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Work status, work hours and health in women with and without children

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ABSTRACT

Objectives: The authors studied self-reported health in women with and without children in relation to their work status (employed, student, job seeker or homemaker), work hours and having an employed partner.

Methods: The study group comprised of 6515 women born in 1960–1979 who were interviewed in one of the Swedish Surveys of Living Conditions in 1994–2003. Self-rated health, fatigue and symptoms of anxiety were analysed.

Results: Having children increased the odds of poor self-rated health and fatigue in employed women, female students and job seekers. The presence of a working partner marginally buffered the effects. In dual-earner couples, mothers reported anxiety symptoms less often than women without children. Few women were homemakers (5.8%). The odds of poor self-rated health and fatigue increased with increasing number of children in employed women, and in women working 40 h or more. Poor self-rated health was also associated with the number of children in students. Many mothers wished to reduce their working hours, suggesting time stress was a factor in their impaired health. The associations between having children and health symptoms were not exclusively attributed to having young children.

Conclusions: Having children may contribute to fatigue and poor self-rated health particularly in women working 40 h or more per week. Student mothers and job seeking mothers were also at increased risk of poor self-rated health. The results should be noted by Swedish policy-makers. Also countries aiming for economic and gender equality should consider factors that may facilitate successful merging of work and family life.

It should be possible for women to work and have children without experiencing adverse effects on their health and well-being. The Swedish welfare system supports gender equality and mothers' participation in the work force and in higher education. Nevertheless, there are signs among Swedish working mothers of confusion and frustration in trying to raise children and work outside the home. At the same time, many women hesitate to question this situation, perhaps out of fear of returning to even more unequal gender patterns. Another possibility could be that young people believe the Swedish welfare system offers equal opportunities for all to participate in the work force and higher education, and mothers who fail to live up to these expectations may blame themselves for being inadequate. Increased knowledge of factors mitigating against successful amalgamation of work or higher education and having children is needed. Situations where having children may be accompanied by impaired health

What this paper adds

- ▶ The Swedish welfare system supports gender equality and women's participation in the work force and higher education; nevertheless, signs of impaired health in young women have increased substantially during the last decades.
- ▶ To the best of our knowledge, no previous study in Sweden or elsewhere has focused on the impact of having children at home on health and well-being, in different educational and work situations.
- ▶ Having children at home increases the risk of poor self-rated health and fatigue in women working 40 h or more, and women with children want to reduce their work hours more often than women without children.
- ▶ Student mothers and mothers looking for a job have an increased risk of poor self-rated health and fatigue compared to women without children in comparable situations.
- ▶ Policy makers and employers should pay attention to factors that encourage the successful merging of work and parenthood without impairing health and well-being. More flexible working hours depending on parental status, health status and individual needs, should be considered.

have to be recognised, for the sake not only of parental health but also of child health and well-being.¹

The risk of impaired health and well-being in working mothers has been studied in different countries including Spain and Australia. Spanish women living in family units with more than three members had an elevated risk of poor self-perceived health status and psychosomatic symptoms; in addition, working more than 40 h a week was associated with a higher probability of medical visits.^{2–3} An Australian study including 1230 women (and 975 men) suggested a negative impact on self-rated health in women when combining full-time employment and having children.⁴ In a study of 15 146 male and female employees from 15 member states of the European Union, full-time (≥ 35 h per week) compared to part-time workers generally reported worse health, including stress and absenteeism.⁵ Among women this could partly be due to difficulties combining full-time work and having children.

The health status of employed individuals, students^{6–8} and the unemployed^{9–11} has been studied extensively, but to the best of our knowledge

no study has been carried out on the implications of having children in different employment situations.

The aim of the present study was to analyse the health status of mothers and mothers with different numbers of children compared to women without children, according to their work status. Work status was categorised as being employed, a student, a job seeker or a homemaker, thereby yielding more specific assessment of the situation in unemployed women, which has been called for in a previous study.⁵ Furthermore, we analysed if mothers had an increased risk of impaired health depending on number of work hours, and if women with and without children differed regarding satisfaction with their work hours. Wishing to work less could indicate time stress and contribute to the understanding of health effects in working mothers. Another question was whether or not the potential health effects in mothers were changed if they had an employed partner. Health status was assessed by self-rated global health, fatigue and symptoms of anxiety.

METHODS

Study population and study group

The source population comprised all women, 20 years of age or older (oldest 43 years of age), born in 1960 through 1979 and registered as Swedish residents (31 December) at least once during 1990–2003 ($n = 1\,255\,201$).

