Abstract
Publishing a manuscript or presenting at a conference are considered valuable accomplishments in one's professional career. However, it is necessary that the outlet be a legitimate rather than a fraudulent or predatory one. Predatory journals have been explored previously to a greater extent but the conference version of predatory entities is the newest iteration. To date, very few studies have endeavored to address the nuisance of predatory conferences and to explain the full magnitude of their significance. Our study addresses the issue of predatory conferences as an educational article for the readership of the Journal of Pakistan Medical Association, and highlights their features, available literature on predatory conferences, and puts forward several new suggestions to avoid falling prey to these illegal entities.

Keywords: Developing countries; Predatory publishing; Research fraud; Scientific conferences.

How would you feel to be invited as a speaker or even a chair to present at an international conference? Such invitations might sound highly promising by saying "it gives me pleasure to invite you on behalf of the Organizing Committee to be a Speaker at….", or perhaps "we would like to extend to you a formal invitation as the Speaker of session….", or "we would like to solicit your gracious presence as a speaker at the upcoming International Conference….". Such an invitation would especially attract young researchers who are struggling to improve their resume, add citations in high-impact journals, and establish themselves as thought leaders in the community.1,2 But how does one likely respond to an invitation to present at a conference that has nothing to do with his or her expertise? For instance, an invitation to a physiotherapist to present at a conference on nanotechnology would be a strange combination. It would be more likely that a physiotherapist would present something on research ethics at a life sciences conference under the theme of pathology or drug delivery.

Fraudulent or predatory conferences are poor quality meetings, representing an emerging hazard, with rapid expansion.1 These conferences are organized by revenue-seeking illegal entities rather than organizations or legitimate groups within the scientific community, mimicking names of reputable conferences, operating through a pay-to-play model, and who have little concern for scientific value.1,4 Organizers of such conferences send unsolicited electronic spam to authors, inviting them to present at a conference.1 The most likely victims of such conferences are naive and inexperienced academics with limited skills and training, striving to accelerate their careers.5 It might also be noticed that young researchers are commonly exposed to predatory publishers and fraudulent conferences following a single publication as a corresponding author.1 Such flagrant violators are believed to originate predominantly from Asian and African countries however, organizers of predatory conferences are not limited only to developing countries.1,5 For example, a study found that 43.8% of fraudulent conferences were organized in the USA and UK.1 Previous studies have also highlighted the most commonly reported predatory conference organizers.4,5 Another study with authors from the West reported receiving 109 (out of 578) invitations from potential predatory conferences.6 The more likely reasons for higher rates of predatory conferences in developing countries is the existence of a point system where promotion is based on the number of points gained through attending a conference, and facilitation of their propagation by government offering subsidies for such trips.5

One may consider publishing a manuscript or presenting at a conference as valuable professional accomplishments in his or her professional career. However, it is important to ensure that the venue for publishing research or presenting at conference be legitimate. Presenting at a predatory conference either by lack of knowledge or...
voluntarily has dramatic consequences.\textsuperscript{1} Because of such instances, junior researchers (especially from developing countries) face more challenges and inequalities when competing for grants.\textsuperscript{1,7} Pressure to publish further increases the vulnerability to fall prey to predatory conferences.\textsuperscript{1} Predatory journals have been explored previously to a higher level but the conference version of predatory entities still remains unexplored.\textsuperscript{1,3,8} However, scientific publications that have attempted to explore predatory conferences are limited to specific geographic regions or types of manuscripts [Table-1]. It may be recognized that predatory publishing has a lot more in common with the predatory conferences.\textsuperscript{4,9} Although Crees PE in her paper has given an extensive criteria for determining predatory conferences,\textsuperscript{5} some of the common features of the predatory conferences are:\textsuperscript{4,5,10}

1. The conference name usually has attractive labels such as “International,” “Global,” “World,” or “Universal,” seemingly reflecting that the presenter would disseminate his/her research to an international audience. However, one might notice very few conference attendees or attendees are as equal in numbers as those presenting at the conference.

