

RESEARCH REPORT

Gender differences in work–home interplay and symptom perception among Swedish white-collar employees

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Objective: To analyse gender differences in paid and unpaid workload and symptoms in matched groups of Swedish white-collar workers with children.

Design and setting: Paid and unpaid workload and perceived stress from paid work, conflict between demands and control over household work were measured by a total workload (TWL) questionnaire. Some symptoms were rated with regard to frequency and severity as a measure of health. Cross-sectional analyses were performed.

Participants: Matched groups of male (n = 440) and female (n = 529) well-educated white-collar workers in full-time employment, aged 32–58 years and living with children in the home.

Results: Women in higher positions in Sweden are healthier than the average population of women, but report more symptoms than men in the same position as well as more stress from paid work, more conflict between demands and a greater TWL. However, women also reported more control over household duties and TWL was not associated with more symptoms. The men were mainly focused on their paid work role and perhaps even more so than men in the general population as they were fairly resistant to feelings of conflicting demands.

Conclusion: Even among matched groups of full-time employed, well-educated men and women, traditional gender differences in division of responsibilities and time allocation were found. Even though the women were healthy at this stage, they might risk future ill health, owing to high workload, stress and feelings of conflicting demands.

Most studies of the combined effect of paid and unpaid work on stress and health have been performed on women, implying that men rarely engage in household work and childcare activities, at least not to the same extent as women.^{1–2} Recent studies using a gender perspective have, however, found that the work–home conflict is just as harmful for men as it is for women.^{3–5}

Several authors have proposed models for how paid work, unpaid household tasks and childcare may affect health.^{3–12} These models are referred to by the scientific community as the “job stress model”, the “health benefit model”, the “multiple role model” or “role expansion theory”, “double exposure” or “work–home conflict”.

The job stress model suggests that conflict between demands from paid and unpaid work, as well as role overload, might cause harmful health effects.^{6–13–14} The health benefits model, on the other hand, emphasises the advantages of employment and how it helps to maintain or enhance health by providing an improved social network and financial independence, greater self-esteem and confidence in decision making.^{6–13–15–16} The multiple role model, also referred to as the role expansion theory, focuses on the interaction between being a spouse, a parent and an employee, and suggests that shouldering many roles improves health. It further suggests that the multiple roles provide improved opportunities for self-esteem and developing social resources, where one role is able to compensate for the negative aspects of other roles.^{6–12–17}

There is supporting evidence for all these models, even though most studies in this field support the health benefits model and role expansion theory—that is, most studies indicate that it is beneficial from a health point of view to be active in many arenas.^{12–17–19} However, it is not only a question of whether many roles are a resource or a burden; it may also be that such a situation is beneficial to a certain level but becomes a burden when the workload becomes too high.

Health problems such as neck–shoulder pain, tiredness, headache, stomach problems, low back pain and sleeping problems are often reported in population-based studies and associations with work conditions and overload situations are often found.²⁰ Complaints about symptoms of this kind have increased primarily in women but also in men in recent decades, and constitute the main reason for sickness absence in Sweden.^{21–22}

The aim of this study was to analyse gender differences in total workload (TWL), including paid work, household work and childcare, and associations with stress, conflict between demands, control over household duties and symptom perception in matched groups of Swedish white-collar male and female employees with children at home.

METHODS

Selection of subjects

The participants were selected from four occupational areas: (1) technology and natural science; (2) education; (3) healthcare; and (4) administrative work. From these disciplines, random samples of men and women, representing different occupational levels, were drawn. As a result, male and female participants were not selected from the same families, although this may have happened in single cases by chance. Men and women were matched for age, occupational level and children at home to compare men and women in similar situations with regard to combining a qualified full-time job with family responsibilities. Whereas men and women were equal with regard to educational level (most of the participants had a university education), the matching of occupational levels was not completely successful, as men were somewhat over-represented in the highest occupational level and women in the lowest. Participants were selected from a total population register by Statistics Sweden. On the

Abbreviation: TWL, total workload

basis of a previous study,¹ the following selection criteria were applied: white-collar employee, at least 35 h of regular employment a week, participant age 32–58 years and with children <18 years at home.

