A Review on the Impact of Telecommuting on Personal and Professional Life

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A B S T R A C T

Aims: Telecommuting effects on various aspects of personal and professional life, such as productivity, work-life balance, performance, quality of life and job satisfaction. Due to limited knowledge regarding these impacts, the present study was conducted to review the evidences to conclude the overall effects of telework on personal and professional life of individuals who telework.
Method and Materials: In this study key search was done between 2000 and 2021 in databases of science direct, web of science, pubMed, scopus, magiran and google scholar. Keywords were telecommuting, teleworking, productivity, job satisfaction, work-life balance, work- life conflict, stress and performance.
Findings: This study showed telecommuting can have positive and negative effects on various aspects of personal and professional life, such as productivity, job satisfaction, work-life balance, and quality of work performance, work-life conflict and stress. Type of organization, community, family and the telecommuter himself were various influential factors in this regard.
Conclusion: Due to the importance of the organizational productivity, family and community progress, and the telecommuter himself satisfaction, more attention should be paid to these factors during Covid -19 prevalence.
It is also recommended to conduct more studies on the effects of telecommuting on personal and professional life.

Keywords: Teleworking, Telecommuting, Job Satisfaction, Personal Life, Professional Life, Work-Life Conflict.

Introduction

The Covid-19 epidemic poses unprecedented health, social and economic challenges [1]. This disease has profound consequences for people life and work sites around the world [1]. To minimize physical contacts between people, applying social distance in order to prevent new infections, many companies do things remotely) and teleworking considered for many jobs [2].

The International Labor Organization (ILO) defines teleworking as doing work outside the workplace through using Information and Communication Technologies (ICTs), including smartphones, tablets, laptops and computers [3]. Given the importance of telecommuting in today's world and its effects on life, the present study aimed to assess the impact of telecommuting on personal and professional life in terms of its effect on productivity, job satisfaction work-life balance, work performance, work-life conflict and stress.

Method and Materials

The present study is a narrative review that examines the impact of telecommuting on personal and professional life. In this study the databases such as Science Direct, Web of Science, PubMed, Scopus, Magiran and Google Scholar were assessed. The search was conducted using the keywords telecommuting, teleworking, performance, productivity, job satisfaction, work-life balance, stress, work-life conflict. The referances of the searched articles were reviewed to access other articles. Moreover, an additional search was made for the links to related articles.

In this study, acceptance of the studies was done based on inclusion and exclusion criteria. According to inclusion criteria the articles were assessed which were original studies and the related references and key words regarding telecommuting were mentioned in their titles and abstracts. Exclusion criteria included subject irrelevance articles, duplication of studies, lack of access to the full text of articles and non-English articles. Due to this strategy 112 articles were found in the initial search. According to the

inclusion and exclusion criteria, the abstracts were studied by the researchers and the relevant articles were identified and their full text was extracted. Finally, 13 articles were included in the study. All stages of evaluating the quality of articles were performed by two researchers independently.

Findings
This review study include 13 studies published between 2000 and 2021. Studies were done in United States, United Kingdom, Germany, South Korea, Lithuania, Belgium, Spain and Italy among home-based businesses, students, government agencies, and information technology company and education staff. The characteristics of studies is given intTable 1. In this review research, by reviewing studies, the effect of telecommuting has been written in 6 sections:

The effect of telecommuting on work-life balance:
 Moore conducted one research on 123 home-based businesses through semi-structured interviews, the General Health Questionnaire (GHQ12) and the Work Source Control Scale. The results shows that working at home provides an opportunity to combine the work with other areas of our lives. However, it has effects on life and family that are not yet fully understood because it seems to have a variety of effects [4]. The results of a cross-sectional study by Gálvez et al conducted on 72 telecommuting women through interviews and focus groups show that although telecommuting is consistent with the sustainability of social programs and can help employees achieve work-life balance, it alone does not guarantee success in this field and must be accompanied by a context of support and promotion that is directly related to organizational culture [5]. Palumbo conducted one research on 9877 people by scoring their ability to cope with the conflict between work and life, which is 5 points. In this research the mediating variable is job participation, which is measured by asking about the degree of willingness to work, sacrifice, and strength in performing tasks, which is 5 points. Another mediating variable is work-related fatigue, which is measured by the individual's own statement of fatigue, which is 5 points. The results of study show that teleworking on the one hand increases the conflict between work and family and on the other hand, work interaction moderates the negative effects of teleworking on work-life balance[6]. Palumbo et al. conducted one study on 2046 employees in the education sector using a sequential analysis, the results show that telecommuting increases the conflict between life and work on the one hand, and on the other hand, tools such as organization and work well-being reduce the negative effects of telework on the work-life balance[7].

