IMPACT OF NATURE CONNECTEDNESS IN REDUCING DEPRESSION, ANXIETY AND STRESS OF WORKING COMMUNITY DURING COVID - 19 PANDEMIC
Insights from IT Sector in Colombo, Sri Lanka

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Abstract: Professionals in the IT sector are subjected to many stressors leading to an array of mental imbalances and disorders. Nature deprivation: lack of connectedness to nature amidst their busy task oriented, accuracy related stressful work schedules can be highlighted as a significant factor causing poor mental health. In view of this, the current investigation focuses on inquiring the impact of 'Work From Home' (WFH) scenario on depression, anxiety, and stress levels of the IT sector employees during pandemic with special reference to their level of exposure to nature. A sample of Software Engineers who were working from office before pandemic (n=35) based in Colombo, Sri Lanka were examined in this investigation via a mixed method. DASS 21 self-report scale was adopted to record the perceived depression, stress, and anxiety levels of participants both before the pandemic when Working from Office (WFO) and during the pandemic once shifted to WFH scenario. A questionnaire survey designed by the author was executed to record the participants level of connectedness to nature during WFO scenario and during pandemic when WFH at his/her own workstation. It was observed that the number of participants having depression, anxiety, and stress in different levels (45%, 52%, 45% respectively) during WFO with less nature connectedness (46%) has significantly reduced during WFH scenario (30%,34%, 16% respectively) with increased nature connectedness (74%). Increasing the possibility to create more connections with nature by participants during WFH set up can be identified as a significant variable in reducing their depression, anxiety, and stress levels. The findings of this study sheds light on actions that organizations can take to lessen the negative impact of techno-stressors on mental well-being of workers in the IT industry.

Keywords: *Mental health, IT Sector, COVID 19, Nature Deprivation, Work from home.*

1. Background to the Research

Workers in the IT industry are known to be subjected to many stressors causing 'techno stress', leading to an array of mental imbalances and disorders in the long run (Ramyashilpa and Nayak, 2014; Padma *et al .,*2015). Due to the nature of the lifestyle, the IT workers are found to experience a 'nature deprivation' which is noted as one of the significant factors causing poor mental health among IT Workers (Leather *et al.,* 1998 ; Lottrup , Grahn and Stigsdotter, 2013 and Nieuwenhuis *et al*., 2014). In engendering a conducive work environment ensuring mental health and well-being to boost satisfaction and productivity of this specific working community, a lot of improvements are being suggested by research scholars namely, improvements in organisational management practices (Ganster and Rosen, 2013), lifestyle as well as the physical office environment including increasing the level of connectedness to greenery/nature (Delagran, 2016).

Work from home (WFH) has been suggested and practiced since 1990s in the IT field as one of the beneficial solutions in ensuring the work life balance and well-being of their workers. There were divided opinions on the pros and cons of WFH in achieving the organisational goals and outcomes. However, during the Covid 19 pandemic the IT industry worldwide made a paradigm shift of work from office (WFO) to WFH as the best available resort for the sustenance of the industry. Even in a situation where the entire world is recovering after several waves of covid and at the verge of a consequential economic crisis, the WFH scenario is seemingly continuing not only in the techno industries but also in the other working communities as the sole mode or a hybrid mode of working. Sri Lanka is one of the countries severely affected by the pandemic situation and struggles to maintain the socio, political and economic balance. IT industry being one of the leading industries which contribute to the economic stability, should ensure the mental stability to improve the quality of the workforce to provide an efficient, effective, and sustainable service. In view of this the current investigation probes the impact of WFH setup on the mental health and well-being of the techno workers in Sri Lanka with reference to depression, anxiety, and stress levels.

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DOI: https://doi.org/10.31705/FARU.2022.18

2. Research objectives

Spending time with nature is one potential way to cope with the psychological health impacts from major stressful life events (Berdejo-Espinola *et al.*, 2021). Exposure to green spaces is known to have an impact on stress reduction. It is widely believed that plants and nature are beneficial to patients in terms of mental health (Koç *et al.,* 2018).

