**Why Do Researchers Publish in Predatory Journals? A Cross-sectional Survey Study**

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**Abstract:**

**Background:** Scientific open-access publishing for dissemination of research studies has resulted in numerous internet-based journals, referred as predatory journals. These journals ave lax peer review standards, accept studies of poor quality and have no proper indexing of the published manuscripts. We aimed to study why scientists publish in such journals.

**Methods:** We surveyed 1270 authors who published in predatory journals with the stated objective that we were studying publication practices among researchers from low and middle income countries (LMIC) and high income countries (HIC). We received survey responses from 114 authors from 31 countries (response rate 9%). We queried if the authors were ‘aware of predatory journals’. If they answered ‘yes’ to the question, we asked seven questions that tested their ability to recognize predatory journals. Authors were ignorant of predatory journals if they self-reported lack of awareness or if they failed in the test (incorrectly answered four or more questions out of the seven).

**Results:**

Majority of authors from LMICs reported that they paid the article processing charge themselves (78% from LMICs compared to 33% of authors from HICs). More authors in LMICs reported awareness of an institutional restriction to publishing in certain journals (32% versus 19%), reported a job-related requirement to publish in journals (53% versus 29%) and reported having a monetary incentive to publication (25% versus 7%). 43% of authors in LMICs and 26% in HICs self-reported a lack of awareness of predatory journals. Majority of the authors in our study were ignorant about predatory journals (58%), irrespective of whether they are from an LMIC or an HIC.

**Interpretation:**

Lack of awareness about predatory publishing practices is associated with publishing in such journals. We may be able to reduce the impact of predatory publishing by instituting an awareness program.

**Why Do Researchers Publish in Predatory Journals? A Cross-sectional Survey Study**

**Background:**

The widespread use of scientific open-access publishing for dissemination of research studies has resulted in numerous internet-based journals. Some of these journals solicit articles from researchers, seek publishing charges but provide no quality control. These journals have lax peer review standards, accept studies of poor quality and have no proper indexing of the published manuscripts. Such journals are referred as ‘predatory journals’. The fundamental nature of predatory publishing practice is exploitative. These journals have to be contrasted against open-access non-predatory journals which like predatory journals assure researchers that access to their manuscripts are free for the readers, and that the authors retain the copyrights to their scholarly work. However, such open-access non-predatory journals provide good quality editorial services, peer review procedures and indexing. It is often difficult to distinguish between these two types of journals.

Predatory journals lack ethics, integrity and standards of academic publishing. They cause damage to scientific research by providing a platform for poor quality research studies. Such publications result in increasing the public’s mistrust in science. A cross-sectional study of 1907 research studies published in more than 200 predatory journals observed that only 40% had ethics committee approval.[1](#ENREF_1) Among the studies that were analyzed, the United States National Institutes of Health was the largest funder, with India’s University Grants Commission and Indian Council of Medical Research coming second and third respectively. India and United States were the leading nations represented in the analysis. Some of the World’s best known institutes and universities have contributed content to predatory journals. While the content of published research in predatory journals has been studied, the reasons why scientists publish in such journals have not been investigated. We aimed to understand the reasons behind it.

**Methods:**

We obtained University of Kentucky Institutional Review Board approval to contact 1360 authors who published in predatory journals and were studied in the cross-sectional study by Moher et al. We obtained the contact information of these authors from publicly available dataset provided by Moher et al (<https://osf.io/y6hw2/>). With the stated objective that we were studying publication practices among researchers from low and middle income countries (LMIC) and high income countries (HIC) we sent a survey to 1270 authors via email (we excluded emails that bounced or were duplicates). We offered a gift card for $10 for participants who complete the survey.