The effect of telecommuting on the conflict between work and life:

The results of intervention conducted by Delanoeije et al. show that telecommuting reduces the conflict between work and life [8].
Zhang et al. in their study show that children play an important role in the outcome of teleworking, which not only increases the conflict between work and family, but also creates more work at home. Policies that support formal childcare resources can resolve work-family conflict and encourage people to work at home [9].
Dutcher conducted a research on 125 students by filling out a questionnaire and performing two types of web-designed work, the results indicate that telecommuting has a positive effect on productivity in creative work and negative effect on productivity in non-creative work[10].
Nakrošienė et al. conducted a web-based survey on 128 telecommuters. They examined the effect of telecommuting factors (with a questionnaire that has time planning skills factors, the ability to work in the most productive time, supervisor trust, supervisor support, reduce communication time with colleagues, the ability to care for family members, the ability to work at home in case of illness, the convenience of work at home, access to documents of organization and the possibility of saving travel expenses. The results show greater productivity in telecommuters [11].
Moretti et al. conducted a cross-sectional study on 51 telecommuters using a questionnaire, the results show that telecommuting reduces productivity [2].

The effect of telecommuting on job satisfaction:
Vega et al. conducted a research on 180 employees of a government agency using the 5-point Job Satisfaction Scale, the results show that telecommuting increases job satisfaction [12].
Suh et al. measured the effect of technology-induced stress on job satisfaction in a cross-sectional study of 258 telecommuters from two IT companies. The results show that technology and job characteristics together cause techno-stress in teleworking people and reduces their job satisfaction [13].
The results of the study by Nakrošienė et al shows greater job satisfaction in teleworkers [11].
Moretti et al. measured job satisfaction using the Utrecht Work Engagement Scale (UWES) in his study. the results show that job satisfaction was lower in people with musculoskeletal disorders due to telecommuting, but in other teleworkers, job satisfaction was equal to those who worked in person[2].

The effect of telecommuting on job performance:
In a study by Vega et al. (1991) Which measured job performance using the Williams and Anderson seven-item scale, as well as creative performance in the two dimensions of idea generation and idea evaluation using the seven-point Brooks-Shesler and Tetrick

Table 1) Characteristics of studies

Author (Date) Country	Study Design(Method)	Participants	Criteria	Results
Moor (2006) England	Semi-structured interviews	123 people with home jobs	Assessing the relationship between work at home and work-life balance and quality of life through semi-structured interviews and also the General Health Questionnaire (GHQ12) and the Labor Control Source Scale	Working at home has an impact on life and family members that were not yet fully understood , so it seems this kind of working has a variety of effects.
Dutcher (2012) Florida, USA	Experimental	125 students	Investigating the effect of telecommuting on productivity by filling out a questionnaire and performing two types of work designed on the web	Positive effect on productivity in creative works, Negative effect on productivity in non-creative works.
Vega et al. (2015) America	Intrapersonal field study	180 employees of a government agency	Investigating the effects of telecommuting by examining job performance, job satisfaction and creative performance. Job performance was measured using the Williams and Anderson (1991) scale consisting of seven items. Job satisfaction was measured using a 5-point job satisfaction scale adapted from Brayfield and Rothe. Creative performance was measured in two dimensions: idea generation and idea evaluation using the seven-point Brooks-Shesler and Tetrick scales.	Teleworking improves job performance, job satisfaction and creative performance.
Wienert Et al. (2015) Germany	Experimental analytical study	310 Telecommuter	Study of stress in telecommuters by examining the effect of teleworking characteristics on stressors. Moreover , investigation of teleworking effects on fatigue and tendency to continue teleworking.	Characteristics of telecommuting increase the rate of fatigue and decrease the tendency to continue telecommuting.
Suh et al. (2017) South korea	Cross-sectional study	128 telecommuters	Assessing the effect of teleworking factors through a questionnaire (which has time planning skill factors, ability to work in the most productive time, supervisor trust, supervisor support, reduced communication time with colleagues, the possibility of caring for family members, the possibility of working at home in case of illness, the suitability of the workplace at home, the possibility of accessing the organization's documents from home and the possibility of saving travel expenses.)	Higher productivity and more job satisfaction
Delanoeije et al. (2020) Belgium	Quasi-experimental interventional study	78 people	Investigating the effect of teleworking on employee stress, conflict between work and life, job performance in two groups of intervention and control	Less stress, lower work-life conflict, and higher job performance

