



# Prevailing Predatory Publishing: A Critical Evaluation of Publications from Pakistan's Physical Education and Sport Science Domains

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## ABSTRACT

This study critically examined the increasing threat of predatory publications in academia, revealing how researchers at Pakistan's Higher Education Institutions (HEIs) take advantage of this trend for academic gains. We examined the widespread trend of predatory publishing for Pakistani public and private HEIs, explicitly focusing on Physical Education and Sports Sciences (PESS). We carefully analyzed a collection of (343) international articles from 48 faculty members of 26 HEIs (21 Public + 5 Private) until March 2024 extending by July 2024. We excluded 97 articles unrecognized by Pakistan's Higher Education Commission (HEC) plus 11 undecided publications. Our results revealed that 208 (88.5%) of 235 so-called recognized international papers were published in hijacked/predatory journals. The authenticity of publications was determined by checking HEC's online Journal Recognition System (HJRS), Elsevier's Scopus, and Web of Science (WOS), respectively. Leading predatory publications, the University of Punjab from the public sector has 108 contributions from 5 PESS faculty members with no recognized articles. The University of Lahore, from the private sector, has 98 predatory contributions by 4 PESS faculty members with only two recognized articles. Among all Pakistani universities, PESS researchers from Government College University Lahore won the lead for (15 of 27) recognized research paper contributions with no predatory publication. Predatory publishing affects the credibility of the researchers engaged, posing a threat to the nation's scientific reputation in the

PESS arena. We suggest immediate policy initiatives to address this unethical practice and stress the need to maintain research integrity.

## **INTRODUCTION**

Predatory publishing is a global phenomenon and requires urgent consideration for disciplinary measures. There is a worldwide rise in malicious publications that significantly warrant the credibility of research and academic integrity. Approximately 15,000 predatory papers were published in 2021, which may have compromised public trust in the legitimacy of research (1).

Researchers publishing their articles in fraudulent journals may face various ethical challenges. Some prominent challenges include academic misconduct, inappropriate use of research funds, inadequate accumulation of nonscientific materials, and decreased faith in scholarly work (2). Further, these fraudulent publications might influence the advancement of knowledge, which ultimately hinders academic research's transparency and integrity (3,4). Also, the risk of predatory publications is that they may compromise the standards, dependability, and integrity of the published scientific research articles and, as a result, harm the authors' careers (5). This practice has led to the spread of unreliable and ineffective information by such predatory journals since they lack authentic review and editing procedures (6,7). In addition, the increased prevalence of these predatory journals creates severe flaws in the academic research system. This prevalence has raised serious concerns about the validity of research findings and the credibility of scholarly publications (8). Hence, authors should cautiously approach journals to submit their papers because predatory journals have the potential risks associated with defective review procedures (9,10).

An American academic scholar named Jeffrey Beall initially proposed the term "predatory journal" to describe publishers prioritizing profit over quality research. Such journals sometimes charge authors to publish their work without thorough peer review (11). Some researchers expanded the term "predatory" by adding other characterizations such as "fraudulent," "bogus," "deceptive," and "pseudo" (12). In addition, to highlight the heterogeneous nature of these journals, several alternative terms like "questionable," "hijacked," "fake," and "false" were also utilized (13). Subsequently, a wide range of terminologies for such journals exposes their efforts to conceal their dishonest tactics.

Nonetheless, distinguishing between predatory and hijacked journals is very crucial in understanding the complications of scholarly publishing. These cloned journals replicate genuine journals using their names, ISSNs, and other metadata without authorization from the original source (14,15). Furthermore, such publishers often succeed in obtaining the rights to

reputable journals and changing their ownership and publication criteria. This further aids them in generating what is described as a "clone" journal (15). Therefore, the scientific community needs to be more cautious of the growing number of cloned publications since it poses a severe threat to the overall reputation of the community. Moreover, scholars may also analyze cases of academic misconduct to reveal the tactics used by various publishers. Researchers might easily become victims of such journals to submit manuscripts in response to solicitation emails, attracting them with the possibility of fast publications (15,16).

Such predatory publication practices are not limited to a specific country but spread worldwide (17,18). Research (19) demonstrated the widespread influence of predatory publications from several countries, including India, the United States, and Ethiopia. Additionally, past research has also uncovered many authors belonging to countries in the global South, such as China, Africa, Pakistan, and India, that have immensely contributed to predatory journals (20–22). Inexperienced researchers are often deceived by the predatory tactics of wrong journals, due to which they fall victim to misconceptions regarding the impact of their articles. Also, established authors occasionally submit their research work to journals with poor reputations to enhance their credentials (23). Under the conception of bogus publications, a recent study analyzed 495 articles authored by 50 Social Sciences and Humanities professors between 2017 and 2021 (13). The study found that 69% of sample papers were published in predatory journals. Based on the growing body of academic literature condemning predatory publishing on a global scale, the current study examined Pakistan's most common predatory publishing practices. Remarkably, the present study extends its evaluation to the Physical Education and Sports Sciences (PESS) field, which is unnoticed in Shah et al.'s (2024) study.

