Adherence to the International Committee of Medical Journal Editors–recommended gender equity policy in nursing journals listed in MEDLINE or PubMed Central: a descriptive study

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Abstract
Purpose: The evolving landscape of nursing research emphasizes inclusive representation. The International Committee of Medical Journal Editors (ICMJE) has established guidelines to ensure the fair representation of various demographic variables, including age, sex, and ethnicity. This study aimed to evaluate the adherence of nursing journals indexed in MEDLINE or PubMed Central to the ICMJE's directives on gender equity, given that journals indexed in MEDLINE and PubMed Central typically adhere to the ICMJE's guidelines.

Methods: A descriptive literature review methodology was employed to analyze 160 nursing journals listed in two databases as of July 28, 2023. The website of each journal was searched, and the most recent original article from each was selected. These articles were then evaluated for their alignment with the ICMJE guidelines on gender equity. Descriptive statistics were applied to categorize and enumerate the cases.

Results: Of the articles reviewed from 160 journals, 115 dealt with human populations. Of these, 93 required a description of gender equity. Within this subset, 83 articles distinguished between the genders of human subjects. Gender-based interpretations were provided in 15 articles, while another 68 did not offer an interpretation of differences by gender. Among the 10 articles that did not delineate gender, only two provided a rationale for this omission.

Conclusion: Among recent articles published in the nursing journals indexed in MEDLINE and PubMed Central, only 16.1% presented clear gender analyses. These findings highlight the need for editors to strengthen their dedication to gender equity within their editorial policies.

Keywords
Editorial policies; Gender equity; MEDLINE; Nursing research; Periodical as a topic
Introduction

Background

Sex and gender issues are of critical importance, especially in biomedical science and research. We should remember that overlooking this issue could harm human health and result in missed opportunities for scientific discoveries and new treatments for diseases [1]. The International Committee of Medical Journal Editors (ICMJE) has established clear recommendations for the selection, description, and representation of study participants [2]. These guidelines emphasize the importance of including diverse populations in research and, at a minimum, providing detailed demographic data such as age, sex/gender, ethnicity, and other pertinent variables. Authors are also urged to consult the Sex and Gender Equity in Research (SAGER) guidelines [3] when reporting on sex and gender in the design, data analysis, results, and interpretation of their studies. The ICMJE guidelines [2] recommend the following for gender equity:

- Ensure correct use of the terms sex (when reporting biological factors) and gender (identity, psychosocial or cultural factors).
- Unless inappropriate, report the sex or gender of study participants and the sex of animals or cells, and describe the methods used to determine sex and gender.
- If the study involved an exclusive population, for example, only one sex, the authors should justify why.
- Authors should define how they determined race or ethnicity and justify their relevance.
- If race or ethnicity was not collected, explain why it was not collected.
- Race and ethnicity are social and not biological constructs; authors should interpret results associated with race and ethnicity in that context.

The European Association of Science Editors established a Gender Policy Committee in 2012 and tasked it with developing the SAGER reporting guidelines [3]. The SAGER guidelines are a comprehensive procedure for reporting sex and gender information in study design, data analyses, results, and interpretation of findings. Its general principles are as follows:

- Authors should use the terms sex and gender carefully to avoid confusing both terms.
- Where the subjects of research comprise organisms capable of differentiation by sex, the research should be designed and conducted in a way that can reveal sex-related differences in the results, even if these were not initially expected.
- Where subjects can also be differentiated by gender (shaped by social and cultural circumstances), the research should be conducted similarly at this additional level of distinction.