In comparison to other professionals, the time duration spent in front of a screen for IT workers is high and their working hours are continued in their homes or apartments. Being stuck in office interiors, focusing on the screens for a considerable time and working on the tasks assigned, the level of exposure to greenery and outdoor landscape of IT based workers can be identified as significantly less. As established in literature, the workers of IT industry are found to experience higher levels of stress ('Technostress") leading to psychiatric imbalances like anxiety and depression.

The Covid 19 pandemic forced many of the IT based workers to WFH experiencing a paradigm shift where they had to work in deprivation of social interaction and exposure to physical office environment (interior/exterior). Instead, the interaction between family members, children, and the level of exposure to immediate green/ landscape elements in the home interior and exterior supposedly increased. In view of this the objective of the current study is to identify the impact of nature connectedness/exposure to greenery in reducing depression, anxiety, and stress levels of IT sector employees of Western Province in Sri Lanka during COVID 19 pandemic WFH conditions.

3. Review of Literature

3.1 IMPACT OF GREEN ELEMENTS ON MENTAL HEALTH

As elaborated by Delagran (2016), exposure to nature not only make individuals feel better emotionally, but also contributes to maintain overall well-being while reducing mortality. Research executed in hospitals, offices, and schools have revealed that keeping even a simple plant in a room significantly reduces stress and anxiety. As further elaborated by Delagran (2016), humans are genetically programmed to perceive natural elements (trees, plants, water) as engrossing and are being absorbed by natural landscape, allowing them to cope with discomfort and pain.

The conducive effects of nature connectedness on mental well-being are significantly elaborated in the Biophilia hypothesis by Wilson (1984), stress reduction theory by Ulrich (1981) and Attention restoration theory by Kaplan (1980-1990) as summarised below.

- *3.1.1 Biophilia Hypothesis (Wilson, 1984):* As suggested in the biophilia hypothesis (Wilson, 1984) humans possess an innate urge to associate with nature and other species. This hypothesis was introduced and made popular by the American biologist Edward O. Wilson by launching his book, "Biophilia" in 1984. As elaborated by him, humans being evolved by nature, possess a biological need to get connected with nature. Humans feel comfortable and love to be in nature since they have lived and survived there for most of their lifetime on the planet earth. As suggested by Wilson (1984), human beings' urge to associate with nature, therefore, is genetically determined.

- *3.1.2 Stress reduction theory (Ulrich ,1981):* As suggested by Ulrich (1981), natural environments can promote stress reduction and recovery. On the contrary, urban environments are found to hinder the stress recovery process. Being exposed to a natural environment which is unthreatening and viewing natural elements are found to be directly associated with triggering positive emotional responses, decreasing significant indicators of stress responses namely heart rate and blood pressure and evokes sustained attention.

- *3.1.3 Attention restoration theory-ART (Kaplan,1980):* ART was developed and made popular by Kaplan (1980) in a context characterized by rapid development, technological and indoor entertainment where people started spending more time indoors devoid of time to get connected with nature. As hypothesized by ART, the nature possesses the capacity to renew/restore an individual's attention after the exerting of mental energy.

3.2 MENTAL HEALTH OF IT WORKERS -PARAMETERS AND CONTRIBUTING FACTORS

As highlighted by Ramyashilpa and Nayak (2014), professionals in IT field undergo an array of psychiatric imbalances including anxiety, depression, and stress due to their work environment, resulting in low self-esteem, displaying the feelings dissatisfaction and inadequacy. Occupational stress has become one of the most serious health issues in the modern world (WHO,2020), as it occurs in any job and is even more severe than ever before. Stress levels are found to be high in IT sector due to the target oriented, accuracy related nature of work characterized by night shifts and heavy workload (Padma *et al.*, 2015). 'Technostress' is a modern psychiatric disorder which is added to the platter arising due to the inability to cope with new computer technologies in a healthy manner. Long working hours, pressure at work, night shifts, and lack of sleep can lead to various mental health and physical problems (Ramyashilpa and Nayak, 2014). Unrealistic expectations from managers, being overly target oriented, the lack of ability to accept failure and lack of job security have led to occupational anxiety among software professionals (Ramyashilpa and Nayak, 2014). "Nature deprivation;" the lack of exposure to nature and greenery, largely due to long hours spent in front of computer screens, has been associated, with overall mental health (Delagran, 2016) in IT professionals.