## **BACKGROUND**

Pakistan's Higher Education Institutions (HEIs) are not independent, and a regulatory body oversees them. The Higher Education Commission (HEC) of Pakistan is the institution that is constitutionally established with the objective of "primary funding, overseeing, regulating and accrediting the higher education efforts in Pakistan" (24). To achieve this goal, the HEC has been devising several policies to encourage quality research. In 2020, HEC Pakistan launched an online journal recognition system (HJRS) for authors' guidance (25). The objective was to establish prestige by establishing various publicly available metrics not tied to one subject or domain. These standards should define a journal's subject area position in a particular body of knowledge. For clarity, the HEC has orchestrated a pivotal initiative by integrating research journals' impact factor entities acknowledged globally, alongside incorporating them into the

databases of renowned platforms such as Elsevier's Scopus and Web of Science's four core collections, namely, "Science Citation Index Expanded (SCIE), Social Sciences Citation Index (SSCI), Art and Humanities Citation Index (AHCI), and Emerging Sources Citation Index (ESCI)" see HJRS, FAQ 8.

At present, research publications in the "W" (highest category), "X," & "Y" category journals are considered acceptable (see HJRS, FAQ 11). According to HEC, the prerequisites for attaining full professorship in Pakistani academia demand a doctoral degree and a substantial tenure of 10 to 15 years dedicated to teaching or research within higher education institutions. Moreover, aspirants must exhibit a prolific scholarly record, having disseminated at least 15 research publications, with a mandated minimum of five publications in HEC-recognized journals within the preceding five years. Similarly, candidates vying for associate professor positions apply to hold a Ph.D. degree and showcase a portfolio of at least ten research articles, including at least four publications in the most recent five-year period (see HJRS, FAQ 14). Pre-PhD academics are urged to author a research article as the principal contributor, acknowledged by the HEC as a publication falling within the "Y" category or higher (see HJRS, FAQ 15).

The above-mentioned strict standards and a competitive spirit to excel have driven researchers to publish their findings rapidly, thereby sacrificing their legitimacy. The present study aimed to objectively evaluate the quality of internationally published articles to maintain research integrity and uphold strict publication standards in Pakistan's PESS disciplines. In recent years, the number of students seeking postgraduate degrees (Master's and PhD in Physical Education and Sport Sciences) increased due to hundreds of vacant positions in school education, Higher Education Institutions (HEIs), and sports organizations. Our study was inspired by Shah et al. (2024) as they demonstrated a rise in the number of students beneficial for institutions, but neglecting research quality could harm the credibility of research-based degrees (13).

Sports have had a rich historical standing in Pakistan since its independence in 1947, which is evident in its educational and research policies (26,27). Also, the sports sector is a profitable industry around the globe, particularly in developing countries like Pakistan. Thus, it is an easy target for predators to get into the field and grab the opportunities to collect undue money and other benefits. Thus, the sports (and physical education) field has become a lucrative opportunity for taking advantage by academics, managers, policymakers, and other stakeholders (27). Due to the significance of the PESS topic, guiding novice and established researchers regarding quality research and where to publish their work is crucial. Clarification on emerging academics is necessary to sustain integrity, ethics, and quality in research. Predatory publications could be unduly used to secure positions, promotions, and financial incentives at

HEIs if not assessed at the current stage. Therefore, evaluating the research work in the PESS field was necessary to highlight and curb the possibility of publication scams. It could aid the HEC in improving publication recognition standards, quality enhancement cells (QECs), and offices of research, innovation, and commercialization (ORICs) at HEIs responsible for ensuring research quality, publication authenticity, and academic integrity. Additionally, it was essential to raise awareness among students studying under such faculty members or would be in the future to save them from predatory publication scams. By going further into the topic to understand how it functions and gets legitimized on a larger scale in the country, the current study's authors want to enlighten readers and evaluators for the guidance of international funding agencies that provide funds to Pakistani academics in various domains.

### **Research Questions**

We deliberately attempted to address the following questions during our inquiry into the prevalent unethical publication practices in PESS disciplines throughout Pakistan.

RQ1. How often do Pakistan's Physical Education and Sports Sciences researchers engage in predatory or bogus publishing practices?

RQ2. What is the credibility of current research publications in the PESS across Pakistani universities and their international impacts?

### **METHOD**

This study utilized the methodology inspired by Shah et al. (2024), published online in 2021. We specifically focused on evaluating PESS domain journals, which differs from Shah et al.'s (2024) study covering other Social Sciences and Humanities subjects throughout Pakistan. We replicate their evaluation method to authenticate publications but eliminate the semi-structured interviews on "symbolic violence (28)". They identified the prevalence of "symbolic violence" in their research, providing valuable insights that could be applied to the local context of PESS within the Social Sciences subjects. Therefore, in the present study, we avoided repeating "symbolic violence" information and focused solely on assessing the reliability of the journals where our chosen area articles were published. Although the present study does not directly examine the extent of symbolic violence in the PESS, we recommend that future studies investigate this element more thoroughly.

## Corpus for Current Investigation

For the current investigation, we employed a systematic approach to undertake an in-depth critical analysis of the international journal publications from Pakistan's faculty connected to PESS. The present study's principal investigator (PI) systematically compiled detailed information on PESS postgraduate degree programs (MS/MPhil/PhD) offered at various HEIs in Pakistan. Being a PESS faculty member, the PI's direct interaction with relevant HEIs facilitated the creation of a concise list. Given that there is a limited number of HEIs (N = 20) offering postgraduate degree programs in the PESS field, the PI included all of them. The HEIs with BS degree programs were deliberately eliminated from the list because no PESS PhD faculty member has worked there till the present. However, PESS PhD faculty working at the Higher Education Department's (HED) Colleges Wing (N = 5) appeared on the list based on having such publications. We did not choose a representative sample because of the limited number of PhDs in the PESS subject; instead, we included all relevant academics (N = 48) working at HEIs (see Table 1).

**Table 1.**

Pakistan's HEI-wise number of recognized and bogus publications in international journals by PESS academics.