The study group comprised 6515 women, including all women belonging to the source population who, during 1994–2003, participated in any one of the Swedish Surveys of Living Conditions (SSLC). The surveys were carried out annually by Statistics Sweden and cover a broad range of living conditions. The data collection was based on face-to-face interviews of population based random samples. The non-participation rate among women, aged 16–44 during 1994–2003, varied between 15.8% and 21.9%, with an average of 19.4%. If a woman was

included in more than one of the 10 surveys, we used data only from the first interview. Individuals still living with their parents were excluded from the study.

Variables

Residential children below 18 years of age were classified as children, and the number of children was categorised into one, two and three or more children.

Outcome measures

Self-rated health was based on the question: “How do you rate your general health condition? Is it: very good, good, in-between, bad or very bad?”. In-between, bad and very bad were labelled “poor” self-rated health and compared with “good” health (good or very good). Fatigue meant pronounced tiredness in the daytime during the last 2 weeks: “Have you felt remarkably tired during daytime?” (yes or no). Anxiety symptoms were measured by the question: “Have you possibly had any of the following: anxiety, restlessness or anguish?” (yes severe, yes light, or no). Severe and light symptoms were combined and contrasted with no symptoms.

We also analysed if women’s satisfaction/dissatisfaction with their work hours differed between mothers and women without children. The question was: “Do your general work hours suit you the best or would you prefer more or fewer hours of work? Assume that the salary will be reduced or increased accordingly”. Wanting fewer and wanting more hours of work was analysed with being satisfied as reference.

Stratification variables

Individuals with a contract of permanent or temporary employment (employed) and those who were self-employed or farmers were classified as working, whether or not they were

Table 1 Crude prevalence (%) of poor self-rated health, fatigue and anxiety symptoms, by age, partner status, work status and work hours ($n = 6515$)

	Poor self-rated health, No (%)	Fatigue, No (%)	Anxiety symptoms, No (%)
All women	6511 (15.9)	6478 (32.8)	6483 (22.3)
Age			
20–30 years	3465 (14.4)	3446 (31.6)	3448 (22.2)
31–43 years	3046 (17.6)	3032 (34.2)	3035 (22.4)
Partner status*			
Cohabiting at interview	4615 (14.3)	4599 (32.4)	4602 (19.3)
Married	2216 (14.7)	2207 (32.1)	2209 (20.1)
Not married	2263 (13.2)	2256 (32.6)	2257 (18.2)
Lone at interview	1896 (19.9)	1879 (33.9)	1881 (29.7)
Never married	1619 (17.9)	1603 (31.9)	1605 (27.5)
Previously married	224 (34.8)	223 (45.3)	223 (43.5)
Work status			
Employed	4480 (13.2)	4473 (31.2)	4476 (19.1)
Self-employed/farmer	198 (14.7)	198 (33.8)	198 (19.7)
Student	968 (15.3)	960 (32.4)	961 (27.9)
Job seeking	441 (27.0)	440 (39.8)	441 (34.9)
Homemaker	376 (30.1)	370 (43.2)	370 (27.8)
Not due to illness	301 (16.6)	295 (37.3)	295 (21.7)
Due to illness	75 (84.0)	75 (66.7)	75 (52.0)
Other	48 (70.8)	37 (51.4)	37 (70.3)
Work hours			
<30 h/week	915 (15.5)	913 (33.5)	915 (21.5)
30–<40 h/week	1466 (12.8)	1465 (32.2)	1465 (18.2)
≥40 h/week	2266 (12.8)	2263 (29.9)	2264 (18.8)

*Status as of 31 December in year of interview.

Table 2 Adjusted odds ratios (OR) with 95% confidence intervals (CI) for self-rated health, fatigue and anxiety symptoms in women with and without children (reference), by work status

