



ORIGINAL RESEARCH

 OPEN ACCESS

# Favouring Responsible Publishing: Creating a Database of Researchers and Surveying Their Knowledge, Attitudes and Opinions towards Open Access Publishing and a New Field-Specific Journal

Jeremy Y. Ng <sup>1,2,3\*</sup>, Halton Quach <sup>1</sup>, Jeremy P. Steen <sup>1</sup>, Ming Zheng<sup>1</sup>, Tushar Dhawan<sup>1</sup>,  
Julian Vincent T. Dychiao<sup>1</sup>, Aisha Hashmani<sup>1</sup>, Bismah Jameel<sup>1</sup>, Kirrthana Jegathesan<sup>1</sup>, Leah Kogan<sup>1</sup>,  
Xiao Wen (Vivian) Li<sup>1</sup>, Natasha Reyes<sup>1</sup>, Jill Shah<sup>1</sup>, Fredrick D. Ashbury<sup>1,4</sup>, Kieran Cooley <sup>1,5,6,7</sup>, Pierre S. Haddad <sup>1,8</sup>

<sup>1</sup>NHP Publications, Toronto, Ontario, Canada

<sup>2</sup>Department of Health Research Methods, Evidence, and Impact, Faculty of Health Sciences, McMaster University, Hamilton, Ontario, Canada

<sup>3</sup>Centre for Journalology, Ottawa Methods Centre, Ottawa Hospital Research Institute, The Ottawa Hospital, Ottawa, Ontario, Canada

<sup>4</sup>Institute of Health Policy, Management and Evaluation, University of Toronto, Toronto, Ontario, Canada

<sup>5</sup>Australian Research Center in Complementary and Integrative Medicine, University of Technology, Ultimo, Australia

<sup>6</sup>Pacific College of Oriental Medicine, San Diego, California, United States of America

<sup>7</sup>Department of Research, Canadian College of Naturopathic Medicine, Toronto, Ontario, Canada

<sup>8</sup>Department of Pharmacology and Physiology, Faculty of Medicine, University of Montreal, Montreal, Quebec, Canada

\*  Corresponding Author: [manager@jnhpresearch.com](mailto:manager@jnhpresearch.com)

## ABSTRACT

**INTRODUCTION:** There may be value to understanding the interests and needs of a journal's audience, particularly regarding open access publishing (OAP) and behaviours associated with predatory publishing while establishing a new field-specific journal. As a new journal facing potential challenges in the publishing space, the Journal of Natural Health Product Research (JNHPR) undertook a stakeholder and community feedback initiative on publishing research in the field of natural health products (NHPs). To our knowledge, this is the first study where academic representatives of the journal used this method to examine the knowledge, attitudes, and opinions of its potential audience.

**METHODS:** A database of international researchers in the NHP field was built using publicly available online data. Most NHP researchers were identified by a keyword-based, systematic search, with a small percentage discovered through snowball sampling. A survey was distributed to all identified researchers to collect their knowledge, attitudes, and opinions about OAP and the JNHPR.

**RESULTS:** The survey was completed by 167 NHP researchers and demonstrated a wide range of attitudes and opinions about OAP. Most respondents were familiar with OAP and preferred the OAP model over a subscription-based journal. Additionally, responses indicated that OAP is a polarizing and controversial subject. Positives included the wider circulation and potential for shorter publication times, while negatives included the potential for less rigorous peer-review standards and generally higher costs. Regardless of perceptions on OAP, impact factor, reputation, scope, and indexing were the most valued factors when choosing a journal for submission.

**DISCUSSION:** According to the survey results, the JNHPR excels in some areas while also needing to improve in others. The journal succeeds in two areas: its broad scope, which attracts NHP researchers from a variety of disciplines, and its rapid publishing time. Indexing and further reduced publication fees for low-income nations were mentioned as areas in need of improvement.

**CONCLUSIONS:** This approach may be useful to researchers who wish to launch their own journal in the future to gain a better understanding of their potential audience's knowledge, attitudes, and opinions, allowing for better engagement and service.

