Healthy Indoor Environments: The Need for a Holistic Approach

Indoor environments have a large impact on health and well-being, so it is important to understand what makes them healthy and sustainable. There is substantial knowledge on individual factors and their effects, though understanding how factors interact and what role occupants play in these interactions (both causative and receptive) is lacking. We aimed to: (i) explore interactions between factors and potential risks if these are not considered from a holistic perspective; and (ii) identify components needed to advance research on indoor environments. The paper is based on collaboration between researchers from disciplines covering technical, behavioural, and medical perspectives. Outcomes were identified through literature reviews, discussions and workshops with invited experts and representatives from various stakeholder groups. Four themes emerged and were discussed with an emphasis on occupant health: (a) the bio-psycho-social aspects of health; (b) interaction between occupants, buildings and indoor environment; (c) climate change and its impact on indoor environment quality, thermal comfort and health; and (d) energy efficiency measures and indoor environment. To advance the relevant research, the indoor environment must be considered a dynamic and complex system with multiple interactions. This calls for a transdisciplinary and holistic approach and effective collaboration with various stakeholders.