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ORIGINAL ARTICLE

Occupations, perceived stress, and stress-related disorders among women and men in the public sector in Sweden

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ABSTRACT

Background: Stress-related disorders are a public health problem and represent a significant burden to individuals and society. It is, therefore, of importance to regard stress in a wider context and identify risk factors not only at work but in all occupations in everyday life, to prevent ill health.

Aim/objective: The aim of this study was to examine potential associations between everyday occupations, perceived stress, and stress-related disorders as well as potential gender differences.

Material and methods: A survey was mailed to a random selection of 3481 employees in the public sector in Western Sweden. Cox regressions with constant time at risk were used, in order to calculate prevalence ratios (PR) and their 95% confidence intervals (CI).

Results: The results showed a clear association between reporting imbalance between different everyday occupations and both perceived stress and stress-related disorders among men and women.

Conclusion: Imbalance between different everyday occupations seems to be an important risk factor for perceived stress and stress-related disorder among both women and men.

Significance: To enable people to achieve balance between different everyday occupations may be a useful way to prevent stress, stress-related disorders, and sick leave, and to promote better health and well-being.

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Health promotion; human activities; occupational balance; stress prevention

Introduction

Stress-related disorders are a public health problem [1] and represent a significant burden to individuals and society. It is, therefore, of importance to identify risk factors that need to be reduced to prevent such ill health and its adverse consequences, e.g., in terms of sick leave. One way to do this is to regard work stress in a wider context and focus on all occupations in people's everyday life, i.e., gainful work, domestic work, leisure activities, recovery, and sleep.

A large proportion of the workforce in many western countries are greatly involved in both gainful work and domestic work. There seems, however, to be a lack of evidence of any differences between women and men regarding the impact on health when combining gainful work and domestic work.[2] Frequently reported outcomes in both genders are poor general health and self-reported poor physical health,[3] mental ill health,[4] and sickness absence.[4] Among both women and men, association between work–family conflicts and exhaustion was also found.[5] These results imply that stress should be regarded in a wider context, including the situation outside work, in order to understand perceived stress and stress-related disorders among vocationally active individuals.

According to a previous study, the perception of everyday occupations seems to be the health-promoting ingredient rather than the actual doing.[6] People with stress-related disorders often perceive occupational imbalance,[7] which means 'a lack of balance or disproportion of occupations'.[8, p. 343] Therefore, the perception of occupational imbalance is focused on in the present study, and the identification of indicators of occupational imbalance may be used to prevent stress-related disorders.

A previous qualitative study [9] has explored indicators of occupational imbalance in women who were past their first phase of recovery from stress-related disorders. The findings showed an occupational repertoire with disproportion of occupations. These women usually gave up leisure and social activities in favour of work activities,[9] which is in line with the findings of other studies.[10,11] Furthermore, the findings of the qualitative study [9] showed that occupational imbalance meant an imbalance between doing things

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that you have chosen yourself and doing things mainly for the sake of others, and lacking strategies to control how much time and energy different occupations take. Further, the women were lacking reciprocal relationships, i.e., relationships from which you mainly get as much as you give in terms of attention, support, gratitude, etc.[9]. Swedish women with stress-related disorders also experienced less emotional support compared with healthy controls,[12] and people with stress-related disorders reported less social support at work than others.[13,14]

To our knowledge, most studies of perceptions of everyday occupations either include only women or do not present the results for women and men separately. Furthermore, these studies [15–17] have mainly shown relationships between perceptions of occupational balance and good subjective health. There are, however, empirical indications that indicators of stress and ill health differ from indicators of good subjective health. The aim of the present study was thus to examine potential relationships between different perceptions of everyday occupations, and perceived stress and self-reported stress-related disorders. A further aim was to examine potential gender differences.

Material and methods

This investigation was undertaken using cross-sectional data from an ongoing part of a longitudinal study of randomly selected employees working in the public sector in Western Sweden.

