AVOIDING PUBLISHING IN PREDA TORY JOURNALS: AN EVALUATION ALGORITHM

ABSTRACT
Academics and scholars need to publish their research results. In addition, they are required to publish scientific papers to prove their research commitment and to achieve certain academic titles in higher education institutions. Globally, there are many scientific journals of well-known publishing houses/universities, which offer opportunities to publish scientific work. One of the recent topics in academic circles is the increasing number of instances to publish scientific papers, without going through the adequate review process. This phenomenon is threatening academic integrity, as these publishers’/journals aim at financial benefits and not contributing to scientific development and progress. There is a gap in the knowledge of the scientific researchers regarding the journal selection to publish their work. Some of them are still unintentionally publishing in such journals, mainly as a lack of information about them. The main purpose of this study is awareness-raising, warning, and guidance of scientific researchers, particularly young researchers by providing information on how to avoid submitting manuscripts in these journals. To achieve this, we have consulted the recent literature and practices of different countries, summarized the most used tools/methods to identify predatory publishers and journals, and lastly, we have developed a guiding algorithm for evaluating them.

KEYWORDS
Blacklists, manuscript open access, predatory journal, predatory publisher, scientific journal, whitelist

HOW TO CITE

INTRODUCTION
Advances in contemporary science depend on the distribution of valuable and credible scientific papers, whereas the academic journal industry depends on a system where competent academics willingly assess the other scholars’ manuscripts. This correction (vetting) process, also known as peer review, highlights the ethical and quality lack in manuscripts. Authors usually benefit from this process because reviewers make recommendations that improve the quality of their manuscripts (Umlauf and Mochizuki, 2018). The concept of predatory publishing has been widely known since its establishment years ago by librarian Jeffrey Beall (Xia et al., 2015). Except “predatory journals” used by Beall (2010), these journals are known also as “hijacked journals” (Jalalian, 2012; cited by Jalalian and Dadkhah, 2015), “dark side of publishing” (Butler, 2013), “ghost journals” (Memon, 2016). The names “fake journals” “sham journals” and “pseudojournals” are also used (Berger, 2017). Despite their renaming, Laine and Winker (2017) emphasize that such journals do not apply the peer review process, which is a distinctive feature of scientific publications.

Electronic journals have multiplied very rapidly in recent years, especially those with open access (hereinafter often referred to as OA). Among them, the quantity of “predatory” journals has increased too. The latter have shown deceitful tendencies, scientific rigor deficiency, and their purpose is mainly the financial benefit (Kurt, 2018). Umlauf and Mochizuki (2018) point out that the consequences of publishing in predatory journals for honest researchers are wasting time, using data in vain, wasted money and manuscripts that end up not being indexed or archived on proper databases. Thus, the identification of these journals is very crucial for writers, scholars, reviewers, and editors, because manuscripts that do not go through the peer review process should not be included in the register of scientific data (Laine and Winker, 2017).

Hereupon, the main purpose of this study is awareness-raising, warning, and guidance of scientific researchers, particularly young researchers by providing information on how to avoid manuscript submitting in these journals. Accordingly, the following research tasks have been set:

• reviewing the literature on predatory publishers and journals,
• summarizing the most used tools/methods to identify predatory publishers and journals,
• developing a guiding algorithm for evaluating publishers and journals.

We believe that this paper will offer significant guidance on avoiding publishing in predatory journals. The paper is organized into five main sections. The first section provides a brief literature review on predatory publishers and journals, their characteristics, open access, article processing charges, and BOAhannon’s experiment. Then it proceeds with materials and methods of the paper. Further, section three presents results, to continue with discussion in the fourth section. In the last section, the conclusion is summarized and the limitations and suggestions for future work are given as well.

