

Fifty years of research in SJWEH

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Overview of the anniversary papers that have been published so far

1. Fifty years of research in the Scandinavian Journal of Work, Environment & Health.
Burdorf & Rugulies, SJWEH 2024;50(1):3-10, <https://www.sjweh.fi/article/4135>.
2. Asbestos and disease – a public health success story?
Järvholm & Burdorf, SJWEH 2024;50(2):53-60, <https://www.sjweh.fi/article/4146>.
3. Successful prevention of organic solvent induced disorders: history and lessons.
Albin et al, SJWEH 2024;50(3):135-141, <https://www.sjweh.fi/article/4155>.
4. Working hours and health – key research topics in the past and future.
Härmä et al, SJWEH 2024;50(4):233-243, <https://www.sjweh.fi/article/4157>.
5. What have we learned about risk assessment and interventions to prevent work-related musculoskeletal disorders and support work participation?
Kuijer et al. SJWEH 2024;50(5):317-328, <https://www.sjweh.fi/article/4172>.
6. Fifty years of research on psychosocial working conditions and health: From promise to practice.
Boot et al. SJWEH 2024;50(6):395-405, <https://www.sjweh.fi/article/4180>.
7. Five decades of occupational cancer epidemiology.
Turner et al. SJWEH 2024;50(7):489-502, <https://www.sjweh.fi/article/4190>.

Discussion paper



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Scand J Work Environ Health. 2024;50(1):3–10. doi:10.5271/sjweh.4135

Fifty years of research in the *Scandinavian Journal of Work, Environment & Health*

by Alex Burdorf, PhD,¹ and Reiner Rugulies, PhD^{2,3}

Burdorf A, Rugulies R. Fifty years of research in the *Scandinavian Journal of Work, Environment & Health*. *Scand J Work Environ Health*. 2024;50(1):3–10.

Objective The Scandinavian Journal of Work, Environment & Health was launched 50 years ago. In this paper we describe how research topics have changed over time.

Methods A complete list of all 2899 articles in the past 50 years was compiled. Each article was coded for type of exposure, type of health outcome, research design, first author, and country of correspondence address. Count of citations was based on the Scopus database.

Results Overall, the attention for chemical exposure in the first 30 years has shifted towards the psychosocial work environment, shift work, and physical work load. These shifts in exposure are mirrored by increased attention over time for mental disorders and musculoskeletal disorders. Cardiovascular disorders and cancer have been studied consistently over the past 50 years. Researchers from Scandinavian countries have been responsible for about 50% of the Journal's content, while authorship has broadened to about 30 countries in recent years.

Conclusion During the past 50 years, some research topics have consistently remained highly visible in the Journal, whereas other topics have gained or lost interest. In terms of authors' contribution, the Journal has its roots in research from the Nordic countries, but has evolved over time as a truly international periodical with a well-recognized position in research on occupational health.

Key terms history; research trend; trend.

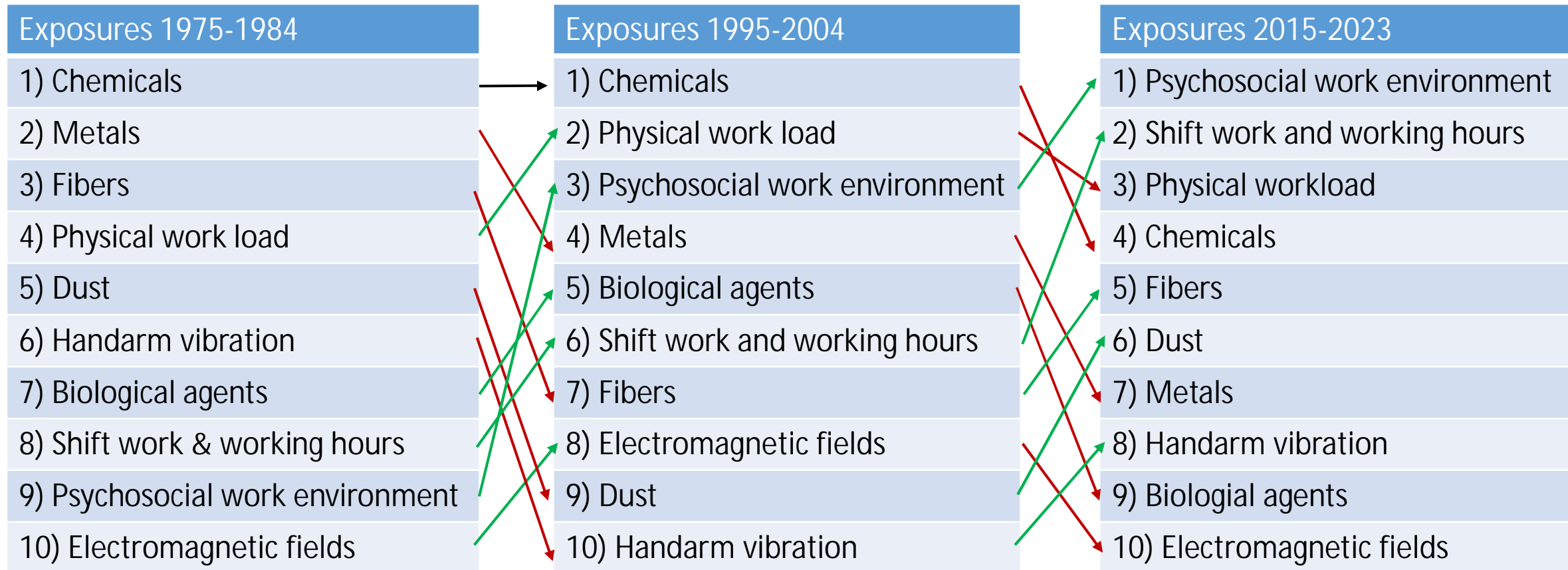
Objective:

- To look back at the papers that were published in the journal during the last 50 years and to describe how topics have changed
 - Changes in work environment exposures.
 - Changes in health outcomes.

Methods:

- Coding of the 2,899 articles that were published in the journal in the past 50 years.

Trends in type of exposure



Trends in type of outcome

Outcome 1975-1984	Outcome 1995-2004	Outcome 2015-2023
1) Cancer	1) Musculoskeletal disorders	1) Mental disorders
2) Circulatory diseases	2) Cancer	2) Musculoskeletal disorders
3) Respiratory diseases	3) Respiratory diseases	3) Circulatory diseases
4) Neurological disorders	4) Circulatory diseases	4) Cancer
5) All-cause mortality	5) Reproductive disorders	5) Injuries
6) Reproductive disorders	6) Neurological disorders	6) Sleep disorders
7) Musculoskeletal disorders	7) Mental disorders	7) Reproductive disorders
8) Mental disorders	8) All-cause mortality	8) Respiratory diseases
9) Injuries	9) Injuries	9) Neurological disorders
10) Sleep disorders	10) Sleep disorders	10) All-cause mortality

- Early days: Focus on chemical exposures and on occupational cancers.
- Recent years: Focus on psychosocial exposures, working time arrangement, and physical workload. With regard to outcomes are now mental disorders and musculoskeletal disorders the two topics with the greatest coverage.
- Chemical exposure and occupational cancer remain at #4 on the exposure and the outcome list, respectively, thus, they have not disappeared, only have become somewhat less prominent than in the early days.

A SJWEH trend or a general trend?

Original article



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Research topics in occupational medicine, 1990–2022: A text-mining-applied bibliometric study

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Sakai K, Nagata T, Mori T, Inoue S, Fujiwara H, Odagami K, Adi NP, Tatemichi M, Mori K. Research Topics in Occupational Medicine, 1990–2022: A Text-mining-applied Bibliometric Study. *Scand J Work Environ Health* – online first.

Objective Occupational health has been influenced by societal and industrial changes. This study aimed to clarify topic trends in occupational health research in 1990–2022.

Methods We conducted a text-mining-adjusted bibliometric study using research titles in occupational health. Data on research titles and the years of publication were collected from 26 peer-reviewed journals on PubMed. Using morphological and correspondence analyses in text mining, we structured research topics into multiple categories and visualized the relationship between all categories and publication years. Statistical analyses were conducted using the text mining software – KH Coder 3.0.

Results We obtained 48 645 articles containing 714 890 words in their titles. The research topics were classified into 4 categories and 17 subcategories, of which those of occupations; countries; non-intervention; psychosocial factors; lifestyle factors; safety; symptoms; therapy and care; and productivity have recently shown an increasing trend. In contrast, the subcategories of risk, chemical factors, disease, and organ damage showed decreasing trends. Chemical factors, which were the main topics in the 1990s, included risk, organ damage, and disease. Productivity, the main topic in the 2020s, co-occurred with lifestyle factors, symptoms, and intervention.

Conclusions Focal areas in occupational-health research shift according to societal trends. Occupational-health research has primarily analyzed issues in developed countries with capitalist values and may not have sufficiently covered issues in developing countries. It is imperative for policymakers and public funding bodies to determine priorities for investigation in the field.

Key terms bibliographic study; bibliometric analysis; industrial medicine; text mining.

- Text-mining of 26 occupational health journals
 - 48,645 articles
 - 714,890 words of titles in articles

Table 1. Characteristics of the research articles. SD=standard deviation.