Study population

The study population included two sub-samples, one that was recruited in 2004 for the longitudinal study and who had participated in the first follow-up in 2006 ($n = 2704$), the other recruited for the survey in 2008 ($n = 2035$) in order to increase the number of men, younger women, and managers. Both samples were randomly selected from the employee records of two organizations in the public sector in Western Sweden (health care and the regional social insurance office).

The total response rate was 73% (83% and 61%, in the two subsamples). The analyses in the present study are based on a total sample of 3481 (2233 and 1248, respectively, from the two subsamples), including 2 716 women and 765 men.

Data collection

Data were collected by a mailed questionnaire. Each selected participant received a covering letter, a questionnaire, and a form on which they could indicate if they did not wish to participate in the study, plus a stamped addressed envelope. It was pointed out that participation was voluntary and that confidentiality was guaranteed. Two reminders were sent out. The regional ethical review board in Gothenburg, Sweden (Dnr 099-04) approved the study.

Measures

The questionnaire contained the following measures.

Stress-related disorders were measured with three self-report instruments: a recently developed self-report Exhaustion Disorder (s-ED) instrument, which has shown good construct and predictive validity,[18] the Hospital Anxiety and Depression scale (HAD), which has been found to have satisfactory reliability and validity,[19] and the Shirom-Melamed Burnout Questionnaire (SMBQ), which has been shown to have good reliability and construct validity.[20,21] The participants who fulfilled at least one of the following four criteria were classified as having a stress-related disorder: answered *yes* to eight of 10 questions in the s-ED instrument, scoring >10 points on the depression HAD subscale, scoring >10 points on the anxiety HAD subscale, or an average of ≥4.0 on all items in the SMBQ.

Perceived stress was measured using a single item, 'Have you during a longer time during the last twelve months perceived stress continuously (i.e., felt tense, restless or anxious, or had problems in sleeping because you are thinking of problems all the time)?'. The item is from the Nordic Questionnaire for Psychological and Social Factors at Work, and it was shown to have satisfactory content, criterion, and construct validity.[22] The item has five response alternatives, and the two indicating most stress were used to classify perceived stress.

Perceptions of everyday occupations were self-reported and measured with the following questions, developed from the qualitative study of imbalance among women who were past the first phase of recovery from stress-related disorders.[9] The response alternatives were never (1), seldom (2), sometimes (3), often (4), and always (5) and they were dichotomized according to a median cut.

'How often are you pleased with your balance between the different occupations in everyday life i.e. employment, domestic work, leisure, rest/recreation, and sleep?' (dichotomized 1–3 versus 4–5).

'How often do you have balance between occupations you are doing mainly for yourself and occupations you are doing mainly for others?' (dichotomized 1–3 versus 4–5).

'How often do you have control over how much time and energy you spend on different occupations in everyday life?' (dichotomized 1–2 versus 3–5).

'Are your relationships with your boss and your workmates mainly reciprocal i.e., do you mainly get as much as you give of attention, support, gratitude, etc.?' (dichotomized 1–2 versus 3–5).

'Are your relationships with your relatives and friends mainly reciprocal, i.e., do you mainly get as much as you give of attention, support, gratitude, etc.?' (dichotomized 1–2 versus 3–5).

Demographic factors, which are known to influence subjective health,[23] were included as *potential covariates*: age, civil status, children living at home (yes/no), and caring for a dependent adult (yes/no). Age was dichotomized according to a median cut, and marital status into married/living with someone versus single.

Physical activity, working hours, and working overtime were also included as *potential covariates*. Physical activity was dichotomized into no physical activity (mainly sedentary) versus physical activity (light/moderate/heavy) and working overtime into often versus seldom/never. The evidence of positive health effects of physical activity is strong,[24,25] working part time is proposed to influence the health of especially women with a dual workload,[26] and a review indicated that there is growing evidence that overtime has a negative effect on people's subjective health.[27]

Statistical analyses

Multicollinearity between the items measuring perceptions of occupations in everyday life was evaluated by means of the contingency table, and the percentage agreement (PA) was calculated. The range of PA between the items was not too great (<0.85), and the items do not seem to measure the same thing.