A questionnaire containing items relating to TWL and perceived health was mailed to 1025 men and 1025 women. The questionnaire was completed anonymously and a reminder was sent by mail to everyone after 3 weeks. A total of 1268 questionnaires were returned, equivalent to a response rate of 62%. However, a number of questionnaires had to be excluded. Eighty four of the respondents did not fulfil the criteria set for participation, as they were either on maternity leave or sick listed on a long-term basis or working part time. Of the remaining 1184 respondents, 186 were excluded because they had children living only periodically at home (alternately with mother and father). Finally, 23 women and 6 men were excluded owing to incomplete or inconclusive data. The statistical analyses were based on the data from 969 respondents (47% of the total sample), comprising of 529 women and 440 men.

Measures

To assess the number of hours devoted to paid work, unpaid household tasks and childcare and the division of responsibilities, a Swedish TWL instrument was used. It was developed and psychometrically evaluated by Mårdberg *et al.*²³ Firstly, each individual's paid work was calculated by adding up hours/week in paid employment, including regular overtime at work. Then, hours/week spent on household duties (shopping, cleaning, cooking, mending, sewing, laundry and gardening) and on childcare (homework/teaching, care taking, playing) were added to a measure of unpaid work. The total number of hours spent on paid and unpaid work constituted the TWL. Secondly, participants reported whether they or their partner bore the main responsibility (scale 1–5) for each of the various unpaid duties related to household work and childcare—that is, planning, organising and ensuring that things were done, even if they did not carry out the tasks themselves.²³

The dependent variables included subjective ratings of stress due to paid work, conflict between demands from paid and unpaid work and level of control of household duties, derived from the TWL questionnaire.²³ It contained mean raw scores (scale 1–7) for the three indices:

- (1) Stress from paid work (10 items): too much to do at work, stress, demands, etc.
- (2) Conflict between demands (9 items): childcare and household chores contribute to TWL, conflict between duties, etc.
- (3) Control over household work (6 items): influence at home, control, opportunity to make own decisions, etc.

Reliability analyses of the three indices gave a Cronbach α of 0.80 for “stress”, 0.86 for “conflict” and 0.79 for “control”. All the subjective indices were dichotomised at the higher quartile (lower for control) of the distribution.

As an indicator of perceived health, a number of symptoms commonly reported by women and men in population-based studies were used.^{5, 24} The symptoms were stomach pain, headache, sleep disturbances, dizziness, low back pain, loss of appetite and shoulder and neck pain. Both frequency (never, every second week or every week) and severity (mild, moderate, severe) were reported. To calculate symptom prevalence, taking both frequency and severity into consideration, a variable was created, ranging from 0 to 1, in which the seven symptoms were taken together and participants dichotomised into those with a high level of symptoms, equal to having at least two symptoms of

moderate or severe character present every week, and those with a low level of symptoms, characterised by no symptoms or only one symptom of any frequency and severity.

Statistical analyses

The statistical analyses were performed using the SPSS/PC software package.²⁵ Gender differences in paid and unpaid workload and subjective ratings of stress, conflict, control and reported symptoms were tested by analysis of variance (ANOVA). To identify possible threshold values for the risk of stress, conflict, low control and symptoms, the sample was divided into quartiles on the basis of the TWL: <58 h/week; 58–67 h/week; 68–80 h/week; and >80 h/week. To assess the relationship between TWL and the dependent variables, multiple logistic regression analyses were performed, adjusting for age, with the lowest level of workload as the reference value. To estimate the possible effect modification of combined exposure to paid and unpaid work, a multivariate analysis was performed with a combined variable with cut-off points in the upper tertiary, corresponding to 45 h/week in paid work and 35 h/week in unpaid work (household work and childcare).

