

Trends in work disability with mental diagnoses among social workers in Finland and Sweden in 2005–2012

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Aims. Social workers report high levels of stress and have an increased risk for hospitalisation with mental diagnoses. However, it is not known whether the risk of work disability with mental diagnoses is higher among social workers compared with other human service professionals. We analysed trends in work disability (sickness absence and disability pension) with mental diagnoses and return to work (RTW) in 2005–2012 among social workers in Finland and Sweden, comparing with such trends in preschool teachers, special education teachers and psychologists.

Methods. Records of work disability (>14 days) with mental diagnoses (ICD-10 codes F00–F99) from nationwide health registers were linked to two prospective cohort projects: the Finnish Public Sector study, years 2005–2011 and the Insurance Medicine All Sweden database, years 2005–2012. The Finnish sample comprised 4849 employees and the Swedish 119 219 employees covering four occupations: social workers (Finland 1155/Sweden 23 704), preschool teachers (2419/74 785), special education teachers (832/14 004) and psychologists (443/6726). The reference occupations were comparable regarding educational level. Risk of work disability was analysed with negative binomial regression and RTW with Cox proportional hazards.

Results. Social workers in Finland and Sweden had a higher risk of work disability with mental diagnoses compared with preschool teachers and special education teachers (rate ratios (RR) 1.43–1.91), after adjustment for age and sex. In Sweden, but not in Finland, social workers also had higher work disability risk than psychologists (RR 1.52; 95% confidence interval 1.28–1.81). In Sweden, in the final model special education teachers had a 9% higher probability RTW than social workers. In Sweden, in the final model the risks for work disability with depression diagnoses and stress-related disorder diagnoses were similar to the risk with all mental diagnoses (RR 1.40–1.77), and the probability of RTW was 6% higher in preschool teachers after work disability with depression diagnoses and 9% higher in special education teachers after work disability with stress-related disorder diagnoses compared with social workers.

Conclusion. Social workers appear to be at a greater risk of work disability with mental diagnoses compared with other human service professionals in Finland and Sweden. It remains to be studied whether the higher risk is due to selection of vulnerable employees to social work or the effect of work-related stress in social work. Further studies should focus on these mechanisms and the risk of work disability with mental diagnoses among human service professionals.

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Introduction

The increasing rate and costs of mental disorders in the working population are major concerns in

industrialised countries (Alexanderson & Norlund, 2004; Wittchen & Jacobi, 2005; Kessler *et al.* 2009; OECD, 2010) and the risk for mental disorders is particularly high among human service professions such as social workers, psychologists and teachers (Wieclaw *et al.* 2006; Samuelsson *et al.* 2013; Kokkinen *et al.* 2014). Social workers, especially in child welfare work, report high job strain, effort-reward imbalance, emotional exhaustion, role conflicts and lack of social support at

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work (Mor Barak *et al.* 2001; DePanfilis & Zlotnik, 2008; Rugulies *et al.* 2009; Tham & Meagher, 2009; Saarinen *et al.* 2012; Aronsson *et al.* 2014). Work-related stressors, particularly job strain, are associated with higher risk of mental disorders (Stansfeld & Candy, 2006; Virtanen *et al.* 2007; Bonde, 2008; Nieuwenhuijsen *et al.* 2010; Stansfeld *et al.* 2012). Wieclaw *et al.* (2006) found that the risk of affective and stress-related disorders was 1.5–2.5 times higher among social workers compared with employees in non-human service occupations. Education and health professionals, including special education teachers and psychologists, were also at risk, but with lower rates than among social workers.

Most previous studies on occupational risks for mental disorders have used self-report data and compared heterogeneous occupational groups (e.g., Stansfeld *et al.* 2013). Only few studies have applied a longitudinal design and used register data to analyse differences between occupations regarding risk of disability pension (Samuelsson *et al.* 2013) or hospitalisation (Wieclaw *et al.* 2006) with mental diagnoses. We are not aware of studies about the relative risk of work disability with mental diagnoses or return to work (RTW) after such a work disability period among social workers compared with other human service occupations.

To address such limitations, we analysed trends in work disability (sickness absence and disability pension) with mental diagnoses in 2005–2012 among 25 000 social workers in Finland and Sweden. In Finland and Sweden, social workers have a university degree, belong to upper-grade non-manual occupations and their job is to assess and facilitate the client's life situation, operate plans to resolve their problems and provide support and guidance to the client in implementing the plan (Statistics Finland, 2001; Statistics Sweden MIS, 2001). We chose preschool teachers, special education teachers and psychologists as reference occupations, because they share job characteristics with social work, such as face-to-face interaction with people who may have social, emotional and mental problems. The occupations were mostly comparable regarding educational level, apart from a lower level in pre-school teachers in both countries, and in Sweden most social workers have a bachelor level education. In addition, we analysed the probability of RTW after work disability with mental diagnoses.