Cox regression with constant time at risk was used for all the analyses, both the bivariate and the multivariate, in order to calculate prevalence ratios (PR) and their 95% confidence intervals (CI). The analyses were performed for women and men separately. All the statistical analyses were performed using the SPSS® program, version 20.0 (IBM Corp, Armonk, NY).

In step 1, bivariate analysis was performed to examine possible associations between perceptions of occupations in everyday life and perceived stress and stress-related disorders, respectively. In step 2, multivariate analyses were performed between perceptions of occupations in everyday life and perceived stress and stress-related disorders, respectively. In step 3, multivariate analyses was performed including the variables that proved to be significant at a level of $p < 0.25$ in step 2 adjusted for the covariates. Results are considered significant if $p < 0.05$.

Results

Characteristics of the study group

The subjects were between 18 and 70 years old and the median age was 48 years. Most of them were married/living with someone, half of them had children living at home, and a few were caring for a dependent adult. The majority worked full time, did not work overtime often, and reported physical activity. More than half of the study group perceived imbalance between different occupations and between doing things for others and themselves. The majority of them reported that they had no control over use of time and energy in different occupations, and no balance in relationships at work or outside work (Table 1). The majority did not perceive stress (68%, 70% of the men and 68% of the women),

Table 1. Characteristics of the study group ($n = 3481$).

	All, *n* (%)	Women, *n* (%)	Men, *n* (%)
Balance between occupations in everyday life			
Yes	1518 (44)	1182 (44)	336 (44)
No	1941 (56)	1517 (56)	424 (56)
Balance between doing things for others and yourself			
Yes	1524 (44)	1190 (44)	334 (44)
No	1932 (56)	1506 (56)	426 (56)
Control over use of time and energy in different occupations			
Yes	311 (9)	253 (9)	58 (8)
No	3138 (91)	2436 (91)	702 (92)
Balance in the relationships at work			
Yes	441 (13)	335 (13)	106 (14)
No	2965 (87)	2323 (87)	642 (86)
Balance in the relationships outside work			
Yes	1030 (30)	804 (30)	226 (30)
No	2381 (70)	1859 (70)	522 (70)
Civil status			
Single	700 (20)	543 (20)	157 (21)
Married/living with someone	2757 (80)	2156 (80)	601 (79)
Children living at home			
Yes	1788 (51)	1402 (52)	386 (51)
No	1688 (49)	1311 (48)	377 (49)
Caring for a dependent adult			
Yes	266 (8)	202 (8)	64 (8)
No	3171 (92)	2477 (92)	694 (92)
Age			
18–34	723 (21)	549 (20)	174 (23)
35–44	718 (21)	562 (21)	156 (20)
45–54	987 (28)	737 (29)	200 (26)
55–70	1052 (30)	817 (30)	235 (31)
Physical activity			
Yes	3013 (87)	2336 (86)	677 (88)
No	450 (13)	365 (14)	85 (12)
Working hours			
Part time	912 (29)	830 (29)	82 (12)
Full time	2210 (71)	1561 (71)	649 (88)
Working overtime			
Often	1031 (31)	737 (35)	294 (42)
Seldom/never	2252 (69)	1848 (65)	404 (58)
Education			
University education	2207 (65)	1662 (63)	545 (71)
No university education	1211 (35)	1010 (37)	201 (29)

and had no stress-related disorder (77%, 79% of the men and 77% of the women).

Associations between perceptions of occupations in everyday life and stress-related disorders among women

Significant associations between stress-related disorders and imbalance between different occupations in everyday life, imbalance between doing things for others and yourself, no control over use of time and energy in different occupations in everyday life, and imbalance in relationships outside work were found in the bivariate analyses among the women (step 1, Table 2).