3.3 WORK FROM HOME

The concept of WFH was initiated in 1970s as 'Telework' which is identical with numerous concepts as telecommuting, e-work, virtual work, work shifting, distance working, remote work, distributed work, and flexible working (ILO Geneva, 2016). The idea of WFH was to enable employees to perform their assigned responsibilities from the comfort of the home, utilizing flexible working hours to maintain an excellent work-life balance while achieving the organizational goals (Reddy and Kannamani, 2018). WFH provides the capacity for the professionals to work from anyplace and anytime while remaining 'connected to' and carefully networking with co-workers either at their employer's work hub or any other locations with the use of technology (ILO Geneva, 016).

3.4 A PARADIGM SHIFT FROM WFO TO WFH DURING COVID 19

The Covid 19 pandemic appeared in 2019 and had a harmful impact on the mental health and well-being of individuals, eventually leading to an overall worldwide psychological crisis (Xiang *et al.*, 2019). Recent investigations on the psychological impacts of COVID-19 pandemic have reported an array of psychiatric imbalances/disorders including depression, anxiety, emotional distress, stress, mood swings, irritability, insomnia, anger, and post-traumatic stress disorder experienced by affected individuals. Individuals kept in isolation under quarantine experience significant levels of anxiety, stress, confusion, and anger (Brooks *et al.,* 2020). Even without being infected, the social restrictions/isolation caused significant changes in the physical and mental health of individuals. Before the pandemic, the idea of WFH was a fantasy to a majority. However, while millions of people lost their jobs, many employees have made the abrupt shift to WFH as the best alternative method amidst the lockdown scenario and social distancing guidelines enforced to prevent spread of the virus. Since the beginning of the pandemic, full-time home-based teleworking was adopted by an array of sectors and professions than ever before, including the ICT sector (Thathsarani and Sooriyamudali, 2021).

With the change in workplace/workstation and its arrangement at ones' own residence being different from previous working environment at office, a separate set of positive and negative parameters were added to the overall working experience of an IT professional influencing his/her mental health. As revealed in a recent study executed by Thathsarani and Sooriyamudali (2021) on WFH set up of IT workers, flexibility in work schedules, organizational support and household characteristics were significant to maintain a positive healthy work life balance while technostress was identified as a negative factor. Accordingly, there is divided opinion on the benefits and demerits of WFH setup reported by a range of organizations, extracted by Reddy and Kannamani (2018) as summarized in the table below.

Table 1: Benefits and demerits of WFH - as extracted by Reddy and Kannamani (2018)

BENEFITS OF WORK-FROM-HOME	DEMERITS OF WORK-FROM-HOME
-Friendly and quieter atmosphere at home leading to less stress. -Work-life balance of employees which leads to improved productivity -Employees get more time with family leading to employee happiness and satisfaction. -Employees can eliminate the long commute and save the transportation cost -Less distractions as the employees work alone at home -Less attrition - Working from home option makes employees happier, and they will not think about changing the employment -Employee loyalty can be improved -Result in considerable savings to the employer ; infrastructure, space requirement, electricity consumption, air condition maintenance, transport cost etc. -A conducive option for the employees with location limitations or disabilities. -Fewer Leaves – Since the employees are at home and able to take care of the family, they do not have to avail many personal or sick leaves. -Decreased traffic in the city	-The absence of community and differences in culture. -Difficult to communicate with colleagues or stakeholders which leads to customer dissatisfaction. -Low reliability. -Difficult for the management to manage and retain responsibility. -Loss of productivity when an employee engages more with the family. -Lack of knowledge in organizations policy. -Information Security concerns. -Poor relationships with the peers, managers, and the organization -Difficulty in supervising the work. -Concern about self-discipline as the employee being away from the office for a long time. -Disruptive distractions from children, work, neighbors, friends, and difficulty in separating between home from work. -Isolated from daily company's contemporary developments

