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Plagiarism in Non-Anglophone Countries: a Cross-sectional Survey of Researchers and Journal Editors

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ABSTRACT

Background: Plagiarism is one of the most common violation of publication ethics, and it still remains an area with several misconceptions and uncertainties.
Methods: This online cross-sectional survey was conducted to analyze plagiarism perceptions among researchers and journal editors, particularly from non-Anglophone countries.
Results: Among 211 respondents (mean age 40 years; M:F, 0.85:1), 26 were scholarly journal editors and 70 were reviewers with a large representation from India (50, 24%), Turkey (28, 13%), Kazakhstan (25, 12%) and Ukraine (24, 11%). Rigid and outdated pre- and post-graduate education was considered as the origin of plagiarism by 63% of respondents. Paraphragiarism was the most commonly encountered type of plagiarism (145, 69%). Students (150, 71%), non-Anglophone researchers with poor English writing skills (117, 55%), and agents of commercial editing agencies (126, 60%) were thought to be prone to plagiarize. There was a significant disagreement on the legitimacy of text copying in scholarly articles, permitted plagiarism limit, and plagiarized text in methods section. More than half (165, 78%) recommended specifically designed courses for plagiarism detection and prevention, and 94.7% (200) thought that social media platforms may be deployed to educate and notify about plagiarism.
Conclusion: Great variation exists in the understanding of plagiarism, potentially contributing to unethical publications and even retractions. Bridging the knowledge gap by arranging topical education and widely employing advanced anti-plagiarism software address this unmet need.

Keywords: Publishing; Plagiarism; Ethics; Writing; Limited English Proficiency; Periodicals as Topic; Surveys and Questionnaires

INTRODUCTION

Recent times have seen a remarkable shift in the science of publishing. A greater worldwide connectivity has ushered in the era of digitalised medicine, with better connectivity, education, and awareness of the science of publication research.[1,2] In such times, access to scientific articles has also lent greater visibility, wider audience, and better understanding of the grey areas in research. While ethical publishing is of ultimate importance, researchers

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and journal editors, particularly those from non-Anglophone countries, often find themselves in a diversity of acceptable and unacceptable rules for publishing.[3] While some aspects of publication ethics are well understood and globally acceptable, there are areas that lack certainty and clarity.[4]

Among the various violations of unethical writing, plagiarism is one of the most frequent and widely reported forms of violation.[5,6] The wider reach and internet-based penetrance and connectivity has lent greater visibility to even obscure forms of research, gifting researchers and the world with a scientific syncytium to build on a better foundation for science. In times of the coronavirus disease 2019 (COVID-19) pandemic, such evils carry much greater and amplified risks of replicating published research works.[7] This may go a long way in disintegrating research credibility, amplifying misinformation.

While scientists worldwide would concur that plagiarism is a violation that deserves immediate, complete and deep uprootal, understanding certain aspects may lend them another perspective.[8,9] At the authors' end, cultural and linguistic barriers have been proposed to impact plagiarism in scholarly articles.[3] Psychological (or personality type) impediments may be other potential contributor to unique scenarios for plagiarism. Parsing manuscripts into salami publications may be an additional setting wherein certain components of manuscript are copied or reproduced. On the other hand, journal editors may encounter financial hardships, limiting their access to advanced anti-plagiarism software.[10]

Understanding the context of plagiarism, grey areas, and acceptable writing norms assumes a central role to further timely action in this publishing domain.[11] An improved awareness of intentional and unintentional forms of plagiarism might place researchers and journal editors in the right shoes for tackle this timeless violation.[12] With the above mentioned in mind, we arranged this online survey to better understand perceptions of plagiarism in scholarly publishing among researchers and journals editors, particularly from non-Anglophone countries.

METHODS

Design of the questionnaire

The completely anonymized e-survey featured questions, most of which (16, 80%) were multichoice. There were questions aimed to characterize the respondent populations' demographic profile (2, 28.6%), expertise (2, 28.6%), and residence (1, 14.7%). All individuals from the author team participated in assessment of the face validity. Following this, the final survey was filled by five individual respondents to identify errors in wording, grammar, or syntax, and critically evaluate the modifications from the original survey. The survey underwent five rounds of revisions. The average survey time was three minutes. The respondents could change the answers before submission but not after it. All questions were mandatory.

