

Work Time Control and Mental Health of Workers Working Long Hours: The Role of Gender and Age

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The aim of this study was to examine the relationship between work time control and mental health in workers working long hours. The study also attempted to show how that relationship depended on age and gender. Three hundred and six white-collar workers doing clerical work for over 8 h daily were diagnosed on work time control and mental health with the 28-item General Health Questionnaire. The results of an analysis of variance (ANOVA) showed that participants working long hours but having high control over their work time had a significantly higher level of their mental health with regard to somatic complaints and anxiety and marginally higher with regard to social dysfunction than workers with low control over their work time. Male and female workers reported different problems with their mental health depending on what age (stage of life) they were at. It is hypothesized that the work–family conflict, inability to fulfil social commitments and poor working conditions can influence those effects.

long working hours work time control somatic complaints anxiety
social dysfunction depression

1. INTRODUCTION

Work intensification has been found to be a new emerging psychosocial risk across Europe [1]. This term is usually applied to circumstances in which work demands exceed an employee's ability to cope with, e.g., high-speed work, tight deadlines, pace induced by external demands and long working hours.

Even though since 1991 there has been a clear trend in Europe towards a reduction in paid working hours, this trend slowed down when the new Member States working longer hours joined the European Union (EU) in 2004 [2]. Poland, a new Member State where weekly work time exceeds 48 h, is the fifth top country of the EU and the fourth top country with the highest percentage of people working 7 days a week [3,

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4, 5]. However, a return of the long hours culture is now observed in EU15¹. In The Netherlands, the number of reported overtime hours has increased substantially (from 4 to 6 h) between 2003 and 2007 [6]. The situation is similar in the UK, where the incidence of long working hours increased among UK workers between 2007 and 2008. This trend has only slightly slowed down over the recent years [7].

The existing meta-analyses clearly show that the outcomes of long working hours are related to deterioration in both physical and mental health (see Sparks, Cooper, Fried, et al. [8] and van der Hulst [9] for reviews). Long working hours and overtime have been found to be associated with adverse physical health problems, such as cardiovascular and musculoskeletal problems, immunological impairments, depression and anxiety. It has also been shown that a poor lifestyle, i.e., lack of physical activity and enough sleep or improper diet and drug abuse are related to overtime leading to increased morbidity, particularly obesity, cardiovascular and musculoskeletal problems [9].

Recent prospective studies show that overtime and long working hours are significant predictors for symptoms of anxiety and major depression [10]. It has also been found that long working hours may have a negative effect on cognitive performance in middle age, measured with vocabulary and reasoning tests [11].

Working long hours also poses a threat for the ability to fulfil familiar duties and other personal goals. Work–life balance problems are widely recognized as connected to long working hours. The amount of time that is occupied by the job is an obvious antecedent of the work–family imbalance [12, 13].

On the other hand, the evidence suggests that interventions which increase employees' control over their work time by offering worker-oriented flexibility are associated with health improvements [14]. Flexitime arrangements can generally be divided into two schedules [15]. According to one schedule, employees are allowed to decide

when to start and end their work and when to take a break on a day-to-day basis, but they are not allowed to vary the length of their daily work schedule. The other type of flexitime allows a much broader variability of work time, even in the length of the working day or week.

High work time control has been found to be related to a lower cholesterol level [16], fewer physical symptoms as well as lower levels of distress and burnout [16, 17]. Butler, Grzywacz, Ettner, et al. confirmed these data; they showed that greater levels of flexibility were associated with better health, less self-reported stress and better physical health [18]. Consequently, low work time control has been shown to increase the risk of subjective ill-health and sickness absence, especially among women. However, studies exploring the link between work time control and health are still very rare, particularly in workers working long hours. A prospective study on 16139 public-sector Finnish employees is a rare example [19]. The results of this study showed that control over work time moderated the effects of work strain and the effort–reward imbalance.

Despite substantial practical interest, the evidence base linking flexibility to health-related outcomes is still relatively weak [20]. Moreover, although existing research indicates that long, rigid work hours are mostly detrimental for young women's health and career [21], there are also data showing that this can also be the case for young fathers [22] and elderly workers [23].

2. AIM OF THE STUDY

The aim of this study was to examine the potential role of work time control in different mental health dimensions such as somatic complaints, anxiety, social dysfunction and depression in people working long hours. This study attempted to establish the role of gender and age in this relationship.