3.5 IMPORTANCE OF NATURE CONNECTEDNESS IN THE WORKING ENVIRONMENT OF IT PROFESSIONALS FOR MENTAL HEALTH.

Most of the research on worker's mental health and other stress-related issues, has been conducted focusing on improving management practices and palliative stress-reduction treatments only (Ganster and Rosen, 2013). The

amount of organizational and management research which has examined the effects of the physical work environment on employee's mental health and well-being is significantly less (Cohen,2007 and Carlopio,1996). Since the workers in the IT sector spend over 40 hours in the office interiors at workstations, in front of screens, it is vital to consider the work environment design as a contributory factor in employee health and well-being (Hilgeman, 2010). As highlighted by Vischer (2007), the research conducted via non-management disciplines on environmental parameters including lighting, noise, air quality has established their impact on employee's mental health.

There are a few investigations executed on the impact of natural environments; greenery and nature in work settings on the mental health of IT professionals (Leather *et al*., 1998, Lottrup, Grahn and Stigsdotter, 2013 and Nieuwenhuis *et al*., 2014). For instance, exposure to natural elements and green spaces have found to be decreasing levels of depression and anxiety (Hartig *et al.,* 2003, Bodin and Harting, 2003 and Knight and Haslam, 2010), to be reducing stress (Parsons *et al.,*1998) and to be boosting psychological well-being (Ulrich, 1986). As revealed by Shin (2007), job-related stress of office workers with a forest view was decreased, while those with views of built elements experienced an increased job-related stress. Kaplan (1995) has highlighted the restorative effect of nature on human mind to counter fatigue. Felsten (2009) and Leathe *et al.* (1998) highlighted that the connection with natural elements to ensure employee mental health can be established in an office environment via three approaches namely, direct (plants in the office), indirect (views through window), or representational (e.g., photographs).

4. Scope and Limitation

The study was limited to working community of Information Technology sector with special reference to Software Engineers who worked at home during the pandemic. The investigation considered only participants in the age group between 25-35 selected from software companies in Colombo who shared similar working environments before COVID-19 pandemic. Sample size had to be limited to 35 subjects who shifted to WFH due to pandemic scenario and having a permanent workstation set up at home. As a restriction of COVID-19, data collection had to be limited to online surveys. Assessing the impact of exposure to nature was limited to indirect views through the windows and evaluating the impact of nature connectedness/exposure on mental health was limited only to depression, anxiety, and stress levels of participants. Even though the parameters of depression, anxiety and stress can vary per participant in WFH scenario with characteristic benefits and demerits highlighted by Reddy and Kannamani (2018), this study was limited only to observing the corelation between their level of nature connectedness when working from home as the significant independent variable.

5. Methodology

A mixed method was adopted to collect data in this investigation. A questionnaire designed by the author(Q1) was adopted to record the participant's responses on the design parameters of office environment vs home environment, and the participants' level of connectedness to nature during WFO and WFH. Further Q1 was designed to test the participants' working hours, time of exposure to nature, preference to view nature, and the nature of the view captured with reference to WFO scenario. Standard DASS 21 self-report scale was adopted to record the perceived depression, stress, and anxiety levels of participants both before the pandemic in WFO mode (DASS 21-WFO-Q2-1) and during the pandemic when WFH (DASS 21-WFH-Q2-2) (Lovibond & Lovibond, 1995) via online mode.

5.1 SAMPLE SELECTION CRITERIA

A sample of Software Engineers (n=35) from selected IT Companies based on Colombo were chosen being a group subjected to nature deprivation during their working hours compared to other sectors. While the location of the subjects' workspaces/workstations and the level of connectedness to nature were determined by the respective organisations during the WFO set up, they had the flexibility to locate their workstation based on their preference with more connectivity with nature in WFH scenario. Below criterion was followed in determining the sample for the investigation.