In the first multivariate analysis (step 2, Table 2), significant associations were found between stress-related disorders and imbalance between different occupations in everyday life and imbalance between doing things for others and yourself. The latter association was, however, much weaker. In step 3 (Table 2), the prevalence ratios for these factors remained virtually unchanged, and statistically significant when adjusted for the potential covariates. In this model, the covariates working part time and physical activity were also significant.

Associations between perceptions of occupations in everyday life and stress-related disorders among men

In the bivariate analyses (step 1, Table 2) of the association between perceptions of occupations in everyday life and stress-related disorders, associations with imbalance between the occupations in everyday life and imbalance between doing things for others and yourself were found among the men.

In the first multivariate analysis (step 2, Table 2), only one of these associations remained statistically significant among the men, i.e., imbalance between different occupations in everyday life. In the last step (step 3, Table 2), imbalance between different occupations in everyday life was still significant even when adjusting for the covariates. None of the covariates was significant in this model.

Associations between perceptions of occupations in everyday life and perceived stress among women

In the bivariate analyses (step 1, Table 3) of the association between perceptions of the occupations in everyday life and perceived stress, imbalance between different occupations in everyday life, imbalance

Table 2. Associations between perceptions of occupations in everyday life and stress-related disorders among women ($n = 2716$) and men ($n = 765$) calculated as prevalence ratios (PR) with 95% confidence interval (CI).[a]

	Step 1 (bivariate analysis[b]) PR (95% CI) *p* value		Step 2 (multivariate analysis[c]) PR (95% CI) *p* value		Step 3 (multivariate analysis[d]) PR (95% CI) *p*-value	
	Women	Men	Women	Men	Women	Men
Imbalance between the activities in everyday life	**1.48 (1.36–1.62) *p* = 0.000**	**1.41 (1.20–1.65) *p* = 0.000**	**1.37 (1.24–1.52) *p* = 0.000**	**1.33 (1.10–1.61) *p* = 0.003**	**1.35 (1.21–1.51) *p* = 0.000**	**1.32 (1.08–1.63) *p* = 0.002**
Imbalance between doing things for others and yourself	**1.36 (1.24–1.48) *p* = 0.000**	**1.26 (1.08–1.48) *p* = 0.004**	**1.13 (1.02–1.26) *p* = 0.020**	1.08 (0.89–1.31) *p* = 0.460	**1.13 (1.00–1.26) *p* = 0.042**	–
No control over use of time and energy in different activities	**1.19 (1.04–1.36) *p* = 0.014**	*1.19 (0.90–1.57) p = 0.226*	0.98 (0.85–1.13) *p* = 0.766	1.02 (0.76–1.38) *p* = 0.875	–	–
Imbalance in the relationships at work	*1.13 (1.00–1.28)* p = *0.055*	1.06 (0.85–1.33) *p* = 0.591	1.03 (0.90–1.18) *p* = 0.633	–	–	–
Imbalance in the relationships outside work	**1.12 (1.02–1.23) *p* = 0.015**	*1.11 (0.93–1.32) p = 0.235*	1.05 (0.95–1.16) *p* = 0.351	1.04 (0.97–1.24) *p* = 0.679	–	–
Single	–	–	–	–	1.01 (0.97–1.24) *p* = 0.130	1.01 (0.84–1.39) *p* = 0.555
Children living at home	–	–	–	–	1.01 (0.91–1.13) *p* = 0.781	1.03 (0.84–1.26) *p* = 0.811
Caring for a dependent adult	–	–	–	–	1.04 (0.86–1.25) *p* = 0.696	1.24 (0.86–1.78) *p* = 0.258
Younger	–	–	–	–	1.00 (0.90–1.12) *p* = 0.944	1.07 (0.88–1.30) *p* = 0.487
Working part time	–	–	–	–	**1.13 (1.02–1.25) *p* = 0.023**	1.12 (0.83–1.51) *p* = 0.470
Often working overtime	–	–	–	–	1.02 (0.91–1.13) *p* = 0.771	1.02 (0.84–1.25) *p* = 0.811
No physical activity	–	–	–	–	**1.13 (1.01–1.38) *p* = 0.043**	1.23 (0.89–1.70) *p* = 0.217

[a]The figures in bold were statistically significant and figures in italics had a *p*-value less than 0.25.
[b]Bivariate analysis perceptions of activities in everyday life.
[c]Multivariate analysis perceptions of activities in everyday life.
[d]Multivariate analyses were performed including the variables that proved to be significant at a level of $p < 0.25$ in step 2 adjusted for the covariates.