We asked several questions pertaining to publication practices and preferences of authors. We also queried if the authors were ‘aware of predatory journals’. If they answered ‘yes’ to the question, we asked seven questions that tested their ability to recognize predatory journals. These seven questions were identified from a list of 13 characteristics of predatory journals validated in a prior publication (Table 1).[2](#ENREF_2) The authors were ignorant of predatory journals if they self-reported lack of awareness or if they failed in the test (incorrectly answered four or more questions out of the seven). We used univariate logistic regression to test for predictors of awareness of predatory journals. We used the following predictor variables in our analysis -location (author in a low and middle income country versus high income country, experience in publishing (published more than 10 manuscripts versus less), presence of institutional restriction to publish in certain journals versus no such restriction, has a job related requirement (present versus no such requirement), and has a financial incentive to publishing (present versus none). Dependent variable was defined as lack of awareness of predatory journals. Statistical analyses were performed using R software.

**Results:**

We received survey responses from 114 authors from 31 countries (response rate 9%)(Table 2). The majority of respondents self-reported publishing more than 10 manuscripts (79%). The majority of authors from LMICs reported that they paid the article processing charge themselves (78% from LMICs compared to 33% of authors from HICs). More authors in LMICs reported awareness of an institutional restriction to publishing in certain journals (32% versus 19%), reported a job-related requirement to publish in journals (53% versus 29%) and reported having a monetary incentive to publication (25% versus 7%).

43% of authors in LMICs and 26% in HICs self-reported a lack of awareness of predatory journals (Table 3). More authors in HICs who reported an awareness of predatory journals failed the test compared to authors in LMICs (48% versus 22%). The majority of the authors in our study were ignorant about predatory journals (58%), irrespective of whether they are from an LMIC or an HIC. In regression analysis, we were unable to identify any predictors that suggest an awareness of predatory journals (table 4).

**Interpretation:**

To our knowledge, this is the first study to investigate the reasons why scientists publish in predatory journals. In a previous study, Moher et al surveyed 18 authors of whom only two reported awareness of predatory journals.[1](#ENREF_11) Ignorance or lack of awareness about predatory publishing practices can result in a researcher sending their manuscript to such a journal. We find that in our study of 114 authors who published in predatory journals, the majority was indeed ignorant of predatory publishing.

Several key factors can contribute to publishing in a predatory journal. Researchers in LMICs had a greater incentive, both monetary and academic promotion, to scientific publishing. Although researchers in LMICs report job-related requirements and monetary incentives to publishing in journals, it is unclear whether removing such requirements or incentives will reduce the number of publications in predatory journals from these countries. Despite not having such an incentive, previous research from Moher et al has shown that HIC-researchers publish prolifically in predatory journals.

Researchers in LMICs reported a significant financial burden of paying for publications. Therefore, predatory publishing practices not just hurt science, it also negatively impacts the financial well-being of the scientist as well. Overall, predatory publishing practices are hurting scientific research and researchers.

There are few limitations to our study conclusions. First, response rate for our survey study was 9%. However, neither did we notify the researchers that we were surveying only authors who published in predatory journals nor inform them that the survey is about predatory publishing practices. Therefore, in our opinion, a non-responder bias is less likely to matter in this study. Second, we are unable to authenticate the responses provided in the study. But we have no reasons to doubt the honesty of these researchers in responding to the survey questions. Although, our survey study has these limitations, we believe it is the best study design for the research question.

In conclusion, we find that lack of awareness about predatory publishing practices is associated with publishing in such journals. Our research has important implications for the field of scientific publishing. We may be able to reduce the impact of predatory publishing if an awareness program is instituted at an institutional level.

**Contributorship statement:**

AM and LP conceived and designed the study and administered the survey. AM, AK, SZ and LP conducted the analysis. AM wrote the first draft of the manuscript. AK, SZ and LP contributed to the final manuscript.

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**Data sharing statement:** Dataset is available on request. Please contact the corresponding author.

Patients were not involved with this research.