Sr. #	Names of Public Sector HEIs	State / Province	PhD Faculty	Recognized Pub. Contrib.	Bogus Pub. Contrib. (f)
1	University of the Punjab (PU), New Campus, Lahore	Punjab	5	0	108
2	Gomal University (GU), New Campus, Dera Ismail Khan	KPK	3	2 (Y)	36
3	Health Services Academy (HSA), Islamabad	ICT	3	1 (W)	31
4	Abdul Wali Khan University Mardan (AWKUM), Mardan	KPK	2	0	20
5	University of Haripur (UOH), Haripur	KPK	3	1 (Y)	18
6	University of Sindh (USindh), Jamshoro	Sindh	3	0	17
7	Lahore College for Women University (LCWU), Lahore	Punjab	2	1 (Y)	17
8	Government College University Faisalabad (GCUF), Faisalabad	Punjab	2	3 (Y)	16
9	The Islamia University of Bahawalpur (IUB), Bahawalpur	Punjab	2	1 (W)	15

10	Higher Education Department (Colleges, Wing) (N = 5)	KPK	5	2 (W)	14
11	Sukkur Institute of Business Administration University (SIBAU), Sukkur	Sindh	1	0	12
12	University of Sargodha (SU), Sargodha	Punjab	1	0	10
13	Shaheed Benazir Bhutto University, Sheringal	KPK	1	0	5
14	University of Karachi (UOK), Karachi	Sindh	1	2(W), 1(X), 1(Y)	3
15	Kinnaird College for Women University	Punjab	1	0	1
16	Higher Education Department (Colleges, Wing) (N = 1)	Punjab	1	1	0
17	XX University	Punjab	2	12 (W), 3 (X)	0
Total Contributions			38	31	323
Names of Private Sector HEIs					
1	University of Lahore (UOL), Lahore	Punjab	4	1 (W), 1 (Y)	98
2	Sarhad University of Science & Information Technology (SUIT), Peshawar	KPK	2	0	9
3	Muslim Youth University (MYU), Islamabad	ICT	2	1 (Y)	7
4	Nazeer Hussain University (NHU), Karachi	Sindh	1	0	6
5	Riphah International University (RIU), Faisalabad Campus	Punjab	1	0	2
Total Contributions			10	3	122

Abbreviations: Pub.-Publication, Contrib.- Contribution, KPK-Khyber Pakhtunkhwa, ICT-Islamabad Capital Territory.

Note: The number of contributions occurred as faculty members' names appeared in one or more publications. For example, if three faculty members of the same or other HEIs appeared in a publication, it costs 3, not 1.

## Publication Searching Procedures

The study's researchers executed a comprehensive examination, encompassing all internationally produced papers by PhD faculty in the PESS disciplines throughout the country, ensuring the following steps.

Step 1: The primary author initiated the process by utilizing a publicly available list of PhD faculty members from the Pakistan Sports Sciences Council's (P-COSS) social media platforms, including the Facebook Page (29) and WhatsApp Group (P-COSS Pakistan).

Step 2: Using the list of PhD faculty members on the mentioned social media platforms, we thoroughly searched the academic staff profiles at their affiliated institutions' websites.

Step 3: We systematically gathered the relevant faculty's publications from international journals, spanning articles published between 2000 and 2024. The search was initiated in

November 2023, completed in March 2024, and extended until July 2024. The researchers found no international publications in Pakistan's PESS field before 2000.

Step 4: Besides academic staff profiles and resumes, scholarly platforms such as Google Scholar, ResearchGate, Academia, Semantic Scholar, and SportDiscus were consulted. The goal was to identify articles authored by each PESS faculty member.

Step 5: Individual faculty members' names were systematically entered into the search tabs of the mentioned scholarly platforms. Finally, we compiled the resulting collection of publications into a collective (soft) folder, with separate subfolders naming each faculty member, facilitating efficient data organization.

### **Inclusion/Exclusion Criteria**

The inclusion and exclusion criteria for evaluation and articles' recognition on HJRS were as follows.

Included:

- a. Pakistan's PESS faculty members' publications from public and private sector HEIs.
- b. The publications of full-time/regular faculty members, including lecturers, assistant professors, associate professors, and professors with doctorate degrees.
- c. The PESS faculty member's contribution to a publication as a principal or coauthor.
- d. International journal publications as per the HEC/HJRS criteria for recognition.
- e. Publications relevant to PESS subject as per HJRS discipline-wise subject area/subcategory.
- f. Papers published in the English language.

Excluded:

- a. Publications of administrative staff (e.g., sports directors/personnel) in HEIs. Even if they hold a PhD, they are not faculty members, so they were excluded from the study corpus.
- b. As per HJRS, articles published outside the subject area/subcategory of PESS.
- c. International Journal publications that HEC/HJRS never recognized in the past or present.
- d. Local publications, except those indexed in Scopus/WOS, were excluded due to a potential lack of peer-review ethics. Local publications are possibly Veer-



reviewed<sup>1</sup> instead of peer-reviewed; therefore, they were excluded for future evaluation separately.

- e. Other publication types, such as newspaper articles, conference papers, theses, books, etc.
- f. Papers published in languages other than English.

## **Assessment**

We assessed each faculty member's available corpus of publications based on inclusion/exclusion criteria. Most publications in the corpus were from cloned/hijacked journals having no (active) digital object identifiers (DOIs). Accordingly, reference management software could not retrieve the article data automatically. Nevertheless, wherever the DOIs were available, the articles' data were retrieved through Zotero (version 6.0 by zotero.org). Where the DOIs were missing, data retrieval through software was not feasible; therefore, researchers manually inserted data into the Zotero.

