

Health trade-offs in teleworking

An exploratory study of work and health in computer home-based working

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Working at home using computers, the typical setting for many indexers, has often been associated with improvements to health, as suggested by evidence of reductions in sickness absence. This study explores the meaning of work and health for teleworkers, identifying a number of potential health risks and benefits for this form of work. However, it also suggests that teleworkers engage in complex trade-offs between the relative advantages and disadvantages of this form of work at different stages of their personal, family and career life-cycles, making simple predictions of health effects difficult. However, if the trend to redefine illness as malaise and to work through illness becomes the norm, there may be wider implications for public health.

Telework is often presented as a new form of employment. Yet many occupational groups, such as journalists, self-employed consultants and editors and indexers, have traditionally worked at home using the available technology to facilitate their work and its receipt and dispatch. However, the advent of the computer has widened the circle of people, employed and self-employed, now able to work at home.

Although the advantages of computer-dependent, home-based working have been discussed predominantly in relation to increased autonomy and savings in terms of time, costs and commuting, there have been suggestions that there are also implications for health and well-being. These are generally assumed to be positive, creating opportunities for eliminating the adverse effects of travelling to and from, and working within, the traditional office. Executive stress, contagious illness and ergonomic problems are expected to be reduced. Some commentators, however, have suggested that telework may have adverse effects associated with social isolation for those in management positions and exploitation in the case of low-status workers.

This study is a preliminary investigation into telework and health experiences from the perspective of 44 home-based workers. They were loosely defined as teleworkers, each being reliant on a computer for the management of their work, and were predominantly home-based. This operational definition was used to include the widest possible range of telework types, from which it was expected that patterns of employment and health would emerge. The study was essentially qualitative, exploring through in-depth interviews the history and meaning of work and health to this group of teleworkers. In addition, work and health data over a six-month period were collected using a longitudinal questionnaire survey. These data provided useful information on occupational, employment and gender effects that were explored further in follow-up interviews.

The findings suggest that teleworkers believe they have less illness and take less sickness absence than when they

worked in a conventional office, or in comparison with office workers. However, this is not directly attributable to improvements in health *per se*, but to changes in the interpretation and meaning of illness symptoms. The study suggests the existence of complex patterns of balancing costs and benefits and of trading short- and long-term effects, which were rarely communicated to employers or contractors. This article describes and discusses the management of health risks and benefits by people working this way.

Telework and health: the prevailing view

The literature on how telework affects health is neither extensive nor generally empirically based. Until recently, the evidence has been predominantly based on anecdotal or company-specific data (Cox et al., 1996), and claims of health improvements have rarely been supported by evidence of reductions in sickness leave (Brocklehurst, 1989; Huws, 1989). The health effects often appear to have been based on combining data on homeworking with evidence from occupational health research concerning intensive computer use. This has resulted in predictions of increased health risks to high-level computer users, and a decreased risk for workers previously exposed to office-based environmental and organizational stress.

However, the research evidence is often ambivalent. Trent et al. (1994) found that full-time teleworkers experienced less stress than part-timers or conventional office workers, while Collins (1994) found high levels of stress, comparable to those of conventional office workers. Cragg and Dawson (1981) claimed telework facilitated well-being, based on the notion of an 'easy-going day', a concept considered 'astonishing' by the subjects of Phizacklea and Wolkowitz's (1995) research. Some researchers identified at-risk workers, for whom telework was predicted to be unsuitable. Kinsman (1987: 14) claimed that 'the less

resourceful and/or those who find themselves forced into working at home will experience claustrophobia, introversion and withdrawal symptoms due to lack of social contact', without defining 'resourcefulness', 'force' or 'working at home'. The lack of agreed terminology creates continual problems in the study of telework, as do unsubstantiated claims of separate and combined gender and occupational status differences in health effect.

Occupational health research on computer use is equally equivocal. Henfin (1984) predicts increasing musculo-skeletal and visual disorders and problems of radiation exposure associated with increasing computer use. In contrast, Murphree (1987) suggested that occupational problems associated with repetitive and routine work would be ameliorated through homeworking. Throughout the 1990s, numerous studies indicated risks of repetitive strain injuries linked to telework (e.g. Haddon, 1991; Bergqvist et al., 1995; Marcus and Gerr, 1996), although suggestions that neurotic conversion or mass hysteria were responsible for repetitive strain injuries (Lucire, 1986) lingered on (Reid et al., 1991).

