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Letter to the Editor

Cognitive therapy in sick building syndrome: Myths, beliefs or evidence

Dear Editor,

With interest, we read a recently published article by Vuokko et al. (2015) involving indoor air problems. We thank the authors for raising very important questions related to multiple health problems caused by poor indoor air.

Currently, Sick Building Syndrome (SBS) is not considered as an enigmatic condition (Zhang et al., 2012). On the contrary, it has gained a lot of interest from immunologists worldwide. The SBS issue has been addressed on separate sessions every second year at the international symposia entitled “Autoimmunity” with several thousands of participants including clinical immunologists and basic scientists. Using advanced biochemical, immunological and genetic techniques it has been extensively documented that many substances indeed may shift the homeostasis towards morbidity status. The SBS has been now linked to an umbrella condition called Autoimmune Inflammatory Syndrome Induced by Adjuvants (ASIA) (Perricone et al., 2013). Thus, by definition, this condition causes somatic disorders, and psychological problems occur as a secondary outcome.

In our opinion negative results should be published in order to minimize scientific biases. However, in relation to this article, we want to express some concerns about the study design, the results and finally about the conclusions.

1. The authors enrolled a heterogeneous group of patients with regards to final diagnoses, confounding factors, the time of the diagnosis of unrelated diseases, the intensity and the duration of the exposure to environmental hazards, and concomitant treatment. It has been accepted (also by the Finnish expert group Majvik II, 2007), that avoidance of potential hazardous agents and total load reduction are the basics of treatment modalities. Why do the authors base their “treatment option” on the opposite opinion, stating e.g. “Avoidance behavior may lead to symptom exacerbation”?
2. What was the authors’ hypothesis about the benefits of the mindfulness-based cognitive therapy (MBCT)? How does this therapy fit into pathophysiology of the SBS? Will the MBCT treatment lessen intoxication when inhalation of toxic mycotoxins has happened? Or will it alleviate immunological imbalance or minimize oxidative stress or restore the metabolic dysfunction on the cellular level, the consequences of the sensitization to dampness molds (reviewed by Hope, 2013). By all means, new reasonable treatment alternatives should be considered if they are scientifically justified. But, as far as we are aware, large, controlled and randomized trials performed during several years do not support the choice of

MBCT for the treatment *per se* for the SBS patients (The Danish Research Center, 2015).

3. We missed the description of the medical examination protocol for the patients although lung function tests have been well described. As reported in scientific literature, the SBS or dampness and mold hypersensitivity syndrome may involve multiple organs and may not be limited to airway dysfunctions only. On what basis do the authors assume that the majority of the symptoms were “functional” or “medically unexplained symptoms”, MUS?
4. The authors wrote “*corroborated by several earlier studies, symptoms may persist despite building remediation*”. Do the authors have an explanation: why this may happen? Do the authors believe that remediation can always be complete and that the source of the poor indoor air can always be removed? How effective can these measures be and what are the tools to assure that remediated building is safe? Do the authors believe that the persistence of the symptoms indeed is related to improper cognition instead of continuously poor quality of indoor air? The authors cited the work of Edvardsson et al. (2008) to support their views. However, Edvardsson et al. wrote “*we confirmed that there was no statistical association between personality factors or coping resources and the analyzed risks*”. The major point of the Edvardsson’s work was that the shorter the exposure to poisons and the quicker the avoidance, the better prognosis for the patients. On the contrary, when the avoidance was delayed, the patients may end up with work disability.
5. On what basis did the authors make the final conclusion that the results suggest that MBCT could be helpful in the treatment protocol of SBS? It seems that the results of their study do not substantiate this conclusion.

With this letter, we would like to pursue discussions on the rationale of the treatment options for SBS patients. Certainly, high quality studies on this topic are desperately needed.

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