LITERATURE REVIEW
Over the past decade, a group of scientific journals has spread rapidly and has become known as a group of “predatory journals” published by “predatory publishers” (Laine and Winker, 2017). Subsequently, the research community has fallen victim to cybercrime. According to Memon (2016: 1644), “when a manuscript is poorly written or the science poorly designed, this arrangement is ideal. On the other hand, honest and mistaken authors who discover their error and seek to withdraw their papers later cannot.” It is considered that predatory journals are the most widely spread category of pseudo journals, and recently they had significant growth (Laine and Winker, 2017). A total of 8,000 active predatory journals published about 2,400 articles in 2014, following a pretty linear increase from 53,000 in 2010 (Shen and Björk, 2015). As stated by Frandsen (2017), possible explanations for the rapid growth are deceptive measures, titles of journals analogous to the titles of esteemed journals, and hence the “presence” of academics/scientists from top universities and research institutes. According to Beall (2013: 84), “there are millions of researchers around the world desperate to publish, and predatory publishers are eager to have them as customers.”

Berger (2017: 206) describes the predatory publishing as ‘as low quality, amateurish, and often unethical academic publishing that is usually Open Access (OA).’ Whereas, Umlauf and Mochizuki (2018) point out that the consequences of publishing in predatory journals for honest researchers are wasting time, using data in vain, wasted money and manuscripts that end up not being indexed or archived on proper databases. According to Beall (2013: 84), “there are millions of researchers around the world desperate to publish, and predatory publishers are eager to have them as customers.”
Table 1: Salient characteristics of potential predatory journals

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<th>Characteristic</th>
<th>Description</th>
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<tr>
<td>1. The scope of interest includes non-biomedical subjects alongside biomedical topics</td>
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<td>2. The website contains spelling and grammar errors</td>
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<tr>
<td>3. Images are distorted/hazy, intended to look like something they are not or are not authorised</td>
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<td>4. The homepage language targets authors</td>
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<tr>
<td>5. The Index Copernicus Value is promoted on the website</td>
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<td>6. Description of the manuscript handling process is lacking</td>
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<td>7. Manuscripts are requested to be submitted via email</td>
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<td>8. Rapid publication is promised</td>
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<td>9. There is no retraction policy</td>
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<td>10. Information on when and how journal content will be digitally preserved is absent</td>
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<td>11. The Article processing/publication charge is very low (e.g., $50 USD)</td>
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<tr>
<td>12. Journals claiming to be open access either retain copyright of published research or fail to mention copyright</td>
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<tr>
<td>13. The contact email address is non-professional and non-journal affiliated (e.g., gmail.com <a href="mailto:or@yahoo.com">or@yahoo.com</a>)</td>
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1. Bohannon’s experiment

A journalist John Bohannon conducted a sting operation to 304 OA publishers. Out of the total 367 journals, 121 journals from Beall’s list, and the last 16 were taken from both of them. He submitted a bogus medical paper which was accepted by 157 journals and rejected by 98. According to him, from the remaining 49 journals, 29 of them were abandoned by their creators, while the last 20 had communications by email saying that the manuscript is still in the process of review.

Bohannon (2013: 61) highlighted that ‘the location of a journal’s publisher, editor, and bank account are often continents apart. Accustomed to the norms, not the exception. The paper was accepted by journals hosted by industry titans Sage and Elsevier. The paper was accepted by journals published by prestigious academic institutions such as Kobe University in Japan. It was accepted by scholarly society journals. It was even accepted by journals for which the paper’s topic was utterly inappropriate.’ Furthermore, Bohannon (2013) was very surprised that 45% of the publishers listed in DOAJ that completed the review process of the paper, accepted it.

At the end of 2013, as a reaction to the “Sting,” the Open Access Scholarly Publishers Association developed a “Principles of Transparency and Best Practice in Scholarly Publishing” in cooperation with other crucial players to support best practices (Berger, 2017).

MATERIALS AND METHODS

This paper is mainly based on the literature review. In line with Fink (2013), the literature review is designed to provide a useful and efficient overview of the current research on a particular topic. More concretely, an integrative review was used as the main review method. Furthermore, Whittemore and Knaff (2005: 547) define the integrative review as ‘the comprehensive and critical description of a broad area of research focused on a particular phenomena or research question.’ It allows for the simultaneous inclusion of experimental and non-experimental research in order to more fully understand a phenomenon of concern. Integrative reviews may also combine data from the theoretical as well as empirical literature. In addition, integrative reviews incorporate a wide range of purposes: to define concepts, to review theories, to review evidence, and to analyse methodological issues of a particular topic.

