Guest Editorial

Artificial Intelligence in scientific writing and research publication: A paradigm shift in language inclusivity

Muhammad Osama
Foundation University College of Physical Therapy (FUCP), Foundation University Islamabad (FUI), Islamabad, Pakistan
E-mail: osamadpt@gmail.com

It is truly humbling to be part of the esteemed editorial board of the *Journal of Back and Musculoskeletal Rehabilitation*, a publication I've admired for a long time and have been dedicated to as a reader. I'm deeply grateful for the chance to offer editorial input for the latest edition of the journal. Coming from a Low- and Middle-Income Country (LMIC) where English isn't the primary language, I feel compelled to address a challenge faced by many researchers and professionals in similar linguistic settings. It is obvious that effective communication is vital for sharing ideas, knowledge and findings [1,2], but the language barrier impedes the capacity of researchers especially in non-English speaking countries to communicate their findings efficiently [1,3,4]. In fact, studies have shown that English hegemony can adversely influence equity in the realm of scientific research and publication [3,4], with research productivity being significantly correlated with English proficiency [1,5]. Native English speakers are more capable of expressing their opinions effectively [6], whereas non-English speaking authors may experience difficulty in doing so, finding it challenging to cope with grammar and syntax related issues and the use of appropriate vocabulary [1,3,4]. The difficulties experienced by authors are also relevant in the context of the publication process as English is the primary language in over 90% of scientific publications, with high ranking journals imposing strict language requirements [1,3]. A study published in 2022 highlights these difficulties and reveals that 43.5% of doctoral students experience

rejection or require revisions of their manuscripts due to poor English grammar and syntax [3]. Even though translation and editing services are available, they are costly and can further exacerbate inequalities between researchers, which is of even greater significance in the context of researchers from LMICs [1,3]. To ensure equitable representation of non-native English speakers in the scientific research and publications, it is imperative to address these language barriers [1,3,4], and Artificial Intelligence (AI) emerges as a comprehensive solution to these problems.

Beyond generative AI, researchers also find AI beneficial in various aspects of scientific writing, such as translation of one's work into English using Neural Machine Translation models, exemplified by applications such as Google Translate. It is imperative to point out that individuals typically think in their native language, before their thoughts can be translated into English [7]. Not being able to think and express in their own language, results in a loss of nuance and clarity. These translation models however, enable an individual to formulate and express ideas more effectively in their native language, and then later on translate their message into English resulting in enhanced understanding and engagement. Researchers, for whom it is easier to articulate their ideas verbally, can use speech-to-text transcription models such as Otter.ai and Google's Live Transcribe. Moreover, speech-to-text transcription models can also be used for data collection in qualitative research.

In the context of AI-driven language models, ChatGPT from OpenAI takes center stage, serving as a versatile writing companion [1,2]. However, in addition to ChatGPT, other AI-driven writing assistants such as Grammarly, Paperpal and ProWritingAid can be used for grammar and syntax refinement. Serving as punctilious proofreaders, these tools elevate the overall quality and clarity of written content [1,2]. By delegating the writing tasks to AI, researchers can concentrate on more important tasks such as data analysis and experimentation [1,2]. Studies have shown that generative AI models such as ChatGPT are capable of generating text and even drafting scientific abstracts in response to user prompts, which is indistinguishable from content written by humans [8,9,10]. Moreover, tools such as ChatGPT, SummarizeBot, and SMMRY can also be used to summarize large bodies of text.

Lastly, several tools such as EndNote, Zotero, and Mendeley can be used to cite relevant sources and research papers when writing manuscripts to avoid plagiarism. Such reference management tools utilize AI algorithms to facilitate researchers by automating the handling of references and bibliographies, ensuring adherence to different citation styles, which can be changed and adopted through the click of a button, ultimately saving researchers valuable time. Furthermore, tools such as Turnitin and Grammarly Plagiarism Checker utilize AI algorithms to ensure the originality of the research work as they are capable of detecting plagiarism, and assist authors in adhering to ethical standards in scientific writing. Although AI holds promise in terms of facilitating scientific research, it is imperative to acknowledge its limitations as well [1,2]. It has been reported that to date, AI is not able to conduct independent research and lacks contextual intelligence [1,2]. Researchers are advised to always verify the information generated by AI models and also scrutinize the text for authenticity and plagiarism, with appropriate citations [1,2].

While AI technology has its benefits, experts are closely examining the long-term implications and concerns about potential misuse, which has led to the development of policies regulating the use of AI-driven language models such as ChatGPT [1,2]. Journals and publishers, including Sage, IOS Press and Elsevier, have updated their policies regarding co-authorship with AI programs and the inclusion of AI-generated text and images [11,12,13]. They explicitly state that labeling AI or AI-assisted technologies as authors or co-authors is not appropriate due to the specific responsibilities associated with human authorship [11,12,13]. A posi-

tion statement by the Committee on Publication Ethics (COPE) emphasizes that AI tools do not meet authorship criteria and stresses the importance of authors being transparent when using AI in manuscript writing [14]. Generative AI tools such as ChatGPT are recommended for improving readability and language, but there are limitations on including figures, images, or graphics produced by these tools, as outlined in guidelines from the majority of publishers [11,12,13]. Journal and publisher guidelines also require authors to disclose the use of AI in their manuscript [11,12,13]. According to the International Association of Scientific, Technical and Medical Publishers (STM), AI tools are allowed for basic author support such as refining, correcting, editing, and formatting text and documents without disclosure, but disclosure becomes necessary when the use goes beyond basic author support [15]. In essence, AI holds great potential in terms of assisting non-native English-speaking researchers in creating superior scientific manuscripts. Although it offers substantial benefits, it is imperative to be aware of its limitations and ethical considerations. AI should be viewed as a tool to enhance, not replace, human expertise, prompting researchers to use it cautiously and ensure the integrity of their work.

Lastly and importantly, I was also tasked with choosing an article from this issue for the Editor's Choice award to be made freely available. The article authored by Liu and Kim [16] stood out to me, as it delves into the effectiveness of kinesio-taping for correcting posture in persons with increased thoracic kyphosis. The study's findings indicate that taping can promptly correct thoracic kyphosis by significantly reducing anterior-posterior and vertical movements, particularly when employing 40% elongation taping. Its significance lies in providing insights into effective interventions for enhancing postural correction in persons with increased thoracic kyphosis, highlighting the immediate corrective effects of taping and its potential to be used as a supplementary approach alongside postural correction exercises for lasting effects and increased efficacy. Nevertheless, further research is necessary to validate its long-term effects, particularly in cases of congenital and pathological kyphosis. I congratulate Liu and Kim for their valuable contribution to this issue.

On behalf of the entire editorial board, I hope you enjoy reading this issue.

Disclaimer

ChatGPT and Grammarly were used to improve the write up of the editorial and ensure that the text was

free of grammar and syntax related errors, thereby enhancing readability and language quality. Subsequently, the editorial was meticulously reviewed and edited to ensure its coherence and accuracy.

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