Some research considered whether teleworking would expose employees to the occupational benefits or hazards of self-employed or freelance workers. Phizacklea and Wolkowitz (1995), for example, reported that 57 per cent of their sample of 401 homeworkers had eye and muscle problems associated with poor ergonomic design of their workspace. However, such studies focused on the experiences of low-paid, female, piece-rate workers. Huws (1984) predicted that the removal of office-based health care and protection, and increasing isolation, would expose men to health risks commonly experienced by homeworking women. There is a clear need to compare similar managerial, professional and clerical workers to avoid unsubstantiated occupational and gender comparisons. Recent studies have begun to explore individual and family responses to teleworking and implications for occupation-related health as in the FAMILIES-IST Programme and the MAST-Adapt Initiative¹ (see also Huuhtanen, 1997).

Overall, the literature contains more predictions and wish-lists from technological advocates or sceptics than hard evidence from homeworkers themselves. The reluctance of companies introducing telework to monitor the health records and health experiences of their employees suggests, however, the low profile placed on illness and sickness in the debate. The greatest silence concerns the health of freelance and self-employed workers.

Research methodology

The study set out to examine the health experiences of teleworkers and to explore their understanding and management of health and illness. It was designed as a wide-ranging exploration of everyday work and illness experiences in a diverse group of computer-dependent, home-based workers. Recognizing the problems of defining telework and the inclusion/exclusion criteria used in previous studies, workers were included if the computer represented an essential tool for the receipt, performance and/or dispatch of work carried out in a home location recognized by contractors as their work base. The term

'telework' is used here generically to refer to these varied types of home-based work.

Fifty-six participants were interviewed initially, using an unstructured interview format exploring their employment and health life histories, and the decisions informing their choice and organization of telework. From the primary research group, 44 agreed to complete a series of five questionnaires over a six-month period. Each questionnaire contained baseline questions about work and health during the preceding fortnight and specific questions about the organization of time, space, leisure, domestic work and health. Questionnaires also collected demographic data, and specific information about types of work undertaken, deadlines, personal and employer management and health data. In addition, participants were asked to complete time audits of hours allocated to work, domestic and leisure activities, and weekly timetables indicating the distribution of these activities.

It is important to remember that the results reported below cannot be assumed to have any statistical significance, especially in the case of gender or occupational sub-groups, since the percentages quoted relate to the small study group completing the questionnaires. They do, however, indicate the strength of opinion or the incidence of particular features within the group studied. The initial analysis of data was taken back to participants for validation and discussion. In follow-up interviews, they were asked to discuss their understanding of the effects of homeworking on their general health and well-being in relation to their reports.

Study group characteristics

In addition to considering the health effects of home-based working in general, the study also examined differences between gender, occupational and employment groups. Given that the subjects of the research were not a representative sample, the sub-groups were inevitably uneven. The 26 men and 18 women participating in the study can be divided as follows:

- professional or managerial workers: 23
- computer programmers or systems analysts: 9
- clerical or niche-market enterprises: 12

Over half the participants (25) were self-employed or freelance, the remaining 19 being classified as employees. The self-employed/freelance groups had had more teleworking experience and had perhaps resolved many of the transitional problems experienced by employees. It was also apparent that the self-employed saw themselves as survivors of, or successes in, telework, other workers having retreated back to conventional working. Although the findings provide no objective or generalizable data about telework, they contribute to an understanding of the views of the workers themselves, especially the often 'invisible' self-employed.

Changes to perceptions and organization of space, time and identity

Participants' observations and reports of telework contexts suggested changes to the organization of space, time and

work identity that might all be predicted to have implications for health and well-being.

Space

Although it is predicted that telework allows the development of individually selected and designed workspaces, observations indicated the poor ergonomic setting of much telework. While over half of both male and female respondents stated that they had purpose-built workplaces, observations indicated that 72 percent of men and 77 percent women worked in dual-purpose living-rooms or bedrooms. Higher-status workers and those working the longest hours did not have the best working environments. Most teleworkers chose to take the smallest or least-contested space available in the house, or attached to the home, rather than inconvenience family members. Quotes from two of the self-employed men are typical:

I picked [the room] so it doesn't disturb the rest of the family.

I just couldn't conceive of having a bigger room and the children having a smaller room. I just couldn't see that as being right.

It might be expected that poorly designed and situated spaces might have negative health effects. However, none of the respondents attributed any illness or health risk to their workspace – even the man who used his computer on the floor or another who sat all day on an 'uncomfortable' dining chair.

Spatial problems were identified in relation to boundaries. Telework alters the conventional boundary between work and home, a boundary often defined by the journey to work (Steward, 2000b). Teleworkers complained about the problems of defending work boundaries, reporting skirmishes with employers, neighbours and family members, who often failed to appreciate or respect workplaces.

The contractor just turns up at the back door and comes in.

He [husband] would say, 'Oh, I'll be up in a minute to keep you company.' And I was thinking, 'No don't. Oh don't. This is my only time for work in the day.'