The review included 28 scientific articles on predatory publishers and journals. We searched DOAJ and Google Scholar with the terms predatory publisher and predatory journal. Selected articles for analysis belong to the period 2013-2018. Thus, to investigate the ways of identifying predatory journals, we have used relevant literature published mainly recently. Based on it, we have presented the main findings in the form of lists, methods, and tools, which are valid in the academic circles and easily accessible form new researchers. Also, we have developed a guiding algorithm for evaluating publishers and journals.

RESULTS

Academics that mainly carry out their scientific activity outside the main industrial states are faced with tough dilemmas for choosing journals to publish. The acceptance of their manuscripts by world-renowned journals is not frequent, and this is due to the different linguistic aspects, then the content of the manuscripts, since they often deal with specific issues of their country. This puts them in an unfavorable position compared to researchers in developed countries. At the same time, they face a lot of pressure to publish in “international journals.” As a result of this pressure, the phenomenon of OA predatory publishers is on the rise. This phenomenon has recently emerged. In most cases, they lack the peer-review process. These journals always require authors to pay for publication (Bjørk, 2017). Rightly Kurt (2018) points out that there is a great need to raise awareness about the importance of selecting the right journals for publication, especially for young researchers in developing countries who are in the early stages of building their academic careers.

Jalalian and Daddkhah (2015: 82) think that ‘developing a list of

1.  This tool can be downloaded from the following link: https://digitalcommons.lnu.edu/librarian_pubs/49.
2.  DOAJ, the Committee on Publication Ethics (COPE), and the World Association of Medical Editors. These organizations, along with the Scholarly Publishing and Academic Resources Coalition (SPARC) and its partner affiliates, continue to provide critically-needed guidance and resources.
“GOOD JOURNALS” is a far better and more effective way to help than publishing a list of “BAD JOURNALS”. (That refers to the questionable journals). “HIDJACKED JOURNALS” (that refers to the legitimate journals that their online identity is stolen by cybercriminals), and “FAKE PUBLISHERS” (that refers to the publishers of journals that are not registered officially by real persons or companies).

Developing lists of quality journals and evaluating the quality of the academic journals on each of the main aspects of scientific publishing is a complex and time-consuming process. The following aspects, data quality, readability, searchability, accessibility, and other concerns, are our current concern and the topic of our research.

There are several lists, methods, and tools to identify legitimate publishers. Peterson (2018) pointed out that following six steps we will examine and discuss the main blacklists and whitelists, proceeding further with other methods.

Blacklists

According to Beall (2013), a blacklist is easier to compose than a whitelist and kept than a whitelisted one. Also, it has more up-to-date information than a whitelist.

Beall's list

With the rise of open access and the movement to publish articles online, the number of publishers and journals using the open-access model also increased (Riching et al., 2018). This drastic increase was also noted by Jeffrey Beall, a librarian, and researcher at the University of Colorado, Denver. In 2008, Beall began to receive an influx of emails from new journals, asking him to send articles or join their editorial boards (Butler, 2013). In response to this phenomenon, he decided to devote himself to these ghost journals and after a period of effort and work he created a list of predatory publishers and journals, which today is known as the Beall’s list. Quek and Teo (2018) mentioned that in 2010, Beall published his first list of potential, possible, or probable predatory scholarly open-access publishers. He published the journals’ evaluation criteria two years later. In the meantime, he published other works on the subject. In January 2017 because of the large number of publishers, Mochizuki, Beall deleted the list of potential predatory publishers from his blog. Beall’s articles have been widely criticized, including evaluation of Beall’s criteria, the lack of direct contact with publishers, to better understand their processes before blacklisting them (Quek and Teo 2018). However, there is an archived version of the Beall’s list at webpage https://archive.is/6EByy. The list contains 1,626 predatory publishers and 1,310 standalone journals. Beall’s list of criteria includes five main issues: 'editor and staff, business management, integrity, poor journal standards/practices and other'.