Methods

Two prospective cohort studies were conducted using data from the Insurance Medicine All-Sweden project

(IMAS) (Wang *et al.* 2014) covering the whole working-aged (16–64 years) population in Sweden and the Finnish Public Sector study (FPS) (Kivimäki *et al.* 2004), a large ongoing prospective cohort study including personnel, aged 18–65 years, of 10 municipalities and 21 hospitals in Finland. The FPS cohort comprised employees who had worked at least 6 months for the participating organisations in years 1991–2005 ($N = 151\,901$). From IMAS we used information about the 5 750 278 people aged 16–64 years who lived in Sweden in December 2004. In both cohorts, the employees were linked to nationwide records of sickness absence and disability pension via personal identification numbers assigned to each resident. The registers contain data on beginning and end dates and diagnoses of work disability covering the years 2004–2011 in Finland and 2005–2012 in Sweden.

In the FPS cohort in 2004, there were 81 707 employees who had been employed for at least 6 months in one of the organisations. We selected all employees in one of the occupations ($N = 4899$), and excluded those who were on disability (part-time or full) or old-age pension at baseline at 1st January 2005 or deceased before that. From IMAS, we included all employed in one of the occupations in December 2004 ($N = 133\,083$, no data on turnover available). We excluded those on disability pension (part-time or full) or on long-term sick leave (>1 year) at baseline 1st January 2005.

The occupations were derived from the employers' registers in Finland and Statistics Sweden in Sweden using the occupational classification codes. In Finland, we used the Classification of Occupations 2001 created by Statistics Finland; a revised version of the International Standard Classification of Occupations (ISCO-88) (Statistics Finland, 2001) here referred to as ISCO codes. In Sweden we used the Swedish Standard Classification of Occupations (Standard för svensk yrkesklassificering 1996, SSSYK 96) (Statistics Sweden MIS, 2001). From both cohorts, we included social workers (ISCO code 24461; SSSYK code 2492), preschool teachers (2332; 3310), special education teachers (234; 2340), and psychologists (24451; 2491). In Finland, the final sample ($N = 4849$) comprised 1155 (24%) social workers, 2419 (50%) preschool teachers, 832 (17%) special education teachers and 443 (9%) psychologists. In Sweden, the final sample ($N = 119\,219$) was 23 704 (20%) social workers, 74 785 (63%) preschool teachers, 14 004 (12%) special education teachers and 6726 (5%) psychologists.

Ethics statement

The approval of the Ethics Committee of the Helsinki-Uusimaa Hospital District was obtained for

FPS. The IMAS-project was approved by the Regional Ethical Review Board of Stockholm, Sweden.

Work disability with mental diagnoses

In Finland, data on sickness absence (>9 days) and disability pensions (temporary, permanent, full-time and part-time) was derived from the registers kept by Social Insurance Institution of Finland and the Centre for Pensions, including information on main diagnoses according to the International Classification of Diseases (ICD-10) (World Health Organization, 2010). The employee has to present to the employer a physician's certificate usually from the 4th day onwards after being absent from work. Sickness benefit is paid after 10 days of sickness for a maximum of 300 working days during two consecutive years. After that, the employee is to apply for temporary or permanent disability pension.

In Sweden, information on sickness absence (>14 days) and disability pensions (75% or full-time) were obtained from the Social Insurance Agency, regarding main diagnoses (ICD-10) and start and end dates. The employee has to present a physician's certificate from the day 8 of sickness. Up to 2008, there was no maximum time limit for sick leave, but the duration of sickness absence has since been set at 364 days in the period of 15 months. In cases of serious disease, extended sickness benefit can be granted additionally 550 days (in all 914 days).

To harmonise the data between Finland and Sweden, we analysed spells >14 days in both countries. We examined work disability spells with any mental diagnosis (ICD-10 codes F00–F99) and combined overlapping and consecutive spells, using the diagnosis of the first period. For comparison, we examined trends in work disability with somatic diagnosis (all non F-diagnoses, ICD-10). Specific work disability diagnoses are reported in online Appendix 1.

Covariates

In Finland, the covariates were age, sex, area of residence, chronic somatic disease and work disability with mental diagnoses (ICD-10 codes F00–F99) in 2004. Age and sex were derived from the employers' records. Area of residence was derived from the Population Centre of Finland. These were coded into the Helsinki region (the Finnish capital) and other regions to form two adequately large categories. The presence of chronic somatic disease at baseline was identified from the national health records: (1) The incidence of diagnosed prevalent hypertension, cardiac failure, ischemic heart disease, diabetes, asthma or other chronic obstructive lung disease and rheumatoid

arthritis was obtained from the Drug Reimbursement Register kept by the Social Insurance Institution of Finland; (2) information on malignant tumours diagnosed during the preceding 5 years was obtained from the Finnish Cancer Register covering all diagnosed cancer cases in Finland.