Population selection

The survey was widely disseminated over social-media platforms (Twitter, Facebook and WhatsApp) with the hashtags #plagiarism and #research to be voluntarily filled by professionals, researchers, and journal editors. Convenience sampling was followed, and all those who agreed to participate were included in this survey. Eligible participants (non Anglophone respondents) were given two weeks to voluntarily complete the questionnaire

from March 2 to March 16, 2021. Informed consent was obtained at the start of the survey and no incentives were offered for survey completion.

Ethics statement

An exemption from review was obtained from the Institute Ethics Committee of Sanjay Gandhi Postgraduate Institute of Medical Sciences, Lucknow, India as per local guidelines with protocol number 2021-149-IP-EXP-39. We adhered to the Checklist for Reporting Results of Internet E-surveys (CHERRIES) to report the data.[13] Descriptive statistics were used, and figures downloaded from surveymonkey.com®.

RESULTS

Respondent characteristics

Among 211 respondents (mean age, 40 years; M: F, 0.85:1), 26 were scholarly journal editors and 70 were peer reviewers. Of total respondents, 74% were clinicians and 56% were researchers. There was a large representation from India (50, 24%), Turkey (28, 13%), Kazakhstan (25, 12%) and Ukraine (24, 11%) (**Table 1**).

Table 1. Respondent characteristics

Characteristics	Values
Age	40
Gender	
Female	114 (54)
Male	97 (46)
Years post medical school	15.4
Job profile	
Educator	92 (44)
Clinician	156 (74)
Researcher	118 (56)
Laboratory physician	16 (8)
Journal editor	26 (12)
Reviewer	70 (33)
Specialty	
Rheumatology	70 (33)
Physical medicine and rehabilitation	6 (3)
Cardiology	5 (2)
Other	18 (8)
Internal medicine	28 (13)
Infectious Diseases	2 (1)
Paediatrics	11 (5)
Immunology	3 (1)
Public health	13 (6)
Family and General Medicine	3 (1)
Endocrinology	2 (1)
General Practice	1 (0.47)
Neurology & neurosurgery	6 (3)
Nuclear Medicine	1 (0.47)
Respiratory medicine	1 (0.47)
General surgery	3 (1)
Pathology	5 (2)
Pharmacology	1 (0.47)
Psychiatry	1 (0.47)
Anaesthetics	3 (1)
Gastroenterology	4 (2)
Hematology	2 (1)

(continued to the next page)

Table 1. (Continued) Respondent characteristics

Characteristics	Values
Nephrology	2 (1)
Preventive medicine	1 (0.47)
Gastroenterologic surgery	2 (1)
Thoracic surgery	1 (0.47)
Laboratory medicine	9 (4)
Clinical biology	1 (0.47)
Immunology	6 (3)
Geriartics	1 (0.47)
Opthalmology	1 (0.47)
Country	
India	50 (24)
Turkey	28 (13)
Kazakhstan	25 (12)
Ukraine	24 (11)
United States	1 (0.47)
Russia	5 (2)
Belgium	1 (0.47)
Croatia	10 (5)
United Kingdom	1 (0.47)
Pakistan	4 (2)
Australia	2 (1)
Lebanon	1 (0.47)
South Korea	8 (4)
Greece	1 (0.47)
Iran	3 (1)
Italy	2 (1)
Malaysia	2 (1)
Mexico	4 (2)
Japan	3 (1)
Poland	5 (2)
Romania	5 (2)
Brazil	1 (0.47)
Bulgaria	14 (7)
Denmark	1 (0.47)
Hungary	8 (4)
Nepal	1 (0.47)
North Macedonia	2 (1)

Values are presented as number (%).

Plagiarism context

Outdated pre- and post-graduate education was distinguished by 63% of respondents as the origin of plagiarism. While a significant majority were familiar with the Committee on Publication Ethics (COPE) guidelines with points on plagiarism (100, 47%), related points of the World Association of Medical Editors (WAME; 42, 20%), the Council of Science Editors (CSE; 38, 18%), and the Office of Research Integrity (ORI; 30, 14%) were lesser known, and 42% were not familiar with any statements of editorial associations on plagiarism.

Most respondents thought that inexperienced authors (174, 82%), students (150, 71%), non-Anglophone researchers with poor English writing skills (117, 55%), and agents of commercial editing agencies (126, 60%) were most likely to plagiarize. Additionally, they thought that Anglophone researchers who lack time for writing (77, 36%) may also occasionally plagiarize.

Most respondents pointed to paraphragiarism as the most frequent form of plagiarism (145, 69%), followed closely by 'copy-and-paste' writing (118, 56%), self-plagiarism (106, 50%), and translational plagiarism (84, 40%).