2. In some cases, predatory conferences may mimic the name of legitimate conferences with a slight difference such as Entomology 2013 (legitimate) and Entomology-2013 (predatory).

3. The conference has a multi-disciplinary and wide-ranging focus. The themes and objectives of the conference might not be reflective of its title. Moreover, content of a theme may not be relevant to it and conference objectives are often vague.

4. Promise that conference papers will be presented in an indexed, high-impact factor journal, which might not be true and may be a predatory journal. It might be difficult for a young researcher to distinguish the good from the bad without additional education, training and mentorship.

5. No peer-review process or promises quick acceptance (may be in a few hours). It might be noticed that virtually all abstracts in such fraudulent meetings are accepted, resulting in an increased revenue generation for these fake journals.

6. Conference organizer/host/sponsors will be one who is not prominent in your field and is generally unknown to you. It might be likely that the details of the conference, including programme schedules, organizing committee members, and keynote speakers, might be missing or vague. Organizers of such conferences select a fancy tourist destination as the conference venue but when attendees arrive, there is no hotel room or accommodations.

7. Such conferences display the names of eminent researchers without their knowledge or may lack their details, and in some cases, they may display some scientists with an expert background as their committee members who may in fact, not be true. Similarly, they offer keynote speaker opportunities to novices, best paper awards and certificates.

8. Fees for conference presentation are mandatory, and are in fact higher than the conference registration fees in most of the cases. Similarly, individuals are requested to pay fees through Western Union or are requested to transfer the conference fee to personal bank accounts and do not have a refund policy. They claim that there is a limited number of seats for attendance so that the researchers pay the fee as soon as possible.

9. Conferences might be cancelled or delayed without any notice and conference organizations may refuse to refund the registration fees. Similarly, one may observe changes in the important dates or deadlines in such conferences.

10. The language in the unsolicited email spams by predatory conference organizers is not standard English, i.e., the words are misspelled or misused with several grammatical mistakes, using free e-mail accounts (Gmail, Hotmail, Yahoo, etc.) and e-mails not associated with an organization.

11. Option to attend the conference virtually or present a paper and receive the conference certificate of attendance is a red flag. Similarly, lack of abstract submission guidelines is a feature of fake conferences.

12. It might be noticed that invitations from such conferences use “flattery, specific reference to the recipient’s previous work, and terms indicative of global reference may be used in invitations to entice researchers into submitting conference abstracts.”

13. Like predatory journals, these conferences may lack contact details.
### Table: Scientific publications that have attempted to explore predatory conferences during last 5 years

