



Editorial

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Scandinavian Journal of Work, Environment & Health: 40 years of innovative research with societal impact in the field of occupational health

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Scandinavian Journal of Work, Environment & Health: 40 years of innovative research with societal impact in the field of occupational health

Forty years has passed since the first issue of the *Scandinavian Journal of Work, Environment & Health*. Over these four decades of rapid change in scientific publishing, the Journal has stabilized its position as the top international periodical in Occupational and Environmental Health. Our latest (2014) impact factor is 3.454, with a 5-year impact factor of 4.060. The journal now ranks 21st of 160 journals in the Public, Environmental and Occupational Health category of the Journal Citation Report – and *the best* among more than a dozen occupational health journals on the list.

Authors refer to articles that are important for their own new research. But what makes an important publication in occupational health research? At the very least, it should be an innovative and high-quality publication. One paper alone is rarely responsible for societal impact, but a good one can further catalyze, support, or enhance our understanding of the elements of good practical solutions and cost-effective interventions. The aim of *Scand J Work Environ Health* has always been to promote good and impactful research in the field of occupational and environmental health and safety and increase knowledge through scientific publication.

Over the years, although the goals of the Journal have remained unchanged, scientific focus, research methods, and academic publishing itself have undergone a monumental change.

Looking back, the first paper published in the Journal in 1975 was a review by Anna Maria Seppäläinen (1) on the applications of neurophysiological methods in occupational medicine. At that time, neurophysiological methods were recommended for the research and diagnosis of vibration and exposure to, for example, insecticides, carbon monoxide, acrylamide, and lead. The first issues of the Journal were rich in exposure assessment methodology and toxicology. Likewise, there were many papers related to occupational medicine. In the third issue from the same year, however, a paper did emerge on sleep length and adaption to shift work among Swedish railroad workers (2), varying the content. A study of the distribution of the research topics of 85 “citations classics” (ie, papers with >100 citations) from 1950 to 1997 in five major occupational medicine journals (including *Scand J Work Environ Health*) revealed some interesting findings. While a few citations classics dealing with toxicology were published during each decade, classics concerning solvents appeared only during the 1970s and 1980s, and those dealing with work-related musculoskeletal disorders emerged in the 1980s and increased significantly in the decades thereafter (3).

During the last ten years, the most popular topics in the Journal have been occupational epidemiology, musculoskeletal disorders, and psychosocial factors. These papers also performed better than average with respect to citations (especially psychosocial factors), while papers on, eg, toxicology and respiratory disorders have appeared less frequently and have also been less frequently cited (4). During the last two years (see the “top-cited articles” www.sjweh.fi/list_top_cited.php), many well-cited papers have investigated key issues relating to present working life, factors predicting return-to-work (5, 6), decreased sickness absence (7, 8), longer work careers (9, 10), and higher productivity (7, 11) at work. The solutions studied were often practical interventions related to work modifications and working hours, but also changes in individual, social or lifestyle factors. The evolution of the Journal’s contents seems to reflect the current trends in general occupational safety and health (OSH) research policies (see eg, <http://www.perosh.eu/research-priorities/>). The Journal has come a long way in updating its expertise and focus areas but is still open to all relevant topics in the area of occupational and environmental health. Also toxicology, which the Journal initially targeted, is still an issue in today’s working life. Especially

primary preventive interventions, such as the lowering of the permissible exposure limits, are important even if their cost-effectiveness can be shown only years later. In general, we believe the Journal's future research topics must address questions that can contribute to the resolution of challenges facing today's and tomorrow's working life.

To obtain new knowledge about effective treatments for diseases or prevention strategies, experimental epidemiological methods have been the traditional choice, and the randomized controlled trial (RCT) has been considered as the gold standard. The occupational health problems of today have multiple etiologies, and – to overcome these problems – complex interventions are often needed. Moreover, it is often not sufficient to target these interventions solely at the individual but rather also at the working environment. As has been described in the paper by Schelvis et al (12) in this issue of the Journal, the RCT or a cluster RCT may be a challenging design to adopt in current working life. Other experimental and observational epidemiological designs exist, some of which have been used in areas other than occupational health. These designs offer more flexibility and feasibility for the intervention and are not as sensitive to the loss of subjects in the groups that are followed. Some of the observational methods can effectively utilize routinely collected data, resulting in lower costs and reduced risks of attrition in the studied samples. Many of these designs require sophisticated statistical skills in the analysis of the data, putting demands on the continuing education of researchers in the field. As the authors recommend, researchers carrying out systematic reviews should broaden their inclusion criteria to include these alternative designs, and guidelines should be developed to improve the reporting of studies utilizing such approaches. The use of new designs offers a new platform to examine the effectiveness of workplace and societal interventions. To invite submissions to this area, the Journal will introduce a new section “*Experimental and quasi-experimental studies (quasi-experiments)*”, where reviewers will be invited to comment.