In Sweden, the covariates were age, sex, area of residence, marital status and chronic somatic diseases in 2000–2004. Chronic somatic diseases were identified in 1.1.2000–31.12.2004 from two registers: (1) in- or specialised outpatient treatment (from 2001) with diagnoses for cardiovascular diseases and prevalent hypertension (ICD-10 codes I10, I11, I15, I20, I21, I25), diabetes (E10, E11), asthma or other chronic obstructive lung disease (J41–J45) or rheumatoid arthritis (M02, M05, M06, M08, M13), obtained from the National Patient Register or (2) malignant tumours, obtained from the Swedish Cancer Register. Area of residence had three categories: big city (Stockholm, Gothenburg and Malmö), medium size city (>90 000 inhabitants within 30 km distance from the city centre), and small city or village (≤90 000 inhabitants within 30 km distance from the city centre).

Statistical analyses

First, we calculated separately the cumulative days of work disability with mental diagnoses and with somatic diagnoses per person years in 2005–2011 in Finland and 2005–2012 in Sweden among social workers, preschool teachers, special education teachers and psychologists. The cumulative work disability days comprised sickness absence and disability pension per calendar year. We then examined incident work disability with mental diagnoses and somatic diagnoses by using negative binomial regression models and estimated rate ratios (RR) and their 95% confidence intervals (CI). The risk of work disability was analysed among social workers in reference to preschool teachers, special education teachers and psychologists.

Duration of work disability periods was calculated as days from the beginning of work disability to the date when the employee RTW, was granted an old-age pension (in Sweden 31st December in the year of 65th birthday), died, or end of follow-up. We calculated the hazard ratios (HR) and their 95% CI and used the Cox proportional hazards model to analyse probability of RTW from work disability episodes during the study period. We tested the proportionality hazards assumption by including the interaction of each occupation with work disability duration (Allison, 2000). In the Finnish sample, the interaction was not statistically significant in any case. In the Swedish sample, all interactions were statistically significant ($p < 0.001$). However,

Table 1. Characteristics of the two cohorts

	FPS (Finland)					IMAS (Sweden)				
	Social workers (<i>n</i> = 1155)	Preschool teachers (<i>n</i> = 2419)	Special education teachers (<i>n</i> = 832)	Psychologists (<i>n</i> = 443)	All (<i>n</i> = 4849)	Social workers (<i>n</i> = 23 704)	Preschool teachers (<i>n</i> = 74 785)	Special education teachers (<i>n</i> = 14 004)	Psychologists (<i>n</i> = 6726)	All (<i>n</i> = 119 219)
Sex										
Men	124 (10.7)	81 (3.3)	198 (23.8)	66 (14.9)	469 (9.7)	4206 (17.7)	6200 (8.3)	2733 (19.5)	2037 (30.3)	15 176 (12.7)
Women	1031 (89.3)	2338 (96.7)	634 (76.2)	377 (85.1)	4380 (90.3)	19 498 (82.3)	68 585 (91.7)	11 271 (80.5)	4689 (69.7)	104 043 (87.3)
Age in years										
18–29	141 (12.2)	368 (15.2)	58 (7.0)	62 (14.0)	629 (13.0)	2276 (9.6)	9984 (13.4)	329 (2.3)	279 (4.2)	12 868 (10.8)
30–39	239 (20.7)	794 (32.8)	206 (24.8)	117 (26.4)	1356 (28.0)	6068 (25.6)	22 530 (30.1)	1567 (11.2)	1326 (19.7)	31 491 (26.4)
40–49	375 (32.5)	891 (36.9)	300 (36.0)	115 (26.0)	1681 (34.6)	6798 (28.7)	22 613 (30.2)	3291 (23.5)	1644 (24.4)	34 346 (28.8)
>50	400 (34.6)	366 (15.1)	268 (32.2)	149 (33.6)	1183 (24.4)	8562 (36.1)	19 658 (26.3)	8817 (63.0)	3477 (51.7)	40 514 (34.0)
Marital status										
Married	–	–	–	–	–	11 708 (49.4)	39 513 (52.8)	8996 (64.2)	3561 (52.9)	63 778 (53.5)
Not married	–	–	–	–	–	11 996 (50.6)	35 272 (47.2)	5008 (35.8)	3165 (47.1)	55 441 (46.5)
Type of area of residence										
Big size city ^a	–	–	–	–	–	9670 (40.8)	25 863 (34.6)	4781 (34.1)	3421 (50.9)	43 735 (36.7)
Medium size city ^a	–	–	–	–	–	8526 (36.0)	28 149 (37.6)	5206 (37.2)	2189 (32.5)	44 070 (37.0)
Small size city /villages ^a	–	–	–	–	–	5508 (23.2)	20 773 (27.8)	4017 (28.7)	1116 (16.6)	31 414 (26.3)
Helsinki region	418 (36.2)	1048 (43.3)	343 (41.2)	126 (28.4)	1935 (39.9)	–	–	–	–	–
Other region in Finland	737 (63.8)	1371 (56.6)	489 (58.8)	317 (71.6)	2914 (60.1)	–	–	–	–	–
Total work disability spells during follow-up ^b	1099	2413	649	308	4469	22 549	78 672	10 997	5190	117 408
F-diagnosis	385 (35.0)	486 (20.1)	160 (24.7)	86 (27.9)	1117 (25.0)	8018 (35.6)	19 229 (24.4)	2987 (27.1)	1531 (29.5)	31 765 (27.1)
Non F-diagnosis	714 (65.0)	1927 (79.9)	489 (75.3)	222 (72.1)	3352 (75.0)	14 531 (64.4)	59 443 (75.6)	8010 (72.8)	3659 (70.1)	85 643 (72.9)
Employees with at least one work disability spell during follow up ^b	687 (59.5)	1429 (59.1)	425 (51.1)	210 (47.4)	2751 (56.7)	11 129 (47.0)	37 523 (50.2)	5777 (41.3)	2661 (39.6)	57 090 (47.9)
F-diagnosis	245 (21.2)	336 (13.9)	116 (13.9)	63 (14.2)	760 (15.7)	4981 (21.0)	12 372 (16.5)	1998 (14.3)	995 (14.8)	20 346 (17.1)
Non F-diagnosis	442 (38.3)	1093 (45.2)	309 (37.1)	147 (33.2)	1991 (41.1)	8378 (35.3)	31 455 (42.1)	4641 (33.1)	2105 (31.3)	46 579 (39.1)