We completed the evaluation process for publication authenticity in two stages. In the first stage, we utilized HJRS to validate the system's acknowledged or non-acknowledged journals. In the second stage, we further scrutinized journals through Scopus or Web of Science (WOS) core collections/journal master list, whichever was applicable by HJRS. According to HEC/HJRS, Social Sciences journals that had (JCR™) Impact Factor fell in the "W" category or in the "X" category those listed in Clarivate Analytics' Master List before 1 July 2020 and are indexed in Scopus or Web of Science (WOS) core collections after the date (see HJRS FAQ 5). Thus, the valid international publications are those currently covered by Scopus or WOS and would not be considered if removed from the above databases even if still listed in HJRS (see Figure 1 for reference).

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<sup>1</sup> *Veer* is a local language term for addressing a brother or brother-like friend, and such friends overwhelm the PESS field.



Figure 1 indicates that any journal's Scopus discontinuation shall be treated as automatically derecognized by HJRS from the date of discontinuation. The first author took the shot from HJRS's homepage on 16 October 2021 and posted it on Facebook on the same day for researchers' awareness.

### **Journal Classification**

After assessing the journals' authenticity, we classified them as hijacked, predatory, or original, which aligned with HEC guidelines. Based on their credibility, we further distributed journals into three zones (i.e., red, yellow, and green). Red zone: Journals have the same names as those in HJRS but are not recognized/derecognized by Scopus/WOS or have distinct hijacked websites, as explained in the rationale on Scopus (16). Yellow zone: Journals lacking apparent clone websites but derecognized by Scopus/WOS, having inconsistent coverage with HJRS—considered predatory. Green zone: Journals indexed concurrently in Scopus or WOS and HJRS, publishing relevant subject area/subcategory papers with a straightforward website/publisher homepage. While classifying, we were particularly vigilant about papers published in journals outside PESS subject areas/subcategories. It is noteworthy that journals related to Medicine (except sports medicine, rehabilitation, and sports injuries), Pharmacy, Nutrition (except sports nutrition), or other similar science subjects (without PESS contents) were not considered in the domain, according to HJRS. However, journals that fall in subject areas such as Health Professions (miscellaneous), Social Science (miscellaneous), Arts and Humanities (miscellaneous), or Multidisciplinary journals were counted eligible, as implied in HJRS. Particularly, journals with content related to physical education, movement, physical activity, exercise, sports, or psychophysical health were deemed in the Physical Education and Sport Sciences (PESS) field, as indicated on HJRS.

Based on the three zones, we created subcollections from the main publication collection into Zotero. We then exported data into the Excel spreadsheets for each zone, detailing author and journal names and publication year. Further, we coded the number of publications against each eligible faculty member (seniority-wise) affiliated with any HEI and journal abbreviations. Avoiding naming the faculty's several universities, we used their current affiliations due to the probability that they may gain potential benefits at current job placements. Then, we counted each university's total publication contributions and percentage using Excel. Furthermore, we prepared graphical representations illustrating the prevalence of hijacked or predatory and original publications across various universities with relevant disciplines. We intentionally concealed the faculty members' identities from results, adhering to robust ethical standards. At the same time, we disclosed university names to guide their QECs and ORICs, and the regulatory body (HEC) for information and further necessary action.

## **RESULTS**

The study's findings are presented in categorized publications across journal zones for readers' clarification. Categorically, we provide zone-wise frequencies of publications in predatory/hijacked or original publications as determined by HEC's online journal recognition system (HJRS). For researchers' guidance, we presented separate lists of journals in tabular form regarding hijacked or predatory publications with justifications.

### **Research Scam in Pakistan's PESS Disciplines**

The results expose the widespread prevalence of predatory publishing, particularly in hijacked journals within Pakistan's academic discipline of Physical Education and Sports Sciences (PESS). Red Zone Journals: PESS faculty's 198 articles were found in red zone journals out of 235 (so-called recognized) publications in the corpus. A supplementary file<sup>2</sup> highlights the journals identified in the red zone, often published internationally with associated fees, bypassing quality assurance. Column A presents original data (journal names, ISSNs, publishers, and homepages from HJRS and Scopus, respectively). Column B reveals journals with identical names may have the same or different ISSNs and hijacked homepage links. The third column highlights discrepancies justifying the classification of hijacked journals in the red zone. Some of these journals are already listed in the Retraction Watch Hijacked Journal Checker, for which we cited

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<sup>2</sup> The file consists of details of hijacked journals covered by this study and can be retrieved from the link <https://osf.io/ed7t9/>

links against them. Notably, 24 journals were exposed in the red zone for the researchers' assistance.

Yellow Zone Journals: The PESS faculty's 10 publications were part of the Yellow Zone Journals. Table 2 displays articles in the yellow zone (predatory) journals, publishing irrelevant subject areas/subcategories. Most hijacked and predatory journals originate from India. Additionally, 11 publications in the journal "Humanities and Social Sciences Reviews (HSSR)" are excluded from the table due to their relevance in the subject area. However, Scopus's derecognition date mismatches with HJRS for this journal (HSSR), which should be reviewed and delisted from HJRS accordingly. After delisting from HJRS, the authors could not use the publications of HSSR.

**Table 2.**

Yellow zone journals (seemingly with non-hijacked websites) have uncertain originality, irrelevant subject areas, and dubious review activities, which have caused Scopus coverage to be discontinued and mismatched with HJRS.