Continuation of Table 1

Author (Date) Country	Study Design (Method)	Participants	Criteria	Results
Gálvez et al. (2020) Spain	Cross-sectional study	72 telecommuting women	Investigating work-life balance, community and organization sustainability in telecommuting through interviews (which includes telecommuting motivations, pros and cons of telecommuting, the relationship between telecommuting and daily life, the impact of job on the organization, the role of gender differences in work-life balance , acceptance of teleworking in the workplace, the role of teleworking in achieving work-life balance, the relationship between gender and teleworking, teleworking and organizing space and time at home, the pros and cons of teleworking for the organization and gender differences).	Telecommuting must be accompanied by a context of support and promotion.
Moretti et al. (2020) Italy	Cross-sectional study	51 telecommuters	The effect of teleworking on productivity, job satisfaction, work-related stress and musculoskeletal disorders through a questionnaire. Back pain is measured by the Brief Pain Inventory (BPI). The Fear Avoidance Belief Questionnaire (FABQ) was used to assess employees' beliefs about how work and activity affect pain. Job satisfaction is measured by the Utrecht Work Engagement Scale (UWES).	Less stress but job satisfaction equal to face-to-face work. Less productivity, reduced job satisfaction in people with musculoskeletal disorders. Insufficient home space for telecommuting, increased mental health problems and musculoskeletal disorders
Palumbo (2020) Italy	Quantitative experimental study	9877people	The effects of teleworking on work-life balance have been measured by scoring their ability to deal with work-life conflict, which is 5 points. The mediating variable was job participation, which was measured by asking about the degree of willingness to work, sacrifice and strength in performing tasks, which was 5 points. Another mediating variable was work-related fatigue, which was measured by the individual's own statement of fatigue, which was 5 points.	More conflict between work and family, more fatigue. Work interaction moderates the negative effects of telecommuting on work-life balance.
Palumbo et al. (2020) Italy	Cross-sectional study	2046 employees of the educational department	Investigating the direct and indirect consequences of working from home on work-life balance using a sequential analysis	Increasing conflict between life and work. Tools such as organization and work well-being reduce the negative effects of telecommuting on work-life balance.
Song et al. (2020) America	Cross-sectional study	3962 participants	Assessing peace of mind in telecommuting people. The study used data from a 2003 census conducted continuously by the US Census Bureau on a population aged 15 years or older.	Compared to workplace, working at home is less fun on weekdays and more stressful on weekdays or holidays.
Zhang et al. (2020) Germany	Extracting data from the census	188081 people	Investigating conflict between work and life	Children not only increase the conflict between work and family, but also create more work at home.

scales, the results show that telecommuting improves job performance and creative performance[12]. In the study of Delanoeije et al., The results show that teleworking leads to higher job performance [8].

The effect of telecommuting on stress:
The results of an empirical analytical study by Weinert et al. show that telecommuting characteristics (lack of information, isolation and autonomy) effect on the stressors of telecommuting and thus increases the rate of fatigue and decreases the tendency to continue telecommuting [14].

In the study by Suh et al., The results show that technology and job characteristics jointly causes technology-induced stress in teleworkers, which varies depending on the severity of telework. People with low information of technilogy are more prone to technology-induced stress [18]. Delanoeije et al. in a research show that telecommuting reduces stress [3]. A study by Moretti et al. shows that telecommuting puts less stress on individuals [13].

In a cross-sectional study that Song et al. conducted on 3962 people by surveying the peace of telecommuters, the results show that working at home on weekdays is less happy than at work. It is associated with more stress on weekdays or holidays [15].

Discussion
In present study the impact of new forms of work, especially telecommuting, on personal and professional life and also its advantages and disadvantages has been extensively discussed. Telecommuting can have different effects on work-life balance. Working at home provides an opportunity to combine work with other areas of our lives [4]. Although telecommuting is consistent with the sustainability of social programs and can help employees achieve work-life balance, it alone does not guarantee success and must be accompanied by an area of support and promotion that is directly related to organizational culture. Work interaction moderates the negative effects of telecommuting on work-life balance [6]. The effect of telecommuting on work-family conflict is influenced by factors such as telecommuting space, presence of family members, number of telecommuting days, flexibility, responsibility outside the workplace, time, fatigue and work well-being. On the other hand, telecommuting has disadvantages such as interfering with work and homework and time allocated to children and managing time / schedule [8, 9]. Telecommuting can have an increasing and decreasing effect on productivity, which depends on several factors such as home conditions for telecommuting and organizational support. Telecommuting increases productivity in jobs that require creativity and decreases it in non-creative jobs [2, 10, 11].

The effect of telecommuting on job satisfaction can be increasing and decreasing, which depends on the characteristics of telecommuting and the ability of individual to telecommute and organization support. Social distance in telecommuting, reduces job satisfaction (2, 11, 13). Telecommuting can reduce or increase stress. Factors such as gender, having children, personal differences, workload, work-life conflict can play an important role in this regard and technology causes techno-stress because some people may be unfamiliar with the technology of working remotely [13]. Studies have shown that telecommuting improves job performance and creative performance [12].

Conclusion
Telecommuting can have both positive and negative effects on personal and professional life. Factors such as suitable environment for telecommuting, family cooperation with the telecommuter, job well-being, reducing workload and telecommuting time, organization support, providing appropriate technology for telecommuting, training and preparing people for telecommuting can eliminate telecommuting problems and help the telecommuter to do the job better and adapt to telecommuting. Given the advancement of technology and growth of telecommuting as well as the prevalence of diseases such as Covid19 that makes the need for telecommuting more and more, organizations should pay more attention to these factors.

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