Continued

Table 1. Continued

	FPS (Finland)				IMAS (Sweden)					
	Social workers (n = 1155)	Preschool teachers (n = 2419)	Special education teachers (n = 832)	Psychologists (n = 443)	All (n = 4849)	Social workers (n = 23 704)	Preschool teachers (n = 74 785)	Special education teachers (n = 14 004)	Psychologists (n = 6726)	All (n = 119 219)
Employees with chronic somatic diseases before the baseline ^c	76 (6.6)	84 (3.5)	15 (1.8)	24 (5.4)	199 (4.3)	1028 (4.3)	2243 (3.0)	611 (4.4)	294 (4.4)	4176 (3.6)

FPS, Finnish Public Sector Study; IMAS, Insurance Medicine All Sweden.
 Note: Values are n (%) unless stated otherwise.
^aArea of residence: big cities: Stockholm, Gothenburg and Malmö; medium sized cities: cities with more than 90 000 inhabitants within 30 km distance from the centre of the city; small cities/villages.
^bWith work disability spells lasting over 14 days in Finland and 2005–in Sweden. Diagnosis is based on International Classification of Diseases, 10th revision codes F00–F99 (mental diagnosis) and all other diagnosis (somatic diagnosis).
^cIn Finland, chronic somatic diseases or malignant tumours in 2004. In Sweden, chronic somatic diseases in 1.1.2000–31.12.2004 from two registers: (1) in- or specialised outpatient treatment (from 2001).

the Kaplan-Meier curve suggested that the magnitude of the HRs remained over time, supporting the hazards assumption (online Appendix 2). For descriptive purposes, we coded the duration of work disability periods into six categories: <2 months (14–59 days), 2–3 months (60–89 days), 3–6 months (90–119 days), 6–8 months (120–239 days), 8–12 months (240–365 days) and >12 months (>365 days).

In sensitivity analyses we analysed the risk of work disability and probability of returning to work with more specific diagnosis categories. The results are reported in online Appendix 3. We used SAS statistical software, version 9.4 for all analyses.

Results

In the FPS, the proportion of women within the occupations ranged from 76.2% (special education teachers) to 96.7% (preschool teachers) (Table 1); in the IMAS-cohort from 69.7% (psychologists) to 91.7% (preschool teachers). In each occupation, proportion of men was greater in the Swedish population-based data than in the FPS data. Participants were also in general older in the Swedish than Finnish cohort. Preschool teachers were more often younger than 30 years than other employees both in Finland and Sweden. In Finland, more employees were ≥40 years in special education teachers (68.2%) and social workers (67.1%) compared with preschool teachers (52%) and psychologists (59.6%). In Sweden, 86.5% of the special education teachers and 76.1% of psychologists were ≥40 years, whereas age was more evenly distributed among social workers and preschool teachers.

During the study period, 4469 work disability spells were recorded in the Finnish dataset (years 2005–2011) and 117 408 in the Swedish dataset (years 2005–2012) (Table 1). In both cohorts, the proportion of work disability spells with mental diagnoses of all work disability spells was the highest among social workers (Finland 35.0%; Sweden 35.6%) and the lowest among preschool teachers (Finland 20.1%; Sweden 24.4%). In the Finnish sample, a total of 760 participants (15.7%) had at least one spell >14 days with mental diagnoses and in Sweden 20 346 participants (17.1%) (Table 1). Both in Finland and Sweden, about 21% of social workers had at least one work disability spell with a mental diagnosis, while the corresponding figures in other occupations were 14–17%.

