

Editorial

# Observations regarding open access publishing in hybrid journals in sport sciences

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Hybrid journals are journals that provide both of 2 common publication options: (a) the traditional approach, where either institutions pay for a subscription or readers purchase individual articles (free of charge for the submitting author); and (b) open access, where articles are accessible without a subscription and free of charge for the reader (the submitting author typically pays an article processing charge). Hybrid journals earn a fixed amount of money from subscriptions, and they earn additional income from the article processing charges associated with their open access option. A hybrid journal can increase its income by publishing a greater number of open access articles. However, institutions tend to stop paying for subscriptions if the ratio between open access and subscription-based publications exceeds a certain threshold. Therefore, it is economically wise for journals to monitor and control the ratio between open and non-open access publications. This hybrid model of publishing presents an ethical conundrum: since open access publications provide income to the publisher, the publisher should not know whether a submitted article is open access when considering it for publication. This conundrum can be avoided by not requesting information on the desired publication option (open or non-open access) at the submission stage. Publishers are aware of this dilemma. Hence the phrase found on the websites of many hybrid journals: “Authors may take advantage of the open access option at the point of acceptance to ensure that this choice has no influence on the peer review and acceptance process” (e.g., Ref. 1). The purpose of this editorial was to probe into how sports science journals, in particular, handle the information on publication preference and to observe journals that do ask for publication preference at the submission stage, thereby producing the aforementioned ethical dilemma.

All 88 Science Citation Index (SCI)-listed journals in Sport Sciences (2020)<sup>2</sup> were screened. The websites and submission platforms of all hybrid journals were checked for information regarding publication options. The monthly ratio between open access and non-open access publications was determined for all hybrid journals that ask for publication preference at the submission stage (i.e., “unblinded journals”;  $n = 10$ ) as well as

for an equivalent number of control journals (those that do not ask for publication preference at the submission stage) starting in January 2020. For the 56 hybrid journals that did not ask for publication preference at the submission stage, 10 control journals were selected to match the unblinded journals in sample size, ranking quartile (Q1 to Q4, where Q1 is the top quartile and Q4 the bottom quartile), issues per year, scope, and article types. The ratio calculation included full-text scientific contributions (e.g., no editorials, letters-to-the-editor, corrigenda). Articles on Coronavirus disease 2019 (COVID-19) were excluded if the journal had a strict policy of publishing all related articles as open access or if their policies on the matter were unclear.

Ten out of 66 hybrid journals asked for publication preference at the submission stage (3 in Q1, 4 in Q2, and 3 in Q3). Out of these 10 journals, 6 journals falsely claimed on their website that they would ask for publication preference only after the peer-review process had been completed and the manuscript was accepted. The remaining journals either did not provide information on their website or clarified that publication preference would be requested at the submission stage. The 10 unblinded journals tended to have a higher ratio of open access publications (mean  $\pm$  SD) compared to the 10 control journals ( $11.0\% \pm 4.3\%$  vs.  $8.5\% \pm 3.5\%$ ,  $Z = -1.87$ ,  $p = 0.06$ ), with the finding only closely missing significance. Both journal groups published comparable relative numbers of open access articles in 2022 ( $12.9\% \pm 9.9\%$  and  $13.4\% \pm 7.3\%$ ,  $Z = -0.68$ ,  $p = 0.50$ ). In 2020, however, control journals published fewer open access articles ( $4.0\% \pm 3.1\%$ ) than did unblinded journals ( $14.2\% \pm 11.2\%$ ) ( $Z = -2.45$ ,  $p = 0.01$ ). The relative number of open access articles increased over time by 0.44% per month in control journals and only 0.08% in unblinded journals. Further in-depth analyses over time, both between journal groups and within individual journals, revealed inconsistencies as well as trends in some unblinded journals with respect to the open vs. non-open publication ratio (Fig. 1). These results were primarily observed in the 6 unblinded journals that falsely stated on their websites they would not ask for publication preference at the submission stage. The remaining 4 unblinded journals were more comparable to control journals