¹ Austria, Belgium, Denmark, Finland, France, Germany, Greece, Ireland, Italy, Luxembourg, The Netherlands, Portugal, Spain, Sweden and the United Kingdom

3. METHOD

3.1. Participants

The data for this study came from 306 Polish workers doing clerical work for over 8 h daily. The administrative staff (54%) and specialists (46%) were examined at their offices. The sample consisted of 157 men aged 19–62 years (*M* 32.58, *SD* 0.61) and 149 women aged 19–60 years (*M* 34.27, *SD* 0.5). Seventy-one percent of the men and 55% of the women were graduates.

Mean organizational tenure was 13.9 years (*SD* 10.2). Over half of the participants (55.6%) had worked for under 10 years. Overall, 53.6% of the sample was married or cohabiting.

3.2. Measures

To measure work time control, workers answered two questions about their control over when they start and finish their work, and when they take breaks during the working day. Participants answered on a 3-point scale: 1—*no control*, 2—*moderate control* and 3—*high control*. The overall index for work time control was a sum of the scores on both questions (6 points was the maximum). Two groups of participants were selected using the self-assessment of work time control: one with low control (scores 1–3), the other with high control (scores 4–6).

The sample (*N* = 102) was also divided into three age groups consisting of equal numbers of participants: 19–27, 28–34 and 35–57 years old. Table 1 describes sample sizes.

Mental health over the past 6 weeks was assessed with the 28-item General Health Questionnaire (GHQ-28) [24]. The original version of GHQ diagnoses four distress dimensions: somatic complaints, anxiety and insomnia, social dysfunction and depression. Each subscale has seven

items. Participants are asked to respond to each item on a 4-point scale (1—*better than usual*, 4—*much worse than usual*). A Polish version of GHQ-28 was constructed. To examine its factor structure, principal components analysis was performed with non-orthogonal Oblimin rotation. The scree plot criterion used to estimate the number of factors revealed three factors, instead of the four in the original scale. They explained almost 50% of data variability. To interpret the theoretical meaning of the components, factor loadings were used. The three factors can be labelled (a) somatic complaints and anxiety, (b) social dysfunction and (c) depression. They were moderately correlated. Depression correlated with both somatic complaints and social dysfunction rather weakly (Pearson’s *r* = .29 and *r* = .19, respectively), while somatic complaints and social dysfunction were related much stronger (Pearson’s *r* = .42). These factors were used in a further analysis as dependent variables. The indicators of the components in the factor analysis were calculated with Bartlett’s regression; thus, values of the dependent variables can be understood in terms of *Z* scores with negative values interpreted as scores below the overall mean and positive values interpreted as scores above the overall mean.

3.3. Statistical Analysis

A series of univariate analyses of variance (ANOVA) were conducted to investigate the effect of work time control on health-related outcomes. Flexibility (work time control, at two levels: low and high) as well as age groups (at three levels: 19–27, 28–34 and 35–57 years) and participants’ gender were entered as independent variables. Somatic symptoms and anxiety, social dysfunction and depression were dependent variables.

TABLE 1. The Number of Participants in Groups (*n* = 306)

Work Time Control	Men			Women		
	19–27 ^a	28–34	35–57	19–27	28–34	35–57
Low flexibility	24	19	14	12	23	30
High flexibility	37	30	33	31	24	29

Notes. a—years.

4. RESULTS

4.1. Somatic Complaints and Anxiety

The results of ANOVA on the collected data showed that the main effect of work time control on somatic complaints and anxiety was significant ($F(1, 293) = 5.05, p < .05, \eta^2 = .02$) which indicated that the level of somatic symptoms and anxiety depended on work time control. Participants with high control over their long working hours reported a significantly lower level of somatic complaints and anxiety than participants with low control (high control $M = -0.07$, low control $M = 0.13$). There was also a significant interaction of gender and age group ($F(2, 293) = 3.21; p < .05, \eta^2 = .02$). Post hoc pairwise comparisons carried out as a follow-up analysis showed that women significantly differed from men but only in the youngest group of workers and they reported a higher level of somatic complaints and anxiety. Such gender differences were not obtained in the middle and older age groups of participants. Moreover, the youngest women had a higher level of somatic complaints and anxiety than other females.

Figure 1 presents the differences in the level of somatic symptoms and anxiety by gender and age.