In both countries, social workers had the highest rate of work disability with mental diagnoses throughout the study period (Fig. 1), unlike for work disability with somatic diagnoses. At the end of follow up, the rates in Finland and Sweden were 7.24 and 10.46 in social workers, and 3.23–4.35 and 7.08–7.73 in the reference occupations, respectively (Table 2). In Finland,

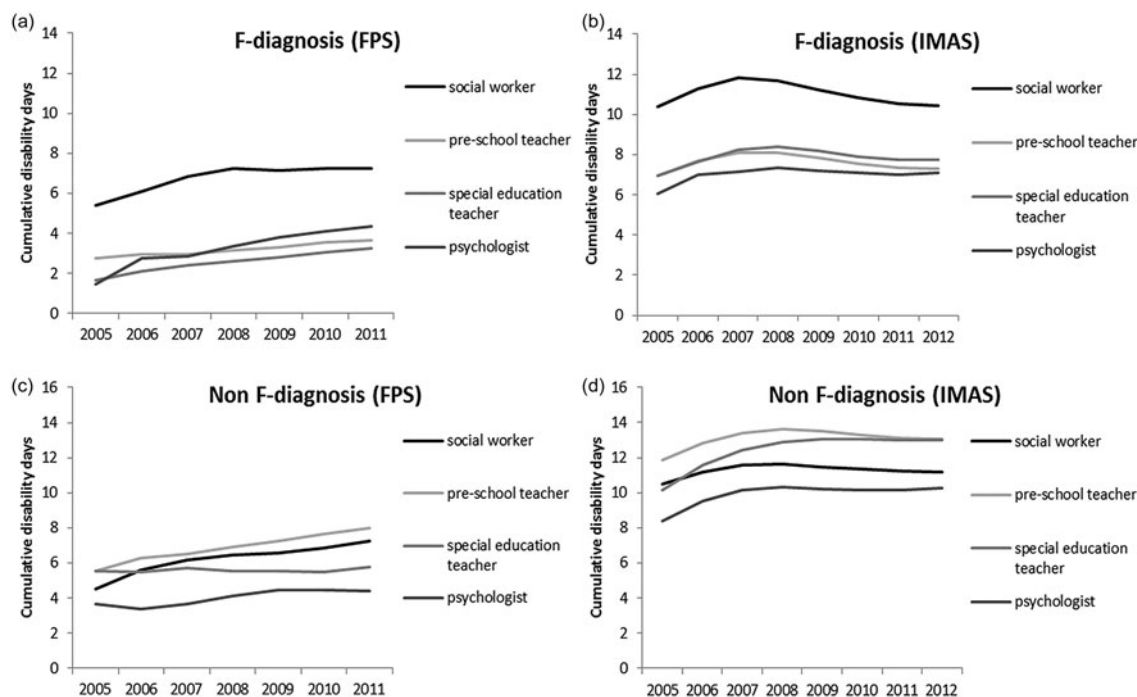


Fig. 1. Cumulative days per cumulative person-years by occupation for work disability with mental diagnoses and somatic diagnoses in FPS (a, c) and IMAS (b, d).

the rates accumulated steadily in all occupations, but in Sweden the rates started decreasing slowly from 2007 to 2008 (Fig. 1).

Risk of work disability with mental diagnoses

In Finland, social workers were 1.77 (95% CI 1.04–2.60) times more likely to have work disability with mental diagnoses than preschool teachers and 1.91 (95% CI 1.08–3.41) times more likely than special education teachers, after adjustment for age and sex (Table 2). After further adjustment for area of residence and either presence of chronic somatic disease or work disability with mental diagnoses in 2004, the higher risk of work disability with mental diagnoses among social workers remained statistically significant only in comparison with preschool teachers. In comparison with psychologists, social workers had a higher risk in the crude model; when adjusting for age and sex the association attenuated to non-significant (RR 1.46, 95% CI 0.73–2.92).

In Sweden among social workers, the risk of work disability with mental diagnoses was 1.43 (95% CI 1.30–1.57) times greater compared with preschool teachers, 1.50 (95% CI 1.31–1.72) compared with special education teachers and 1.53 (95% CI 1.29–1.81) compared with psychologists, after adjustment for age and sex (Table 2). Additional adjustment for area of

residence, marital status and chronic somatic diseases in 2000–2004 did not change the risks markedly.