Health symptom	Total, No	No of children*								Trend test†	
		Any number vs none		1 vs none		2 vs none		≥3 vs none		p1	p2
		No	OR (95% CI)	No	OR (95% CI)	No	OR (95% CI)	No	OR (95% CI)		
Poor self-rated health											
Employed	4480	345	1.36 (1.08 to 1.71)	107	1.21 (0.91 to 1.60)	167	1.45 (1.11 to 1.91)	71	1.59 (1.11 to 2.26)	0.003	0.06
Student	968	73	2.05 (1.27 to 3.29)	25	1.88 (1.07 to 3.32)	23	1.77 (0.93 to 3.39)	25	3.41 (1.67 to 6.99)	0.001	0.07
Job seeking	441	79	2.31 (1.32 to 4.06)	31	2.41 (1.25 to 4.65)	32	2.31 (1.18 to 4.53)	16	2.02 (0.87 to 4.70)	0.04	0.74
Homemaker											
Not due to illness	301	46	0.98 (0.24 to 3.99)	17	0.85 (0.20 to 3.69)	18	1.31 (0.29 to 5.81)	11	0.83 (0.17 to 4.13)	0.97	0.86
Due to illness	75	43	0.85 (0.19 to 3.80)	20	1.09 (0.17 to 6.82)	13	1.25 (0.15 to 10.49)	10	0.40 (0.06 to 2.69)	0.44	0.23
Fatigue											
Employed	4473	827	1.31 (1.12 to 1.54)	268	1.29 (1.06 to 1.56)	393	1.27 (1.05 to 1.53)	166	1.58 (1.24 to 2.03)	<0.001	0.06
Student	960	129	1.40 (0.98 to 2.00)	50	1.54 (1.00 to 2.36)	52	1.37 (0.86 to 2.21)	27	1.07 (0.59 to 1.93)	0.40	0.67
Job seeking	440	123	2.47 (1.53 to 3.96)	47	2.53 (1.46 to 4.40)	53	2.71 (1.54 to 4.78)	23	1.81 (0.90 to 3.64)	0.02	0.35
Homemaker											
Not due to illness	295	105	0.74 (0.21 to 2.56)	37	0.76 (0.21 to 2.68)	40	0.76 (0.21 to 2.77)	28	0.59 (0.15 to 2.31)	0.44	0.52
Due to illness	75	36	1.56 (0.55 to 4.44)	18	2.49 (0.67 to 9.32)	10	1.26 (0.32 to 5.03)	8	0.91 (0.21 to 3.91)	0.44	0.23
Anxiety symptoms											
Employed	4476	461	1.01 (0.84 to 1.22)	153	0.99 (0.79 to 1.24)	233	1.07 (0.86 to 1.33)	75	0.87 (0.64 to 1.19)	0.81	0.92
Student	961	99	0.99 (0.68 to 1.44)	36	1.04 (0.66 to 1.65)	33	0.76 (0.45 to 1.27)	30	1.40 (0.78 to 2.51)	0.70	0.25
Job seeking	441	87	0.92 (0.57 to 1.47)	37	1.13 (0.65 to 1.99)	33	0.80 (0.45 to 1.44)	17	0.71 (0.34 to 1.47)	0.27	0.11
Homemaker											
Not due to illness	295	58	0.47 (0.13 to 1.65)	21	0.47 (0.13 to 1.72)	25	0.54 (0.14 to 2.03)	12	0.28 (0.07 to 1.18)	0.14	0.25
Due to illness	75	24	0.61 (0.22 to 1.73)	11	0.57 (0.17 to 1.92)	7	0.64 (0.17 to 2.51)	6	0.67 (0.16 to 2.86)	0.57	0.72

*number of exposed cases; OR adjusted for year of interview, age, cohabitation status and long-standing illness; †p1: based on number of children 0 through 3; p2: based on number of children 1 through 3.

students or looking for a job as well. Students were not working but may have reported that they were looking for a job. Job seekers were neither working nor students, but may have reported that they were homemakers as well, and homemakers were those who gave this alternative only. Seventy five of the 376 homemakers reported that they were homemakers because of illness. The work status of a potential partner was assessed in the same way, and we explored the possible buffering effect of having a partner who was employed.

The analysis of number of work hours was based on working women with at least 5 h a week on average. Overall, 49% of these women worked at least 40 h a week (full-time). We used three strata of work hours per week: <30 h, 30 to <40 h, and 40 h or more.

Statistical methods

The effect measures were adjusted for age, cohabitation status, year of interview and long-standing illness. Age and year of interview were assessed by 1-year intervals. Cohabitation status was dichotomised: women who were married or cohabiting versus women living without a registered partner.

We have previously found that long-standing illness (but not poor self-rated health) was a determinant of not having children and that long-standing illness was also associated with poor self-rated health at interview. We concluded that long-standing illness was a potential confounder and should be controlled for in the regression models.¹² The most common diagnoses were related to the musculoskeletal system, the respiratory system, injuries or accidents, the nervous system, digestive organs, and psychiatric disorders.

