

Paul A. Schulte, Ph.D.
Director, Division of Science Integration
National Institute for Occupational Safety and Health
Centers for Disease Control and Prevention
United States
PSchulte@cdc.gov

Future perspectives on the impact of technology on work and occupational health and safety.

Introduction

It is clear that the nature of work, the workforce, and the workplace are changing rapidly, differently, and to a greater extent than in the past. Waiting until these effects are fully revealed could be highly problematic and inadequate. The future can be influenced but it requires action now. There is need for strategic foresight to anticipate and even shape the future of work and the occupational safety and health (OSH) response.

Materials, methods, approaches

Three streams of information were evaluated to identify future perspectives on the impact of technology on work and OSH. These included: a systematic review of the peer-review and gray literatures published from 1999-2019 to identify scenarios of the work of the future and hazards related to them (Schulte et al. 2020); and two workshops: one in 2020 with 45 participants with expertise in training OSH professionals of the future (Felknor et al. 2020); and one in 2021 with 53 participants with expertise in OSH research and practice (Felknor et al. 2021).

Results

The main theme that runs through the literature and expert assessments are that technology (along with other factors such as globalization, demographics, and climate) will change the nature of work and the workplace. The pace of these changes signal an urgent need for a proactive approach to understand the potential effects of new and emerging workplace hazards on worker health and safety and wellbeing. There is a need to understand work organization and employment models that best support decent work and improved worker health and safety. Technology was identified in the literature as the primary driver of the future of work scenarios.

There are divergent views about whether technology will create more or fewer jobs than it displaces. The consensus is that at least in the short-term, jobs will be lost which will lead to precarious employment situations and resultant stress for workers. Psychosocial hazards are predicted to be the major adverse exposure for workers. A paradigm shift will be needed for OSH research and practice in the future. This shift will need to include more efforts that embrace key stakeholders and approaches that utilize an expanded focus on hazards and preventive measures. The focus should include research that addresses the integration of work with personal, social, and economic factors and addresses issues all along the working life continuum. To better consider these factors there is a need for an over-arching concept such as "well-being". There is a rich and growing literature on the concept of well-being that may serve as a framework and goal for OSH research and practice. Well-being has long been

used as a conjunctive phrase “...and well-being”, however, for future use it needs to be operationalized for use in research, practice and policy. Additionally, two other overarching concepts are increasingly being promoted: systems thinking and a transdisciplinary approach. System thinking involves understanding the interconnections in complex systems. A transdisciplinary approach integrates a range of disciplines and research methods to achieve systems thinking.

Summary, Conclusion, Recommendations

The description of scenarios of the future of work provides an expansive future vision of the influence of technology but rarely focuses on task level scenarios or goes beyond manual and cognitive descriptors of work. Clearly technological advances are increasing exponentially, and technologies are becoming more “sentient.” Nevertheless, the impact of technology is not inevitable and can be shaped by planning and social and political control.

The anxiety and stress of precarious or intense work in the future appears to be driving factors for adverse health effects. The OSH field will need to be promote lifelong learning, reskilling, and upskilling to help prevent these effects.

The impact of technology will not occur everywhere in the world in the same way and different approaches to addressing it will be needed. While work will change many of the traditional hazards known to the OSH field will still be present and will need to be addressed.

In summary, the OSH field will need a broader paradigm to address the impact of technology on the future of work scenarios. However, technology is not the only factor that this paradigm should address. There is need to prepare for the impact of globalization, demographic transitions, and climate change. The paradigm needs to be holistic and comprehensive.

References

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