In additional analyses, men and women were analysed separately in the Swedish sample. In the fully adjusted model, male social workers had a higher risk in relation to psychologists (RR 1.52, 95% CI 1.01–2.30) than female social workers (RR 1.33, 95% CI 1.10–1.61). The risk was higher in female social workers in relation to preschool teachers (female: RR 1.49, 95% CI 1.35–1.63; male: 1.36, 95% CI 1.01–1.83) and special education teachers (female: RR 1.36, 95% CI 1.18–1.75; male: 1.29, 95% CI 0.89–1.86). Due to the low number of men in the FPS cohort, sex-stratified analyses were not conducted.

Duration of work disability with mental diagnoses

In both the Finnish and Swedish cohorts, a large proportion of the work disability spells with mental diagnoses lasted for less than 60 days (71.4% in Finland; 41.0% in Sweden; Fig. 2). Work disability periods of 1 year or longer were more common among Swedish (19.1%) than Finnish (6.3%) employees. In the Finnish sample, the percentage of spells lasting ≥ 3 months was 21.9% in social workers, 18.9% in preschool teachers, 16.1% in special education teachers and 20.8% in psychologists. In the Swedish sample, percentages were 48.3, 53.0, 51.7 and 49.7, respectively.

Table 2. Associations between occupation and work disability due to mental diagnoses in Finland and in Sweden. Social workers are compared separately with each reference occupation

	FPS (Finland)				IMAS (Sweden)			
	Cum. disab. days ^d	Unadjusted model RR (95% CI)	Model 1 ^a RR (95% CI)	Model 2 ^b RR (95% CI)	Cum. disab. days ^d	Unadjusted model RR (95% CI)	Model 1 ^a RR (95% CI)	Model 2 ^c RR (95% CI)
Social workers	7.24				10.46			
v. preschool teachers	3.63	2.37 (1.52–3.70)	1.77 (1.04–2.60)	1.62 (1.04–2.52)	7.32	1.43 (1.30–1.56)	1.43 (1.30–1.57)	1.40 (1.27–1.53)
v. special education teachers	3.23	2.73 (1.55–4.82)	1.91 (1.08–3.41)	1.45 (0.80–2.61)	7.73	1.36 (1.19–1.55)	1.50 (1.31–1.72)	1.46 (1.28–1.67)
v. psychologists	4.35	2.12 (1.06–4.26)	1.46 (0.73–2.92)	1.91 (0.92–3.92)	7.08	1.50 (1.26–1.78)	1.53 (1.29–1.81)	1.52 (1.28–1.81)

FPS, Finnish Public Sector Study; IMAS, Insurance Medicine All Sweden; RR, rate ratios; CI, confidence interval.

^aModel 1 adjusted for age and sex.

^bModel 2 adjusted as model 1 and for area of residence and presence of chronic somatic disease and work disability due to mental diagnoses (ICD-10 codes F00–F99) in 2004.

^cModel 2 adjusted as model 1 and area of residence, marital status, presence of chronic somatic diseases in 2000–2004.

^dCumulative work disability days due to mental diagnoses in 2005–in Finland and 2005–in Sweden.

The Kaplan-Meier curve (online Appendix 2) revealed a modestly higher probability of RTW in preschool teachers compared with employees in the other occupations. However, there was a clear difference in the patterns in the two countries. In Finland, after 3 months of work disability about 80% of the employees had returned to work, in Sweden around 60%.

In the Finnish sample, the HRs for probability of RTW were non-significant in all analysed models (Table 3). In the Swedish sample in the final model, the probability of RTW after work disability with mental diagnoses was slightly higher in special education teachers compared with social workers.

In additional analysis, probability of RTW was analysed separately for men and women in the Swedish sample. In the final model, the differences in HRs were small between men and women, among men the results were all non-significant (HRs 1.00–1.02). Among female preschool teachers, special education teachers and psychologists the HRs were 1.03 (95% CI 0.99–1.06), 1.10 (95% CI 1.04–1.17), and 0.99 (95% CI 0.92–1.07). Low number of male employees prevented sex-stratified analyses in the Finnish sample.

Discussion

Our study on nearly 25 000 social workers in Finland and Sweden showed that they had higher rates of work disability with mental diagnoses compared with preschool teachers, special education teachers and psychologists during years 2005–2011/2012. In preschool teachers, special education teachers and psychologists, the rates were relatively similar to each other at the end of the study period. In Sweden, the risk of work disability with mental diagnoses was higher in social workers compared with each of these professions, whereas in Finland, the risk was higher only in comparison with preschool teachers, after full adjustments. In Sweden, social workers had a small but statistically significant risk of delayed RTW compared with preschool and special education teachers.