According to the surveyed respondents, the intentional plagiarism should be punished (159, 75%) and so does the plagiarism of ideas (107, 51%) and copying graphics with copyright violation (99, 47%). They were not so sure about unintentional (14, 7%) and self-plagiarism (28, 13%). Copying graphics without official permission was thought to be fairly common (83, 39%), while stealing ideas was also occasionally observed (55, 26%).

Grey areas in plagiarism

There seemed to be confusion over the categorization of plagiarism in articles with copying of graphics with an official permission from a primary publisher being considered as plagiarism by 22%. Interestingly, reusing own materials without citation was also thought to constitute plagiarism by 56%.

The majority thought that copying of text, graphics and ideas, best describe plagiarism in scholarly articles (146, 69%). Notably, 39% of respondents thought that less than 10% plagiarism is acceptable while others thought that more than 10% of plagiarism is also acceptable (98, 46%). and the rest were confused (31, 15%). There was also a disagreement on the legitimacy of text copying in scholarly articles; where word-for-word copying quotes, enclosing in quotation marks, and linking to related source/reference was rightly identified as acceptable by 45%, and word-for-word copying of methods was also agreeable to another 38%, while 22% disagreed as none of these were considered acceptable to them. Notably, 18% confessed to have published manuscripts with at least some copied parts.

Means to detect plagiarism

At the time of taking the survey, iThenticate (88, 42%) was the most widely used software for detecting plagiarism followed by Plagscan (70, 33%), Google Scholar (58, 27%) and Grammarly (38, 18%), while 26% respondents were not using any software.

Possible solutions to prevent plagiarism

The majority believed that employing plagiarism-detection software for all submissions could help prevent publications with plagiarized parts (168, 74%), while another 55% thought that requesting reviewers to report any suspicious for plagiarism material may be beneficial. Notably, 165 respondents (78%) recommended specifically designed courses for plagiarism detection and prevention (**Table 2**), and 200 (94.7%) thought that social-media platforms may be deployed to educate and notify about plagiarism.

DISCUSSION

To the best of our knowledge, this is one of the largest e-surveys on plagiarism where nearly 45% of the respondents were associated with journal editing and reviewing, lending greater credibility to the academic observations. A variety of views in scholarly articles point to some uncertainties and poor understanding of ethical writing among scholars. This survey reiterated that despite improving global awareness on plagiarism, poor understanding still persists among non-Anglophone medical researchers. The basic tenets of plagiarism as copying texts and graphics are known to many, while other aspects entailing stealing of ideas and paraphrasing of the existing article is still considered to lie outside the boundaries of plagiarism; and hence may be the most commonly seen form of unethical writing practice.[14]

Table 2. Survey responses

Questions	Values (n = 211)
How likely is that plagiarism origins are rooted in rigid and outdated pre- and post-graduate education?	
Unlikely	23 (11)
Neither likely nor unlikely	55 (26)
Likely	99 (47)
Most likely	34 (16)
Which of the following scales of textual similarity is acceptable?	
0%	9 (4)
1–10%	73 (35)
11–20%	67 (32)
21–30%	24 (11)
> 30%	7 (3)
Not Sure	31 (15)
Which of the following instances of text copying in scholarly articles are acceptable? (Multiple answers)	
Word-for-word copying of disease definitions with/without linking to a relevant reference	52 (25)
Word-for-word copying of standard operating protocols, descriptions of laboratory/instrumental tests, and technological procedures	80 (38)
Copying large passages of texts from own previous publications to draft new review and research articles (text recycling/self-plagiarism)	17 (8)
Word-for-word copying of sentences, enclosing in quotation marks, and linking to related references	80 (38)
Word-for-word copying quotes, enclosing in quotation marks, and linking to related source/reference	94 (45)
None of these is acceptable	46 (22)
Which of the following methods are helpful for detecting plagiarism? (Multiple answers)	
Google Scholar	58 (27)
Google Images	25 (12)
Grammarly	38 (18)
PlagScan	70 (33)
iThenticate	88 (42)
I do not use any software	55 (26)
Other	14 (7)
Which of the following editorial measures may prevent publication of plagiarized articles? (Multiple answers)	
Regularly updating journal instructions with statements on plagiarism	91 (43)
Employing plagiarism-detection software for all submissions	164 (78)
Specifically inquiring the authors about their writing and requesting disclaimers of the absence of plagiarism	92 (44)
Requesting reviewers to report any suspicious for plagiarism materials	116 (55)
Instituting research integrity post for comprehensive anti-plagiarism checks	81 (38)
Which of the following online platforms best reflects the incidence of plagiarism in scholarly articles? (Multiple answers)	
Retraction Watch blog	45 (21)
PubMed platform	48 (23)
Online bibliographic databases such as Scopus and Web of Science	37 (18)
Institutional repositories	13 (6)
I am not familiar with any of these	56 (27)
None of these best reflects the incidence of plagiarism	51 (24)
How social media channels may help detect and prevent plagiarism in scholarly articles? (Multiple answers)	
No any role for social media to detect and prevent plagiarism	22 (10)
Journal social media channels can be contacted by readers to report plagiarism in published articles	106 (50)
Individual users of social media may initiate discussion of article suspicious for plagiarism	84 (40)
I am not sure	60 (28)
Would you recommend specifically designed courses on plagiarism detection and prevention in your research environment? (Likert scale question)	
Unlikely	19 (9)
Neither likely nor unlikely	27 (13)
Likely	119 (56)
Most likely	46 (22)
Have you published any scholarly article that contained copied parts?	
Yes	38 (18)
No	173 (82)