- Equally representing both genders
- Age group between 25 -35 years
- Working in a similar working environment before pandemic- WFO
- All participants were working at a permanent workstation in his/her own residence during pandemic
- All participants were in normal physical health condition

6. Data Presentation and Analysis

6.1. DEPRESSION, ANXIETY AND STRESS LEVELS - WFO BEFORE PANDEMIC

6.1.1 Connectedness with nature - WFO before pandemic.

According to the survey (Q1) only 46% of the participants were able to connect with nature during WFO before pandemic while 54% had not been able to connect with nature (figure 1), signifying the level of nature deprivation aligned with literature (Leather *et al.,* 1998 ; Lottrup , Grahn and Stigsdotter, 2013 and Nieuwenhuis *et al*., 2014).

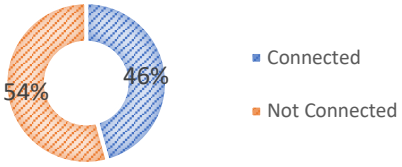

Figure 1 – Percentage of participants connected with nature – WFO

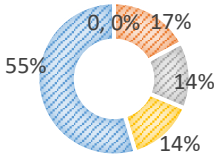

Figure 2 - Depression levels WFO before pandemic

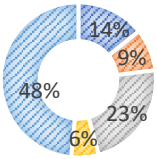

Figure 3 – Anxiety levels WFO before pandemic

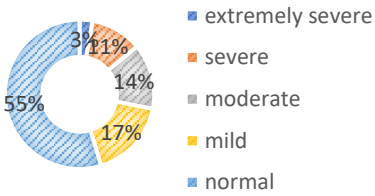

Figure 4 – Stress levels WFO before pandemic

6.1.2 Depression levels - WFO before pandemic: As revealed through the data from DASS - 21 adopted to assess the perceived mental health condition of participants during WFO before pandemic, 55% of the participants had experienced a normal mental state (figure 2). Nearly half of the group tested (45%) had reportedly experienced depression in varying levels. While 14% had experienced a mild level of depression, another 14% and 17% had experienced a moderate level and severe level of depression respectively.

6.1.3 Anxiety levels - WFO before pandemic: 48% of the IT workers tested had not experienced anxiety while working from office. However almost half of the participants tested (52%) had suffered from anxiety in different levels: mild 6 %, moderate 23%, severe 9% and extremely severe 14%. It was noted that 23% had experienced a severe anxiety level during WFO which is an alarming revelation (figure 3)

6.1.4 Stress levels - WFO before pandemic: 55% of total participants had not experienced any level of stress in WFO scenario (figure 4). Somehow, the rest of the 45% participants had experienced stress in varying degrees: mild 17%, moderate 14%, severe 11% and extremely severe 3%.

Table 2: Depression, anxiety, and stress -WFO – Comparison

Disorder	Depression	Anxiety	Stress
Total percentage (n=35)	45%	52%	45%

Out of the three disorders tested, anxiety was found to have the highest percentage of prevalence among the sample of Software Engineers (52%) followed equally by depression and stress (45% each) during their experience in the WFO scenario. Accordingly, aligned with literature (Ramyashilpa and Nayak, 2014; Padma *et al.*, 2015) almost half of the sample of Software Engineers tested were reported to experience some level of depression, anxiety or stress in WFO scenario, which is an alarming observation.

6.2. DEPRESSION, ANXIETY AND STRESS LEVELS – WFH SCENARIO DURING PANDEMIC

6.2.1 Connectedness with nature WFH during pandemic.

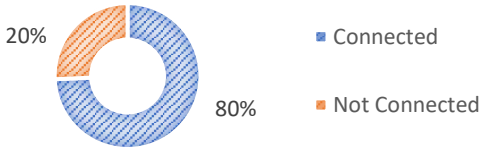

Figure 5 – Percentage of participants connected with nature – WFH

It was revealed that most participants (80%) had the opportunity to connect with nature after shifting to WFH (figure 5) while only 20% were experiencing a nature deprivation. The freedom available to decide the location of one's workstation at home with views of nature during WFH may have contributed towards this development which is supposedly beneficial in improving their mental health and overall well-being (Reddy and Kannamani,2018). The findings of the DASS – 21 are presented below.