Our findings are supported by previous studies that have shown a high risk of mental disorders and work disability in social workers (Wieclaw *et al.* 2005, 2006; Lund *et al.* 2007; Samuelsson *et al.* 2013; Kokkinen *et al.* 2014). In two Danish studies, social workers had a higher risk of affective and stress-related disorders compared with referents matched by age and gender (Wieclaw *et al.* 2005) and non-human service professionals (Wieclaw *et al.* 2006). In the latter study, the risk for either disorder was higher in social workers than in health and education professionals in general, except for a slightly higher risk of affective disorders in female nurses. Other studies have also

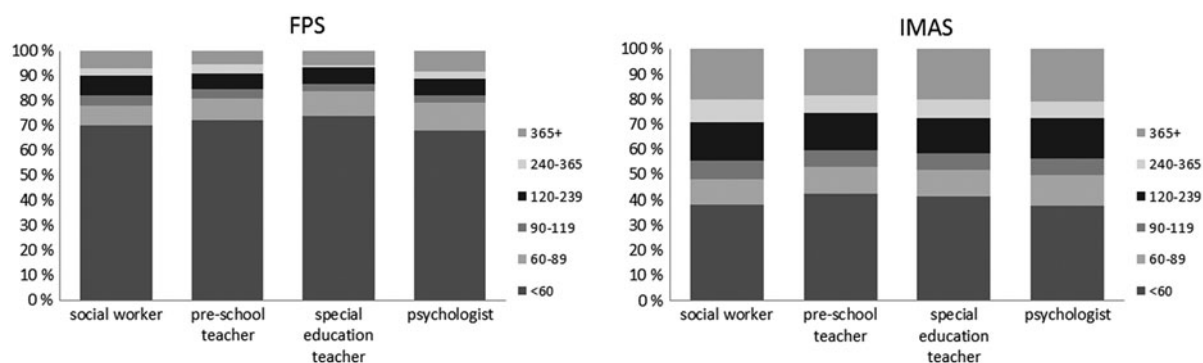


Fig. 2. The duration of work disability spells with mental diagnoses and their proportions of all work disability spells with mental diagnoses in FPS and IMAS.

shown a high risk of mental disorders in nursing and other elementary personal care occupations (e.g., Stansfeld *et al.* 2013). In a Swedish study, higher risk of disability pension with mental diagnoses in social workers and healthcare employees was observed even after controlling for multiple confounding factors, including psychosocial working conditions (Samuelsson *et al.* 2013). Finally, in a recent Finnish study social work, education and health professionals had a 2-fold risk of mental disorders compared with employees in financial services (Kokkinen *et al.* 2014).

It remains unclear whether the observed association in this study reflects causation or selection, or both. Causation hypothesis, meaning mental disorders among social workers is due to work-related exposures, is supported by previous findings indicating that social workers report multiple work-related risk factors (Mor Barak *et al.* 2001; DePanfilis & Zlotnik, 2008; Rugulies *et al.* 2009; Tham & Meagher, 2009), which increase the risk for mental disorders and work disability (Clausen *et al.* 2012; Magnusson Hanson *et al.* 2013). Of human service professions, social workers are the most likely to be forced to give clients negative information, experience conflicts with clients, feel unease towards work and wanting to quit (Jönsson, 2005). Also, turnover is high. According to the selection hypothesis, people vulnerable to mental health issues could be more likely to become social workers. Cross-sectional studies based on self-report have suggested that adverse childhood experiences and a caretaking role assumed as a child may lead to an unconscious motivation to help others in later life (Burnett *et al.* 2006; Nikcevic *et al.* 2007). Among social workers, a caretaking role was associated with burnout, depression and difficulty of seeking help (Siebert & Siebert, 2005). In other human service professionals (eldercare workers), increased prevalence of antidepressant treatment was observed both 10 years before and 4 years after entering human service work, suggesting a selection into the

profession (Madsen *et al.* 2012). Thus, somewhat limited results exist to support both hypotheses and they may not be mutually exclusive. Unfortunately, we had no data on mental health prior to entering work life, thus we could not examine selection into social work in our study.

There is strong evidence for older age (>50 years) and limited evidence for female sex, education, socio-economic status, negative recovery expectations and history of sickness absence as risk factors (Cornelius *et al.* 2011). There were some differences between the occupations in age and sex distributions in our study, however the results remained after adjusting for this. In additional analyses, we analysed the risks for men and women separately. In previous studies, male social workers had a higher risk of mental disorders than female social workers (Wieclaw *et al.* 2006). In our study, the risks were similar for male and female social workers: only in comparison with psychologists the risk of work disability with mental diagnoses was somewhat higher in male social workers.

In our study, special education teachers in Sweden had a slightly higher probability of RTW after work disability compared with social workers. Delayed RTW from work disability with mental diagnoses has been associated with factors such as old age, low education, health risk behaviours, symptom severity, depressive disorder diagnosis and high job stressors (Blank *et al.* 2008). The occupational differences in RTW were modest, but there was a clear difference between the countries with longer duration of RTW in Sweden.

