Original Article

Impact of Work From Home in Information Technology Workers: a self-report study

Bhargav P Sawant Dessai[1], Hemangini K Shah[1]
[1]Department of Community Medicine, Goa Medical College, Goa, India

Corresponding Author
Bhargav P Sawant Dessai
E-mail ID: bharga20695@gmail.com

Submission: 12.08.2022 Acceptance: 27.09.2022 Publication: 30.09.2022

https://www.doi.org/10.56136/BVMJ/2022_00078

Abstract

Background: The COVID-19 pandemic has rendered a large proportion of the workforce unable to commute to work to mitigate the virus's spread. Employees now based at home might like to continue to Work From Home (WFH). These may be fully, or in some capacity, for the foreseeable future, especially in the IT sector. In view of a sudden change in the work environment, we aimed to study the effects of WFH on Information Technology (IT) workers. **Methods:** A study was conducted using a pre-designed questionnaire to compare WFH with routine work and assess its impact on the worker. A total of 876 IT workers consented and participated in the study. They consisted of workers from Bengaluru, Gurugram, and Pune. IT workers who had worked for more than one year in the office and more than six months in WFH during preceding period were eligible for the study. The data was collected via google forms through snowballing technique. **Results:** The study included 876 Information Technology workers, of which 564 (64%) were males and 312 (36%) were females. About 324 (37%) of the study participants found the work environment suitable for working. A significant lower proportion of stress and productivity outcomes was seen among males as compared to females. About 336 (38%) would prefer working from home even if the pandemic subsides. **Conclusion:** WFH has had a negative effect on workers' productivity and work-life balance, especially among females who have been hampered with dual responsibilities of work and home care. Hence most females want to return to working in offices.

Keywords: Work From Home, IT, occupational diseases, occupational health, workers

Introduction

Coronavirus disease caused emergency lockdowns in countries across the globe and influenced health, business, and all aspects of daily life[(1)]. These led to stalling daily routine activities, and daily work had come to a standstill in most sectors of the economy. The COVID-19 pandemic has altered every aspect of our work and life[(2)].

The IT industry accounted for 8% of India's GDP in 2020[(2)]. It has adapted to the new challenges and focused on the Work From Home (WFH) concept. Technology is now available to enable us to be connected and attend meetings with anyone in any part of the world[(3)]. WFH saves daily commuting time and offers more flexibility for workers to take care of their families[(4)]. It allows employees to choose working time zones when they are most productive and can be beneficial for avoiding distractions from colleagues, especially in open-plan offices[(5)].

However, the two most important domains of an individual's life are work and family, and WFH has mixed these two domains and blurred the boundaries between these domains[(6)]. These ongoing practices can lead to conflict, which can lead to emotional exhaustion[(7)]. The onset of the largest WFH concept was altering work environments in ways unimaginable a few months ago.Beyond the technological adjustments to online meetings and video calls, people struggle with isolation and uncertainty, childcare responsibilities, or even grief [(8)].

The aim of the study was to determine the physical and mental effects of WFH on IT workers in India.

Objectives

1. To study the impact of WFH on IT workers.
2. To compare effect of WFH with working from routine offices.

Methodology

Study design

A questionnaire-based cross-sectional study was conducted among IT professionals in major IT cities of India (Bengaluru, Gurugram, Pune).

Study participants

Information technology workers from three cities in India, namely Bengaluru, Gurugram, and Pune, participated in the study. The participants who had completed more than one year in the routine work environment and more than six months of WFH and were currently working from home were eligible for the study.

Study Duration

The study was conducted over a period of two months, from September 2021 to December 2021, after obtaining institutional ethical clearance.

Sample size estimation

Sample size $n = [DEFF \times Np(1-p)]/[(d^2/Z^2_{1-\alpha/2} \times (N-1)+p \times (1-p)]$ where; Population size (for Finite Population Correction

factor or FPC) (N) = 3000, hypothesized % frequency of outcome factor in the population (p) = 50%, absolute precision (d) = 5%, confidence level ($Z^2_{1-\alpha/2}$) = 95% and design effect (DEFF) = 1. The calculated sample size was 384 and considering 10% non-response, the sample size was 425.

Data Collection and tool

Each city's IT sector representative was identified, and snowball sampling was used to obtain the sample size via social media platforms and email. Data was collected through an online, anonymous questionnaire developed based on a literature review and distributed via google forms after obtaining informed consent.

The questionnaire included socio-demographic details like age, sex, and type of family. A 5-point Likert scale was used from 1 to 5 (very unsatisfied, unsatisfied, neutral, satisfied, and very satisfied) to assess work routine, satisfaction, stress, and productivity in WFH compared to routine work.