Ethical considerations

The study followed the ethical rules of Stockholm University. The participants were informed about the anonymity of data processing and presentation, and were given the right to withdraw from participation at any stage of the research process.

RESULTS

Characteristics of participants

Most of the 529 female (73.2%) and 440 male (71.8%) study participants were 40–58 years of age and were married or lived with a partner. They all had children <18 years at home, but 73 (13.8%) women and 11 (2.5%) men were living without a partner (table 1).

Gender differences in TWL, stress, conflict, control and reported symptoms

Statistically significant differences were found between men and women in terms of hours/week spent on paid work, household work and childcare. Men worked 2.7 h/week more in paid employment than women, whereas women devoted 5.7 more hours/week to household duties and 3.6 more hours/week to childcare than men—that is, a TWL of 6.6

Table 1 Sociodemographic data for study participants

	Women n (%)	Men n (%)
	529	440
Age of participants (years)		
32–34	43 (8.1)	40 (9.1)
35–39	98 (18.5)	84 (19.1)
40–44	128 (24.2)	94 (21.4)
45–49	152 (28.8)	103 (23.5)
50–58	107 (20.2)	118 (26.9)
Total	528	439
No of children <18 years of age		
1	226 (42.7)	164 (37.3)
2	239 (45.2)	206 (46.8)
3–7	64 (12.1)	70 (15.9)
Total	529	440
Family type		
Living without partner	73 (13.8)	11 (2.5)
Living with partner	456 (86.2)	429 (97.5)
Total	529	440

more hours/week for women than for men (table 2). For the subjective ratings, women scored significantly higher than men on stress from paid work, conflict between demands and control over household work. Women also reported a significantly higher level of symptoms than men. In addition, 30% of the women and 16% of the men had two or more symptoms occurring every week or every second week.

Gender differences in responsibility for unpaid household tasks

Women reported having the main responsibility for most of the daily tasks (washing dishes, daily cleaning, grocery shopping, preparing food, laundry/ironing), whereas men reported having the main responsibility for only three items (car maintenance, house or flat maintenance and the management of household finances; fig 1). The most equally shared task was gardening. As the men and women did not generally belong to the same family, and other members of the household could hold the main responsibility for certain tasks, the percentages would not be expected to be 100.

With regard to childcare duties, a larger percentage of women than men reported having the main responsibility for all items (fig 2). Men were mostly engaged in activities with their somewhat older children—that is, children who had passed the infant stage.

TWL and association with stress, conflict, control and symptoms

Table 3 displays different levels of TWL and their associations with stress, conflict, control and symptoms. For both women and men, only the most extreme level of workload (>80 h/week) gave rise to stress in paid work, and more women than men faced this situation; OR for women was 1.94 (1.13 to 3.34) and that for men 2.69 (1.34 to 5.43). This high level of workload was also associated with conflict between demands and low control in the household for women (OR 3.30 (1.63 to 6.68) and 0.38 (0.18 to 0.81), respectively) but not for men. There was no association between high workload and symptoms in either women or men.

Interaction between paid and unpaid work

To acquire a better understanding of how paid and unpaid work interact, the combined effect was analysed in relation to feelings of stress, conflict, control over the household and symptoms (table 4).

For both women and men, more than 45 h/week in paid employment was associated with a significantly higher risk of stress in paid work, regardless of the level of unpaid work, and the risk was more than twice as high for men as for women in the double-exposure situation (OR for women 2.43

(1.12 to 5.30) and for men 5.65 (2.25 to 14.19)). Conflict between demands was significant for women (OR 2.05 (1.24 to 3.38)) only when associated with working for <45 h/week in paid work and for >35 h in unpaid household tasks.

No significant associations were found with control or symptoms for any of the combined exposures.

