La Medicina del Lavoro

Editorial

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Hey James, Write an Editorial for "*La Medicina del Lavoro*"

Last year, *Nature* reported that some scientists were already using chatbots as research assistants – to help organize their thinking, generate feedback on their work, assist with writing code and summarize research literature [1]. A chatbot named James authored several paragraphs of this editorial using Artificial Intelligence (AI) and a Large Language Model or Logic Learning Machine (LLM). We checked for possible plagiarism, obtaining the following assessment: "It looks 100% original. We found no matching text in our databases or on the internet".

As technology and industry advance, we cannot ignore their ongoing impact on workers' health and safety. It is, therefore, crucial to have a platform that addresses the complexity of work-related illnesses and injuries. "*La Medicina del Lavoro*" provides just that. The journal, established in 1909[1], has been instrumental in disseminating research, editorial reviews, and news of new technologies and laws that have improved the quality of health services for over a century. Today, its contributions are equally essential in promoting wellness and reducing workplace hazards. The range of topics covered by the journal is broad and includes occupational ergonomics, environmental health, occupational toxicology, and psychological health at work, to name a few. These topics demonstrate the scope of concern for occupational health matters.

Many work-related illnesses and injuries are complex, requiring a multi-disciplinary approach. Work settings have specific factors affecting workers' health; thus, evaluation and intervention should be tailored to the workplace. The journal encourages cross-disciplinary collaboration, which facilitates sharing of knowledge and expertise from various fields, such as occupational medicine and toxicology, epidemiology, and microbiology. As the official journal of the Italian Society of Occupational Health, it is committed to ensuring research integrity and the standards of leading publications providing valuable insights into the crucial intersection of work, environment, and health. It covers everything from occupational health to environmental sustainability, highlighting the importance of addressing these issues in the workplace.

Addressed topics include environmental sustainability, occupational hazards, and workplace safety. These articles emphasize the importance of a holistic approach to workplace health and safety, which involves addressing physical and psychological factors.

As employers strive to create healthier and safer work environments, it is crucial to consider the interplay between work, environment, and health. By adopting evidence-based policies that prioritize employee well-being, reduce occupational hazards, and promote environmental sustainability, workplaces can create a more productive, healthy, and resilient workforce. The journal also keeps up with changes in the field, such as the effects of COVID-19 on the workforce, the issue of remote work, and the implications of new technologies, such as artificial intelligence and robotics, on occupational health. Such new frontiers will certainly impact occupational health and safety. The journal remains relevant to the present and undaunted by future challenges.

Using artificial intelligence (AI) in occupational health and safety (OHS) can have numerous benefits. For example, AI can help identify and mitigate potential workplace hazards with machine learning algorithms and predictive analytics, which can analyze data from various sources such as sensors, employee feed-

1. The current title, "*La Medicina del Lavoro*," was adopted in 1925 to coincide with the discipline's official denomination for courses, congresses, and teaching licenses. Despite a new name – the first issue of "*Il Lavoro*" had been published in 1901 – it was labeled as volume 16 to express its continuity with "*Il Lavoro*" (WW1 and other reasons account for eight volumes and hence years missing in the collection). Therefore, James extrapolated the journal's foundation's date to 1909, considering that in 2023 we are publishing volume 114.

back, and other sources. This can help OHS managers to make informed decisions about workplace safety measures, equipment maintenance, and protective equipment to reduce the risks of accidents and injuries. AI can also help identify patterns, predict potential hazards, and provide real-time insights into workplace safety for immediate attention. This can help companies to minimize the likelihood of accidents or near-misses and improve the overall safety culture of the workplace.

But is there a dark side? Could something go wrong? Can LLM allow deeper insight or even discovery? While these tools may enhance efficiency and reduce errors, they may pose potential hazards to authors [3]. A primary hazard is the lack of human input and decision-making. AI-based systems may be unable to understand nuances and context within scientific writing or make incorrect decisions, leading to errors or misleading information.

This, in turn, could decrease the quality of scientific papers and may affect their credibility and impact. While these systems may seem innovative and efficient, they also have the potential to exacerbate errors and bias while stifling creativity in the scientific community. Moreover, relying on AI deprives authors of opportunities to learn and grow from their mistakes. When authors do not receive feedback from a human editor, they lose the chance to understand their errors fully and may not learn how to avoid them in future work.

Scientific research is advancing at an unprecedented pace, and as a result, the volume of academic literature is expanding exponentially. This growth in academic articles creates difficulty for academic editors to keep up with it. AI- and LLM-based editorial assistants promise to streamline the scientific publishing process. However, this innovation implies hazards that also editors need to consider. One of the potential hazards of AI-based editorial assistants is their ability to perpetuate bias. AI-based assistants are trained using existing data and pre-existing patterns, which can be biased. As a result, they might perpetuate the same bias during the submission and review process, leading to a biased review of the manuscript.

AI-based editorial assistants have incredible potential to transform scientific publishing. Still, the editorial process requires stringent checks and balances to ensure the quality of the published work. Misconduct must be ruled out in scientific papers, which are potentially affected by: (i) Plagiarism (presenting someone else's work or ideas as one's own): proper citation and attribution are crucial in scientific writing; (ii) Fabrication or falsification (manipulating or selectively presenting data to fit one's hypothesis or to achieve desired results); (iii) Misleading or inaccurate claims (researchers' personal beliefs and interests might impede an objective and balanced viewpoint in conclusions which should be both accurate and supported by evidence).

In addition to misconduct sanctioned by deontological rules, two ethical issues must be considered: (ii) Duplicate or redundant publication (it is unethical to publish the same work in multiple publications without proper disclosure or permission); (ii) Informed consent (studies involving human subjects require properly informed consent), safeguarding patients' privacy and autonomy.

Misconduct in scientific writing could have serious consequences, such as loss of reputation, loss of funding and employment, and in some cases, legal action. Thus, researchers must abide by ethical standards and principles in scientific writing, ensuring the integrity and credibility of scientific research.

Although OpenAI has tried to put guard rails on what the chatbot will do, users are already finding ways around them. Some preprints and published articles have credited ChatGPT with formal authorship [4-5]. Such a rapidly evolving situation led *Nature* to establish two rules which also our journal will follow: (i) No AI-based tool will be accepted as a credited author on a research paper because any attribution of authorship carries with it accountability for the work, and AI tools cannot take such responsibility; (ii) Researchers using AI-based tools should document this use in the methods or acknowledgments sections. For papers not including these sections, the introduction or another section can be used to document the use of AI, as I did in the first paragraph of this editorial. Can we detect text written using LLM? Perhaps, a cumbersome and time-consuming analysis could distinguish some peculiar characteristics of LLM, but ultimately, we expect transparency, integrity, and truth from our authors. This is, after all, the foundation that science relies on to advance [2].

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