Values are presented as number (%).

Conventionally plagiarism was viewed as a research misconduct, and it is still an ethical transgression that shatters the credibility of scholarly journals.[15] The vast majority of the journal editors and other scholars who responded to our survey believe that the origin of

plagiarism are rooted in outdated pre- and post-graduate education. Rote learning is widely publicized as the correct form of acquiring knowledge, and individualism is considered unwelcome in some academic societies.[15] Moreover, the pressure to publish or perish is immense in non-meritorious systems which reward those successful in a rat race. Such instilled fret for research among medical students and inexperienced authors may give rise to a major population prone to plagiarize, since their knowledge and awareness about publication ethics, plagiarism and its consequences remain limited.[4] These are conventional reasons for plagiarism, however recently there is emerging evidence of language, cultural, and social barriers being a major roadway to plagiarism.[12] Since most instances of plagiarism may be unintentional, topical education may play a decisive role in curbing the issue and avoiding unnecessary post-publication discussions of poor writing and unethical behaviour by some researchers and authors.[16] Along with poor understanding of publication ethics, limited access to proprietary tools and platforms for detecting plagiarism may be another major impediment to credible publishing, particularly in non-Anglophone countries. Despite the dire need to address these issues, there are uncertainties on the effective approaches to do so.

Landmark studies of MEDLINE/ PubMed-indexed articles have demonstrated that plagiarism is the reason for retraction in about 14.4–27% of cases.[17,18] There are only a few surveys that explore perceptions of plagiarism among scholars.[5,12] Notably, a cross-sectional survey of biomedical researchers in Europe and China was consistent with our finding of fair understanding about major forms of plagiarism, but uncertainties around the permissible extent of text copying.[12] Furthermore, lack of time for writing was reported to be another major factors leading to plagiarism in some instances.[10]

Misunderstanding of the acceptable extent of plagiarism in scholarly articles is widespread, with less than 10% seems to be the threshold. However, a greater percentage of similarity is thought to be acceptable by some journal editors and authors. Several software such as PlagScan, iThenticate, and Grammarly have been designed to determine the overall and single-source similarity degrees. Unfortunately, such an advanced plagiarism detection and prevention approach is still unknown to some and inaccessible to other scholars.[3,6] This is highlighted in **Fig. 1**. The instructions for authors are also not always updated to guide how to avoid plagiarism in the journal submissions.[19] Such deficiencies may confound the poor consensus among authors around the acceptable extent of copied words, phrases, or sentences, with or without citations.[8] In this context, it is important to emphasize the differences between similarity (which is detected by outputs from automated software) and plagiarism. Mere similarity of any degree cannot be described as plagiarism. Similarity even lower than 10% can indicate plagiarism if a portion of the text was reproduced verbatim without due reference to the source. On the other hand, similarity of much greater degree might not be indicative of plagiarism if this was due to small commonly-used phrases being detected as similar throughout the manuscript. The extent of similarity detected on outputs from iThenticate or Turnitin depends on the limits of filters imposed on such scans. Speaking from personal experience, a limit of at least eight to ten words should be imposed to avoid detecting similarity of little actual relevance.[20,21]