The higher rate of work disability and longer duration of RTW may be explained by the datasets used or different social security systems. Sweden has had more generous and easily accessible sickness benefits than other countries, lighter restrictions on the duration of sickness absence and a higher amount of long-term sickness absences compared with other

Table 3. Associations between occupation and probability of return to work after work disability due to mental diagnoses

	FPS (Finland)				IMAS (Sweden)					
	Number of spells	Unadjusted model		Model 1 ^a		Number of spells	Unadjusted model		Model 1 ^a	
		HR (95% CI)	1 = Referent	HR (95% CI)	1 = Referent		HR (95% CI)	1 = Referent	HR (95% CI)	
Social workers	385	1.15 (0.99–1.33)	1 = Referent	1.07 (0.92–1.25)	1 = Referent	8018	1 = Referent	1.03 (1.00–1.06)	1 = Referent	1.02 (0.99–1.06)
Preschool teachers	486	1.15 (0.93–1.43)	1.18 (0.93–1.50)	1.17 (0.96–1.44)	1.04 (1.01–1.08)	19 229	1.04 (1.01–1.08)	1.09 (1.03–1.15)	1.09 (1.03–1.15)	1.09 (1.03–1.15)
Special education teachers	160	1.06 (0.81–1.39)	1.03 (0.79–1.34)	1.04 (0.81–1.34)	0.97 (0.91–1.04)	2987	0.97 (0.91–1.04)	1.00 (0.93–1.07)	1.00 (0.93–1.07)	0.99 (0.93–1.07)
Psychologists	86					1531				

FPS, Finnish Public Sector Study; IMAS, Insurance Medicine All Sweden; HR, hazard Ratio; CI, confidence interval

^aModel 1 adjusted for age and sex.

^bModel 2 adjusted as model 1 and for area of residence and either presence of chronic somatic disease and work disability due to mental disorder diagnoses (ICD-10 codes F00–F99) in 2004.

^cModel 2 adjusted as model 1 and area of residence, marital status, presence of chronic somatic diseases in 2000–2004.

organisation for economic co-operation and development (OECD) countries (OECD, 2010). In 2005–2007 sickness absences >6 months comprised 50% of all work disability days compared with 10% in Finland and most OECD countries. Since 2003, the rate of sickness absence decreased greatly, but still in 2007, 6% of employees were absent at any time compared with 3% in Finland. In the Swedish sample, work disability rates decreased in all occupations at the turn of 2007–2008. At this time, a benefit reform was introduced with the aim to avoid long-term work disability and to encourage those who were on temporary disability pension to RTW.

Strengths and limitations

This study had multiple strengths: a longitudinal design, large sample, register data (not self-reports) and comparison between two countries and between specific human service occupations. Also, only few studies have previously analysed RTW after work disability.

The differences between the reference occupations enable hypothesising explanations for the different risks in the occupations. For example, the difference in the risk between social workers and psychologists may be due to job characteristics (e.g., responsibility or role conflicts) or resilience for emotional demands from the skills gained through education (e.g., self-care strategies). The occupations were mostly comparable regarding educational level and within occupations, the job contents descriptions were similar between countries. Although information on mental health and behavioural diagnoses may be considered sensitive, national health registers have been shown to provide a reliable measure of those (Melchior *et al.* 2009; Svedberg *et al.* 2010; Ahola *et al.* 2011; Ludvigsson *et al.* 2011; Dewa *et al.* 2014).

Limitations mainly concern differences in the datasets and the available variables. The Swedish sample was population-based, while the Finnish sample comprised public sector employees. Older age is associated with work disability and the average age was higher in the Swedish sample. However, in the analyses we adjusted for age. There were differences in the available variables in the two datasets, which affected the exclusion criteria and the covariates and which have to be taken into account when comparing the results from the two countries. From the Finnish sample, those employees were excluded who were on old-age pension, disability pension, or long-term sickness absence at the beginning of the follow-up, or had been employed in the occupation for less than 6 months in 2004. In the Swedish data, information was not available about old-age pension or duration of employment, otherwise exclusion criteria were

equal. Use of covariates was further limited by the fact that this was a register-based study and the registers contained no data on such potential risk factors as psychosocial work characteristics or employee-related factors, such as history of mental disorders prior to entering work life.

Conclusions

This study shows that social workers are at a greater risk for work disability compared with other human service professionals. Future studies should examine whether this risk is due to selection to social work or causation by work-related stressors.

Supplementary material

The supplementary material for this article can be found at <https://doi.org/10.1017/S2045796016000597>.

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Conflict of interest

None.

Ethical standards

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. The use of a questionnaire acts as a form of written informed consent in the FPS cohort.

Availability of Data and Materials

Data were obtained from the Finnish Public Sector study (FPS), and requests for the FPS data can be made to the principal investigators of the Finnish Public Sector study (tuula.oksanen@ttl.fi; mika.kivimaki@helsinki.fi). The

data from the Insurance Medicine All Sweden project are available from the Statistics Sweden, The National Social Insurance Agency and The National Board of Health and Welfare in Sweden for researchers who meet the criteria for access to confidential data.

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