We pooled the data from the SSLC interviews conducted in 1994–2003. We used multiple logistic regressions (SAS statistical package v 9.1.3; SAS Institute, Cary, North Carolina, USA,

2002–2003) and estimated the associations by odds ratios (ORs) with 95% confidence intervals (CIs).

The exposure was any children versus no children, and we also used models with the dummy coding of number of children: one, two, three or more, with no children as reference. The test for increasing risk due to number of children was first based on the p value (p1) (Wald test) for the variable “number of children” with values from 0 through 3. In addition, we performed the same type of trend test (p2) only in mothers, that is using “number of children” with values from 1 through 3, to clarify whether or not additional children after the first child tended to increase the risk. It should be noted that the tests are valid if a linear trend is the correct model.

The relationship between exposure and health outcome was assessed for each stratum of the stratification variables to obtain a high degree of homogeneity within groups, probably yielding additional control of unmeasured confounding.

Satisfaction with work hours was analysed by a regression model where children/number of children, year of interview, age, cohabitation status, full-time/part-time, self-rated health and long-standing illness were related to less/more work (both with satisfaction as reference).

RESULTS

Study group

As expected, a high prevalence of health related symptoms was found in lone women, particularly in those who had been married previously, in women looking for a job (job seekers) and in homemakers with a considerable difference between those reporting illness as the cause of staying at home and those who were homemakers for other reasons. Employed women working at least 30 h a week had the lowest prevalence of the symptoms considered (table 1).

Table 3 Adjusted odds ratios (OR) with 95% confidence intervals (CI) for self-rated health, fatigue and anxiety symptoms in working women with and without children (reference), by average number of work hours per week

Health symptom	Total, No*	No of children†								Trend test‡	
		Any number vs none		1 vs none		2 vs none		≥3 vs none		p1	p2
		No	OR (95% CI)	No	OR (95% CI)	No	OR (95% CI)	No	OR (95% CI)		
Poor self-rated health											
<30 h/week	915	90	1.35 (0.81 to 2.25)	33	1.55 (0.88 to 2.74)	36	1.10 (0.60 to 2.02)	21	1.40 (0.68 to 2.87)	0.56	0.96
30<40 h/week	1466	126	1.25 (0.82 to 1.90)	28	0.90 (0.53 to 1.54)	74	1.56 (0.97 to 2.49)	24	1.40 (0.75 to 2.61)	0.08	0.13
≥40 h/week	2266	148	1.38 (1.00 to 1.90)	51	1.17 (0.79 to 1.75)	67	1.49 (1.01 to 2.21)	30	1.83 (1.08 to 3.10)	0.01	0.06
Fatigue											
<30 h/week	913	195	1.02 (0.69 to 1.49)	57	0.99 (0.63 to 1.54)	85	0.94 (0.61 to 1.47)	53	1.44 (0.84 to 2.45)	0.32	0.08
30<40 h/week	1465	325	1.28 (0.96 to 1.70)	99	1.35 (0.97 to 1.89)	172	1.26 (0.91 to 1.74)	54	1.09 (0.71 to 1.68)	0.50	0.36
≥40 h/week	2263	348	1.33 (1.07 to 1.66)	129	1.30 (1.00 to 1.70)	153	1.25 (0.96 to 1.64)	66	1.75 (1.21 to 2.53)	0.005	0.07
Anxiety symptoms											
<30 h/week	915	114	0.82 (0.53 to 1.27)	40	0.92 (0.56 to 1.51)	52	0.78 (0.47 to 1.29)	22	0.65 (0.34 to 1.23)	0.16	0.41
30<40 h/week	1465	177	1.14 (0.81 to 1.62)	54	1.17 (0.78 to 1.76)	100	1.24 (0.84 to 1.83)	23	0.73 (0.42 to 1.29)	0.78	0.23
≥40 h/week	2264	192	0.95 (0.74 to 1.24)	65	0.83 (0.60 to 1.16)	92	1.04 (0.76 to 1.43)	35	1.12 (0.71 to 1.74)	0.64	0.05

*All employed, self-employed or farmers working >0 h per week; †n, number of exposed cases; OR adjusted for year of interview, age, cohabitation status and long-standing illness; ‡p1: based on number of children 0 through 3; p2: based on number of children 1 through 3.