4.2. Social Dysfunction

A similar pattern of results was obtained for social dysfunction: there was a marginally significant main effect of work time control ($F(1, 287) = 2.69, p = .10, \eta^2 = .01$) showing that people with a low level of work time control reported a higher level of social dysfunction ($M = 0.13$) than participants with high flexibility ($M = -0.06$). There was also a significant interaction of gender and age ($F(2, 287) = 2.96, p < .05, \eta^2 = .02$). A pairwise comparison of simple effects showed that males and females differed significantly only in the youngest group and that males reported a lower level of social dysfunction than females. There were also significant differences among male groups: the middle age group of males had a higher level of social dysfunction than the males in the other age groups. Figure 2 presents the means.

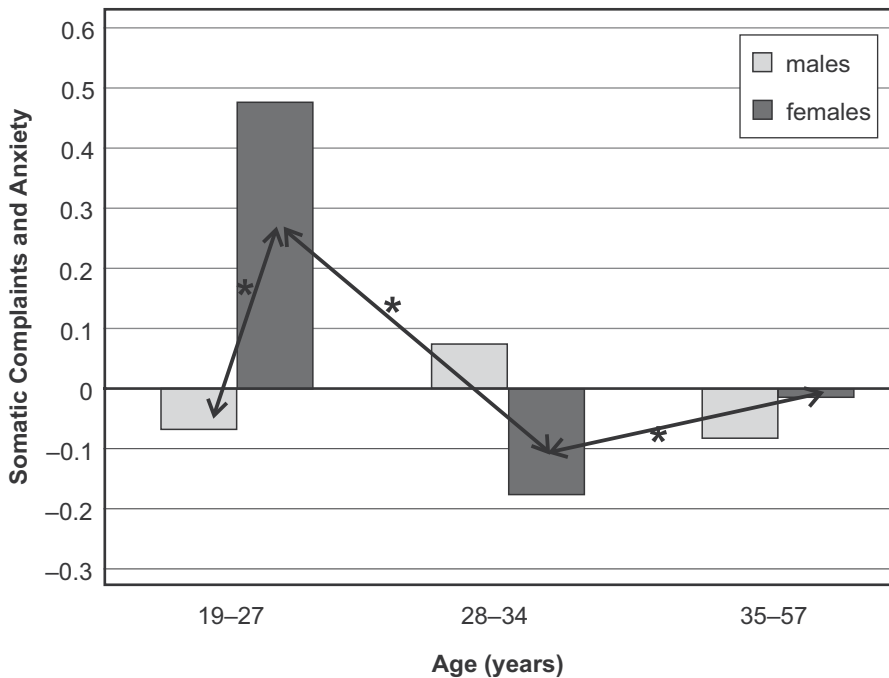


Figure 1. Means for the level of somatic complaints and anxiety by gender and age. Note. $*p < .05$; the values are Z scores; negative values mean that the score is below the overall mean, while positive values can be interpreted as above the overall mean.

4.3. Depression

ANOVA showed a more complicated pattern of results for depression. Although work time control alone had no significant effect on this aspect of participants' health, its interaction with age and gender turned out to have a significant effect ($F(4, 287) = 3.78, p < .05, \eta^2 = .03$). Post hoc pairwise comparisons showed that the youngest female workers differed from the other age groups when flexibility was low; it

also showed that the oldest male group differed from the youngest participants in these working conditions. There were significant gender differences in low-flexibility working conditions in the youngest and the oldest groups. The youngest female workers and the oldest male workers had a higher level of depression than participants from the other gender groups working in low-flexibility conditions. Figure 3 presents the means.

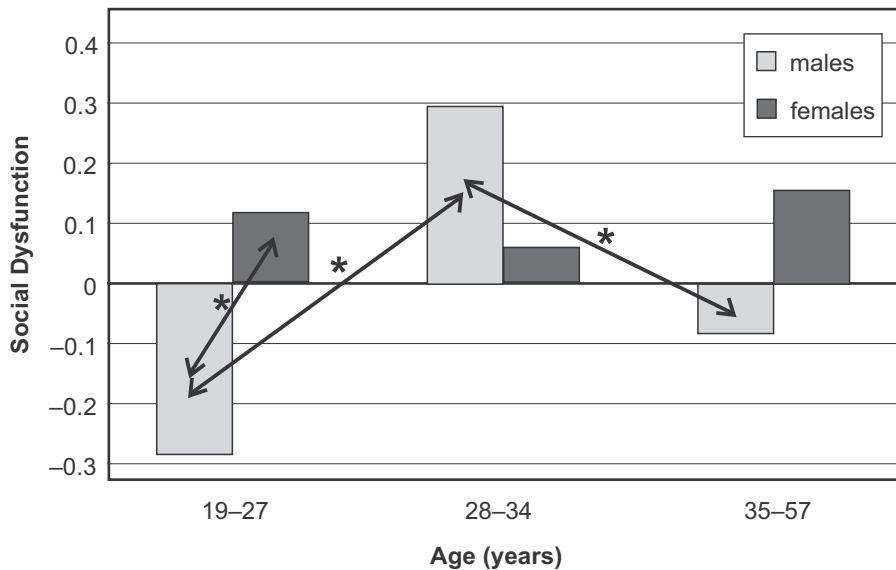


Figure 2. Means for the level social dysfunction by gender and age. Note. $*p < .05$; the values are Z scores; negative values mean that the score is below the overall mean, while positive values can be interpreted as above the overall mean.

