

Workload and health of older academic personnel using telework

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Abstract. Aim of the study was to measure telework usage and to explore interactions between health, workload and telework. Telework is work that is carried out outside the central office, involving new technology that permits communication. Work carried out at any time, at any place, has been very common in the case of research institutes and universities. This type of work has advantages and disadvantages for both an employee and employer. The study of telework was carried out in Tallinn University of Technology (TUT) where working at home has been very common for a long time. The questionnaires were sent to academic personnel. The study shows that academic employees preferred teleworking for better concentration on work and saving time and money. There was no significant difference in telework usage by age and teleworkers had fewer complaints about tired eyes, arterial hypertension and stress.

Key words: telework, work hours, diseases, stress.

INTRODUCTION

Telework is work that is carried out outside the central office (often, on the go and at home), involving new technology that permits communication. Concept of telework was first introduced as telecommuting by Jack Nilles in 1976 (Nilles et al., 1976). It has much increased in many developed countries in Europe, America and Asia during the last decades. People have worked in homes from time immemorial. Teleworking hasn't 'invented' any new places to work and principally new problems. It is a complex phenomenon that creates possibilities of a number of issues at present. It is important to redesign work life and support the work ability of older workers so that they are able and willing to work longer than before (Ilmarinen, 2009). Telework may be one of the options that quite easily provide flexibility to work life including older workers. The common myth that has to be dispelled is that older people have more difficulties when working with information communication technology.

Work carried out at any time, at any place, has been very common in the case of research institutes and universities. This practice supports understanding that work does not refer to a physical place, but rather more to a set of activities carried out by people. This type of work has advantages and disadvantages for both an employee and employer. There are also circumstances when teleworking has more advantages or disadvantages. Teleworking proposes new challenges, as it raises the chances of people working in places which are not tailor-made as most workplaces. Many people like freedom to choose the place for work.

However it may reduce the results of work through less control. People who work too many hours from outside the central office experience more stress and health problems. In some occasions there is also threat of decreasing physical activity or overeating which may lead to increase of body weight.

According to common understanding telework usage depends on workers age. Generally, young people are considered to be more interested in working outside the central office by using computers, mobile phones, tablets and internet, but some data (Arvola, 2009) were disproving this well-known position – young people were using less telework compared to their elder colleagues.

The average age of academic staff is relatively high compared to most white-collar workers and it is increasing at present as is the age of all work-force in Estonia. Experienced and qualified academic employees remain on the job for a long time. By law no person may be discriminated on the basis of age in Estonia. While most legal, organisational, psychological and social aspects of telework have been widely studied according to the scientific literature, less attention has been paid to problems connected to the age of academic personnel and the influence on their health (see *The Oxford Handbook*, 2012).

Sharit et al. (2009) studied managerial experience from a large variety of companies in the United States. The results presented a mixed picture with respect to the employability of older workers as teleworkers, and strongly suggested that less experienced managers would be more resistant to hiring older people as teleworkers (Sharit & Czaja, 2009).

AGEING AND HEALTH

Ageing is an accumulation of various types of damage in organism. A much longer life in healthy and youthful body has been human greatest dreams. Most ordinary people think that it is impossible.

Health depends on workload. High workload of older people is harmful. There is close relationship between biological ageing and age-associated pathologies in humans. Age associated diseases appear as a result of ageing. They develop from ageing changes in the organism. Distinction of ageing from diseases is separating undefinable from undefined (Evans, 1988).

European culture is fixed on eternal youth and middle-age. In official statistics, age-groups are for youth and middle-aged (20–24, 25–29 years etc.) and mostly up to 60 years. All older people are ‘older’. Medical research about older subjects is much rarer compared in people less than 65 years old. As a result of these peculiarities of medical research we don’t know well about hundreds of physiological parameters of older persons. We don’t exactly even know what the best weight and blood pressure is for older people. Many research articles showed that Body Mass Index (BMI) for 65+ should be less than 25 (bigger BMI is worse), but many showed that BMI > 25 is the best for health of older people. In 13 studies, Chapman (2010) found increased mortality only above a BMI of 27–28.5 for 65+.

There is need for experimental and longitudinal studies. Limitation of longitudinal studies on older workers is difficulties for that during years workers change professions and causes of this are very different, sometimes unhealthy working conditions.