Table 3. Associations between perceptions of occupations in everyday life and perceived stress among women ($n = 2716$) and men ($n = 765$) calculated as prevalence ratios (PR) with 95% confidence interval (CI).[a]

	Step 1 (bivariate analysis[b]) PR (95% CI) p value		Step 2 (multivariate analysis[c]) PR (95% CI) p value		Step 3 (multivariate analysis[d]) PR (95% CI) p value	
	Women	Men	Women	Men	Women	Men
Imbalance between the activities in everyday life	**1.49 (1.36–1.63) $p = 0.000$**	**1.42 (1.20–1.68) $p = 0.000$**	**1.40 (1.25–1.57) $p = 0.000$**	**1.34 (1.10–1.64) $p = 0.04$**	**1.36 (1.20–1.53) $p = 0.000$**	**1.34 (1.11–1.62) $p = 0.002$**
Imbalance between doing things for others and yourself	**1.31 (1.20–1.44) $p = 0.000$**	**1.30 (1.10–1.54) $p = 0.002$**	*1.07 (0.96–1.20) $p = 0.219$*	1.10 (0.90–1.34) $p = 0.366$	–	–
No control over use of time and energy in different activities	**1.27 (1.10–1.46) $p = 0.001$**	*1.26 (0.95–1.69) $p = 0.114$*	1.07 (0.92–1.25) $p = 0.384$	1.07 (0.79–1.45) $p = 0.665$	–	–
Imbalance in the relationships at work	**1.15 (1.01–1.31) $p = 0.037$**	1.10 (0.78–1.28) $p = 0.992$	1.05 (0.91–1.21) $p = 0.542$	–	–	–
Imbalance in the relationships outside work	**1.14 (1.03–1.26) $p = 0.009$**	1.06 (0.88–1.28) $p = 0.533$	1.06 (0.95–1.18) $p = 0.304$	–	–	–
Single	–	–	–	–	1.14 (1.00–1.29) $p = 0.058$	1.08 (0.84–1.39) $p = 0.555$
Children living at home	–	–	–	–	1.01 (0.90–1.14) 1.02 $p = 0.800$	1.03 (0.84–1.26) $p = 0.811$
Caring for a dependent adult	–	–	–	–	1.13 (0.92–1.38) $p = 0.243$	1.24 (0.86–1.78) $p = 0.258$
Younger	–	–	–	–	1.03 (0.93–1.16) 1.04 $p = 0.546$	1.07 (0.88–1.30) $p = 0.487$
Working part time	–	–	–	–	1.03 (0.93–1.15) $p = 0.577$	1.12 (0.83–1.51) $p = 0.470$
Often working overtime	–	–	–	–	1.07 (0.96–1.21) $p = 0.234$	1.02 (0.84–1.25) $p = 0.811$
No physical activity	–	–	–	–	1.12 (0.95–1.32) $p = 0.185$	1.23 (0.89–1.70) $p = 0.217$

[a]The figures in bold were statistically significant and figures in italics had a p-value less than 0.25.
[b]Bivariate analyses perceptions of activities in everyday life.
[c]Multivariate analysis perceptions of activities in everyday life.
[d]Multivariate analyses were performed including the variables that proved to be significant at a level of $p < 0.25$ in step 2 adjusted for the covariates.

between doing things for others and yourself, no control over use of time and energy in different occupations in everyday life, and imbalance in relationships at work and outside work were found to be significant. In the multivariate analyses (steps 2 and 3, Table 3), only the association with imbalance between different occupations in everyday life remained significant even when adjusted for potential covariates in step 3. In step 3, none of the covariates proved to be significant.