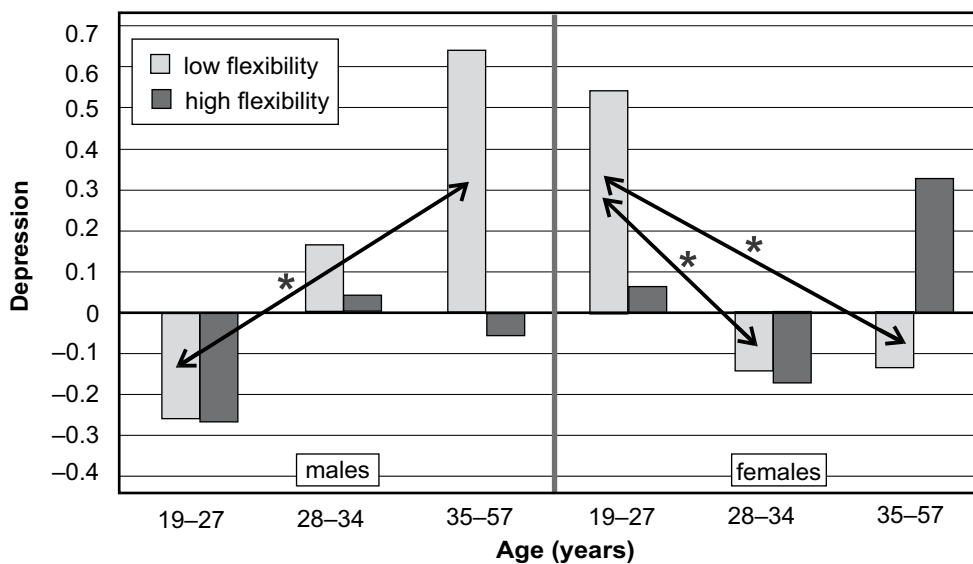


Figure 3. Means for the level of depression by gender and age. Note. $*p < .05$; the values are Z scores; negative values mean that the score is below the overall mean, while positive values can be interpreted as above the overall mean. Work time control is at 2 levels: low or high flexibility.

5. DISCUSSION

The results of this study revealed several significant effects related to the mental health of people working long hours. The effects connected with somatic complaints and anxiety showed that work time control as well as the interaction of age and gender played a significant role between long working hours and these aspects of mental health. Namely, it was found that individuals with high control over their work time had a significantly lower level of somatic complaints and anxiety than those who did not. This outcome is consistent with studies showing that long, rigid working hours are associated with less time for recovery and difficulties in unwinding after work and may result in serious health consequences (for a review, see Geurts and Demerouti [12]). It is also likely that workers with more flexible work arrangements are able to take better care of their health than those without flexible work time, e.g., by seeing the doctor or having medical examinations when necessary. Lack of proper recovery is regarded as a crucial link between long hours and poor health. Repeated incomplete recovery after work may lead to chronic load reactions and poor health in the long run [25].

The result showing that the group of the youngest women working long hours reported a significantly higher level of somatic complaints and anxiety than men of the same age and women in other age groups is partly in line with the outcomes of some other studies. Ala-Marsula, Vahtera, Pentti, et al. showed that work time control was linked to lower sickness absence especially among woman with small children [26]. Koopmans, Corné, Bültmann, et al. revealed that sickness absence due to common mental disorders was higher in women than in men, and that recurrences were more frequent in women under 35 years and in women 35–44 years of age. There were no differences between age groups in men [27]. Other data showed that despite women's increasing participation in the labour market, they spent more time on child care and household tasks than men [28, 29]. Therefore, the significant effect of long working hours on somatic complaints and anxiety obtained in

a study of a group of prime-age female workers might be the result of stress resulting from an inability to reconcile their work and family roles [30, 31, 32]. In the GHQ-28 questionnaire used in this study, anxiety was diagnosed as a feeling of being overwhelmed or even panicked due to excessive duties, which might support this reasoning.