Despite the critics, Beall’s list is the most known blacklist and also most used and discussed among academicians (Bohannon, 2013; Butler, 2013; Xia, 2015; Xia et al., 2015; Shen and Björk, 2015; Danesva et al., 2016; Memon, 2016; Wallance and Perri, 2018; Björk, 2017; Bagues, Sylos-Labini and Zinovieva, 2017; Laine and Winker, 2017; Wallance and Perri, 2018). Since 2008, when Beall started his campaign, he has organized 180,000 conference proceedings, and over 80,000 books from around the world. With over 100 years of comprehensive coverage and more than one billion cited reference combinations, you can search with confidence and explore the complete network of citations underpinning the significant research in any field (Web of Science, 2018). It is managed by Clarivate Analytics.

It should be noted that the results of Bohannon (2013) point out that Beall has been successful in identifying poor quality publishers, as 82% of publishers on its list who completed the review process accepted the bogus paper. Cabell’s blacklist

Cabell’s blacklist emerged in 2017 when the Beall’s blog was closed. This list is presented by its creators, Cabell’s, the scholarly analytics company from Beaumont, Texas, as the “the only blacklist of deceptive and predatory academic journals.” Today, this list contains more than 4,000 regular journals and many more under review (Strielkowski, 2018). Beall’s list was accessible free of charge, and everybody could consult it any time. Meanwhile, Cabell demands enormous payments for their blacklist. As stated by Cabell’s, the ‘1-year subscription to its Blacklist can be purchased for a $1500 add-on cost with the purchase of at least 1 more discipline on the subscription’ (Cabell, 2018). Regrettably, Cabell's list does not allow authors to check their profiles for free as they can in Scopus (Strielkowski, 2018). Whitelists

Academics have sought a credible whitelist to identify legitimate academic journals as an alternative to the blacklist (Umlauf and Mochizuki, 2018). Indeed, white lists have existed much earlier than blacklists. The most popular whitelists are available in the Web of Science (WoS) and Scopus databases. Also, several other databases are used by some academics to evaluate high-quality databases etc. There are other databases that archive academic papers from various world-wide journals. Of these, some are closely related to a certain scientific field. In the following, we will introduce some of the most used and highly appreciated databases in the academic world.

According to the official website, Web of Science is ‘the world’s leading citation database, with multidisciplinary coverage of high impact journals in the natural, medical, and social sciences. It contains about 100,000 titles, has over 180,000 conference proceedings, and over 80,000 books from around the world. With over 100 years of comprehensive coverage and more than one billion cited reference combinations, you can search with confidence and explore the complete network of citations underpinning the significant research in any field’ (Web of Science, 2018). It is managed by Clarivate Analytics.

Today, this list contains more than 4,000 regular journals and many more under review (Strielkowski, 2018). The list continues to be the most important whitelist (Berger, 2017). The DOAJ started with 300 open access journals and today contains 12,152 OA journals including all fields of science. The Web of Science database is used by researchers and scholars to select journals for publication. It is worth noting that besides the possibility of downloading it, there is also the online database to search if a certain journal is indexed or not in the Web of Science. This search can be done by writing the full name of the journal (without errors) or the ISSN number (print or online).

Scopus is considered the second database at world level, i.e., after the Web of Science. Although on their official website, it is presented as ‘the largest abstract and citation database of peer-reviewed literature: scientific journals, books, and conference proceedings.’ It is a registered trademark of Elsevier Company and dates back to 1970. It has over 5,000 publishers, 22,800 serial titles, and 150,000 books and has about 10 billion cited references from the early start (Scopus, 2018b).

Scopus also has a database that includes indexed journal titles, but to access it easily you need to be registered with Scopus. In addition, Elsevier offers access for free to the updated Scopus list on the official website, which is an Excel workbook, but usually, you cannot find it easily. This list can be accessed through the following link: https://www.elsevier.com/solutions/scopus/how-scopus-works/content. As well, Scopus always updates the list of journal titles that have been removed from its database for various reasons and this list can be found in the same way. Whole Scopus databases, in a list that is, ‘the titles removed in order to find the reason why such titles have been removed. This list currently contains 424 titles. Of these, 289 (about 68%) have been removed due to publication biases, 97 (about 25%) have been removed because they did not meet any of Scopus set metrics and benchmarks. The remaining of 21 (about 5%) are identified by the so-called ‘ruder’ tool, which means that they have undergone rapid unexplained changes (Scopus, 2018a). Since the predatory journals are on the rise, Scopus has taken rigorous measures and is constantly re-evaluating the titles listed in its database, removing titles globally. Each year, about 3,500 new titles are proposed to be added in Scopus, but roughly 33% of these titles fulfill the minimum criteria (Scopus, 2018a). Therefore, they suggest that in addition to the most whitelisted, the list of removed titles should also be checked.