#	Journal Name, ISSN, Publisher URL	Coverage Status/Discrepancies
1	Indian Journal of Economics and Business, 0972-5784, Ashwin Anokha Publications and Distributors, India. <a href="http://www.ashwinanokha.com/IJEB.php">http://www.ashwinanokha.com/IJEB.php</a>	Scopus coverage till 2020, HJRS X-Category till June 30, 2022, i.e., incompatible. - The subject subcategory for PESS is irrelevant as per discipline classification on HJRS.
2	International Journal of Computational Intelligence in Control, 0974-8571, Muk Publications and Distributions, India. <a href="https://www.mukpublications.com/ijcic.php">https://www.mukpublications.com/ijcic.php</a>	Scopus coverage till 2021, HJRS X-Category till June 30, 2022, i.e., incompatible. - The subject subcategory for PESS is irrelevant, as per HJRS.
3	Plant Cell Biotechnology and Molecular Biology, 0972-2025, Society for Biology and Biotechnology, I.K. Press, India. <a href="https://www.ikpress.org/index.php/PCBMB/">https://www.ikpress.org/index.php/PCBMB/</a>	Scopus & HJRS coverage ceased in 2021. - The subject area/subcategory for PESS is irrelevant as per discipline classification on HJRS.
4	Latin American Journal of Pharmacy, 0326-2383, Colegio de Farmaceuticos de la Provincia de Buenos Aires, Argentina. <a href="http://www.latamjpharm.org/">http://www.latamjpharm.org/</a>	Scopus/WOS & HJRS (Y-Category) coverage till present. The publisher's physical/postal address & Editorial team are absent from the website. It falls in an irrelevant subject area/subcategory for PESS.

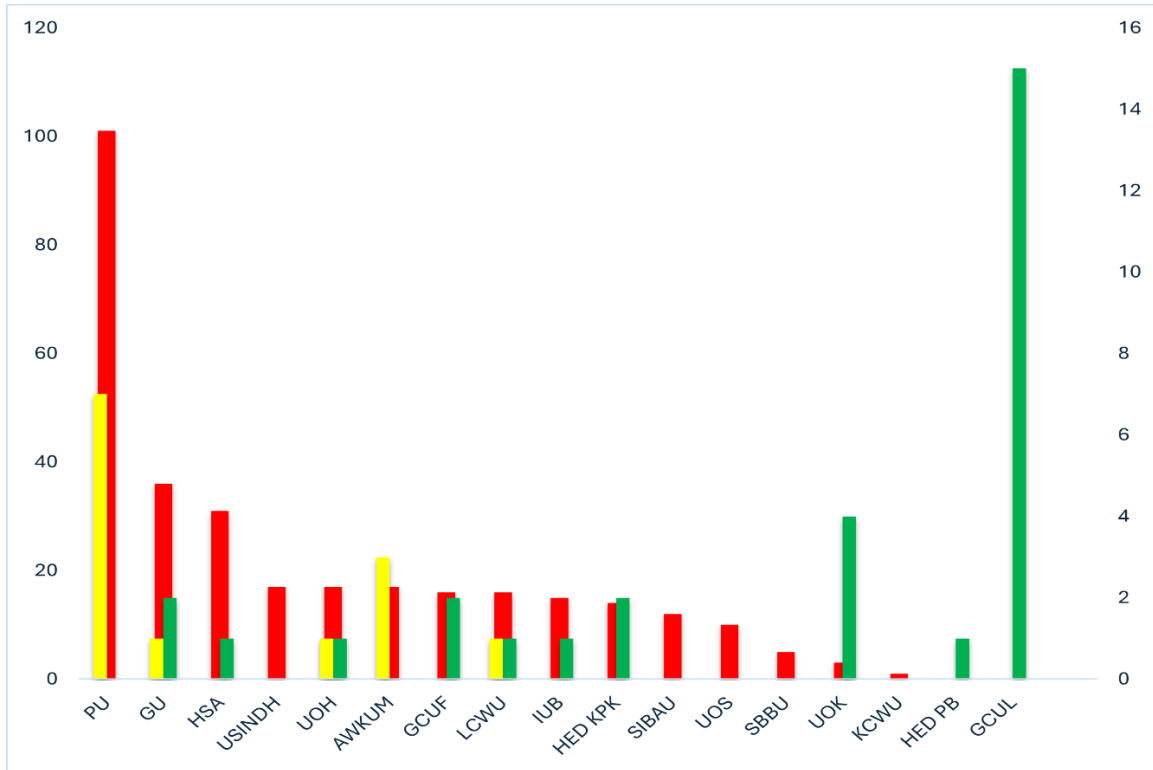
In addition to the above hijacked/predatory publications, we prepared a list of unrecognized journals mentioned in faculty resumes/profiles to save the research students from becoming victims of paper mills (30). Since these publications are not listed in HJRS they have no benefits, but research students must be vigilant to falling into the trap of supervisors with such papers.

