

Peer Review

Review of: "Evolution of Occupational Health: From Industrial Medicine to the Digital-Era"

Francesca Sgobbi^{1,2}

1. DIMI, University of Brescia, Italy; 2. Dinamia/CET, ISCTE-Instituto Universitário de Lisboa, Lisbon, Portugal

The paper addresses a highly relevant topic, namely the evolution of Occupational Health (OH) in relation to socio-economic and technological change. The perspective adopted is timely and potentially valuable, particularly in light of the ongoing transformation of work driven by digitalisation and platform-based models. However, some conceptual and framing issues need to be addressed to improve the paper's clarity, robustness, and contribution to the literature.

Strengths

A major strength of the paper lies in its focus on the dynamic nature of OH, which is framed not as a concept requiring continuous proactive and reactive adaptation to the evolution of socio-economic and technological systems. In addition, the paper attempts to provide an interpretive framework for the evolution of OH over time in response to broader systemic shifts. This historical and systemic perspective is useful and potentially impactful, provided it is more solidly grounded.

Major issues

1. Structure and interpretation of the "five phases"

The authors claim to identify five phases in the evolution of the OH paradigm. However, what is described in the paper appears more consistent with three phases or periods (the 1st, 3rd, and 5th), separated by two critical events (the 2nd and 4th), rather than five distinct phases. This ambiguity affects the internal validity of the framework: it is unclear whether the model is meant to describe structural periods or punctuated shocks.

Moreover, while the paper discusses how Event 2 influenced Phase 3, the emergence of Events 2 and 4 is not explained. They seem to appear "out of the blue", without being clearly rooted in social, economic,

technological, or institutional transformations.

Clarifying whether these are phases or events, and systematically explaining their origins and drivers, would significantly strengthen the paper.

2. Positioning within the existing literature

Given that the evolution of OH is a long-debated and well-established topic, the manuscript would benefit from a much stronger positioning within the existing literature. In particular, the paper should establish a clearer connection between the stages and milestones of the proposed evolutionary framework with existing historical, sociological, and institutional analyses of OH. This effort would also help resolve the ambiguity mentioned above concerning phases versus events by linking them to recognised streams of research.

3. Passive view of social actors

Workers and employers are portrayed as passive recipients of exogenous decisions concerning OH, driven mainly by institutions, regulation, or technological change. This representation is problematic. Both actors, and particularly workers by means of trade unions, have played an active role in shaping OH policies and practices, including in post-industrial and service-based contexts. By ignoring this dimension, the paper oversimplifies the governance of OH, underestimates the role of conflict, negotiation, and collective action, and reduces the explanatory power of the framework.

4. Treatment of platform-based and digital jobs

The discussion of platform-based jobs and freelance digital work needs additional clarifications. Whilst these forms of work are comparably new and theoretically attractive, the authors should acknowledge that

- they still involve a minority share of the workforce in most countries;
- they are far from homogeneous in terms of OH risks and protections. For instance, food delivery workers are de facto workers exposed to physical risks and algorithmic control, whereas software developers or digital freelancers are closer to professional occupations, with very different OH profiles;
- regulatory frameworks accounting for these new forms of work already exist in many countries (e.g., within the EU, incorporating or anticipating the EU Directive mentioned in the paper). This suggests that institutional adaptation is more advanced than the paper seems to imply.

Minor issues and formal aspects

- There are some repetitions, particularly between pp. 5–6 and 6–7.
- Figure 1 is not referred to or discussed in the text.
- Some acronyms are defined more than once (e.g., WHA), whilst others are defined inconsistently (e.g., OH is defined only on p. 5).
- There are unexpected bold characters in the text.

Declarations

Potential competing interests: No potential competing interests to declare.