SUBJECTS AND METHODS

The study of telework was carried out in Tallinn University of Technology (TUT) where working at home has been very common for a long time. At present many retired professors (emeritus) participate in scientific work of the university at home. The research sample consisted of 259 academic staff members of TUT who were agree to participate and answer questionnaire and whose responses were suitable for analysis. The sample size was enough regarding the representativeness of the survey. Actual sample size is greater than minimum sample size (100,39) that was calculated as following (see Eq. 1) (Arvola, 2006).

$$\begin{aligned}n &= \frac{t^2 \sigma^2 N}{\Delta^2 N + t^2 \sigma^2} = 100,39 \\t &= 0,95 \\ \Delta &= 0,5\end{aligned}\tag{1}$$

The purpose of the study was to measure telework usage to identify the factors that have influence on health. The questionnaire consisted of open-ended (e.g. factors that influence teleworking, personal benefits concerning telework, disadvantages concerning telework) and closed-ended questions (incl. telework usage, about teachers' mastery working with ICT equipment, about the size of their family, about the number and pages of publications and hours spent on scientific work (working with literature, planning and carrying out the research). Data about the time spent commuting between the university and home and about income were also included. Respondents were asked also about their health complaints concerning particular issues (e.g. high blood pressure and stress) on the scale 1–3, where 1 – do not occur, 2 – occurs rarely, 3 – occurs.

The criteria for participating in survey was occupation (holding academic position, e.g. professor, lecturer, researcher). People older than 45 years were considered as older workers. Questionnaires were sent to academic staff by e-mail and by paper. Survey population was 1,253 academic employees in TUT. Questionnaires were sent on paper and by e-mail. 260 questionnaires were completed and returned. 259 of the questionnaires were considered to be suitable for analysis. One returned questionnaire was removed, because the respondent declared significantly more telework hours (70 hours a week) compared to second most intensive teleworker (42 hours a week). Therefore final sample size was 259 and response rate was 21%.

RESULTS AND DISCUSSION

Data from survey in TUT showed that older academic staff is productive (Kristjuhan & Taidre, 2010, 2012, 2013). The productivity was highest in age group 56–65 years. Older academic staff published more articles per year compared to their younger colleagues.

According to telework usage survey in TUT in 2006 teleworking is widespread. There were no significant differences in teleworking usage by gender, but men tend to do 1 hour more telework a week compared to women. Majority (90%) of academic staff members that were 40 years old and younger evaluated their computer skills upper-medium and professional level (Fig. 1). It was 52% in age group over 50 years. But only 12 respondents (that was for instance 5% in age group 61–70 years) said that they can use a little when asked about their computer skills (e.g. 5% in age group 61–70 years). As results show, the vast majority of senior academic staff members do not have significant difficulties concerning working with computers. These survey results help to reject the common belief of elderly and ICT relationships. Academic staff members in TUT use computers regularly for filling their work tasks. Most of the work is organised in the way that the physical place of work do not matter and they have the access to information system and documents from any place that has internet connection.

But as the gathered data was measured through self-evaluation, there is still a possibility that difference in self-evaluation and objective skills still exists. The survey did not provide answer for question if younger employees have higher estimation on their computer skills compared to their elder colleagues.

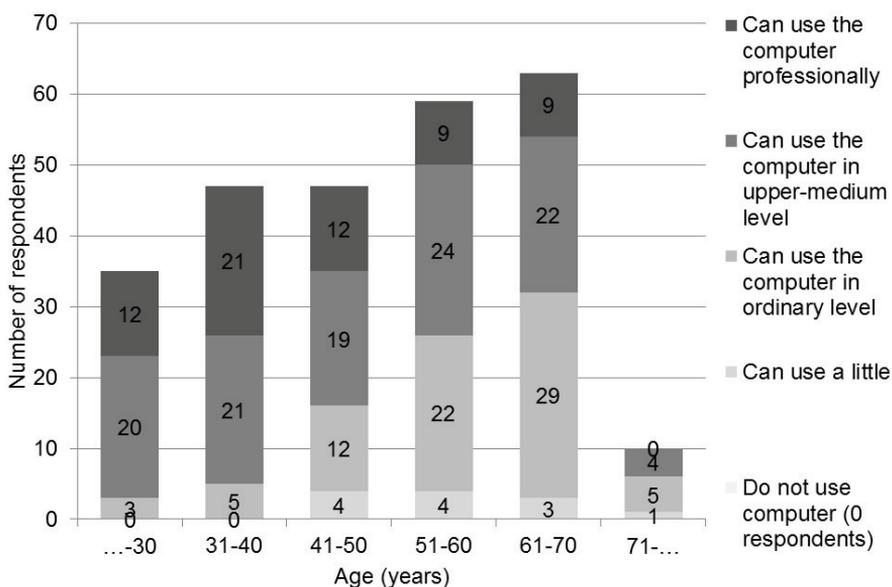


Figure 1. Computer skills self-evaluation (number of respondents) by age.

