Safety and Health at Work 11 (2020) 378–379

Contents lists available at ScienceDirect

Safety and Health at Work

journal homepage: www.e-shaw.net

Letter

Letter to the Study by Hyvönen et al. on Moisture Damage and MCS

Keywords:
Epidemiology
Indoor air
MCS
Moisture damage
Symptoms

A B S T R A C T

Due to the significant methodological problems in the empirical part of the paper and the very selective literature review, the conclusions of the paper are mostly unsupported.

To the editor,

The article by Hyvönen et al. [1] attempt to address the association of exposure to moisture and microbes at their workplace in a hospital with the risk of neurological symptoms and multiple chemical sensitivity. Unfortunately, the empirical part has several major problems and unclear methods, and therefore provides little evidence. Despite of this, in the discussion exaggerated conclusions are drawn from the results.

Authors were able to contact only 13% of the personnel working at the hospital. All of them were symptomatic and most reported several illnesses, e.g. 69% reported to have asthma. The hospital in question has attracted a lot of attention in the national media, and there are also ongoing litigations, which is likely to affect the self-reported symptoms. There were no objective markers of health status and little, if any, exposure assessment (duration, amount or quality of personal exposure).

There are also many problems with the statistical analyses. All persons from the hospitals were female, but only half of the control group. The methods promise a test for the confounding effect of gender, but it is not reported in the results. In addition, other statistical methods are unclear, e.g. the methods speak of Mantel-Hanzel, the result about logistic regression and the table misses the crucial footnote, which might have explained what was really carried out.

Taken together, the low response rate, likely high selection bias and reporting bias, missing exposure assessment and unclear and missing statistical adjustments make the empirical results of the article quite unreliable.

In their review of literature, the article completely neglects the majority of the literature on multiple chemical sensitivity and only concentrates on articles supporting the authors' unidirectional toxicological interpretations. Current knowledge supports the biopsychosocial origin of environmental intolerance, e.g. multiple chemical sensitivity, which is not due to exposure [2–5], but relate to negative expectations and prior beliefs [6]. Thus, multiple chemical sensitivity, other environmental intolerances and functional disorders share common manifestations and nocebo-related mechanisms [6–9]. In Finland, an excess of building-related environmental intolerance is seen, likely due to the raised alertness on dampness-related health risks [10]. Thus, the relationship between microbes and nonspecific symptoms presented in this article should be interpreted with considerable caution.

Based on these very weak cross-sectional data and their biased review of the literature, the authors in their conclusion still propose causality between mould exposure and multiple chemical sensitivity.

Owing to the significant methodological problems in the empirical parts of the article and the very selective literature review, the conclusions of this article are mostly unsupported and it contributes little to current scientific literature.

Conflict of interest

None of the authors have conflict of interest with this letter.

References

[1] Hyvönen S, Lohi J, Tuuminen T. Moist and mold exposure is associated with high prevalence of neurological symptoms and MCS in a Finnish hospital workers cohort. Saf Health Work 2020. https://doi.org/10.1016/j.shaw.2020.01.003.
[2] Das-Munshi J, Rubin GJ, Wessely S. Multiple chemical sensitivities: a systematic review of provocation studies. J Allergy Clin Immunol 2006;118:1257–64.
[3] Azuma K, Uchiyama I, Tanigawa M, Bamba I, Azuma M, Takano H, Yoshikawa T , Sakabe K. Chemical intolerance: involvement of brain function and networks after exposure to extrinsic stimuli perceived as hazardous. Environ Health Prev Med 2019 Oct 22;24(1):61.
[4] Bornschein S, Hausteiner C, Römmelt H, Nowak D, Förstl H, Zilker T. Double-blind placebo-controlled provocation study in patients with subjective Multiple Chemical Sensitivity (MCS) and matched control subjects. Clin Toxicol 2008;46:443–9.
[5] Hetherington L, Battershill J. Review of evidence for a toxicological mechanism of idiopathic environmental intolerance. Hum Exp Toxicol 2013;32:3–17.
[6] Van den Bergh O, Brown RJ, Petersen S, Witthöft M. Idiopathic environmental intolerance: a comprehensive model. Clin Psychol Sci 2017;5:551–67.

DOI of original article: https://doi.org/10.1016/j.shaw.2020.01.003.

2093-7911/$ – see front matter
https://doi.org/10.1016/j.shaw.2020.05.005

[7] Bailer J, Witthöft M, Paul C, Bayerl C, Rist F. Evidence for overlap between idiopathic environmental intolerance and somatoform disorders. Psychosom Med 2005;67:921–9.
[8] Eis D, Helm D, Mühlinghaus T, et al. The German multicentre study on multiple chemical sensitivity (MCS). Int J Hyg Environ Health 2008;211:658–81.
[9] Szemerszky R, Köteles F, Lihi R, Bárdos G. Polluted places or polluted minds? An experimental sham-exposure study on background psychological factors of symptom formation in 'Idiophatic Environmental Intolerance attributed to electromagnetic fields. Int J Hyg Environ Health 2010;213:387–94.
[10] Karvala K, Sainio M, Palmquist E, Claeson AS, Nyback MH, Nordin S. Building-related environmental intolerance and associated health in the general population. Int J Environ Res Public Health 2018;15:2047.

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16 March 2020
Available online 12 June 2020