**KEYWORDS:** JNHPR; journalology; natural health product; natural product; NHP; open access; predatory publishing; protocol; publication science

## Introduction

Open access is a publishing model that allows readers to access content published by others at no cost. The number of open access scholarly journals has grown considerably in tandem with the rise in Internet usage for information distribution [1]. Unfortunately, an increasing number of digitally based, open access journals have taken advantage of scientific authors by charging them publication fees while failing to adhere to high-quality, transparent editorial and publishing practices [2, 3]. Such exploitative business strategies are known as predatory publishing, in which a journal offers false metrics (i.e. fabricated impact factor) in order to encourage authors to use their services in the aim of prioritizing profit over quality and accuracy of the content they publish [4]. In addition to jeopardising the integrity of legitimate scientific literature [5], predatory publishers have unintentionally created difficulties for new, but legitimate journals or publishers with open access journal offerings, making it harder for them to distinguish themselves from the predatory ones [6]. In April 2019, an international group of stakeholders took part in a Delphi survey to inform a consensus definition of predatory journals and publishers [7]. Based on the Delphi results, renowned scholars and publishers from ten countries then issued a comment in *Nature* presenting this first consensus definition in December 2019 [8]. They defined predatory journals and publishers as “entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices” [8]. In addition, it was determined that changing the already established term “predatory” would be challenging for the scientific community, with difficulties identifying literature, disseminating and promoting a new name internationally, and updating existing educational materials among the challenges [7, 8]. As a result, it was concluded that the term “predatory” would continue to be utilized [7, 8].

Furthermore, in 2020, a scholarly journal published the results of a modified three-round Delphi survey of 45 well-known experts in predatory journals and

journalology that covered three themes: 1) predatory journal definition, 2) educational outreach and policy initiatives on predatory publishing; and 3) developing technological solutions to stop submissions to predatory journals and other low-quality journals [7]. Three of the seven markers were unanimously agreed to be highly crucial in detecting predatory journals and distinguishing them from legitimate publications. These are: 1) the journal solicits articles using forceful or persuasive emails; 2) the publisher's contact information is difficult to verify; and 3) the journal lacks a retraction policy. In terms of educational outreach and policy measures, the 45 experts agreed that public funds should be committed to research about predatory publishing and that a checklist be established to help writers recognize predatory journals [7]. Additionally, they decided to create a single website to combine information and build a predatory journal research observatory in order to explore technical solutions to stop submissions to predatory journals [8].

Reputable research journals frequently focus on a certain specialty, clearly define their scope, and depend on a qualified and experienced editorial board comprised of researchers with a track record of publishing peer-reviewed research that is relevant to the journal's scope [9]. In this context, it is not only the reputation of the journal, but also the reputation of its associated editorial board, that draws higher-quality scientific contributions. Normally, a new journal will target a specialized community of scholars, issue a call for articles, and use social media channels to raise awareness of the new journal and its editorial board [9, 10]. As these approaches demand just a small investment of time, energy, or infrastructure, it is very easy for predatory publishers to replicate their behaviour [11–13].

The challenges of launching a new scholarly journal have been highlighted in some published research articles, including 1) the time, financial, and managerial commitments, 2) governance responsibilities, 3) selecting a qualified editorial board that is motivated to better understand the needs, desires, and capacities of potential contributing scholars, and 4) developing a robust peer-review procedure [10, 14]. In addition, since most established researchers prefer to submit their

original findings to well-known and reputable journals with high impact factors, encouraging original contributions from the field's top scholars is a critical step in developing a new journal [10, 15, 16]. This challenge, however, can be addressed by targeted marketing and direct communication with scholars in the field [14, 16]. Furthermore, partnering with a society can help a new journal gain credibility by connecting scholars with international academic communities and enhancing the exposure of the journal's content [17–19].

In 2018, the Journal of Natural Health Product Research (JNHPR) was created to serve as the first journal dedicated to NHP research, regardless of sponsoring institution, scientific discipline, or methodology [20]. In 2019, the JNHPR was formally launched and also became the official journal of the Natural Health Product Research Society of Canada (NHPRS), a learned society that represents academic, government, and industry researchers in this field [21]. As a new journal, representatives of the JNHPR were driven to better understand the needs, desires, and capabilities of its potential contributing scholars, with the goal of stimulating increased submissions and growth. The purpose of this study was to survey NHP researchers to gain a better understanding of their attitudes and opinions towards open access publishing and a field-specific journal, the JNHPR. This survey was informed by a newly created database that only identified English-speaking/publishing NHP researchers internationally.