Work status and subjective health

The odds of poor self-rated health were higher in employed mothers compared to employed women without children; and the odds increased by increasing number of children ($p_1 = 0.003$; $p_2 = 0.06$). Poor self-rated health was increased in mothers who were studying or looking for a job, and in students the odds increased by number of children ($p_1 = 0.001$; $p_2 = 0.07$) (table 2).

Pronounced fatigue during the daytime was associated with motherhood in employed and job seeking women. The odds increased by number of children in employed women ($p_1 < 0.001$; $p_2 = 0.06$) (table 2).

Having children was not associated with anxiety symptoms in employed women, students or job seekers (table 2).

Comparatively few women were classified as homemakers not because of illness (4.6%), yielding a low statistical precision. Based on small numbers, there were no signs of increased odds of poor self-rated health or fatigue in mothers among homemakers. The odds of anxiety symptoms seemed to be decreased in mothers (table 2).

Work hours

Women combining work of at least 40 h a week with having children had increased odds of poor self-rated health and fatigue,

and the more the children the higher the odds of poor self-rated health ($p_1 = 0.01$; $p_2 = 0.06$) and fatigue ($p_1 = 0.005$; $p_2 = 0.07$). Motherhood was not associated with symptoms of anxiety, but in women working 40 h or more the odds seemed to be increased by number of children after the first child ($p_1 = 0.64$; $p_2 = 0.05$) (table 3).

In the total study group 11% wanted more work hours, 16% wanted fewer work hours, and 73% were satisfied with their current work hours.

Among full-time workers, 66% of mothers were satisfied compared to 85% in women without children. The situation was the opposite among part-time workers, with 73% of mothers being satisfied compared to 60% of women without children. The results according to number of children, full-time/part-time work, and cohabitation status, are given in fig 1. In regression models including children in the home, year of interview, age, full-time/part-time work, cohabitation status, long-standing illness and self-rated health, the most important characteristic of women who wanted to work less was having children in the home (OR 2.90; 95% CI 2.32 to 3.62) (data not shown), and this applied to both full-time and part-time workers. The wish to work more was most clearly associated with not having children (OR 0.53; 95% CI 0.41 to 0.70) (data not shown).

Figure 1 Percentage of women who want to work more hours, are satisfied, or want to work less, by full-time/part-time work, cohabitation status (C, cohabitating; L, lone) and number of children.

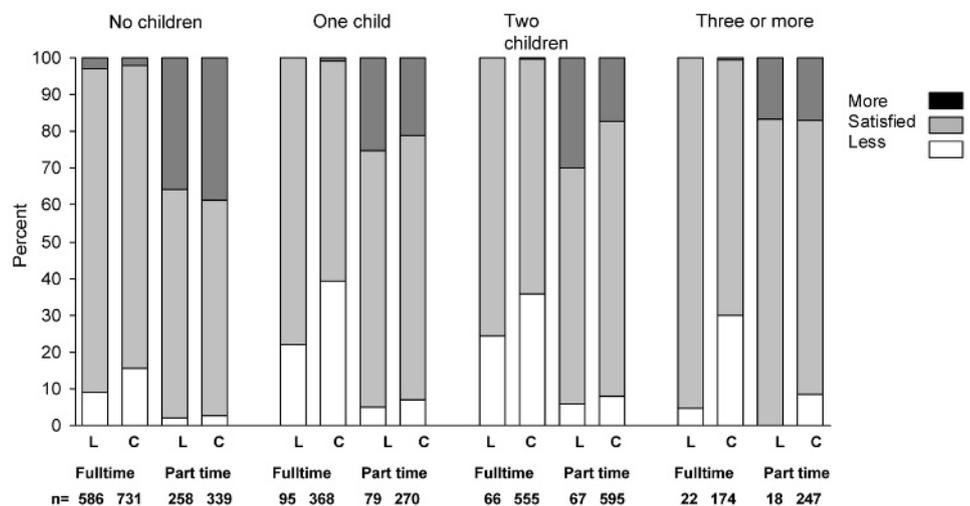


Table 4 Adjusted odds ratios (OR) with 95% confidence intervals (CI) for self-rated health, fatigue and anxiety symptoms in cohabiting women with and without children (reference), by work status of the couple