### **University-wise Publications**

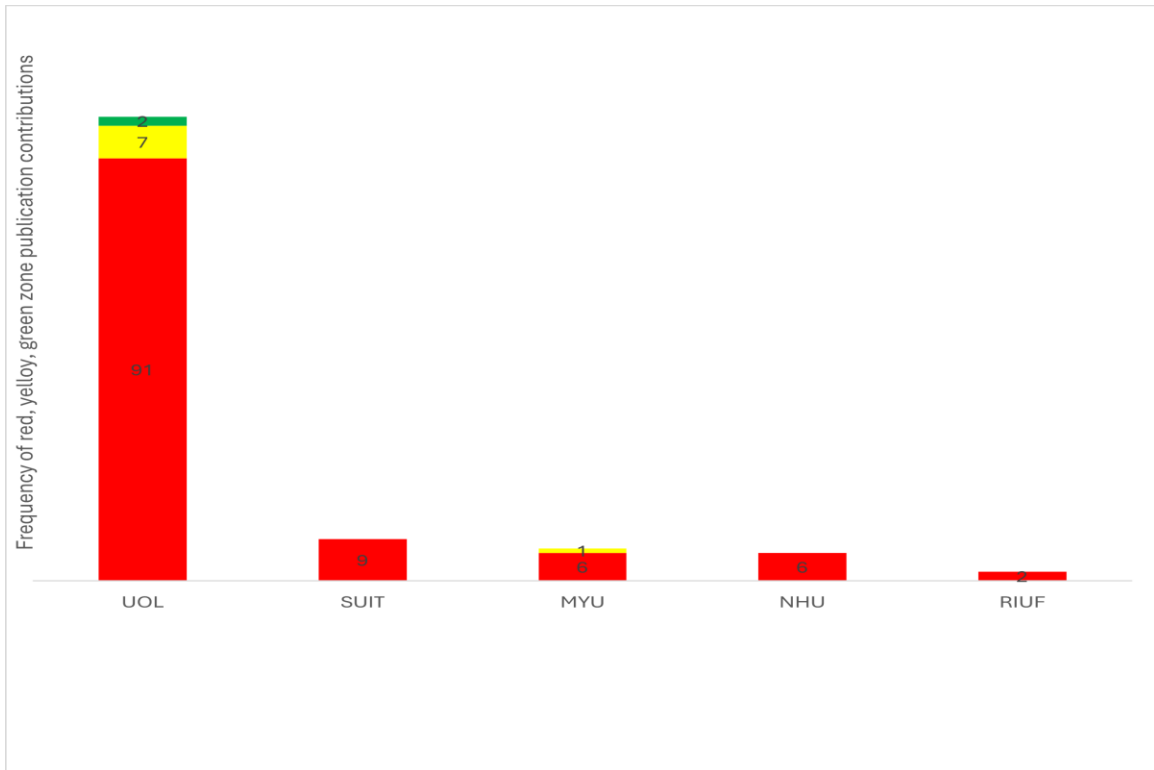
After collecting international publications, and removing unrecognized and duplicates, we evaluated 235 (198 red + 10 yellow + 27 green zone) articles focusing on university-wise numbers. In the realm of fake journals, public sector universities witnessed prolific contributions (Figure 2). In the red zone, Pakistan's University of Punjab (PU), Lahore led the list by contributing 108 times to bogus publications by five PESS faculty members—notably, 35 of them contributed by the chair. The Gomal University (GU), Dera Ismail Khan, has 36 publication contributions from three faculty members with a major part (21) from a previous person in charge of the PESS department. The Health Services Academy (HSA), Islamabad (f = 31) with a substantial part (24) by the chair, and the Abdul Wali Khan University Mardan (AWKUM), Mardan (f = 20) followed suit with three and two faculty members, respectively. In the private sector (Figure 3), the University of Lahore (UOL), Lahore dominated with 98 contributions in red zone publications involving four faculty members, and 18 of them contributed by the chair. The Sarhad University of Science and Information Technology (SUIT), Peshawar (f = 9) pursued by Muslim Youth University (MYU), Islamabad (f = 6) with contributions from two faculty members in each, respectively. Transitioning to the yellow zone, PU maintained its lead among public sector universities, with seven contributions attributed to three faculty members, followed by AWKUM with three contributions by two faculty members. Conversely, in the private sector, a faculty member from the UOL independently published seven predatory publications tracked by one contribution of MYU in the yellow zone.

When evaluating research, a researcher cannot leave aside the work of any academics who work for quality research in the realm of fake achievements. To minimize the bias, the investigators prepared separate files including all publications available in each zone as separate Excel files which can be accessed for confirmation and clarification. In the Green Zone, Government College University Lahore excelled with 15 contributions for W & X category publications by two faculty members. Also, those faculty members served as the first or main authors for 5 of them, with no red zone publications. The University of Karachi (UOK) secured

the second position with four contributions on recognized publications by one faculty member but lacked contribution as a principal investigator. Unfortunately, the faculty member from UOK had two predatory publications in the red zone as a leading author, which put him at risk for research supervision and professorship.



**Figure 2.** Visual depiction of PESS faculty members' frequency of publication contributions categorized into red, yellow, and green zones, according to their current affiliations at public sector HEIs in Pakistan at the time of evaluation.



**Figure 3.** Graphical representation of PESS faculty members' contributions in red, yellow, and green zone publications, according to their affiliations at private sector HEIs in Pakistan at the time of evaluation.

## DISCUSSION

The present investigation into predatory publications reveals a troubling trend in Pakistan's academic field, specifically in the Physical Education and Sports Sciences (PESS) disciplines. The public sector institutions, such as PU, GU, and HSA showed a concerning publishing trend in fake journals in the red zone. Private sector universities, such as UOL, SUIT, and MYU indulged in the worrying trend of academics being involved in questionable international publications within the covered period. In addition to red zone publications, PU again remains the top public-sector university followed by AWKUM, in the yellow zone. However, in the private sector, UOL is notable for independently publishing seven articles in the yellow zone followed by MYU. Regarding the study findings about quality international publications, Government College University Lahore was recognized at the top in the green zone, with contributions in the HEC's "W" and "X" categories. This comprehensive review highlights how

critical it is to hinder predatory publishing practices and implement changes in academic publishing policies at Pakistani universities.