## Methods

### Approach

Prior to commencing this study, a protocol was published [22]. The study initially created an international database consisting of NHP researchers who were identified as the journal's potential audience using publicly available information (i.e. peer-reviewed publications, faculty webpage, etc.). Once identified, participants were asked to complete a survey electronically and responses were collected. Survey questions were developed and beta-tested by a core team of authors. They focused on understanding NHP researchers' attitudes and opinions concerning OAP as well as the creation of a new field-specific journal. While our study was exempt from the Hamilton Integrated Research Ethics Board's oversight, we do confirm that this study was conducted in accordance with the Declaration of Helsinki. We ensured that participants were treated with respect, that respect for autonomy and informed consent was present, and that the participants' privacy and confidentiality were respected.

## Natural Health Product Researcher Database

As described in detail in the published protocol [22], an internet-based search was carried out to create a database containing the majority of English-speaking/publishing NHP researchers globally. This approach thus focused on authors/researchers from North American (Canada and the United States) and European countries (including the following: Austria, Belgium, Bulgaria, Czech Republic, Denmark, England, Finland, France, Germany, Greece, Italy, Ireland, Norway, Netherlands, Poland, Romania, Spain, Sweden, and Switzerland), as well as Australia. The region (i.e. state, province or territory) from which each Canadian, American, and Australian researcher was affiliated was also identified. An alphabetical list of each region's major universities and research institutes was also generated. Their websites, faculty and researcher profiles were specifically probed to further increase the likelihood of identifying a high percentage of NHP researchers. When necessary, this was complemented by Google searches using search terms such as “[‘University Name’ and ‘Researcher Name’]”. In reviewing each faculty member/researcher's web profile, evidence was sought that they were an actual NHP researcher by looking for keywords relating to: 1) NHPs as per Health Canada's definition [23] as well as 2) the scope of the JNHPR [24].

For each individual that was determined to be an NHP researcher by these criteria, the following information was collected: country/region of affiliation, first and last name, age, gender, university/institutional affiliation, academic/professional rank, research interests (keywords), email address, and the URL of the web profile. In addition, data was collected on up to five of their most recent NHP-related research publications, including the date of publication, article title, name of publication (journal), article keywords, article DOI, and article type (i.e. primary research, review article, editorial, etc.). As this information was not always available on a single webpage, the NHP researcher's publications were identified with the help of Google Scholar, Google Scholar profiles and PubMed. To minimize duplication, all NHP researchers who were sourced and included were cross-referenced against the database, as some researchers were linked with more than one university/institution or country.

## Natural Health Product Researcher Survey

In addition to the NHP researcher database, a quantitative observational cross-sectional survey was designed. It was administered with the aim of understanding the knowledge, attitudes and opinions of NHP researchers towards 1) open access publishing; 2) aspects of

high-quality journal policies (vs predatory); and 3) the JNHPR itself. Each NHP researcher that was identified and added to the database was sent one invitation email and three reminder emails if they did not respond to the original invitation email. These four emails were sent one month apart. After participants consented to participating and completed the survey, the responses were exported to a Microsoft Excel spreadsheet. Open-ended survey questions were coded and developed into data with themes and meaningful constructs, while descriptive statistics were used to analyse the survey's Likert scale questions. The survey is available as Supplementary File 1. The first step was to gather information about researchers' prior knowledge and experience with open access journals. Furthermore, the survey revealed factors that influenced researchers' decision to publish in an open access journal, including potential barriers such as article processing fees. It is worthy to note, however, that many notable NHP researchers exist in nations other than those on the list we utilized to develop our NHP database. While this is recognized as a limitation of the present study, it was revealed that the majority of faculty profiles in these nations were not written in English. Apart from the fact that our team lacked the resources to translate these profiles, several of these researchers were not fluent in English, which would have made participation in our survey more difficult. To address this limitation, survey participants were urged to invite any other NHP researchers from across the world who they thought may also be interested in participating. After such suggestions dwindled or further NHP researchers could not be discovered, recruitment ended and the survey was considered complete. The intention of this process was to reduce bias in response collection.

Our survey was analysed using descriptive statistics; hence no specific power calculation was provided. Based on the sample size and response rate, the margin of error was calculated and reported. SurveyMonkey was used to collect all responses. Microsoft Excel and IBM SPSS Statistics were used to analyse the data (Version 25). The construction of the NHP researcher database began in early 2018, and our survey collection ran from January to September 2020. The survey sent to NHP researchers contained a link to our published protocol. The STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) Statement, particularly its checklist of items that should be included in cross-sectional study reports, was utilised to inform the reporting of our survey findings [25].