The Directory of Open Access Journals (DOAJ) was established 10 years ago by a library scientist at Lund University (Berger, 2017). This list continues to be the most important whitelist (Berger, 2017). The DOAJ started with 300 open access journals and today contains 12,152 OA journals including all fields of science and humanities from 128 countries across the world. Laine and Winker (2017) emphasize that DOAJ is not an all-inclusive list of all genuine OA journals. If a journal is not included in DOAJ, it does not mean that it is predatory. It could be a journal that has not made a request to be included in DOAJ or there is not enough allocated fund to fulfill all of its conditions. Contrariwise, joining DOAJ does not mean that the journal is prestigious. Indeed, white list tools like users, it seeks to warn them if they see a journal with doubtful practices on its list.

According to Berger (2017; 2018), ‘the most significant observation of the sting was that DOAJ is the most used and discussed among academics’ important whitelist, required all its listed journals to reapply using a rigorous vetting system. As of December 2016, DOAJ accepted 3,700 journals, rejected 6,500 applications. Additionally, 1,450 journals on a blacklist were listed 2,850 journals for not re-applying to stay indexed.’

Memon (2016) sheds light that articles published in predatory journals are likewise apparent on ResearchGate as that of trustworthy journals. According to him, ResearchGate probably does not control or filter the content of the papers uploaded. Maybe, this is why we encounter articles from predatory journals on ResearchGate.

“Think. Check. Submit” approach

As cited by Forrester, Björk and Tenopir (2017: 281), ‘many studies over the last two decades have examined that decision process, and it is a complex array of competing criteria, including, among other factors, time from submission to publication, acceptance/rejection rate, potential audience, fees, impact factor, and perceptions of prestige’ (Björk and Holmström, 2006; Björk and Öörni, 2009; Coonin and Younce, 2010; Jamali et al, 2014; Mabe, 2009; Mabe and Amin, 2002; Mabe and Mulligan, 2011; Wijen, 2013). On the other hand, although there are many debates and discussions in academic circles regarding predatory publishers, the evidence is obvious that they exist in the academic world and is a thriving business. Therefore, we need to be very careful when accepting invitations to publish in various journals and not to get excited without casting a second glance at the invitation source (Quek and Teo, 2018). Kurt (2018) points out that the pressure to publish often causes researchers to fall prey to advertising used by predatory journals because they do not analyze the articles of the journal at all before sending the manuscript for publication.

According to the official website, “Think. Check. Submit” is ‘a campaign to help researchers to identify and avoid predatory publishers. It is a simple checklist that researchers can use to assess the credentials of a journal or publisher. The campaign has been produced..."
We have developed a guiding algorithm for evaluating journals and journals based on our studies. Since the practice has proved that despite attempts not to fall into the trap set up by these predatory journals, researchers are inadvertently found themselves part of them. As mentioned earlier, the most popular whitelists are available in the Web of Science and Scopus databases. The Web of Science database should be the first whitelist taken into consideration by researchers and scholars to select journals for publication, followed by Scopus.

DISCUSSION

Predatory journals are a blight on science, and something needs to be done to curtail these unethical publishers (Clark, 2018). Their number has increased rapidly in the last five years, however, it is difficult to measure. Some studies confirm that the country’s regional distribution of publication and authorship is highly skewed and lead by Asian and African researchers (Frandsen, 2017). Whereas, Kurt (2018) think that numerous scholars from developing countries have the impression that western journals will reject them and so they seek alternative journals for publication. Severin et al. (2020: 10) discuss that: ‘inexperienced scholars and scholars in developing countries might be more likely to be tricked into believing that they review for a legitimate journal. It is also possible that predatory journals provide an opportunity for marginalized members of the global academic community to survive in the “publish or perish” culture of academia.’