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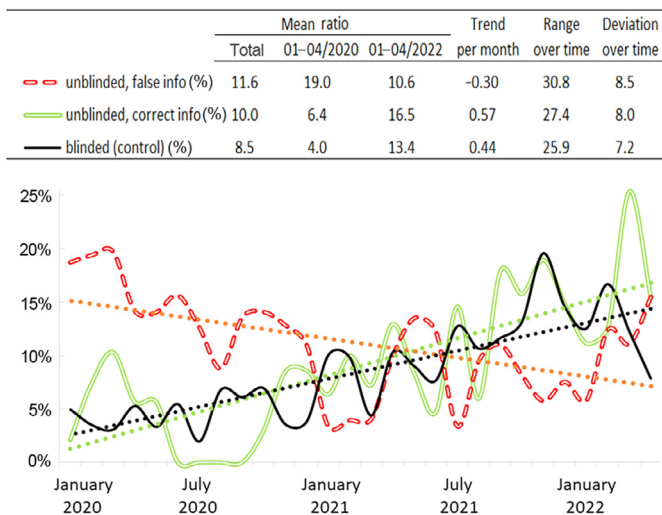


Fig. 1. Percentage ratio of articles published as open access vs. non-open access in journals that ask for publication preference prior to the acceptance of a manuscript but falsely state on their website they would ask for this information only after acceptance (i.e., “unblinded, false info”), in journals that ask for publication preference and either reflect this correctly on the website or do not mention it (i.e., “unblinded, correct info”), and in journals that ask for publication preference only after acceptance (i.e., “blinded (control)”). Orange, green, and black dot lines represent linear trends within the respective journals. info = information.

when it came to the general trends, range, and magnitude of the publication ratio.

One-fifth of the hybrid journals exposed themselves to ethical risk by asking for publication preference at the initial stage of submission. Moreover, 60% of that group were aware of this risk, point it out on their website, and falsely state they do not ask for publication preference at the submission stage. Knowing the publication preference prior to the peer-review and acceptance process may influence acceptance rates in favor of open access publications because of the financial incentive for the publisher. Similar concerns exist for open access journals that require publication fees. The trend towards a higher ratio of open access publications in journals that request publication preference at the submission stage as compared to control journals that are blinded to this information is suspicious. The increasing trend of open access publishing in control journals is thought to be a natural response to its increasing popularity and institutional support, including the favorable policy requirements of federal granting agencies. Findings in specific unblinded journals (i.e., stable ratio at high level, low range, low volatility) conflicted with the observations in control journals and may indicate that some journals monitor and control the ratio of open access articles. One explanation from an economic game-theory point of view may be that these journals aim for an optimal publication ratio of additional income through article processing charges without making subscriptions dispensable for institutions.

As the ratio of open access and non-open access manuscripts submitted to individual journals was not publicly available, this information could not be considered in the current analyses. It could be argued that the difference in publication ratio was due

to unnoticed differences in submission ratio. However, this argument assumes that there was a systematic difference in submission ratio between blinded and unblinded journals, which seems doubtful. Therefore, it seems unlikely that differences in the submission ratio could explain the current observations.

The data on open vs. non-open access publishing in journals do not allow for the identification of the reasons behind these observations or possible ethical dilemmas in the review and acceptance process. The purpose of this probe was to raise awareness of the ethical dilemma raised by knowing the publication preference prior to accepting a submitted manuscript. It may be of concern that some journals provide misleading information on their websites, and those journals that ask for publication preference at the submission stage show different publishing records than journals that do not ask for publication preference. Perhaps there are reasonable explanations for these observations that are not publicly known. To avoid any potential ethical dilemma, a hybrid journal should simply not ask for publication preference before it has accepted a manuscript, and it should state this clearly on its website.

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#### Authors' contributions

PXF developed the study, collected data, implemented statistical analyses and visualization, drafted and finalized the manuscript; TYS was involved in the development of the study design, contributed to data interpretation, provided intellectual contributions, and participated in the finalization of the manuscript; WH provided intellectual contributions and participated in reviewing and finalization of the manuscript. All authors have read and approved the final version of the manuscript, and agree with the order of presentation of the authors.

#### Competing interests

The authors declare that they have no competing interests.

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