Health symptom	Total, No*	Prevalence,* %	No of children†								Trend test‡	
			Any number vs none		1 vs none		2 vs none		≥3 vs none		p1	p2
			No	OR (95% CI)	No	OR (95% CI)	No	OR (95% CI)	No	OR (95% CI)		
Poor self-rated health												
Both working	3125	11.7	255	1.13 (0.84 to 1.51)	70	1.02 (0.72 to 1.46)	132	1.19 (0.86 to 1.65)	53	1.21 (0.80 to 1.85)	0.24	0.39
Both employed full-time	1417	12.1	113	1.35 (0.90 to 2.02)	38	1.26 (0.77 to 2.07)	54	1.38 (0.86 to 2.20)	21	1.52 (0.80 to 2.88)	0.14	0.64
Partner employed and												
woman student	348	11.8	24	2.28 (0.92 to 5.64)	10	2.17 (0.81 to 5.82)	6	1.76 (0.49 to 6.32)	8	4.66 (1.22 to 17.75)	0.04	0.29
woman job seeking	219	19.2	35	2.74 (0.95 to 7.88)	14	3.55 (1.09 to 11.55)	14	2.15 (0.68 to 6.79)	7	3.59 (0.84 to 15.25)	0.23	0.80
woman homemaker¶	199	13.1	25	1.20 (0.09 to 15.67)	7	0.72 (0.05 to 10.57)	11	1.89 (0.14 to 26.29)	7	1.16 (0.08 to 17.03)	0.46	0.41
Fatigue												
Both working	3119	30.4	676	1.31 (1.08 to 1.60)	201	1.32 (1.05 to 1.66)	333	1.25 (1.00 to 1.56)	142	1.55 (1.17 to 2.06)	0.005	0.29
Both employed full-time	1413	31.0	288	1.49 (1.14 to 1.94)	102	1.56 (1.13 to 2.15)	135	1.36 (0.99 to 1.85)	51	1.81 (1.17 to 2.80)	0.01	0.70
Partner employed and												
woman student	347	31.4	60	1.67 (0.93 to 2.99)	26	1.90 (1.00 to 3.62)	25	1.56 (0.74 to 3.27)	9	0.97 (0.36 to 2.58)	0.63	0.12
woman job seeking	219	38.8	69	1.81 (0.87 to 3.75)	23	1.81 (0.78 to 4.19)	34	2.05 (0.92 to 4.56)	12	1.16 (0.42 to 3.18)	0.52	0.39
woman homemaker¶	195	37.4	71	0.54 (0.07 to 4.17)	29	0.68 (0.09 to 5.46)	24	0.48 (0.06 to 3.86)	18	0.37 (0.04 to 3.19)	0.12	0.15
Anxiety												
Both working	3121	16.2	329	0.78 (0.61 to 0.98)	80	0.63 (0.47 to 0.86)	192	0.93 (0.71 to 1.21)	57	0.68 (0.47 to 0.97)	0.20	0.54
Both employed full-time	1414	15.2	124	0.81 (0.58 to 1.13)	37	0.70 (0.46 to 1.08)	69	0.93 (0.63 to 1.37)	18	0.69 (0.38 to 1.25)	0.39	0.73
Partner employed and												
woman student	347	22.2	39	1.05 (0.55 to 2.00)	16	1.21 (0.59 to 2.49)	13	0.72 (0.30 to 1.71)	10	1.34 (0.49 to 3.64)	0.90	0.98
woman job seeking	219	26.0	38	0.62 (0.29 to 1.34)	14	0.75 (0.30 to 1.86)	16	0.53 (0.22 to 1.27)	8	0.62 (0.20 to 1.91)	0.22	0.63
woman homemaker¶	195	15.9	30	0.49 (0.05 to 5.23)	10	0.52 (0.05 to 5.78)	12	0.55 (0.05 to 6.19)	8	0.34 (0.03 to 4.16)	0.40	0.47

*number of cohabiting women; prevalence of health symptom in women; †n, number of exposed cases; OR adjusted for year of interview, age and long-standing illness; ‡p1: based on number of children 0 through 3; p2: based on number of children 1 through 3; ¶homemaker not due to illness.

Potential impact of an employed partner

In contrast to the previous tables which included all women, the results of table 4 were based on cohabiting women. Among couples where both were working, the odds of poor self-rated health in mothers did not differ from the odds in women without children. However, in couples where the woman and her partner had full-time employment, the effect of being a mother was similar to the effect seen in all employed women; however, the statistical precision was comparatively low. In couples where the woman was a student, job seeker or homemaker while the partner was employed, the results were imprecise but consistent with the outcome for students, job seekers and homemakers in general.