DISCUSSION

This study shows that even among these matched groups of men and women in higher positions, a traditional gender pattern was found for the division of responsibilities and actual time devoted to paid work and household tasks. Women shouldered most of the responsibilities and were also exposed to a higher TWL. Men had the main responsibility for three items only, activities that are performed less frequently and can usually be planned somewhat further ahead in time. Consequently, the women were more stressed and reported higher levels of conflict between demands and more symptoms, but also higher levels of control in the household than men. An important finding was, however, that all mean values were modest for both men and women; for the women, it is obvious that stress, conflict and symptoms were much less pronounced than for the general population of Swedish women. For men, the pattern was more in line with what is commonly seen in the general population of men.^{8 26}

The recurring finding in this study, when analysing TWL and combined exposures, was that neither for men nor for women was there a risk of symptom perception related to level of workload. This is an exceptional finding, at least as regards the women, as it is well known from many studies that women tend to have medically unexplained symptoms for reasons of overload in everyday life.^{3 4 5 20 27 28} It fits in well, however, with the findings that these well-educated women were not particularly stressed; they did experience conflict between demands to a certain degree but generally did not lose control at home, at least not until the TWL exceeded 80 h/week, which leads us to believe that they were rather well in control of their entire life situation and well able to shoulder multiple roles. This could also be a “healthy worker” effect—that is, women who are able to shoulder a work burden of ≥ 68 h/week are very healthy and a selection effect is present.

The men in this study were robust to symptom perception at all levels of workload and also able to shoulder multiple roles even if paid employment was their most pronounced role. This finding could also be interpreted within a framework of understanding gender roles, where men are not supposed to show weakness in terms of symptom perception,

Table 2 Gender differences in paid and unpaid work hours, subjective ratings of stress, conflict and control and in symptom reporting

	Women		Men		F	p Value
	M	SD (95% CI)	M	SD (95% CI)		
Hours/week						
Paid work	43.5	6.3 (43.0 to 44.0)	46.2	7.2 (45.5 to 46.9)	39.3	0.001
Household work	16.7	7.9 (16.0 to 17.4)	11.0	6.9 (10.4 to 11.7)	134.1	0.001
Childcare	17.5	14.7 (15.9 to 19.0)	13.9	10.6 (12.8 to 15.1)	13.0	0.001
Subjective ratings (1–7)						
Stress from paid work	5.1	0.7 (5.0 to 5.2)	4.8	0.8 (4.7 to 4.9)	36.4	0.001
Conflict between demands	3.8	1.0 (3.7 to 3.9)	3.4	1.0 (3.2 to 3.5)	41.3	0.001
Control over household	5.7	0.9 (5.6 to 5.8)	5.2	1.0 (5.1 to 5.2)	69.9	0.001
Symptoms (0–1)						
High level of symptoms	0.30	0.46 (0.26 to 0.34)	0.16	0.36 (0.12 to 0.19)	27.00	0.001

Significance tests were performed using analysis of variance. *df* = 1,969. *n* = 529 women and 440 men.