Associations between perceptions of occupations in everyday life and perceived stress among men

Among the men associations between imbalance between the occupations in everyday life, imbalance between doing things for others and yourself, and perceived stress were found in the bivariate analyses (step 1, Table 3).

In the multivariate analysis (step 2, Table 3), only imbalance between different occupations in everyday life remained statistically significant among the men. This was also true in the last model (step 3, Table 3) even when adjusted for the covariates, and none of the covariates proved to be significant in this model.

Discussion

The results show a clear association between reporting an imbalance between different occupations in everyday life and both perceived stress and stress-related disorders, as defined in this study, among female as well as male employees. No gender differences were found. These associations were still statistically significant, and of similar magnitude among men and women, after adjustment for several covariates. This is in concordance with the results of other studies of women.[9,15] Living in a situation that creates a perception of such an imbalance thus seems to be associated with stress and could, in the long run, increase the risk of severe stress-related disorders such as depression, anxiety, and/or burnout. Longitudinal studies are needed, however, in order to elucidate whether such a causal relationship exists.

We showed in an earlier study [16] that balance between different occupations in everyday life was important for women's subjective health but not for men's subjective health. A possible explanation for the incongruence in results could be that balance between different occupations in everyday life in this previous study was operationalized in a different way, i.e., as having energy left after work for domestic work, leisure activities, and friends. Using a broader and more general question, as in the present study, may be more

adequate when comparing men with women since there may be gender differences in the perception of what constitutes a desired balance or right mix of occupations.[28] The gender ideology individuals possess underlies the types of occupations in which they engage, and the degree of their engagement. Their ideas concerning engagement and the degree of involvement in occupations constitute their ideal balance between different occupations in everyday life. Most studies of balance have been done among women and little is known about men's perception of balance in everyday life. Further research of men's perceptions of balance between different occupations in everyday life is therefore needed.

In the present study, a gender difference was found concerning imbalance between doing things for themselves and others. Among the women, perceived imbalance between doing things for themselves and others was a risk factor for stress-related disorders, but not among the men. These results confirm the findings of a Swedish study of women recovering from a stress-related disorder.[9] The findings in that study also showed that this balance is important for the individual's feeling of not being exploited. Another qualitative study was based on life histories of women who when they were interviewed were of retirement age, the life stories were about the women's paid and unpaid work, life, and health. The findings showed that it was of importance to balance one's own needs and being there for others.[29] It may be advocated that these results show women's need of being needed and doing something for others. People often act on socially and culturally constructed values and beliefs, and gender ideologies for women may include the ability to create relationships, as well as responding to the demands of always being available for others. Adjusting to other people's time-relative needs, demands, or routines has structured everyday life for many women.[29] However, a qualitative study by Stamm et al. [30] found that, to experience balance, it was important for both men and women to perform occupations that were meaningful for someone else and activities that were meaningful for them. Our results could be interpreted as giving some support to their conclusions. Further studies are needed to test whether or not there are gender differences.

Another interesting gender difference in the present study was that, among the women, working part time was associated with stress-related disorders. This confirms the results of another study, which showed that employees working part time were over-represented among those with stress-related sickness absence.[31] A study from Japan showed associations between working part time and stress among men but not among women.[32] Traditional gender ideologies in western countries cast men as the breadwinners, while women were held to be responsible for domestic occupations. This result of the present study may be a consequence of a more egalitarian gender ideology in Sweden today. This gender ideology implies equal opportunities and responsibilities for men and women.