Recommendations per section of the article

- Title and abstract: If only one sex is included in the study, or if the results of the study are to be applied to only one sex or gender, the title and the abstract should specify the sex of animals or any cells, tissues, and other material derived from these and the sex and gender of human participants.
- Introduction: Authors should report, where relevant, whether sex or gender differences may be expected.
- Methods: Authors should report how sex and gender were considered in the study’s design, whether they ensured adequate representation of males and females, and justify the reasons for any exclusion of males or females.
- Results: Where appropriate, data should be routinely presented disaggregated by sex and gender. Sex and gender-based analyses should be reported regardless of positive or negative outcomes. In clinical trials, data on withdrawals and dropouts should also be reported disaggregated by sex.
- Discussion: The potential implications of sex and gender on the study results and analyses should be discussed. If a sex and gender analysis was not conducted, the rationale should be given. The authors should further discuss the implications of the lack of such analysis in interpreting the results.

Although the adherence to the ICMJE-recommended gender equity policy in articles has been studied, data on individual journal compliance with this recommendation are scarce. Gea-Caballero et al. [4] examined the gender equity of 115 nursing journals indexed in the Journal Citation Reports. Their analysis focused solely on the gender of the journal editors and authors. They reported that men were disproportionately represented in editor roles, particularly in the most prestigious nursing journals. Additionally, there was a higher proportion of male authors in prominent authorship positions. A study of submissions to the journal eLife [5] revealed that gender disparities were present throughout the editorial process, suggesting that simply increasing the number of women may not be enough to eradicate this bias. However, this study did not analyze the articles themselves but rather the gender of editors and reviewers.

As of July 28, 2023, there were 160 nursing journals listed in MEDLINE or PubMed Central. During the review process for inclusion in MEDLINE and PubMed Central, the US National Library of Medicine (NLM) expects journals to demonstrate compliance with established industry guidelines and
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best practices. These guidelines include the ICMJE Recommendations for the Conduct, Reporting, Editing and Publication of Scholarly Work in Medical Journals. It is not known whether these international nursing journals also adhere to the ICMJE-recommended gender equity guidelines.

Objectives

This study aims to investigate the extent to which the 160 nursing journals indexed in MEDLINE or PubMed Central adhere to and implement the ICMJE guidelines, focusing on gender equity in their publications. The evaluation includes checking for explicit gender distinctions in articles with gender-specific interpretations and, if that information is absent, looking for justifications.

Methods

Ethics statement

This study did not require Institutional Review Board approval or informed consent as it was a literature review, not a study with human subjects.

Study design

This is a descriptive study based on a literature review.

Data collection

The sample included nursing journals as of July 28, 2023, which were identified by searching the NLM Catalog (https://www.ncbi.nlm.nih.gov/nlmcatalog) with the search terms “currently indexed AND nursing” and “journalpmc AND nursing.” The first search term yielded 192 journals, from which only nursing journals were selected, resulting in 137 journals. The second search term produced 30 journals, of which seven were duplicates already included in MEDLINE. Consequently, 23 journals were added to the 137 MEDLINE journals, totaling 160 journals for the study. From July 28 to August 9, 2023, one recent original article from each of the 160 journals was collected by visiting the journal websites. If the first original article did not pertain to human or animal studies, up to the fifth article was reviewed. The articles were analyzed for adherence to the ICMJE-recommended gender equity guidelines. The analysis involved four steps: first, determining the necessity of reporting sex/gender differences; second, assessing whether sex/gender differences were described in the data from human populations or animal/cell experiments; third, if sex/gender differences were described, evaluating whether the interpretation was explicitly made by sex/gender; and fourth, if sex/gender differences were not described, examining whether there was an explanation provided for this omission.

Variables

The outcome variables included the study population, the necessity for gender equity, the interpretation of gender equity, and (if applicable) the explanation for the absence of sex/gender differentiation.

Bias

No selection bias was expected, as all target journals were included.

Study size

As a descriptive study, there was no need for sample size estimation in advance.

Statistical analysis

Descriptive statistics were used to count the cases that met each criterion.

Results

Analyzed articles

Of the 160 articles that were reviewed, 115 dealt with human populations. Ten articles were literature analyses, and 20 journals did not publish original articles. Twelve articles could not be analyzed because they were not written in English. Two journals were closed. One journal did not provide its articles on its website. Therefore, 115 articles were selected for the analysis of whether sex/gender differences were reported.