	Article		Words in title	
	N	%	Mean	SD
Total	48 645	100	12.9	5.0
Publication year				
1990–1994	3104	6.4	10.7	4.9
1995–2009	5435	11.2	11.6	4.7
2000–2004	5516	11.3	12.1	4.8
2005–2009	6974	14.3	12.4	4.8
2010–2014	10 066	20.7	12.9	4.7
2015–2019	10 454	21.5	13.7	5.0
2020–2022	7096	14.6	14.6	5.0
Journals, publication year				
J Occup Environ Med, 1995–2022	5471	11.2	13.6	4.9
Work, 1990–2022	5445	11.2	12.7	4.9
Am J Ind Med, 1990–2022	4772	9.8	12.3	4.5
Occup Environ Med, 1994–2022	4569	9.4	13.4	4.9
Occup Med (Lond), 1992–2022	3548	7.3	9.1	3.8
Int Arch Occup Environ Health, 1990–2022	3270	6.7	14.3	5.0
Scand J Work Environ Health, 1990–2022	2549	5.2	12.5	4.8
Toxicol Ind Health, 1990–2022	2335	4.8	13.5	5.0
Ind Health, 1990–2022	2008	4.1	13.6	4.7
J Occup Environ Hyg, 2004–2022	1981	4.1	13.1	4.9
Int J Occup Saf Ergon, 1995–2022	1646	3.4	13.4	4.6
Int J Occup Med Environ Health, 1994–2022	1554	3.2	13.9	5.7
J Occup Health, 2003–2022	1400	2.9	14.5	4.8
Arh Hig Rada Toksikol, 1990–2022	1264	2.6	11.7	4.7
New Solut, 1990–2022	1209	2.5	10.3	6.0
J Occup Health Psychol, 1996–2022	938	1.9	13.6	4.0
Arch Environ Occup Health, 2005–2022	848	1.7	12.5	4.7
Soc Work Public Health, 2007–2022	751	1.5	13.8	4.4
Saf Health Work, 2010–2022	714	1.5	13.8	4.2
Ann Work Expo Health, 2017–2022	676	1.4	14.2	4.7
J Occup Med Toxicol, 2006–2022	610	1.3	14.8	4.9
Indian J Occup Environ Med, 2007–2022	563	1.2	12.1	5.0
Ann Occup Environ Med, 2013–2022	474	1.0	15.2	5.2
Occup Health Sci, 2017–2022	30	0.1	13.8	3.6
J Workplace Behav Health, 2009–2019	13	0.0	12.7	3.9
Int J Workplace Health Manag, 2010–2021	7	0.0	11.6	4.0

- In the 1990s focus was on chemical factors (lead and asbestos), specific diseases (cancer) and organ damage (lung and respiratory).
- From 2000 to 2022, there was a shift towards psychosocial factors (stress and social), symptoms (pain and mental), and therapy and care (disability and care).
- From 2010 to 2022, productivity gained prominence.
- From 2020 to 2022, biological factors gained prominence (driven by COVID-19 pandemic).

Papers (reviews) with highest number of citations in the 50 year history

Author	Title	Year	Citations
Reviews			
Stansfeld et al (42)	Psychosocial work environment and mental health - a meta-analytic review	2006	1220
Bongers et al (20)	Psychosocial factors at work and musculoskeletal disease	1993	869
Kivimäki et al (43)	Work stress in the etiology of coronary heart disease - a meta-analysis	2006	609
Belkic et al (44)	Is job strain a major source of cardiovascular disease risk?	2004	501
Bøggild et al (45)	Shift work, risk factors and cardiovascular disease	1999	474
Burdorf at al (46)	Positive and negative evidence of risk factors for back disorders	1997	447
Armstrong et al (47)	A conceptual model for work-related neck and upper limb musculoskeletal disorders	1993	446
Van der Hulst (48)	Long workhours and health	2003	413
Hoogendoorn et al (49)	Physical load during work and leisure time as risk factors for back pain	1999	406
Bannai et al (50)	The association between long working hours and health: A systematic review of epidemiological evidence	2014	388

Papers (original) with highest number of citations in the 50 year history

Author	Title	Year	Citations
Original articles			
Kristensen et al (51)	The Copenhagen Psychosocial Questionnaire - a tool for the assessment and improvement of the psychosocial work environment	2005	922
Geurts et al (52)	Recovery as an explanatory mechanism in the relation between acute stress reactions and chronic health impairment	2006	569
Elo et al (53)	Validity of a single-item measure of stress symptoms	2003	514
Demerouti et al (54)	Burnout and engagement at work as a function of demands and control	2001	452
Johnson et al (55)	Combined effects of job strain and social isolation on cardiovascular disease morbidity and mortality in a random sample of the Swedish male working population	1989	401
Ahlstrom et al (7)	The work ability index and single-item question: associations with sick leave, symptoms, and health – A prospective study of women on long-term sick leave	2010	399
Punnett et al (56)	Back disorders and nonneutral work trunk postures of automobile assembly workers	1991	391
Viola et al (57)	Blue-enriched white light in the workplace improves self-reported alertness, performance and sleep quality	2008	341
Theorell et al (58)	Changes in job strain in relation to changes in physiological state – a longitudinal study	1988	338
Vartia et al (59)	Consequences of workplace bullying with respect to the well-being of its targets and the observers of bullying	2001	325

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