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<th>Manuscript</th>
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<td>2. Invitations received from potential predatory publishers and fraudulent conferences: a 12-month early-career researcher experience</td>
<td>A cohort study published in the Postgraduate Medical Journal (The Fellowship of Postgraduate Medicine) during 2017. It presents the findings of spam emails received by an early-career Canadian researcher during 1 year. There were 201/502 invitations received from the predatory conference organizers with majority of the meetings to be held in Europe, North America, and Asia.</td>
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<td>3. Predatory Publication: The Conference Version</td>
<td>Editorial by the Editor-in-Chief of the Journal of Continuing Education in Nursing published in 2017. The Editor invites the authors to share their experiences with predatory conferences.</td>
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<td>5. The Predatory Journal Issue: Part II</td>
<td>Editorial published in the Oncology Nursing Forum (the Oncology Nursing Society) during 2017. It briefly discusses predatory journals and conferences with respect to cancer nursing.</td>
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<td>6. Fake/Bogus Conferences: Their Features and Some Subtle Ways to Differentiate Them from Real Ones</td>
<td>Opinion piece published in the Science and Engineering Ethics during 2017. It discusses the features of predatory conferences and ways to differentiate them from the legitimate conferences.</td>
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<td>7. New year’s resolution: Say no to fake journals and conferences</td>
<td>Guest editorial published in Obesity (the Obesity Society) during 2017. It discuss about predatory journals and conferences in context to obesity research.</td>
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<td>8. Is This Conference for Real? Navigating Presumed Predatory Conference Invitations</td>
<td>Editorial published in the Journal of Oncology Practice (the American Society of Clinical Oncology) during 2017. It illustrates the characteristics of potential predatory conference invitations and a list of the most frequent conference invitations present on Beall’s blog.</td>
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<td>9. “Buyer Beware!” predatory conferences: Avoiding an expensive mistake</td>
<td>Editorial published in the Nursing &amp; Health Sciences (the Society for Nursing and Health Sciences at Yamaguchi University Japan) during 2016. The authors have illustrated features of predatory conferences and a few most commonly known predatory conference organizers.</td>
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<td>13. Predators and Cranks</td>
<td>Perspective by the Editor-in-Chief of the American Journal of Neuroradiology (The American Society of Neuroradiology) published during 2013. The editor reports a fake conference called “Autism One” and further says that “Unfortunately, serious institutions such as the University of Toronto, the Sick Kids Foundation, and even the American Academy of Pediatrics have been suckered into debacles stirred by presentations at these autism meetings”.</td>
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<td>14. Fake Academia and Bogus Conferences are on the Rise in the Middle East: Time to Act</td>
<td>Editorial published in the Ibnosina Journal of Medicine and Biomedical Sciences. The author has covered several aspects concerning predatory conferences, with special focus on Middle Eastern readership and presented differences between a predatory and a legitimate conference.</td>
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*Note* that the authors could find, to the best of their knowledge, only these publications.
There is no shortage of predatory conferences around the world and some authors have attempted to identify several predatory conferences and organizers.4-6 Several strategies also have been suggested and adopted to avoid predatory conferences. An example is of the website by the Federal Trade Commission (FTC) called the FTC Complaint Assistant where predators can be reported.5,9 Similarly, websites like the Chronicle of Higher Education and conferences warn researchers about bogus conferences.9 Moreover, Beall’s blog (although defunct now) served for several years as a source to help author avoid predatory journals, publishers, and conferences.4,5,9

Speaking specifically in Pakistani context, training and skills about predators are deficient. It may be likely that most of us are receiving unsolicited spam mails inviting us to submit to predatory journals or present at a predatory conference and be their victims.11 It is important to understand this in an international as well as national context. While attending or presenting at a conference (international or regional), researchers are advised to judge the features of the conference and compare them to what has been reported in this paper and in previous studies to be sure that they are not falling into the hands of predators [Table-1].4,5,10,17

**Conclusion**

The aim of presenting at a conference should be research dissemination to a wide array of audience through a legitimate and reputable source.2 Therefore, researchers must ensure that the regional conference caters international or nationally diverse population and their paper gets published in a reputable, indexed journal. Likewise, senior researchers and teachers who have experience in this topic may guide their junior trainees and faculty. Institutions and organizations teaching higher education should be wary of the rapidly emerging trend of predatory journals and conferences and should enhance education about them.11,12 Funding agencies, government, and universities should consider suggesting policies against predatory conferences, refrain from funding such meetings, and should consider revising their promotion criteria with strict regulations. In this context, Monash University Australia has set an example by taking a serious stance against predatory publications and conferences.7 As such it does not count any work published in a fraudulent journal for career advancement (promotion, tenure) and any academic purpose (scholarship). It does not fund publishing in a predatory journal or attendance at a predatory conference; thus, students, faculty, and staff are required to check the legitimacy of the journal or conference before applying for funds. Similarly, it expects graduate students to include references from only legitimate journals in their work.7 Finally, the scientific community, especially the journal editors from developing countries, should enhance education about the least explored and highly growing predatory conferences. In this regard, we believe that the Journal of Pakistan Medical Association takes the initiative from Pakistan.

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**References**

15. Dadkhah M, Jazi MD, Pacukaj S. Fake Conferences for Earning Real