Present research shows that usage of telework doesn't depend on academic staff members' age (Arvola, 2009). Older academic staff used telework just a little more (see Fig. 2) than younger ones, but no significant correlation exists between age and telework usage. Nevertheless unlike in other age groups it was difficult to find respondents up to 30 years old who use telework more than 20 hours a week. In fact there was only one respondent in the youngest age group (36 respondents in this age group in total) whose estimation on telework usage in a week exceeded 20 hours.

With respect to overall stress level perceived working from office compared to working from outside the office (e.g. from home) the overall stress was perceived more often when working from office (Fig. 3). Most respondents did not perceive stress. 7% perceived higher or rather higher stress when teleworking while 49% respondents perceived lower or rather lower stress.

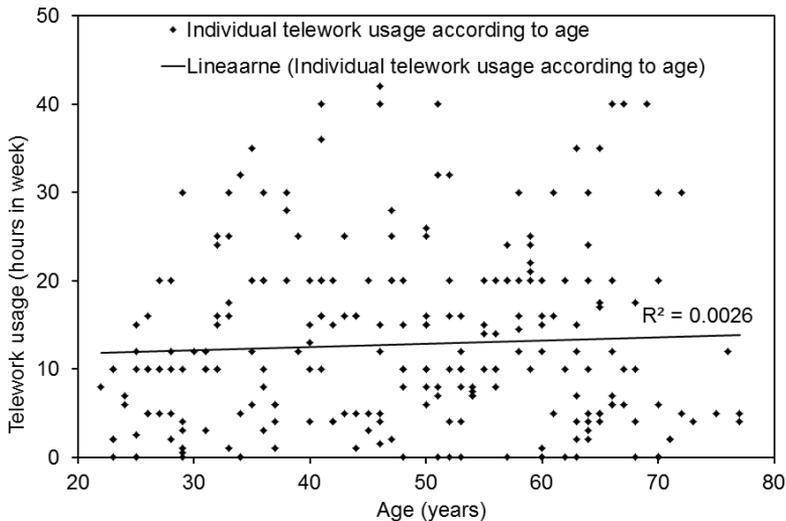


Figure 2. Telework usage and age.

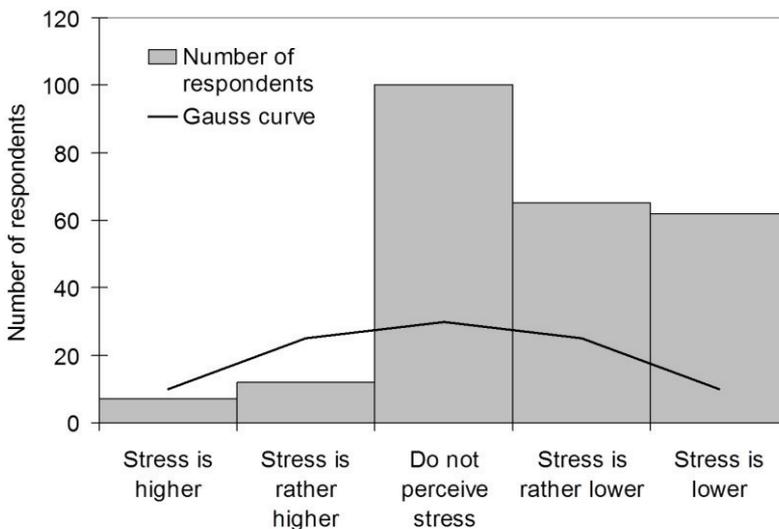


Figure 3. Perceived stress level of employee when working outside the office compared to stress level at the office.

Complaints of stress and hypertension varied according to same pattern by telework usage: non-teleworkers complained the most; respondents that teleworked 1 to 20 hours

per week had least complaints; and teleworking more than 20 hours per week brought a slight increase in complaints that still remained lower compared to non-teleworkers' complaint's level (Fig. 4 and 5). In Figs 4, 5 and 6 X-axis represents number of responses on assessment scale 1–3, where 1 – do not occur, 2 – occurs rarely, 3 – occurs. Telework usage did not caused significant increase in complaints of tired eyes, but as for stress and blood pressure, non-teleworkers had more complaints (Fig. 6). Survey results were not giving solid justification for the increase of complaints that go together with more teleworking.