6.2.2 The nature of the view, the time of working hours and time of exposure to nature - WFH

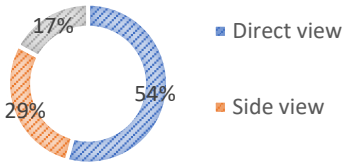

Figure 6 – Percentage of participants' time of exposure to nature – WFH

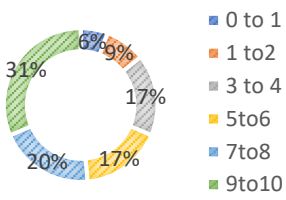

Figure 7 – Working hours – WFH

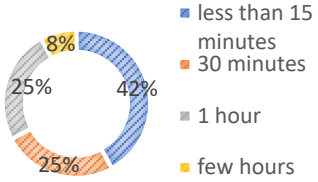

Figure 8 – Percentage time of exposure to nature – WFH

Using the freedom to locate the workstations based on their preference and capacities during WFH scenario, 54% of participants were able to receive a direct view of nature. While 29% of them managed to capture the views from a side of the workstation, another 17% experienced an interrupted view of nature due to an array of challenges associated with locating a self-installed workstation at home (figure 6). Working hours also have been notably changed during pandemic situation. 9 a.m - 4 p.m hours was the normal time duration of daily working in WFO scenario for all the participants. However, during WFH the time duration was found to vary on a person-to-person basis. 9 a.m -10 p.m was reported as the maximum duration of working hours of the sample (31.4%) while the minimum time duration was 0-1 hours per day (5%) which can be identified as an adverse impact of WFH scenario as also highlighted by Reddy and Kannamani (2018) (figure 7). Amidst above circumstances the participants' time of exposure and interaction with nature per day ranged between less than 15 minutes by a majority (42%) followed by 25%:30 minutes, another 25%: one hour and few hours only by minority of 8% (figure 8).

6.2.3 Depression levels - WFH:
A majority of the of the sample (70%) had experienced a normal mental state without any signs of depression after shifting to WFH scenario (figure 9) which is a significant improvement. Only 30% of the participants had experienced depression in fluctuating levels: mild 9%, moderate 11%, severe 2%, extremely severe 8%.

6.2.4 Anxiety levels - WFH: 66% of the IT workers tested had not experienced anxiety which is a noteworthy improvement compared to the WFO scenario (figure 10). Only 34% of the participants had experienced anxiety: mild 6 %, moderate 17%, severe 3%, extremely severe 8%.

6.2.5 Stress levels - WFH: A significant majority of 84% of total participants had not experienced any level of stress in WFH setup (figure 11). Only a minority of 16% had experienced stress under WFH scenario: mild 2%, moderate 8%, severe 6% and extremely severe 0%.