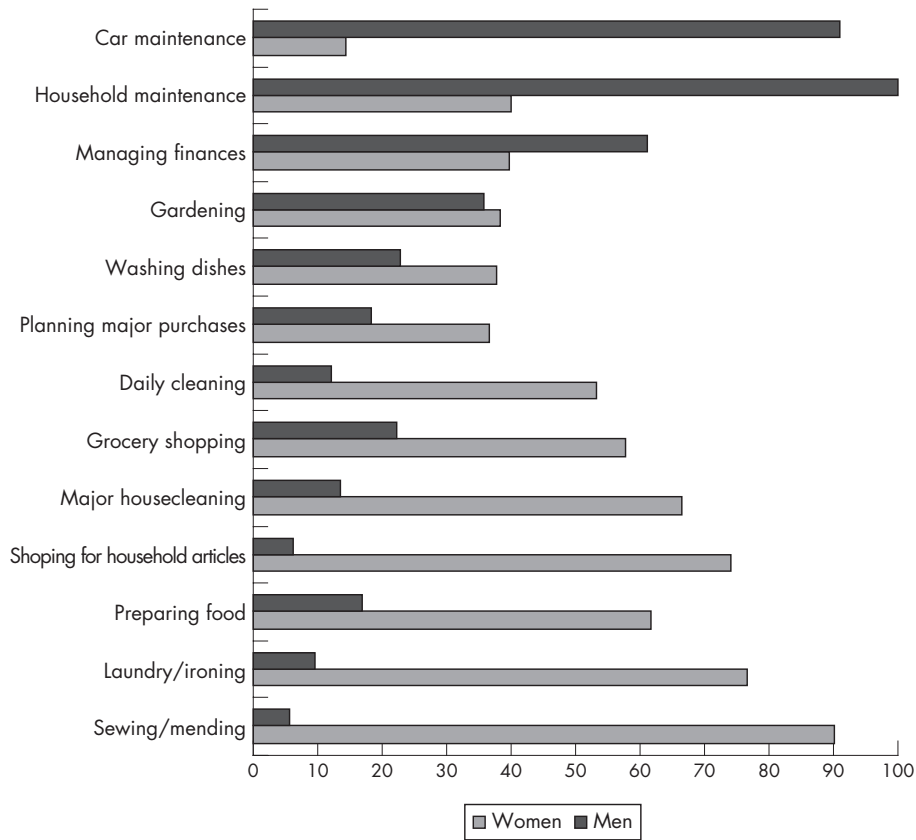


Figure 1 Percentages of full-time employed women and men reporting the main responsibility for various household tasks (n = 529 women and 440 men).

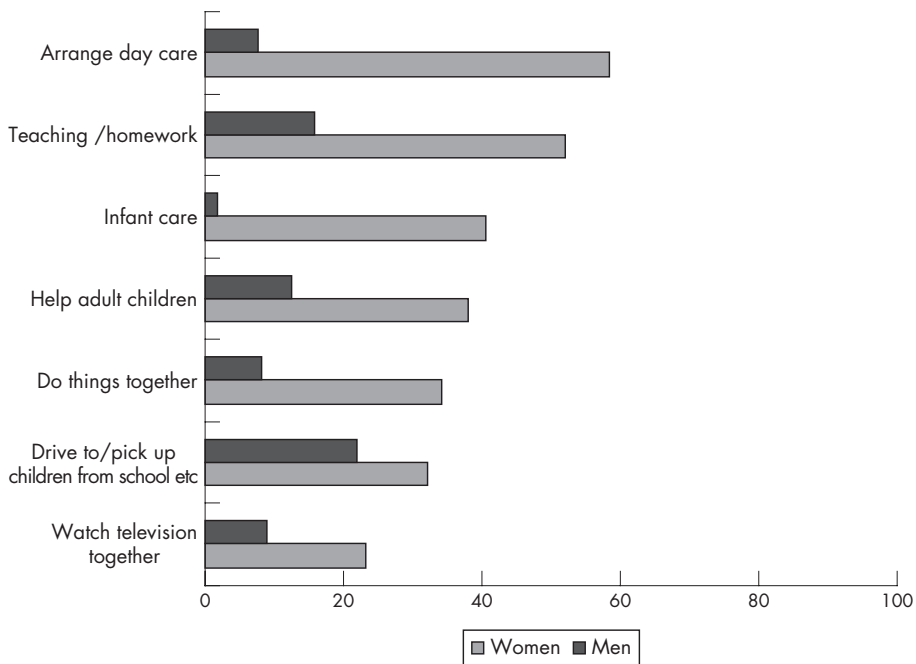


Figure 2 Percentages of full-time employed women and men reporting the main responsibility for childcare duties (n = 529 women and 440 men).