In the presence of a working partner the odds of fatigue were increased in working mothers (table 4). When both partners had full-time employment, the odds of fatigue were significantly higher for mothers than for women without children. The highest odds ratio was found for mothers of three or more children. When the women were students or homemakers, it did not make a much difference whether or not they had an employed partner; however, among job seekers the estimates tended to be lower (table 4).

Anxiety symptoms were not associated with having children in the analysis of all employed women (table 2), and the result was similar in couples with an employed partner. When the woman and her partner were working, mothers had lower odds of anxiety compared to women without children (table 4).

DISCUSSION

There is strong evidence that having multiple roles is beneficial for health and well-being, but the so-called "role expansion

theory" is not always valid.¹³ A woman can be a young adult, a worker, a partner and a mother, and certain interactions between different features can lead to adverse health effects.

In a previous study we found that women with children had a higher risk of poor self-rated health and fatigue than women without children, and that this was particularly true in the youngest age groups (below 30 years of age), in full-time workers, high income earners and lone women.¹²

The aim of the present study was to analyse health status in women with and without children in different employment situations, including being employed, a student, a job seeker or a homemaker. The intention was also to study the association between having children and health according to the level of work hours, and to explore if women with and without children differed in their wish for more or fewer work hours. We also wanted to explore if the potential health effects in mothers in different employment situations changed if they had an employed partner.

Among employed women, poor self-rated health and fatigue, but not anxiety, were more common in mothers compared to women without children. This was attributed to those who worked 40 h or more, and the risk increased with the number of children. The results are consistent with previous studies.^{3 4 13} On the other hand, in a study of middle-aged white-collar workers in Sweden, "a high level of symptoms" was not increased in women exposed to >50 h of paid work combined with childcare (based on small numbers).¹⁴

The reasons for the deviant results for symptoms of anxiety are not obvious. Having children brings meaning to life which may protect against feelings of anxiety, or it may be that childlessness produces anxiety. We carried out additional analyses on anxiety symptoms without controlling for long-standing illness, but the results were largely unchanged (data not shown).

As unemployed women are not always homemakers, we decided to focus on students, job seekers and homemakers separately. Although based on small numbers, homemakers seemed to differ from the other groups of unemployed women. Having children did not result in increased odds of impaired health in women who were homemakers “by choice” (not due to illness), unlike both students and job seekers, where having children showed an adverse effect on health and well-being. The similarity of the results between students and job seekers could partly be due to the fact that studies may partly hide unintentional unemployment.

Below we discuss the results further from three perspectives, which may be useful for understanding health effects in mothers in different employment situations: economic stress, role conflicts and psychological strain, and time stress.

Economic stress

Being a parent means that your economic resources must also cover the needs of your children. Parents exposed to economic stress have previously shown a high risk of poor self-rated health.¹⁵ In our previous study, however, the prevalence of children in the home did not increase the odds of poor self-rated health in women in the lowest income category (in the lowest quartile).¹² Economic stress may be particularly important in lone mothers, which may partly explain the impaired health status in lone mothers.^{12 16 17} Economic pressure may also explain why comparatively few lone mothers wanted to work less than full-time (fig 1).

Worries about poor personal finances and future employment are common among students.⁷ In Sweden you can receive financial support for studying for a maximum of 14 semesters until the age of 54; the median age of female students is 26 years of age. The benefits are somewhat increased if you have children and the amount depends on the number of children you have. It may be rather specific to Sweden that studies are often combined with parenthood (36% of the 968 female students in this study group had children in the home); poor personal finances may contribute to economic stress and impaired health status in student mothers.

Women living with an employed partner were expected to have better economic security compared with women in general, leading to a buffering effect on poor self-rated health and fatigue in mothers in these couples. However, there was just a slight reduction in the odds ratios of poor self-rated health for mothers among employed women with an employed partner compared to all employed women. The fact that there was no clear buffering effect either in employed women or in students or job seekers could mean that increased financial security has a limited influence in general on mothers' health and well-being. It could also mean that a buffering effect of the partner's earnings was cancelled out by more parental conflicts when both had a full-time job.