### **Prevailing Predatory Publishing**

Faculty are often involved in questionable publishing practices to enhance self-promotion or financial benefits un/knowingly. The majority of studies and analyses on “predatory” publishing reinforce the presumptions about the ignorance and lack of comprehension of academic scholars (31). The present study's results of red zone publications show that the PESS faculty members at all levels of teaching cadres publish papers in journals that are hijacked or predatory. Whereas the regulatory body's (HEC) HJRS in 2021 clearly stated for authors that "Before selecting a journal for publishing an article, the author(s) need to ensure that only quality journal is selected. Those journals which are involved in predatory publishing/unethical activities may be avoided" (see Figure 1). It meant that for journal selection, the sole responsibility implied to authors for their publications. In addition to HJRS, authors must consult other relevant databases (Scopus/WOS) before selecting an international journal to determine its quality (HJRS FAQ 7).

In addition to hijacked/predatory journal publications, most of the leading faculty members have a lot of unrecognized publications mentioned on their resumes. Even though unrecognized publications have no benefits, it is unethical to mention those obscure publications on CVs and upload them on the official websites of HEIs to lure research students. The senior faculty members, being the PESS leaders, should show exemplary responsibility for guiding the juniors. On the contrary, the present study findings showed that such PESS leaders seemingly do not know how to choose the right journal to disseminate their research. One possibility for such behavior is that they may have low-quality studies, so they looked for easier ways to publish. Another possibility is that they may not adhere to quality, which requires talent, time, and much effort to complete the genuine research process.

The high (fake) publication output occurs due to gift authorship, consortium agreement, or other dubious methods that may be the source of extreme publishing behavior (32). The faculty with such dubious publications possibly formed friendly groups to publish their unscientific work and to protect their gains and self-interests. Unethical practices within academia must be intolerable which poses a severe threat to the integrity of scholarly work. This investigation sheds light on faculty engagement in predatory publishing within both public and private sector universities in Pakistan.

Predatory publishing is not confined to Pakistan; it is a global issue that threatens academic research throughout the world (17,18). Since predatory journals often operate



internationally, the misleading nature of these publications affects a wide audience, including researchers, practitioners, and policymakers globally. Readers from various countries may unknowingly rely on fraudulent research, distorting scientific understanding and hindering legitimate academic progress. Furthermore, international/national funding agencies that assess grant proposals based on the quantity and quality of publications may inadvertently allocate resources to researchers engaging with predatory publishers. This misdirection of funds can lead to wasted resources, reinforcing the need for global vigilance and stronger regulatory measures against predatory journals.

### **Predatory Publishing and Research Supervision Shortcomings**

The rise of predatory publishing is closely linked to deficiencies in research supervision, which can unintentionally drive early career researchers and students toward unethical publishing practices. Supervisors play a vital role in guiding researchers through the intricacies of scholarly publishing, yet when this guidance is insufficient or misguided, the risk of engaging with predatory publishing increases. Flaws in research supervision, such as inadequate awareness of credible publication outlets, pressure to publish quickly, and lack of mentorship in ethical publishing standards, can lead students and novice researchers to fall victim to predatory publishers.

The present study's findings in the red zone indicate a failure by research supervisors to prioritize scientific rigor, leading to a disregard for academic integrity. When faculty employ unethical authorship practices, such as directing graduate students to coauthor articles with established names or making transactional deals with journals for publication, they undermine academic integrity. By doing so, they promote a culture of influence known as symbolic violence, as demonstrated by Shah et al. (2024), gaining backing from an increasing number of pupils who were likely to imitate their immoral behavior. Further, under their supervision, the production of more PhDs through predatory processes has become a vicious chain that is undermining academic and research integrity. Furthermore, the research supervisors, who participate in fraudulent operations, help their favored students obtain undeserved jobs by supporting bogus research publications and academic qualifications. It can be claimed that the degrees after such bogus research output are fake if not done without explicit consideration. In this regard, there is straightforward evidence in the present study that both the published works of supervisors and students are fraudulent and may face severe actions.

The effects of supervisors' predatory publications on research students under their supervision can be profoundly detrimental. Supervisors who engage in predatory publishing set a poor example for their students, potentially undermining their understanding of ethical

research practices. This misguidance can lead students to value quantity over quality, prioritize rapid publication over rigorous peer review, and ultimately jeopardize their academic integrity and future careers. Students may inadvertently follow suit, submitting their work to predatory journals, which diminishes the credibility of their research and qualifications. This practice not only affects the individual students but also tarnishes the reputation of academic programs and institutions involved, making it harder for graduates to find respectable positions in academia or industry. The occurrence of unfair postgraduate admissions for favored pupils, degree completion with fraudulent publications, and support in getting unmerited (competitive) jobs should be further investigated.

### **Predatory Publishing, Fake Academic Achievements, and Global Impact**

Predatory publishing undermines the integrity of academic research and contributes to the inflation of fake academic achievements. By exploiting the “publish or perish” culture in academia (33,34), predatory journals provide an easy yet deceptive avenue for researchers to accumulate publications without rigorous peer review. This leads to the creation of artificial academic profiles, where individuals claim scholarly success based on papers published in low-quality or unethical journals. Such achievements may appear legitimate on the surface, but they erode the credibility of the academic community, distort performance evaluations, and grant undeserved recognition, ultimately devaluing genuine scholarly work.