Table 3 Total workload per week in relation to stress, conflict, control and symptoms presented as age-adjusted odds ratios with 95% confidence intervals

Total workload (h/week)	Stress in paid work		Conflict between demands		Control over household work		High level of symptoms	
	n	OR (95% CI)	n	OR (95% CI)	n	OR (95% CI)	n	OR (95% CI)
Women								
<58	117	1	73	1	116	1	118	
58–67	117	1.59 (0.92 to 2.76)	96	2.16 (1.03 to 4.54)	120	0.47 (0.22 to 1.03)	118	1.50 (0.85 to 2.63)
68–80	141	1.30 (0.80 to 2.23)	116	1.90 (0.92 to 3.92)	140	0.49 (0.23 to 1.05)	141	1.15 (0.66 to 2.02)
>80	139	1.94 (1.13 to 3.34)	124	3.30 (1.63 to 6.68)	138	0.38 (0.18 to 0.81)	139	1.65 (0.94 to 2.90)
Men								
<58	123	1	91	1	119	1	122	1
58–67	123	1.21 (0.63 to 2.34)	101	0.68 (0.30 to 1.55)	123	0.66 (0.37 to 1.16)	118	0.46 (0.22 to 0.97)
68–80	105	1.39 (0.70 to 2.75)	95	0.98 (0.45 to 2.14)	101	0.54 (0.30 to 0.97)	100	0.62 (0.30 to 1.29)
>80	83	2.69 (1.34 to 5.43)	79	1.99 (0.93 to 4.26)	83	0.60 (0.32 to 1.13)	83	0.91 (0.43 to 1.96)

and a general finding is that men report fewer symptoms than women.

Our assumption that it is the level of TWL rather than the number of roles that are associated with stress in both women and men, and conflict between demands for women was supported by this study. However, as ill health in terms of symptom perception did not increase with the level of workload, this issue needs to be further researched in a general population sample.

We further found that both women and men were at risk of stress in paid work when the TWL exceeded 80 h/week or when paid work amounted to >45 h/week. Although more women than men had a TWL exceeding 80 h/week, men were at greater risk of reporting stress from paid work. The fact that only the women had feelings of conflict between demands supports the idea that the men were mainly focused on their paid work role whereas their household and childcare responsibilities were not as pronounced. Figures 1 and 2 provide the evidence for this. In support of this is also the finding that the men were at risk of experiencing low control in the household at a lower level of workload than the women.

Traditionally, feelings of conflict between demands have been associated with women in gainful employment having to balance demands from paid work and the home.^{11–29} This was also found in the present study, but the level was fairly modest.

It seems it was mainly those women devoting a maximum of hours to household and childcare tasks who were at risk of conflict between demands along with those shouldering an extreme TWL. As the women also bore the main responsibility for unpaid duties in this study, this adds to the conflict

between demands, even if the actual tasks are carried out by someone else. However, these results differ from those found in studies of the general population, where it has been shown that a high load at home and at work gives rise to feelings of conflict in both women and men.^{11–30}

Limitations

Our findings are based on cross-sectional, self-reported data, which means that it is not possible to establish the causal direction. Consequently, people who feel stressed or experience conflict between demands or low control for other reasons could well rate their TWL as higher than those who do not experience these feelings. However, it seems more plausible to assume that role overload causes stress, conflict or low control rather than the reverse, and this has been shown in other studies with a longitudinal design.^{31–32} It also makes sense that men and women with the highest paid workload also report more stress from paid work than the other groups. The response rate was fairly low, however, and this was partly owing to the exclusion of incomplete questionnaires. The age distribution of the sample was somewhat skewed towards higher age groups, and therefore our findings cannot be generalised to a wider population. In Sweden, the mean age when parents have their first child was 29 for women and 30 for men in 2004.³³ As all the present participants were ≥32 years, parents with very young children are likely to be under-represented compared with the general population, which could bias our results as younger parents with small children may experience more stress, conflict and symptoms and have less control. However, the main purpose of the present study was to compare highly educated matched groups of male and female white-collar

Table 4 Effect modification of the combined exposure to paid and unpaid work with regard to a high level of stress, conflict, control and symptoms, presented as age-adjusted odds ratios with 95% confidence intervals