The findings suggested that although participants attempted either to develop the flexible organization of space, or to build and defend clear boundaries, they often found their chosen strategies undermined by employers and families.

Time

Similar problems existed when the anticipated temporal flexibility of teleworking failed to materialize. Teleworkers often retained a 9–5 day, but also extended the working day into periods previously allocated to commuting. Most significantly, many developed new strategies of calculating time. Normal 'comfort' breaks, short periods of socialization, thinking and waiting periods were discounted from calculations of work time. Time 'wasted' on these 'off-task' activities was compensated for by adding hours to the end of the working day or at weekends (Steward, 2000a). Self-employed teleworkers described a work ethic that did not allow them to charge clients for these normal periods of non-productive, yet essential work. Employees discussed

logging overtime, which would have conventionally been taken as time off in lieu, but which they now felt unable or unwilling to take as free time.

Identity

The implications of absence from an office and presence at home were identified in relation to work status and recognition. Teleworkers felt that when they were visible at home during the working day they were viewed as unemployed or 'skivers'. Some made their work more apparent, others created barriers to family or neighbours, while others again attempted to be invisible at home. Losing bodily presence at work was thought to threaten status and trustworthiness, and many teleworkers sought to meet colleagues and clients. Self-employed workers also described the social imperative to be a 'real' worker, not a virtual one.

It is quite good for the clients to see me as opposed to logging on to their computer.

However, the financial and productivity implications of going out to be visible were keenly appreciated and often difficult to balance.

How do you maintain visibility? How do you 'be seen'? Do you decide between working to pay next month's mortgage or spending three days networking at a conference?

The self-employed also identified aspects of perceived deskilling associated with homeworking.

There was a tendency to become a bit of a busker, doing everything for yourself.

Many commented on the more sinister effects of professionals working at home and being identified as teleworkers.

It was as if you had retired or hadn't got a job any more.

There is a tremendous expectation that a man should get up and go to work.

I am sure people around here think I am an East End villain. They are suspicious because I have money and am around in the day.

A telework or virtual identity was no substitute for the loss of a conventional professional identity.

[Telework] sounds like a switchboard operator or more like a production line worker, I think.

People still view it that I am shirking at home. They think you are skiving, I'm sure. They always rib you, like 'How's your handicap?'

Trade-offs between autonomy and health risks

These perceptions, however, were very rarely related to health risks or declining personal or family well-being. What became apparent was the trade-off between the recognized disadvantages and the very individual time- and family-specific gains from this form of work. It was often difficult for an outsider to appreciate these calculations of short-term and long-term gains and losses, yet the advantages for health and well-being were as tangible to the participants as the potential health risks.

The degree of autonomy afforded by teleworking appeared to offer a considerable compensation for what appeared to be situations of increasing health risk. Owning and controlling a workspace and having time latitude were considered advantageous and health promoting. Opportunities to watch a child's school assembly, to attend a hospital appointment or to manage a small domestic crisis weighed heavily as advantages. Collins (1994) suggested that reduction in 'hassle' has a disproportionately positive effect for personal feelings of autonomy and well-being when considered in relation to the time lost to productive work.

Evidence of illness and sickness in telework

The questionnaires recorded the type and frequency of illness during a six-month period. From a total of 195 returns, 89 cases (46 percent) of illness were recorded. These were not limited to a small sub-group of the more chronically ill or disabled subjects. They suggest a high instance of stress-related illnesses, especially in women, but very low rates of repetitive strain or visual impairment. Professional and managerial workers reported more illness than computer and clerical workers, and women reported more illness than men. There was no clear difference in reported illness levels between employed and self-employed workers.

Men and women in all groups actually reported *feeling* healthier than others of their own age and occupation, and three-quarters of both men and women reported feeling happier. Although approximately half the men reported anticipating computer-related health problems in the next five years, nearly two-thirds of both sexes felt themselves to be at *less* risk of occupation-related disorders than office-based workers. These findings indicated an equivocal picture of health beliefs and experiences.

However, if teleworkers selected (or were selected for) telework on the basis of existing health problems, this could explain some of these anomalies. Further investigation showed that 75 percent of female and 40 percent of male data-input/clerical teleworkers reported having a chronic illness or disability at the time of starting to work at home. Long-standing health problems appeared to have influenced women's decisions to become teleworkers, 44 percent of professional/managerial women and 66 percent of computer-specialist women reporting health problems when deciding to work at home. Despite this, illness reports were not concentrated within this chronically sick group.

Subsequent interviews suggested three emergent health themes. First, the health risks or adverse experiences in telework were considered trivial compared to the very negative physical and psychological stresses of a conventional office setting. Secondly, teleworking was considered possible in almost all periods of illness. Finally, concepts of unfitness to work altered when commuting, conventional working hours and team interaction were all no longer required.