Studies on how physical activity is correlated to stress-related disorders report varied and sometimes seemingly contradictory findings. Melamed et al. [33] found that subjects who did not participate in sports activities reported medium or high levels of burnout. In contrast, Grossi et al. [13] found no differences in physical exercise between subjects who reported low or high scores of burnout. In a prospective study of leisure time physical activity and mental health in our original 2004 sample of health care and social insurance workers, we found associations between a sedentary lifestyle, i.e. no physical activity, and symptoms of depression and burnout.[34] In the present study, no physical activity was a risk factor for stress-related disorders among the women but not among the men. However, an imbalance between the different occupations in everyday life was a greater risk for stress and stress-related disorders than no physical activity.

The cross-sectional design of the present study limits the ability to infer causality between the studied variables, as already mentioned. Although the assumption is that the perceptions of occupations in everyday life causes stress and stress-related disorders, the reverse may also hold true. The direction of causality could be investigated only by carrying out longitudinal studies in further research.

In the present study, variables related to different occupations in everyday life were included. There are, however, additional factors that are associated with perceived stress and stress-related disorders such as people's financial situation and sleeping disturbances. This possible shortcoming in the present study suggests the need for more research. Another limitation is that the measures of perceptions of occupations in everyday life have not been sufficiently tested for validity and reliability. The results should, therefore, be interpreted with caution. Furthermore, it was a selected population working in the public sector. This may restrict the generalizability of the results, and further studies including people from outside the public sector are needed.

Conclusion

Imbalance between different occupations in everyday life seems to be an important risk factor for perceived

stress and stress-related disorder among both women and men. Imbalance between different occupations in everyday life was a greater risk for stress and stress-related disorders than no physical activity. Another risk factor for women seems to be imbalance between doing things mainly for others and doing things they have chosen themselves.

To enable people to achieve balance between different occupations in everyday life may be a useful way to prevent perceptions of stress and a risk of developing a potentially disabling stress-related disorder and sick leave, and to promote better health and well-being.

However, the present study should be seen as a pilot study. Further studies are needed in other populations to elucidate whether causal relationships exist between perceptions of everyday life, perceived stress, and stress-related disorders, to be able to generalize the results, and to further investigate gender differences.

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Disclosure statement

The authors report that they have no conflicts of interest. The authors alone are responsible for the content and writing of this article.

References

[1] WHO. The world health report 2001: Mental health: new understanding. New hope. Geneva: World Health Organization; 2001.

[2] Nylén L, Melin B, Laflamme L. Interference between work and outside-work demands relative to health: unwinding possibilities among full-time and part-time employees. Int J Behav Med. 2007;14:229–236.

[3] Väänänen A, Kevin MV, Ala-Mursula L, et al. The double burden of and negative spillover between paid and domestic work: associations with health among men and women. Women Health. 2004;40:1–18.

[4] Frone MR. Work-family conflict and employee psychiatric disorders: the national comorbidity survey. J Appl Psychol. 2000;85:888–895.

[5] Canivet C, Östergren PO, Lindeberg SI, et al. Conflict between the work and family domains and exhaustion among vocationally active men and women. Soc Sci Med. 2010;70:1237–1245.

[6] Eklund M, Leufstadius C. Relationships between occupational factors and health and well-being in individuals with persistent mental illness living in the community. Can J Occup Ther. 2007;74:303–313.

[7] Ekstedt M, Fagerberg I. Lived experiences of the time preceding burnout. J Adv Nurs. 2005;49:59–67.

[8] Wilcock AA. An occupational perspective of health. Thorofare: SLACK; 1998.

[9] Håkansson C, Dahlin-Ivanoff S, Sonn U. Achieving balance in everyday life. J Occup Sci. 2006;13:74–82.

[10] Eriksson T, Karlström E, Jonsson H, et al. An exploratory study of the rehabilitation process of people with stress-related disorders. Scand J Occup Ther. 2010;17:29–39.

[11] Sonnentag S, Zijlstra FR. Job characteristics and off-job activities as predictors of need for recovery, well-being, and fatigue. J Appl Psychol. 2006;91:330–350.

[12] Stenlund T, Ahlgren C, Lindahl B, et al. Patients with burnout in relation to gender and a general population. Scand J Public Health. 2007;35:516–523.