Total workload (h/week)	Stress in paid work		Conflict between demands		Control over household work		High level of symptoms	
	n	OR (95% CI)	n	OR (95% CI)	n	OR (95% CI)	n	OR (95% CI)
Women								
Paid work <45, unpaid <35	271	1	213	1	271	1	272	1
Paid work >45, unpaid <35	86	1.87 (1.13 to 3.08)	62	0.50 (0.27 to 1.07)	87	0.75 (0.39 to 1.44)	89	1.06 (0.66 to 1.86)
Paid work <45, unpaid >35	121	0.99 (0.61 to 1.63)	107	2.05 (1.24 to 3.38)	122	0.57 (0.32 to 1.03)	121	1.26 (0.77 to 2.07)
Paid work >45, unpaid >35	29	2.43 (1.12 to 5.30)	25	0.82 (0.36 to 2.26)	28	0.72 (0.26 to 2.01)	27	1.57 (0.68 to 3.61)
Men								
Paid work <45, unpaid <35	218	1	186	1	213	1	208	1
Paid work >45, unpaid <35	138	2.07 (1.23 to 3.48)	111	0.61 (0.31 to 1.20)	138	0.96 (0.61 to 1.51)	138	1.67 (0.92 to 3.00)
Paid work <45, unpaid >35	42	0.46 (0.13 to 1.60)	38	2.17 (0.99 to 4.71)	42	1.55 (0.71 to 3.37)	42	0.84 (0.27 to 2.60)
Paid work >45, unpaid >35	23	5.65 (2.25 to 14.19)	22	1.43 (0.65 to 4.47)	22	0.58 (0.24 to 1.43)	22	1.81 (0.56 to 5.90)

What this paper adds

This paper adds to the knowledge about the interaction between the home and work environment in relation to stress and symptom perception among matched groups of highly educated and full-time employed white-collar male and female employees in a country where equality between the sexes is considered to be comparatively high. Only women reported conflicts between demands, but no association between workload and symptoms was found. The conclusion is that, although a traditional gender pattern was seen in terms of the division of both labour and responsibilities, well-educated men and women with a demanding, yet challenging, work situation appear to be fairly resistant to stress, conflict between demands, low control and symptom perception, which is different from the situation seen in general population samples. However, as more women than men report a very high TWL, the possibility that this will affect women's health and career opportunities in the longterm cannot be excluded.

workers with children and not to generalise to the general population. Nevertheless, parents with university education, as most of the participants in this study, usually have their first child late in life and, therefore, some of the participants most probably had young children at home.

Using index variables has some limitations as the entire record is often discarded if one variable has a missing value. The conflict index, which consisted of nine items, included missing values on items relating to childcare among respondents with older children, as childcare was not relevant.

Interestingly, the findings in fig 1 relating to responsibilities are complementary to a high degree. For items where more women report having the main responsibility, fewer men report the same thing, and the reverse also applies, which suggests the data are accurately reported.

Conclusions

The main conclusion from this study is that women in higher positions in Sweden are healthier than the average population of women even though they carry a high TWL, and are still mainly responsible for household duties and childcare. Even though they experienced feelings of stress and conflict between demands, they did not lose control of household chores and seemed not to be at risk of symptoms, at least not in the short-term. This supports the multiple role model and the role expansion theory. However, the high workload and the conflict reported by many women in the present study might cause future ill health in terms of depression, anxiety and burn out. The relatively high level of symptoms detected in women supports this notion.

It is also evident that gender roles are still traditional even among men and women of higher education and in higher positions at work. We had expected these groups of men and women to share responsibilities more equally than has emerged from this study. On the other hand, most participants were aged ≥ 40 years and a more egalitarian pattern might have been found had the participants been younger.

The other pattern that emerged was that the men in this study were rather traditional in terms of still being focused mainly on their paid work role and perhaps even more so than men in the general population as they were fairly resistant to feelings of conflicting demands.

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