The results related to social dysfunction showed that, although marginally, people working long, but flexible hours had a lower level of this problem than those who worked long, inflexible hours. Besides, male workers aged 28–34 years reported a significantly higher level of social dysfunction than did men in other age groups. The first of those results is generally consistent with research showing that work time flexibility is a valuable resource allowing workers to co-ordinate the responsibilities of their job with other social commitments [33], mostly to reduce the work–family conflict [30, 31]. Traditionally, young working women with young children are recognized as those family earners that need work time flexibility the most [27, 34]. However, there are studies showing that young managerial fathers with young children, but working long hours may experience the work–family conflict, stress and burnout, too [34]. This is particularly the case in egalitarian societies, where family duties related to bringing up children are increasingly split between both parents. The result obtained in the present study showing that male workers aged 28–34 years reported a significantly higher level of social dysfunction than men in the other age groups may confirm this effect. It is also possible that the social functioning of young, single persons, perhaps less committed to family obligations, can be affected by long working hours in a sense that such a work regime makes activities important at that age, such as socializing, attending courses or practising physical activities, impossible or difficult to engage in. To predict better whether that is the reason of an increased social dysfunction in that group rather than the work–family conflict, their family status should be included in the analysis.

The most intriguing results were obtained in relation to depression in low-flexibility condi-

tions. Lack of flexibility has turned out to be particularly detrimental for two groups of workers. The youngest female workers had a significantly higher level of depression than the female participants from the other two age groups and the oldest male workers had a significantly higher level of depression than the youngest male workers.

The former result can be easily explained in the light of the previous outcome showing an increased level of somatic complaints and anxiety in the youngest group of female workers. As it has been said before, according to a large body of evidence, part of the effect of flexibility on health outcomes can be explained or mediated by indicators of the work–family balance [30, 31]. Moreover, gender and the stage of life also play an important role in this relationship [34]. However, it can be also supposed that some other than the work–family conflict variables may mediate the relationship between low work time flexibility and impaired mental health in the case of the youngest women who are very active (work long hours) in the labour market. An increased level of depression in this group of workers can also be caused by their inability to start a family. According to Czapiński and Panek’s data, Polish woman aged 20–35 years indicate employment as the fourth most important determinant of a happy life, after health, a successful marriage and children [35]. Polish men rate employment higher than having children, and almost as important as a successful marriage. Although having children is declared by prime-age women to be more important than employment, their high level of education and financial reasons may increase their need to participate in the labour market. At the same time, other Polish data show that having a young child significantly reduces women’s employment opportunities [36]. Similarly, studies show a clear negative relationship between having young children and women’s employment [28, 29]. According to recent reports on the labour force in Poland, women have a lower chance than men to get a job, and even if they are successful, it is clearly more difficult for them to keep it. Moreover, there is salary discrimination in this group of workers despite their higher level

of education [36]. Thus, only information on the family status of women participating in the study would allow to determine whether the increased level of depression observed in prime-age female workers in this study was related to the work–family conflict or rather to their inability to start a family.

The last, significant result of this study showing a very high level of depression in the oldest group of men working long inflexible hours points to the need to search for some other factors than those related to work–family arrangements to explain this result. Working conditions, such as work control, work complexity or reward for overtime, are often regarded as variables mediating the relationship between long hours and health. For example, Beckers, van der Linden, Smuglers, et al. showed that involuntary overtime work was associated with high fatigue and low satisfaction, especially for involuntary overtime workers without rewards, who can be considered a burnout risk group [37]. Besides, long inflexible hours are more common in low skilled jobs with a lower level of general job control [22]. Low job control is widely regarded as related to ill-health [38, 39]. If that is the case, the oldest men are at the greatest risk of impaired mental health as a consequence of low job control. It can be particularly frustrating at this stage of life, because it can additionally indicate no career prospects.

Overall, it can be concluded on the basis of the outcomes of this study that even in the presence of objective psychosocial risks, such as long working hours, work time flexibility may have a beneficial effect on workers’ mental health. Thus, providing workers with work time control may promote mental health. However, the need for flexible working hours of men and women at their various stages of life can be different. The youngest female workers who are very active at work may need work time flexibility to start a family or to better reconcile work and family duties. The oldest men may suffer from a lack of job control while working long inflexible hours and from having no prospects for change before their occupational career ends. However, to confirm these explanations, some further analyses taking into account

more variables both of individual and organizational nature are necessary.

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