Discussing faculty's institutional achievements through their fraudulent publications is pertinent to highlight academic integrity deterioration. The alarming situation is that faculty with fraudulent publications work in key leading positions, and HEC Pakistan is unaware of their fake professorships. This worsening situation can be explained by an instance where a senior faculty member working as a chair in the Department of Sports Sciences and Physical Education at PU exhibited highly unethical behavior, spearheading 35 fake publications in the red zone. Another worse example is from a public sector HEI namely HSA where a PESS professor has 24 fraudulent publications and works as a chair. Also, a faculty member included in red zone publications from the University of Haripur has been nominated as a country representative for the Global Observatory for Physical Education (GoPE). In the private sector, namely at the University of Lahore, a professor has written 51 followed by his chair (18 articles) in predatory journals till July 2024. Also, a professor from MYU (now in AlHamd University, Islamabad Campus) has the utmost list of unrecognized (having only one recognized) international publications prevailing in the field with a PhD from another discipline (PhD in Education bracketed with Sports Science). Leading faculty members from two private universities (i.e., AlHamd and UOL) are making international contacts based on their fake achievements by showing international peers as if they are real

leaders of Pakistan Sport Sciences. In addition, based on their fake achievements, they work as external examiners/subject experts for several recruiting entities such as Provincial and Federal Public Service Commissions, and Universities' selection boards for PESS subjects. Since their own positions are questionable, they favor their favorite students throughout the selection process to gain more strength in the field. Instead of fulfilling the primary role of guiding and instructing junior colleagues and students in pursuing quality research and original journal publications, such leaders prioritize personal advancements, exemplifying a lamentable form of academic fraud.

The global impact is that international peers and organizations wrongly consider them as real leaders of sports science through their fake achievements. In the predatory publishing, they included contributions from postgraduate (MPhil/PhD) students, benefitting from international collaborations and awards based on their fake achievements. The widespread prevalence of academic fraud in Pakistan's PESS discipline is highlighted by these instances, where the leading faculty members misuse resources for fake publications rather than authentic research. Thus, the study findings posed a serious question of whether such faculty members' current positions are justified or unjustified. Based on unjustifiable publications, the process of getting their degrees, selections, promotions, and reaching leading positions is doubtful and could be further investigated. There is another debate in the field: how the so-called sports leaders got their PhDs from other disciplines not relevant to PESS should also be further investigated.

The current situation is very alarming and, thus, requires relevant authorities' immediate attention to rectify the flaws in the system. Moreover, significant systematic changes are compulsory to ensure academic progress is based on authentic scientific achievements rather than fraudulent practices (35,36). Furthermore, addressing this issue is crucial for developing an environment that encourages and promotes high-quality research in Pakistan's academic sectors, particularly PESS. In summary, predatory publishing is a widespread problem that requires thorough actions to protect the credibility of academic research. Necessary initiatives should be taken at institutional and global levels to address this issue by promoting transparency and ethical publication procedures.

## **Limitations**

The limitations of the study were as follows:

- i. The study's scope was limited to Pakistani academics in Physical Education and Sports Sciences (PESS), which restricts the applicability of the results to other academic fields.

- ii. Most predatory publications did not indicate the corresponding author details. Therefore, the current study's authors found it difficult to determine the primary author for predatory publications. In such cases, the first (student) author's supervisor or the most senior faculty member was considered the principal author.
- iii. Hijacked journal websites usually have privacy errors and are constrained to access directly by search engines or research databases. Therefore, it was sometimes difficult to reach out to the websites and download papers. Based on this limitation, it is probable that some of the hijacked journal papers might be skipped from the evaluation radar.
- iv. The study's timeframe could impact the significance of suggestions as the educational environment and predatory publication behaviors may change over time.

## Conclusions

We examined scientific publications in Pakistan's Physical Education and Sports Sciences (PESS) disciplines. Our evaluation extended till July 2024 and found how many Pakistani PESS research publications were published in "hijacked/predatory" or unrecognized journals. This alarming trend can be attributed to employment market dynamics, promotions and tenure issues, and institutional requirements for article publishing before the dissertation defense. Predatory publishers target experienced academics and graduate students in these academic settings. The effects transcend beyond academics and are linked to HEC accreditation and the global ranking system. This complicated interplay emphasizes the need for comprehensive reforms to survive the detrimental intrusions that endanger scholarly publishing in Pakistani academia, particularly the PESS sector. Authors, publishers, editors, and institutions must encourage academic research integrity and avoid predatory publications. The following disciplinary measures could be implemented to avoid further involvement of researchers in such predatory publishing practices.

- i. Guideline development: Faculty recruiting authorities must create clear criteria for assessing research articles for appointments and promotions. Furthermore, HEIs should develop clear guidelines for ORIC or article screening staff in discriminating between legitimate and predatory journals.
- ii. QEC personnel training: Since quality enhancement cells (QECs) in HEC or relevant institutions are responsible for maintaining research quality, the staff must be trained to carefully check any journal's credibility and subject area/subcategory to determine the authenticity of publications.

- iii. Benefits reversal: Publications in hijacked/predatory journals should not be considered for appointments or promotions. Faculty members who have gained any benefits from such publications should be revoked.
- iv. Stringent measures: After completing the appropriate trials, the HEIs should take extensive penalties against faculty members engaged in predatory publishing, such as demotions or dismissals.
- v. HEC intervention: Pakistan's regulatory body (HEC) for HEIs should take necessary action against university administrations that appoint individuals with predatory publications.
- vi. Program bans: Protecting students' educational goals in all academic fields, particularly in PESS is essential. Therefore, HEC should ban degree programs offered by faculty members who are involved in predatory tactics.

Conclusively, if the HEC Pakistan remains as ignorant as in the past, corruption regulatory bodies like the National Accountability Bureau (NAB), Federal Investigation Agency (FIA), Anti-Corruption Establishment, or other relevant agencies, should investigate HEIs involved in corrupt activities linked to fake degree completion processes and predatory publications and assess the financial benefits received.

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