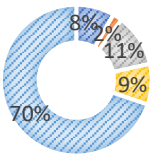

Figure 9 - Depression levels WFH during pandemic

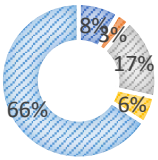

Figure 10 – Anxiety levels WFH during pandemic

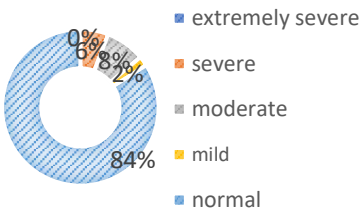

Figure 11 – Stress levels WFH during pandemic

6.3 COMPARISON OF DEPRESSION, ANXIETY AND STRESS LEVELS IN WFH VS WFO

6.3.1 Comparison of depression levels – WFH vs WFO

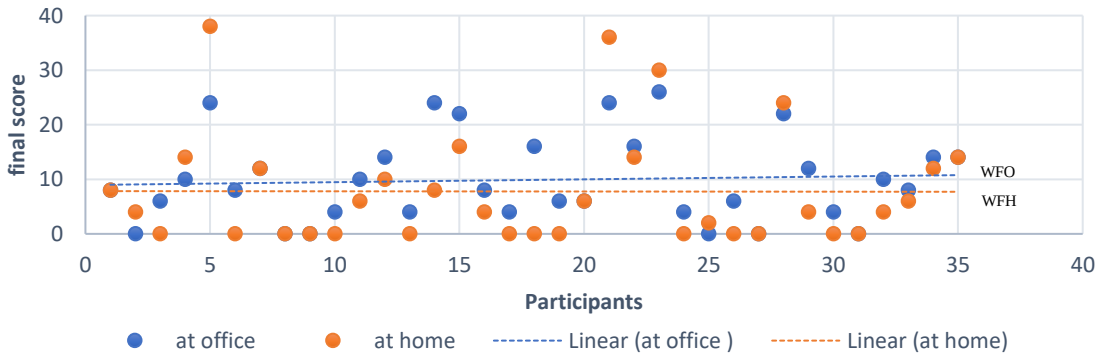

Figure 12 – Difference between depression levels – WFH Vs WFO

Figure 12 elaborates the comparison of depression levels experienced by participants during WFO and WFH composed in a scatter plot. The comparison between the trend lines clearly depicts the reduction in the participants who experienced depression when they are WFH in comparison to WFO. Accordingly, the impact of WFH setup to reduce depression in Software Engineers is significantly revealed.

6.3.2 Comparison of anxiety levels – WFH vs WFO

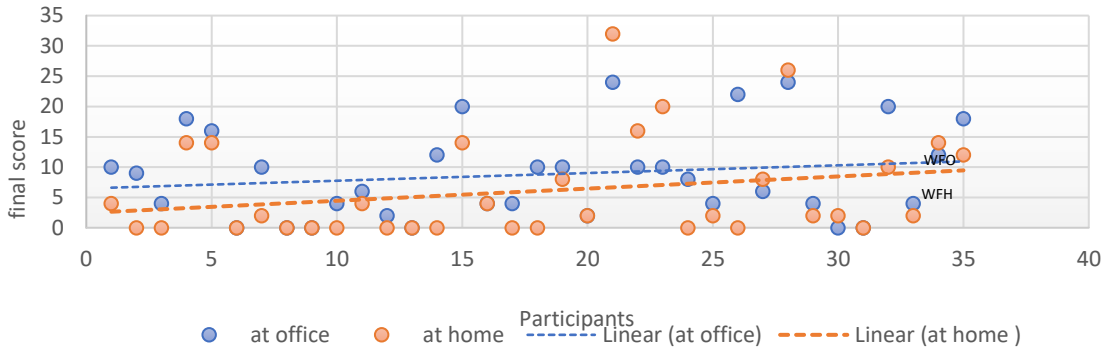

Figure 13 – Difference between anxiety levels – WFH Vs WFO

A comparison of anxiety levels experienced by participants during WFO and WFH are shown in the above scatter plot (figure 13). The trend line representing the anxiety level of participants during WFH is clearly positioned below the trend line representing WFO scenario portraying the impact of WFH set up to reduce the participants anxiety levels in a significant manner.