Main results

Research data are available in Dataset 1, and Fig. 1 summarizes the following results.

Necessity of a description of sex/gender differences

Among 115 articles reviewed, a description of sex/gender differences was deemed necessary in 93 of the articles. The remaining 22 articles did not require an explanation of sex/gender differences.

Description of sex/gender difference in the data

Out of the 93 articles for which a description of sex/gender differences was deemed necessary, 83 (89.3%) described the sex/gender differences, while 10 did not.

Interpretation of sex/gender differences

Out of 83 articles that described sex/gender differences, 15 (16.1%) interpreted the results.
Explanation of why the authors did not describe sex/gender differences

Out of 10 articles that did not describe sex/gender differences, two presented an explanation.

Discussion

Interpretation

The rate of adherence to the ICMJE guidelines by incorporating gender differentiation and interpretation was only 15 of 93 applicable articles (16.1%). This indicates that many international nursing journals have not adopted robust gender equity policies. Determining the reasons behind this low adherence rate is challenging. A likely explanation is that gender equity policies have not been widely disseminated among editors of many international nursing journals. Although adherence to ICMJE-recommended gender equity policies is a critical requirement for journals indexed in MEDLINE and PubMed Central, the journals in question were indexed in these databases before the introduction of the ICMJE-recommended gender equity policies and SAGER guidelines in 2016. Consequently, it may not be compulsory for established journals to adhere to this gender policy. Furthermore, this policy may not be emphasized to reviewers during the peer review process.

Comparison with prior research

An editorial on gender equity in medical journals in Korea [6] highlighted that, out of human population studies from 38 Science Citation Index Expanded (SCIE)–indexed medical journals, only 11 journals (29.0%) provided a description of gender equity with an appropriate interpretation. Finding additional reports on gender equity policies in scholarly journals is challenging, particularly within the PubMed database.

Limitations

This study is limited to nursing journals indexed in MEDLINE and PubMed Central, but more nursing journals exist worldwide. During the journal selection process, the term “nurse” was not included; as a result, some nursing journals were excluded from the target analysis. Some nursing journals use the title “nurse” without including “nursing.” Only one article from each journal was analyzed, representing a tiny fraction of the total annual publications in the target journals. If a larger number of articles had been selected, the results might have changed.

Generalizability

Despite the aforementioned limitations, the findings provide valuable insights into how international nursing journals describe gender differences.

Suggestion for further research

Future research could benefit from randomly sampling a larger number of nursing journals and articles, comparing older and more recent articles to observe trends, and dividing the number of cases in the analysis method for comparative purposes.

Fig. 1. Diagram of the analysis results of the articles from 160 nursing journals indexed in MEDLINE or PubMed Central on the sex/gender difference.
Conclusions
Out of recent articles published in 115 nursing journals indexed in MEDLINE or PubMed Central, only 15 (16.1%) of 93 applicable articles (after the exclusion of 22 articles where a description of gender differences was not necessary) both described and interpreted gender differences. The challenge for editors is determining the extent to which they should implement gender equity in editorial policies moving forward.

Conflict of Interest
No potential conflict of interest relevant to this article was reported.

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Data Availability
Dataset file is available from the Harvard Dataverse at https://doi.org/10.7910/DVN/SDYWLJ.

Dataset 1. Raw data of gender equity out of 160 nursing journals indexed in MEDLINE or PubMed Central (as of January 28, 2023).

Supplementary Materials
The authors did not provide any supplementary materials for this article.

References
2. International Committee of Medical Journal Editors (ICMJE). Recommendations for the conduct, reporting, editing, and publication of scholarly work in medical journals [Internet]. ICMJE; [updated 2024 Jan; cited 2024 Jan 27]. Available from: https://www.icmje.org/recommendations