Avoiding the stresses induced by office working was considered by most of the respondents to be advantageous to health: 87 percent liked to work away from the office, 82 percent liked being away from the emotional life of the

office, and 72 percent liked being away from the petty politics of collegial working.

I got so fed up with being treated so badly. I would come out of there desperately depressed and furiously angry. I thought, 'Damn this, I am going teleworking self-employed.'

We were all sharing files and it was very crowded. People were coming in and out. That made the day very disrupted.

Participants described the positive effects of freedom from contamination from colds and flu, the avoidance of commuting and office life stress, the creation of individually customized working spaces that need not be shared and the absence of the supervisory gaze. They traded these advantages against the loss of social interaction and workplace health and safety measures, the former being thought more important than the latter. Telework was not considered to promote health but to eliminate or reduce the adverse effects of office working.

Illness symptoms that would have prevented work at the office no longer did so at home. A bout of vomiting, a strain injury or a spell in bed were no longer associated with not being able to work for at least part of the day.

I had a temperature for one day, so I went to bed for an hour and worked the rest.

Physically I could not have been at an office, so I potted about and did bits and pieces of work when I could.

Very few symptoms were considered incompatible with work. The inability to 'go home' for periods of sickness further seemed to limit opportunities to take sickness absence. Teleworkers reported that their invisibility from colleagues and employers/contractors rendered their health status equally unobservable and increasingly irrelevant. Being able to do some work appeared to make it difficult for teleworkers to define themselves as ill and, if they were not ill, then they were able to do a near-normal working day.

Employees' experiences mirrored those reported by the self-employed. Both groups shared limited access to health and safety inspections and protection, and little employer concern for the size, condition or suitability of their working spaces. Teleworkers resisted the intrusion of employers, or the bother of implementing health and safety recommendations, thus compounding potential occupational risks. They often attributed this lack of attention to health to their work ethic, which placed the needs of the work above their needs as individuals, and the shift in employment and job security, which demanded work being prioritized to limit being made redundant or unemployable.

The picture that emerged was one of increasing potential health risk from prolonged hours, poor work environments and increased exposure to hazards, but one that was psychologically and socially enriching and independently designed and managed.

Discussion and implications

This study suggests a complex interaction between work, health, family, social and environmental factors. For any one individual at any point in his or her life or career, telework presents work and health advantages and disadvantages. It does not appear to prevent work-related prob-

lems or cause them, but to offer new opportunities for defining and managing illness and work.

Teleworkers reporting illness consistently spent more days working than when they reported no illness. They described having to work through evenings and weekends during periods of illness to ensure that they could complete their work and cause no inconvenience to others by not meeting deadlines, and to prevent them being identified as 'sick' workers. Reported decreases in sickness absenteeism amongst teleworkers cannot therefore be assumed to provide evidence of improved health, but rather that there exists a shift from interpreting troublesome symptoms that limit work from the category of illness to that of malaise. Malaise is inconvenient but not incompatible with work.

Invisible workers appeared to experience certain disadvantages in gaining recognition for illness and this limited their opportunities to take sickness leave. Both colleagues and employers were unable to see and credit early signs of illness and to give formal and informal approval for taking sickness absence. Employees or contracted staff who rarely took sickness leave were considered to be healthy and their style of work health-inducing, further limiting tolerance of absenteeism. Teleworkers often said they were considered lucky to work at home and so work-related illness was thought to be unlikely. Invisibility resulted in the bodily health of the worker being less important, and thus health and safety education or inspection, or trade union concerns about worker well-being, also became less important.

The health implications of these shifts in working practices cannot be predicted from the small sample investigated in the present study, nor in a workforce in which trading individual advantages and disadvantages is typical. The reduction in health monitoring and provision of safe and ergonomically designed offices may have long-term effects. The reinterpretation of illness as malaise may result in delaying diagnostic consultation and receiving medical treatment. The resistance to taking sickness leave may create problems of identifying occupation-related illness in telework.

The study has indicated an urgent need for further research to observe the long-term effects of computer-dependent home-based working. A comparison of self-employed and employed, volunteer and compelled teleworkers is required to investigate how symptoms are defined and managed and the implications over a working life of teleworking for the individual and their family. Most importantly, however, the experiences of teleworkers themselves should inform and direct health education programmes and guides to ensure that the advice they give is directly relevant.

Note

1. The FAMILIES-IST programme is studying the interactions between family trends and new work methods in the Information Society; MAST = Managers in Support of Teleworking – Adapt Initiative. Both are EU-funded programmes under the auspices of the Dublin-based European Foundation for the Improvement of Living and Working Conditions.

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