As we have seen, the “academic pollution” has affected a number of prestigious institutions. Clark (2018) considers that even the most prestigious institutions in the world have been affected, although the cases are few. 9 articles from Harvard University and 11 from Mayo Clinic. Bohannon (2013) found that 45% of the publishers listed in DOAJ that completed the bogus paper review process, have accepted it. Fortunately, the “Bohannon Sting” operation resulted in certain noteworthy changes (Berger, 2017). Wallace and Perri (2018) found that in 2015 an unexpected number of scholars who are in the top 5% in RePEc, have also published in predatory journals. Beall had only scientific journals as an initial focus. But the same strategies of predatory publishers are being used to organize fake conferences, to deceive academics, to hijack legitimate journals’ websites, to offer low-quality science without proper academic values, and to give space to unethical authors. Consequently, these cybercriminals are missing the necessity of academics and researchers to publish their work. Also, they are getting rich because many dishonest authors are willing to pay to publish low-quality manuscripts for the purpose of professional advancement (Umlauf and Mochizuki, 2018).

As stated by Richtig et al. (2018: 3), ‘Although Beall’s list had certain shortcomings, it represented a valuable tool that researchers could use to assess journals on the basis of their credibility, raised awareness about this important issue and provided guidance for other institutions to create their own blacklists.’ Academics involved in the staff advancement process should warn and advise young researchers on where to submit their manuscripts for publication. Review committees for academic publishers and journals should also be prepared to conduct a serious evaluation of articles published in predatory or captured journals (Danevskà et al., 2016). As well as bibliographic databases should have a vigorous role in reinforcing the quality control of indexed articles/journals (Frandsen, 2017).

Therefore, the identification of these journals is very important for authors, researchers, reviewers, and editors, because scientific work that does not go through the proper review process should not be included in the register of scientific data (Laine and Winker, 2017). Richtig et al. (2018) propose that a new system would have to be implemented to identify predatory journals.

Rightly Striełkowski (2018) raises the concern that there is no clear recommendation as to what to do with journals that Beall suspected of having fraudulent practices that are indexed in respected databases such as Web of Science and Scopus. Should the researchers continue to publish on them or should they seek other blacklists and guidelines from ethics commissions for publication? If so, who would select such commissions, or who will determine which journals are good and which ones are bad?

According to Memon (2016: 1645), ‘ResearchGate has been lenient in its policies and has created a space for predatory journals to enter the website. Some of the journals displaying fake impact factor on their website (previously mentioned) are available in ResearchGate with an impact factor - a misleading point for scientists who rely on ResearchGate.’ He also points out (Memon, 2016: 1645) that ‘ResearchGate should take a serious note of the fact that considerations given to ghost journals and putting them in the row of reliable and quality journals might create an alarming situation in future. This dark side of academic writing should be hampered, before it finds more space and prevails, as it would not only affect the scientists only but also the community as a whole.’ Beall (2016) has proposed some policy changes as follows: the use of the quantity of articles published as a measure of academic performance should be prohibited by universities and colleges, researchers and esteemed journals should not quote articles from predatory journals and academic library databases should reject metadata for such publications; organizations that provide publishers with services, including those that license journal management software or provide standard identifiers, should refuse to work with predatory publishers, academic databases such as Scopus and Thomson Reuters should raise the bar for acceptance, removing journals and publishers that use false peer-review practices.

CONCLUSION

This paper aims to provide information on recognizing and avoiding publishing in predatory journals. We have consulted the recent literature and practices of different countries, and we have summarized the most used tools/methods to identify predatory journals and journals. In addition, we have developed a guiding algorithm for evaluating journals/publishers. This study contributes to the provision of information on identifying and avoiding publishing in predatory journals.
Thus, it may be of particular interest to the countries that face the same academic problems. There are a number of other potential areas for future research that can provide increased scientific value. Thus, it is recommended that the following limitations be taken into account in future research.

This paper is mainly based on the literature review. In the future, the empirical aspect should be included as well. Hence, the rate of publications in predatory journals should also be researched. Besides this, the reasons and motives of publication in these journals should be examined.

REFERENCES