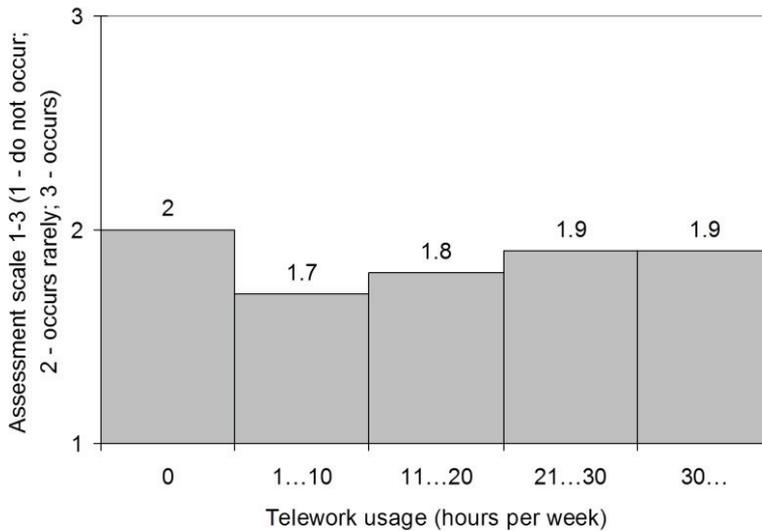


Figure 4. Complaints on stress.

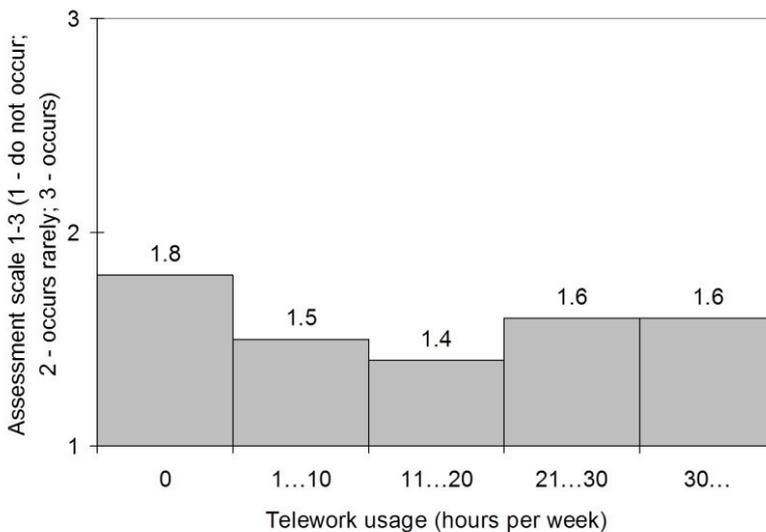


Figure 5. Complaints on hypertension.

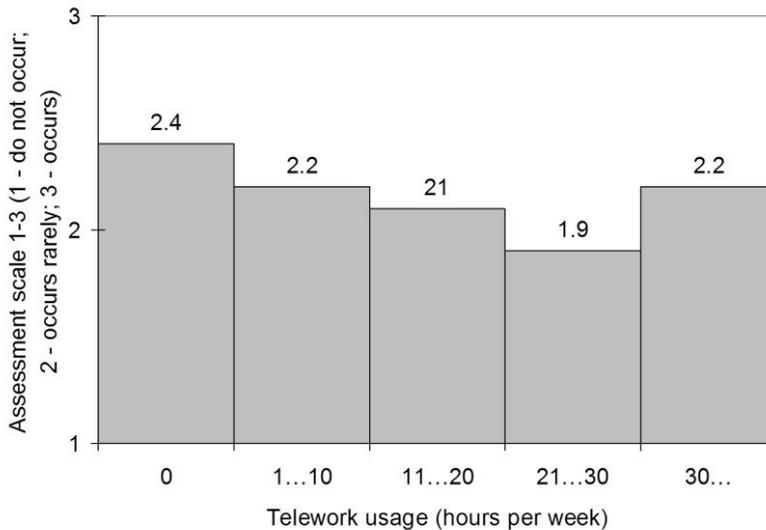


Figure 6. Complaints on tired eyes.