If the scientific content of journals and research methods employed have changed, then the academic publishing landscape itself has been turned on its head. Such upheaval have been driven by technology but also by the increasing number of scholarly and scientific players around the world and concerns relating to the commercial influence on scientific knowledge. According to a 2015 report (13), globally there are up to an estimated 10 000 journal publishers, approximately 5000 of which are included in Scopus. Only 650 English-language publishers – mostly from trade and professional associations – produced 11 550 journals or close to half of the total journal output by title. By the end of 2014, an incredible 28 100 scholarly peer-reviewed journals were in circulation, growing at a rate of 3.5% per year and publishing about 2.5 million articles annually. The US continues to dominate with 23% of output, but China is not far behind (17%) followed by the UK (7%), Germany (6%), Japan (6%), and France (4%).

The biggest area of change stems from the rapid growth of open access (OA) journals. Although they are difficult to define due to the multiple models employed (eg, “gold”, versus “hybrid”, versus green”), at the time of writing, the Directory of Open Access Journals listed 10 477 “gold” or 100% OA titles, from 134 countries, totaling close to 2 million articles (<https://doaj.org/>). *Scand J Work Environ Health* continues to be a “hybrid” journal, which means the Journal has “locked” and “unlocked” content. Authors or their supporting network can purchase OA for EUR1300 per article or some articles are awarded OA status based on merit (eg, Editor's Pick, highly cited paper). In 2014, majority of all *Scand J Work Environ Health* content (including editorials, articles, letters, commentary etc) was OA. The Journal would be eager to “flip” to gold status but unfortunately institutions have been slow to take up [NOROSH membership](#), which comprises OA publishing of all accepted papers from authors affiliated with the organization, and income from the author processing charge (APC) is not enough to cover the Journal's costs. We are not alone in facing this challenge. Without sufficient scale and a low-cost approach, most smaller journals would have to charge APC of anywhere from \$2500 to \$10 000 to cover their costs (13). The challenge going forward is to lower costs and increase output without cutting corners or reducing quality. For a commercially independent journal like *Scand J Work Environ Health*, there is literally no room to maneuver

on revenue. For this reason, we continue to focus on maintaining high quality standards, a responsive and meaningful editorial process, and rapid online publication of articles to attract the best content and the strongest reviewers in the OSH field.

The real dilemma ahead is the trend of funders to insist that authors not only publish OA articles but that they publish them in “gold” journals and, one step further, that authors aim for “green” publishing where feasible. The “green” model is one where, at first sight, it appears like “nobody pays”. The author takes the accepted and post-peer-reviewed paper and self-archives it in a repository. According to the Directory of OA repositories, the number has grown from 128 in 2005 to 2900 in 2015 (13). And while the objective behind “green” publishing is commendable, there is always a price to pay at the end of the day, mostly it will be smaller quality journals like *Scand J Work Environ Health* who will lose subscribers and APC fees. Even the big commercial publishing houses are wary of the “green” trend but at least they have the financial clout, negotiating authority, and economies of scale to manage the pending crisis. For the time being, *Scand J Work Environ Health* continues to be flexible and, with the aim of ensuring accessibility to research, lifts the embargo and all copyright restrictions from articles two years from publication. It is our hope that a two-year embargo will become an accepted standard for “green” publishing.

Eight years ago we concluded in an Editorial that “continuous improvements in quality, relevance, speed, and accessibility are needed to maintain the interest of future authors and subscribers” (14). At that time, we initiated a development strategy for the Journal that, compared to 2008, has almost doubled the impact factor (from 1.820 to 3.454), shortened greatly the average publication time, and increased accessibility through the rapid online publication and the promotion of OA. While the development of the journal continues to evolve, our focus today is on maintaining our high quality by extending and sharpening the Journal’s editorial expertise, the basic foundation of which is an active Editorial Board. In addition, our new strategic goal, is to be more open. Not only in terms of accessibility and increased free content, but also with respect to new authors and ideas, and members of NOROSH. We hope you will continue to support us on this journey as we navigate the unpredictable seas of academic publishing. We welcome your feedback and suggestions on how we can better serve all our stakeholders.

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