Data Analysis

The results obtained in the google sheet were converted to an excel sheet and then analyzed using SPSS version 25. Continuous variables were presented as mean and standard deviation. For categorical variables, the percentages were calculated. The independent sample t-test was used to determine the association between means. Survey responses contained no personally identifiable information.

The study was approved by Institutional Ethics Committee (IEC) before the initiation of the study.

Results

A total of 945 responses were received, of which 69 were incomplete filled forms and hence were not included. Thus, 876 responses were considered for analysis.

Of the 876 information technology workers participating in the study, 564 (64%) were males, and 312 (36%) were females. The average age of the study participants was 27.96±4.83 years. Approximately 696 (79%) belonged to a nuclear family, 132 (15%) in a joint family, and 48 (6%) in a three-generational family. Among the study participants, 582 (66%) were married, and 492 (56%) had at least one child, 384 (44%) did not have any child (Table 1).

Table 1: Socio-demographic information of the study participants

Sr. No.	Socio-demographic distribution of the participants	Number of participants (876)	Percentage (%)
1.	**Age (years)**		
	22 – 25	274	31
	26 – 29	389	44
	30 – 33	71	8
	34 – 37	98	11
	38 – 41	17	2
	42 – 45	27	3
2.	**Sex**		
	Male	564	64
	Female	312	36
3.	**Type of family**		
	Nuclear	696	79
	Joint	142	15
	Three generational	48	6
4.	**Religion**		
	Hindu	613	69
	Muslim	131	16
	Christian	70	9
	Sikh	52	6
5.	**Number of children**		
	No child	384	44
	≥ one child	492	56

About 324 (37%) of the participants found a home work environment suitable for working. Among them, 253 (78%) were males, and 71 (22%) were females. The participants felt that availability of more time (39%), less traveling (36%), and safety (26%) were the best aspects of WFH. Whereas when asked about the worst aspects of WFH, blurred boundaries between work and home (66%), increased domestic work (17%), family stress (13%), and increased disturbance (4%) were reported.

The mean score regarding stress among males and females was 3.66±0.651 and 2.01±0.867, respectively. Statistically significant difference between males and females for stress (chi-square = 445.145, df = 4, p-value = 0.0001) was noted.

Earlier work routine consisted of moving to work and a continuous human interaction and a demarcation between work and home which was changed in WFH where home turned into office. With respect to work productivity, the mean score among males was 3.38±1.002 and 2.92±0.830 among females (Table 2). Study participants stated increased domestic work and child care as the factors for their stress and lower productivity while working from home.

Table 2: Association between gender and WFH

WFH vs. Workplace	Gender	n	Mean	T-test	daf	Pvalue
1) Work Routine	Male Female	564 312	3.53±0.987 2.08±1.387	18.004	874	0.0001
2) Work Satisfaction	Male Female	564 312	3.66±0.930 2.00±1.416	20.866	874	0.0001
3) Work Productivity	Male Female	564 312	3.38±1.002 2.92±0.830	6.902	874	0.0001

Nearly 360 (41%) of the participants were able to balance work and family life. However, most of them, 276 (77%), did not have any child, and 336 (38%) would prefer working from home even if the pandemic subsides, among whom 274 (82%) were males and 62 (18%) females. Some 88 (25%) study participants mentioned that staying in a joint family than in a nuclear family would make working less stressful from home, thus improving productivity. Finally, 336 (38%) participants would want to continue doing WFH even if the pandemic subsides. (Table 3)

Table 3: Association of gender and willingness to continue WFH

Gender	Willingness to continue WFH		Total
	Yes	No	
Male	274 (48%)	290 (52%)	564
Female	62 (20%)	250 (80%)	312
Total	336	540	876

Odds Ratio = 3.098
C.I 2.7571 to 5.2645
χ^2 = 70.0268
df =1
P = 0.0001

Discussion

The present study's findings show that females have been less productive and lesser stressed in WFH than males. IT workers especially females want to return to routine work as the pandemic is subsiding : while men prefer WFH even after pandemic is subsiding. These findings are consistent with a study conducted by Purwanto A et al. among Indonesian teachers. The study showed that some of the advantages of WFH are that teachers do not need to follow office hours nor have to spend money to pay for transportation or gas costs, and they save time on travel as well. The many time-sensitive demands of work that must be completed sometimes force some people to lose the balance between the world of work and personal life. However, with the WFH policy, one can more easily divide the roles[9].

The current findings were similar to those obtained in the study conducted by Irawanto DW et al., wherein it was found that working from home has a significant negative effect on work-life balance. Employees are not able to divide their time between work and personal life because they are still used to having fixed working hours[10]. A similar study by Nakrosienė A et al. observed that telecommuting work in the digital workplace might offer a strategy for creating flexibility that opens workers' creativity as long as the work-life balance strategies are stretched and implemented well by the workers through organizational support[11].