[13] Grossi G, Perski A, Evengård B, et al. Physiological correlates of burnout among women. J Psychosom Res. 2003;55:309–316.

[14] Lindblom K, Linton S, Fedeli C, et al. Burnout in the working population: relations to psychosocial work factors. Int J Behav Med. 2006;13:51–59.

[15] Håkansson C, Lissner L, Björkelund C, et al. Engagement in patterns of daily occupations and perceived health among women of working age. Scand J Occup Ther. 2009;16:110–117.

[16] Håkansson C, Ahlborg G. Perceptions of employment, domestic work, and leisure as predictors of health among women and men. J Occup Sci. 2010; 17:150–157.

[17] Håkansson C, Björkelund C, Eklund M. Associations between women's subjective perceptions of daily occupations and life satisfaction, and the role of control. Aust Occup Ther J. 2011;58:397–404.

[18] Glise K, Hadzibajramovic E, Jonsdottir IH, et al. Self-reported exhaustion: a possible indicator of reduced work ability and increased sickness absence among human service workers. Int Arch of Occup Environ Health. 2010;3:511–520.

[19] Bjelland I, Dahl AA, Haug TT, et al. The validity of the hospital anxiety and depression scale. an updated literature review. J Psychosom Res. 2002;52:69–77.

[20] Melamed S, Ugarten U, Shirom A, et al. Chronic burnout, somatic arousal and elevated salivary cortisol levels. J Psychosom Res. 1999;46:591–598.

[21] Melamed S, Shirom A, Toker S, et al. Burnout and risk of cardiovascular disease: evidence, possible causal paths, and promising research directions. Psychol Bull. 2006;132:327–353.

[22] Elo AL, Leppänen A, Jahkola A. Validity of a single item measure of stress symptoms. Scand J Work Environ Health. 2003;29:444–451.

[23] Allebeck P, Mastekassa A. Swedish council on technology assessment in health care (SBU). Chapter 5. Risk factors for sick leave – general studies. Scand J Public Health. 2004;32:49–108.

[24] Eriksen W, Bruusgaard D. Physical leisure-time activities and long-term sick leave: a 15-month prospective study of nurses' aides. J Occup Environ Med. 2002;44:530–538.

[25] Proper KI, van den Heuvel SG, de Vroome EM, et al. Dose response relation between physical activity and sick leave. Br J Sports Med. 2006;40:173–178.

[26] Ginn J, Sandall J. Balancing home and employment: stress reported by social service staff. Work Employ Soc J. 1997;11:413–434.
[27] van der Hulst M. Long workhours and health. Scand J Work Environ Health. 2003;29:171–188.
[28] Wagman P, Håkansson C, Björklund A. Occupational balance as used in occupational therapy: a concept analysis. Scand J Occup Ther. 2012;19:322–327.
[29] Forssén A, Carlstedt G. Work, health and ill health. New research makes women's experiences visible. Scand J Prim Health Care. 2001;19:154–157.
[30] Stamm T, Lovelock L, Stew G, et al. I have a disease but I am not ill: a narrative study of occupational balance in people with rheumatoid arthritis. OTJR. 2009;29:32–39.
[31] Hansson AS, Arnertz B, Anderzén I. Risk factors for stress-related absence among health care employees: a bio-psychosocial perspective – associations between self-rated health, working conditions and biological stress hormones. Ital J Public Health. 2006;3:53–61.
[32] Inoue A, Kawakami N, Tsuchiya M, et al. Association of occupation, employment contract, and company size with mental health in a national representative sample of employees in Japan. J Occup Health. 2010;52:227–240.
[33] Melamed S, Kushnir T, Shirom A. Burnout and risk factors for cardiovascular diseases. Behav Med. 1992;18:53–60.
[34] Jonsdottir IH, Rödjer L, Hadzibajramovic E, et al. A prospective study of leisure time physical activity and mental health in Swedish health care workers and social insurance officers. Prev Med. 2010; 51:373–377.