6.3.3 Comparison of stress levels – WFH vs WFO

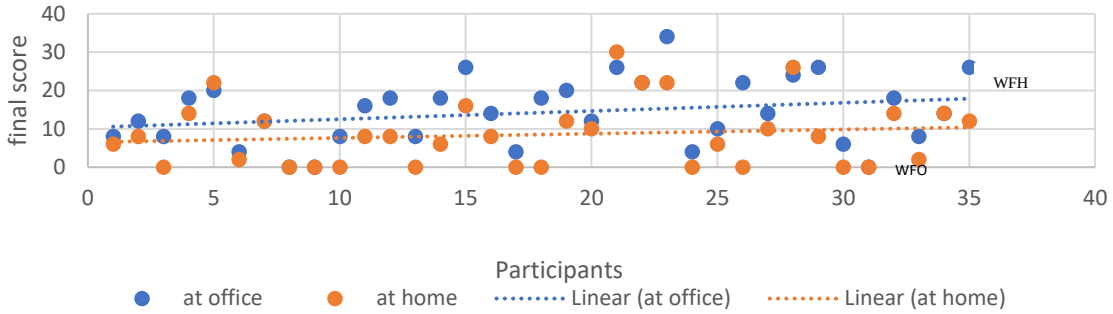

Figure 14 – Difference between stress levels – WFH Vs WFO

The above scatter plot (figure 14) represents the comparison of stress levels of participants during WFO and WFH scenarios. It is evident that the participants have experienced significantly low stress levels during WFH over WFO scenario. Accordingly, WFH setting has been found to be supportive in reducing stress levels of workers in the IT industry.

Table 3; Average percentages of reduction in psychiatric imbalances with outdoor environment influence.

Participants (n=35)	Nature Connectedness	Absence of Depression	Absence of Anxiety	Absence of Stress
WFO	46%	55%	48%	55%
WFH	80%	70%	66%	84%
Percentage increase	34%	15%	18%	29%

As identified by Q1, aligned with biophilia hypothesis (Wilson, 1984), the majority of participants (88.6%) expressed their desire to visually connect with nature while engaging in their work at the workstations.

Accordingly, it can be clearly observed that the number of participants having depression, anxiety, and stress in different levels during WFO (45%, 52%, 45% respectively) with less nature connectedness (46%) have significantly reduced (30%,34%, 16% respectively) during WFH scenario with increased nature connectedness (80%). Increasing the possibility to create more connections with nature by Software Engineers during WFH set up can be identified as a significant variable in reducing their depression, anxiety, and stress levels regardless of the other distinctive positive and negative parameters highlighted by (Reddy and Kannamani, 2018). The most positive was on reducing

stress of participants (29%) followed by anxiety (18%) and depression (15%). Accordingly, aligned with the findings of Hartig *et al*. (2003), Bodin and Harting,(2003), Knight and Haslam (2010) and Parsons *et al.*(1998) the ability to reduce depression, anxiety and stress levels of individuals by the exposure to natural elements and green spaces was substantiated. However, it was noticed that there were few participants who demonstrated deviations from the above findings. As elaborated below in table 4, even if they got opportunity to interact with nature during WFH they continued to experience a certain level of depression, stress or anxiety supposedly due to the overriding impacts of other parameters including technostress induced by target oriented, accuracy related nature of work and heavy workload (Padma *et al*., 2015) as well as personal challenges and distractions from WFH scenario (Reddy and Kannamani, 2018) which is worth inquiring in depth further in future investigations.

Table 4 deviations of results

Participant number	Probability to interact with nature	Depression level	Anxiety level	Stress level
15	yes	Moderate	Moderate	Mild
23	yes	Extremely severe	Extremely severe	Moderate
28	yes	Severe	Extremely severe	Severe

7. Conclusions and future recommendations.

The current investigation identified connectedness to nature as a significant factor on mental health of the workers of IT sector. It was observed that WFH scenario has provided opportunity for more participants (74%) over WFO mode (46%) to connect with nature/greenery due to the flexibility to locate his/her own workstation as preferred. Consequently, a significant decrease in the number of participants experiencing depression, anxiety and stress was observed in WFH over WFO. Accordingly, WFH scenario was found as a conducive mode for workers in the IT sector to achieve mental health free from depression, stress, and anxiety. Nature connectedness was found to be significantly supportive for stress reduction followed by anxiety and depression.

The study can be further extended to identify the most conducive means to connect with nature to draw maximum benefits on mental health; direct (interior plants), indirect (views through window), or representational (nature photographs) to enhance the mental health of workers of IT sector. Further, the impact of the views from workstation can be investigated in depth, focusing on the visual quality of the view of nature, viewing angle, time of exposure to the view as well as the distance to natural elements to derive as design guidelines. Accordingly, the findings of the study sheds light on actions that organizations can take to lessen the negative impact of techno-stressors on mental well-being of workers in the IT industry.

8. References

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