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**Table 1: Characteristics of predatory journals**

|  |
| --- |
| Predatory journals: |
| * have an article processing charge of > USD 1500 (answer: False) |
| * targets readers (answer: False) |
| * encourage manuscript submission via email (answer: True) |
| * do not have a quick peer review turnaround (answer: False) |
| * report index Copernicus value (answer: True) |
| * include non-biological subjects alongside biological topics (answer: True) |
| * are included in Beall’s list (answer: True) |

**Table 2: Characteristics of researchers who published in predatory journals**

|  |  |  |
| --- | --- | --- |
|  | **No. (%)** | |
| **Characteristics** | **Low & Middle Income Countries** | **High Income Countries** |
| Number of authors included in the survey | 670 | 600 |
| Number of authors who responded (response rate) | 72 (10.7%) | 42 (7%) |
| Number of countries represented | 21 | 10 |
| Number of authors who self-reported >10 scientific manuscripts | 56 (77.8%) | 34 (81%) |
| Usual means of selecting journal for publication (N=114) |  |  |
| Based on prior publication of similar manuscript | 24 (33.3%) | 19 (45.2%) |
| Recommendation from peer group | 8 (11.1%) | 5 (12%) |
| Response to invitation via email | 2 (2.8%) | 3 (7.1%) |
| Using a web based search engine | 31 (43.1%) | 8 (19%) |
| Other | 7 (9.7%) | 7 (16.7%) |
| Usual means of submitting to journals (N=112) |  |  |
| Emailed to journal | 16 (22.9%) | 4 (9.5%) |
| Journal specific system | 54 (77.1%) | 38 (90.5%) |
| Who paid the Article Processing Charge (N=114) |  |  |
| Research grant | 5 (6.9%) | 8 (19%) |
| Institution | 4 (5.6%) | 13 (31%) |
| Self | 56 (77.8%) | 14 (33.3%) |
| Other | 7 (9.7%) | 7 (16.7%) |
| Is there restriction to publishing in certain journals |  |  |
| Yes | 23 (31.9%) | 8 (19.0%) |
| No/Do not know | 49 (68.1) | 34 (81.0) |
| Is there a job-related requirement to publish in journals |  |  |
| Yes | 39 (53.4) | 12 (28.6) |
| No/Do not know | 33 (46.6) | 30 (71.4) |
| If there is job-related requirement, is publication mandatory for promotion? (N=51) |  |  |
| Yes | 33 (84.6) | 11 (91.7) |
| No/Do not know | 6 (15.4) | 1 (8.3) |
| Is there monetary incentive to publish |  |  |
| Yes | 18 (25.0) | 3 (7.1) |
| No | 54 (75.0) | 39 (92.9) |

**Table 3: Awareness about predatory publishing practices**

|  |  |  |
| --- | --- | --- |
| Number of authors who self-reported lack of awareness of predatory journals? | 31 (43.1) | 11 (26.2) |
| Of those who self-reported awareness of predatory journals, the number of authors who correctly answered these True/False questions:  Predatory journals: | N=41 | N=31 |
| have an article processing charge of > USD 1500 (answer: False) | 19 (46.3) | 13 (41.9) |
| targets readers (answer: False) | 14 (34.1) | 12 (38.7) |
| encourage manuscript submission via email (answer: True) | 39 (95.1) | 28 (90.3) |
| do not have a quick peer review turnaround (answer: False) | 28 (68.3) | 23 (74.2) |
| report index Copernicus value (answer: True) | 25 (61.0) | 10 (32.3) |
| include non-biological subjects alongside biological topics (answer: True) | 32 (78.0) | 12 (38.7) |
| are included in Beall’s list (answer: True) | 25 (61.0) | 15 (48.4) |
| Of those who self-reported awareness of predatory journals, the number of authors who incorrectly answered more than 50% of the questions (gave incorrect answer for at least 4 questions) | 9 (22%) | 15 (48.4%) |
| Number of authors who were unable to identify predatory journals or were not aware of predatory journals (N=114) | 40 (55.5%) | 26 (62%) |

**Table 4: Logistic regression analysis**

|  |  |  |  |
| --- | --- | --- | --- |
| Variable | Estimate | Standard Error | P-value |
| Location (LMIC vs HIC) | 0.23 | 0.42 | 0.58 |
| Publishing experience (≥10 vs <10) | -0.75 | 0.50 | 0.13 |
| Restriction to publish in certain journals (yes vs no) | 0.40 | 0.44 | 0.36 |
| Job related requirement (yes vs no) | 0.16 | 0.40 | 0.68 |
| Financial incentive to publish (yes vs no) | -0.16 | 0.52 | 0.74 |