Lifelong employment in universities is enabled only in some countries (e.g. the United States). Second careers are possible for older specialists, including former academic staff, but academics have substantially changed the characteristics of their working activity. They start up their own firms, begin working as consultants and so on. Often these changes result in massive changes in lifestyle that can affect their competitiveness and health. Should specialists older than 65 be working in universities, either full-time or part-time when they want and are productive?

In the past, it was rare to encounter such aged academic staff among faculty members. At present older persons are healthier and the working conditions are better. Older people have more time for work – their children have grown up. This means that they also have more time to rest and recover their work ability.

It is often thought that senior academic staff offer experience, while the young offer new knowledge. However, knowledge is derived from experience. Peak work ability mostly comes earlier, but specialists are employed for their skills when they have yet to reach this peak.

Most specialists are rarely interested in the questions of older healthy (not with decrepit) workers. These questions are mainly new for them. They don't pay attention that there are some overlooked important benefits for employers of the old specialists: accumulated knowledge, work experience and discipline.

In order to telework as good working conditions at home as at traditional workplace are necessary: good posture, body movements to avoid a static position all the time, task lighting, avoiding glare on the monitor. Working conditions can be better at home than in office because of greater flexibility. It is important to keep to a 'work day ritual'. Compared with traditional workplaces the problems of overwork are more probable and workers should not exaggerate. When workers feel tired they can make a pause more easily compared to traditional workplaces. Teleworkers do sometimes agreements with employer on number of telework hours, e.g. in universities of the United States.

Among older academic staff there are more people with disabilities compared to younger ones. Older persons have more health disorders acquired during their lifetime. These disabilities depend on biological ageing, and their living and working conditions. However there is also much positive and these disabilities are mostly not hindrances for teleworkers activity.

The study shows that a majority of academic employees preferred teleworking for better concentration on work and saving time and money (see Fig. 7). There was no significant difference in telework usage by age and telework didn't increase complaints about tired eyes, hypertension and stress. Research of some other authors (Lundberg and Lindfors, 2002) show that blood pressure is lower working at home than at office.

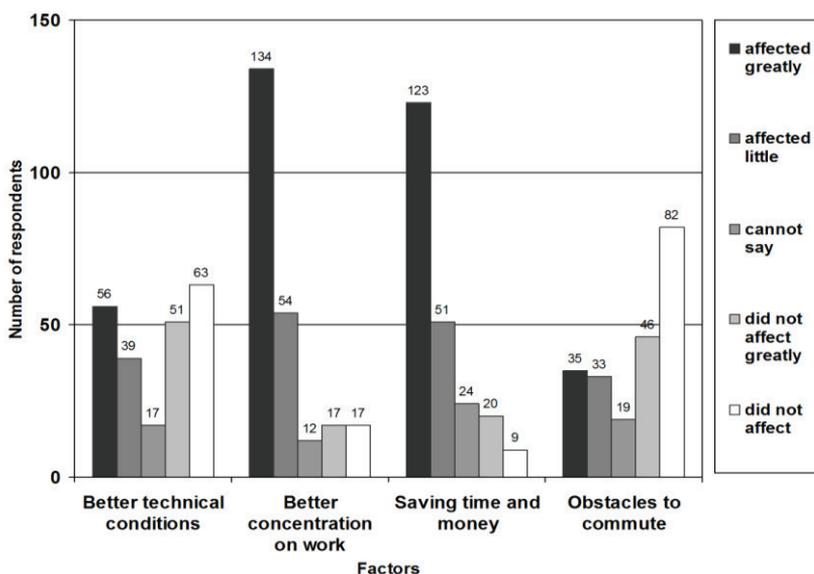


Figure 7. Factors affecting teleworking preference.

CONCLUSION

The study shows that teleworking among academic staff is widespread and for some people even tacit. Irrespective of age academic staff members use ICT (incl. computers and internet) obviously and there are no evidence supporting the myth that older people difficulties with ICT and teleworking is not for older people. Academic employees preferred teleworking for better concentration on work and saving time and money. Factor that had least effect on telework preferences was obstacles to commute. There was no significant difference in telework usage by age and gender. Teleworkers had fewer complaints about health, tired eyes, hypertension and stress. Survey did not explained the reasons why more teleworking hours involve more complaints regarding stress, blood pressure and tired eyes, but as academic staff very often faces heavy work load, it might be caused by simple overwork.

Further research is necessary to provide new knowledge about telework impact on people's life.

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