Gajendran RS et al. reported that participants were under considerable stress working from home. Presently the pandemic compels workers to do extra work, even working overtime, because they have to complete the job they were meant to do. This, in addition to social isolation, leads to employees being disconnected from their working environment and triggers work stress, in accordance with our findings of increased work stress[12].

Although Oh M et al. found that comfort is one of the determinants in creating a high-performance team and in the early stages of working from home, the worker's satisfaction is maintained; as it is balanced. With the fulfillment of work-life balance. The study was conducted in early days of working from home hence its findings cannot be generalized[13].

The findings of a study conducted by Kaur T et al., it was observed that 52% of respondents strongly agree that being women, WFH is more challenging than working in an office which is congruent with findings from our study[14].

However, an article by Kaushik M, and Guleria N, which discusses the impact of the COVID-19 pandemic at the workplace, found that WFH puts a person into a comfort zone which leads to laziness and lots of distractions. Although WFH may make it simpler for employees to offset their work obligations with their own life and family jobs (e.g., thinking about kids or old guardians), time management is another challenge to settle[15].

Limitations

Using Snowball sampling means that the researcher has little or no control over the sampling method and hence has relied mainly on the referrals from already-identified participants, which can cause sampling bias in the study due to a lack of representation of the population of interest.

Conclusion

WFH has created an unfavorable environment, especially for females who have found it difficult to adjust to the dual responsibilities of office work and home care. Although a sizeable number of participants wanted to continue WFH, most of them were unmarried, and eventual transition into the family would also place them under dual responsibilities; hence WFH concept may not be a good concept in the long term.

Conflict of Interest: Nil

Source of Support: Nil

ORCiD

Bhargav P Sawant Dessai 0000-0002-3397-8131

References

1. Chu DK, Akl EA, Duda S, Solo K, Yaacoub S, Schünemann HJ, et al. Physical distancing, face masks, and eye protection to prevent person-to-person transmission of SARS-CoV-2 and COVID-19: a systematic review and meta-analysis. Lancet. 2020 Jun 27;395(10242):1973–87.
2. Indian IT and BPM Industry Analysis Presentation Industry Report. Available from: https://www.ibef.org/industry/indian-it-and-ites-industry-analysis-presentation. Accessed on 3 December 2021.
3. Gichora NN, Fatumo SA, Ngara M V, et al. Ten Simple Rules for Organizing a Virtual Conference — Anywhere. PLoS Comput Biol. 2010 Feb;6(2): e1000650.
4. Tavares AI. Telework and health effects review, anda a research framework proposal.
5. Kim J, de Dear R. Workspace satisfaction: The privacy-communication trade-off inopen-plan offices. J Environ Psychol. 2013 Dec;36:18–26.
6. Messenger J, Vargas Llave O, Gschwind L, Boehmer S, Vermeylen G, Wilkens M. Working anytime, anywhere: The effects on the world of work.
7. Oakman J, Kinsman N, Stuckey R, Graham M, Weale V. A rapid review of mental and physical health effects of working at home: how do we optimise health?. BMC Public Health. 2020 Dec;20(1):1-3.
8. How companies are supporting employees during COVID-19. Available from: https://www.jll.co.in/en/trends-and-insights/workplace/how-companies-are-supporting-employees-during-covid-19. Accessed on 3 December 2021.
9. Purwanto A, Asbari M, Fahlevi M, et al. Impact of work from home (WFH) on Indonesian teachers performance during the Covid-19 pandemic: An exploratory study. International Journal of Advanced Science and Technology. 2020;29(5):6235-44.
10. Irawanto DW, Novianti KR, Roz K. Work from home: Measuring satisfaction between work–life balance and work stress during the COVID-19 pandemic in Indonesia. Economies. 2021 Jun 25;9(3):96.
11. Nakrošienė A, Bučiūnienė I, Goštautaitė B. Working from home: characteristics and outcomes of telework. International Journal of Manpower. 2019 Jan 11.
12. Gajendran RS, Harrison DA. The good, the bad, and the unknown about telecommuting: meta-analysis of psychological mediators and individual consequences. Journal of applied psychology. 2007 Nov;92(6): 1524-41.
13. Oh M, Choi S. The competence of project team members and success factors with open innovation. Journal of Open Innovation: Technology, Market, and Complexity. 2020 Jul;6(3):51.
14. Kaur T, Sharma P. A study on working women and work from home amid coronavirus pandemic. J. Xi'an Univ. Archit. Technol. 2020:1400-8.
15. Kaushik M, Guleria N. The impact of pandemic COVID-19 in workplace. European Journal of Business and Management. 2020 May 31;12(15):1-0.