Role conflicts and psychological strain

Combining parenthood and work may lead to role overload and role conflicts between parents. Role conflicts in a woman with children may occur when she cannot fulfil her goals as a professional woman and/or a parent. This could explain our previous results that children at home increased the odds of poor self-rated health particularly among women with high income, because high income could be a proxy for dedication to a professional role.¹² This is in line with the results from a US study showing that participants in the top income category had

higher scores of work–family conflict than their counterparts in other categories.¹⁸

The links between having children and symptoms of impaired health status may have different pathways for married and lone mothers, and not only be due to economical inequalities. In married couples, children may increase the potential for parental conflicts regarding time allocated to work and home duties. Work–family or work–home conflicts have shown associations with different psychiatric symptoms, mental disorders and poor self-rated health.^{18–23}

Being unemployed may mean that the woman misses her professional role. It may also entail a lack of social interaction with adult individuals, a situation that could be particularly harmful for lone mothers. In a Spanish study, a negative effect on mental health was seen in unemployed women. However, this did not apply to women living with children, and the authors suggest that this may be due to women assuming their traditional family roles.³ The results from our study were not consistent with the Spanish results since mothers among job seeking women showed doubled odds of poor self-rated health. The association was the same in couples with an employed partner. The lack of consistency may indicate that women's traditional role within the home is not considered an option in case of unemployment among Swedish women, which is also apparent from the finding that only 4.6% of the study group were homemakers “by choice”.

Time stress

Time stress could partly explain the increased prevalence of poor self-rated health in student mothers. Being a student means irregular work hours, studying outside normal work hours, and irregular compulsory attendance outside home. This may be difficult to combine with the regular schedules typical of child care and day care centres. In general, non-standard work hours are associated with reduced work–life balance,¹ and children in the home may strengthen the effect.

In 100 cohabiting women with preschool children and working at least half-time, the number of work hours was associated with daily stress, and more stress was linked with lower quality of life and lower sense of coherence.²⁴ In another study of 146 mothers, daily stress and role balance influenced the mothers' health status.²⁵

The subsidised child day care service in Sweden is a highly valued privilege that facilitates mothers (and fathers) participating in the working force. But, being “a day care centre parent” also means another struggle against the clock with daily hassles for parents and their children. Daily hassles have been defined as “irritating, frustrating, distressing demands that to some degree characterise everyday transactions with the environment” according to Kanner and co-workers.²⁵

Data on satisfaction with work hours were analysed to see if a desire for fewer work hours was a marker of time stress due to shortage of time for duties outside work, which could contribute to impaired health. A desire to reduce work hours was clearly elevated in women with children compared to women without children, possibly indicating that time stress is a precursor of the health effects shown in the main analyses of self-rated health and fatigue.

Part-time workers with no children had the highest proportion of women who wanted to extend their work hours (223 women, 37%). Those who wanted fewer hours were over-represented particularly among full-time working cohabiting mothers (395 women, 36%). These results suggest the balance between work hours and current family structure should be

adjusted. An exchange of paid work hours, not only between men and women, but also between women seems possible, although it may be hard to handle the effects on individuals' financial status and career opportunities. Several studies have shown that employee control over work hours is associated with a better work-life balance, and that part-time work is associated with better work-life balance particularly among women.¹ Based on experience from the Netherlands and Finland, the importance of working time arrangements has been pointed out as a useful tool for reducing negative work-home intrusion.²⁶⁻²⁸

The time and energy required for children differs depending on the age of the children. This variable was not considered a priori in the present study, but we conducted an analysis on the ages of the children (>0-6, 7-12, and 13-18 years of age) and combinations of age groups. The highest ORs for poor self-rated health in employed women was found for women with small children and teenagers (OR 2.28, 95% CI 1.02 to 5.08), women with teenagers only (OR 2.07, 95% CI 1.20 to 3.57), and women with all three age categories (OR 2.06, 95% CI 1.05 to 4.03). Having only small children yielded an OR of 1.20 (95% CI 0.93 to 1.54). For fatigue, the highest ORs were found for women having small children and teenagers at home (OR 2.41, 95% CI 1.31 to 4.43) and for women with children in all age groups (OR 2.13, 95% CI 1.28 to 3.54). The results indicate that the increased risk of poor self-rated health is not limited to parents of small children.

The population based nature of the study should yield a high degree of generalisability to Swedish women with and without children in different employment situations and different family arrangements. An advantage of the present study which strengthens the conclusions is the fact that we analysed not only the prevalence of children but also the number of children, with reasonable statistical power. An important limitation is the lack of comparable analyses in men with and without children. Cross-national comparisons of countries with similar and different welfare systems and gender policies would be of interest. Also for countries developing welfare systems, the results may be an incentive to analyse parents' allocation of time and energy to work and family, keeping economic and gender equality in mind, before women enter the work force on a large scale.

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