The knowledge gap of 42% of our surveyees is indicated by their non-familiarity with the statements on plagiarism by the COPE, WAME, and other editorial associations. Those who (un)intentionally plagiarize are also unaware of the severe consequences that could follow this misconduct.
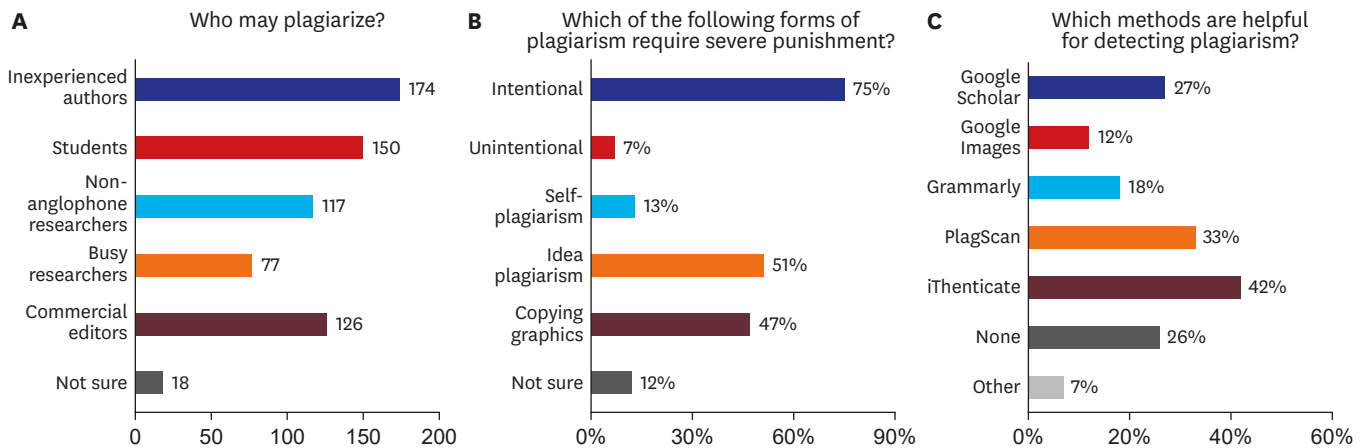
Fig. 1. Physicians and scholars' perception of plagiarism.

One global issue that has recently emerged is the overload of poorly validated documents, particularly preprints with plagiarized parts.[22] It is generally not advisable to cite unpublished (preprint) works. However, the unique situation arising out of the ongoing pandemic has led to a massive rise in preprint platforms, lending journal editors another grey area to resolve.[7] The COVID-19 pandemic has ushered in indexing of COVID-19-related preprints on PubMed Central, further compounding the issue of duplicates.[7] It is now mandatory that authors list all preprints and conference abstracts in their final publications to avoid duplication/ plagiarism claims.

The question arises as to how journal editors should address the issue of plagiarism in scholarly articles, particularly in view of the possible overburdening of peer reviewers. The majority of our survey respondents thought that specifically designed (topical) courses on plagiarism detection and prevention might prove beneficial to fill the knowledge gap and address the grey areas that exist. Presumably, various training sessions covering types of plagiarism, degrees of copying, utilization of anti-plagiarism software along with legal regulations of research should be included as part of the curriculum in medical school.[3,6] Students can be mentored by experienced researchers ensuring adequate learning, particularly in non-Anglophone countries where courses of ethical writing and editing are non-existent.[23] Social-media channels can also help in the process and can ensure online educations for a large population of scholars.

The majority of scholars believe that anti-plagiarism software can help curb the issue.[3,9] Regularly updated points on plagiarism in the journal instructions with specific statements on employing advanced anti-plagiarism software may guide the authors to carefully recheck their manuscripts prior to the submission and peer review.[9,19] The software checks should always be accompanied by manual checks.[3] Academic institutions and publishers may provide access to advanced anti-plagiarism software for regular research audits and for ensuring quality publishing.[21,24,25] A previous survey suggested variations between non-Anglophone editors and Anglophone editors with respect to global ethics recommendations for plagiarism. Given those variations, the need of the hour is to develop practical approaches based on opinion from global representatives to address the prevalent issue of plagiarism.[25]

We fully acknowledge the limitations caused by the short period of our survey and a relatively small sample size. Besides, knowing the number of indexed articles published

by respondents in English could have provided further understanding of the respondent population. Having said that, we believe that those who commit plagiarism may do it at any stage of their academic career, regardless of the number of publications. We hope that unique insights from our survey would pave the way for a larger global study.

To conclude, great variation exists in the understanding of plagiarism among non-Anglophone authors, potentially contributing to unethical publications and even retractions. Bridging the knowledge gap by arranging topical education and widely employing advanced anti-plagiarism software may address this unmet need.

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