## Results

### Demographics

#### *Specific NHP-related Studies Conducted by Survey Respondents*

Of the researchers identified in the database, 167 responded to our survey. Most respondents (n = 152, 91.0%) answered "yes" when asked if NHPs, in any form, were part of their research interests. The type of NHP-related studies these respondents had conducted are as follows: (multiple selections were allowed, a mean of 3.1 options (report SD or IQR) were selected): 102 were related to traditional use, phytochemical composition, and therapeutic properties of NHPs (73.9%), 61 were about NHPs in clinical settings and healthcare education (44.2%), 48 were about adverse effects of NHPs (34.8%), 41 were about the use of NHPs in society (29.7%), and 36 were exploring NHP-drug interactions (26.1%). Detailed demographics and other aggregate participant data are shown in Table 1.

### Publishing

#### *Experience with Open Access Publishing*

Our respondents were familiar and had prior experience with open access journals. Indeed, when asked about their familiarity with the concept of an "open access" journal, more than three quarters (n = 108, 77.7%) reported being "very familiar" and almost one quarter (n = 29, 20.9%) reported being "somewhat familiar". In addition, more than three quarters (n = 110, 79.1%) of respondents have authored a published article in an open access journal dealing with some aspect of NHP research. Of these authors, the earliest year of publication in an NHP open access journal on average was 2012, while the most recent year of publication on average was 2018.

#### *General Attitudes Towards Open Access Publishing*

Provided that all factors such as journal quality and reputation are equal, respondents were asked whether they had a preference to publish their research in an open access vs. a subscription-based journal. Though most respondents had no preference (n = 62, 44.6%), more respondents preferred to publish in an open access journal (n = 49, 35.3%) than a subscription-based journal (n = 28, 20.1%) (Figure 1). Those who expressed a preference towards publishing in an open access journal did so for a number of reasons. Reasons included: 1) most research is government funded and taxpayers deserve the right to access the knowledge, 2) easier access means wider sharing among the scientific community and is more often cited, 3) there is normally a faster time to publication. Those who expressed a preference towards

**Table 1.** Characteristics of survey respondents<sup>a</sup>.

Mean (range) (n = 167)	58.8 (16 to 84)
Female Sex (n = 167)	72 (43.1%)
Country of Primary Affiliation (n=167)	
USA	53 (31.7%)
Canada	35 (20.9%)
Australia	34 (20.4%)
Unspecified	16 (9.6%)
Italy	6 (3.6%)
Germany	3 (1.8%)
Thailand	2 (1.2%)
Spain	2 (1.2%)
Netherlands	2 (1.2%)
Ethiopia	1 (0.6%)
India	1 (0.6%)
Malawi	1 (0.6%)
Bulgaria	1 (0.6%)
England	1 (0.6%)
Austria	1 (0.6%)
Sweden	1 (0.6%)
Romania	1 (0.6%)
Norway	1 (0.6%)
Mexico	1 (0.6%)
Colombia	1 (0.6%)
Serbia	1 (0.6%)
Peru	1 (0.6%)
Malaysia	1 (0.6%)
Current Position (n = 167)	
Professor	48 (28.7%)
Associate Professor	22 (13.1%)
Lecturer	13 (7.8%)
Industry Scientist/Researcher	13 (8.4%)
Post-Doctoral Fellow	10 (6.0%)
Assistant Professor	7 (4.2%)
Professor Emeritus	7 (4.2%)
Employment Sector (n = 139)	
University	105 (75.6%)
Industry	28 (20.1%)
Research Institute	17 (12.2%)
Hospital	10 (7.2%)
Government	6 (4.3%)
Years of Research Experience (n = 139)	
>20 Years	73 (52.5%)
11–20 Years	37 (26.6%)
5–10 Years	23 (16.6%)
Fewer than 5 Years	6 (4.32%)
Years of NHP-Specific Research Experience (n = 139)	
>20 Years	40 (28.8%)
11–20 Years	49 (35.3%)
5–10 Years	33 (23.7%)
Fewer than 5 Years	17 (12.2%)

<sup>a</sup> Not all respondents answered every question. Data are number (percentage) of respondents unless indicated otherwise.

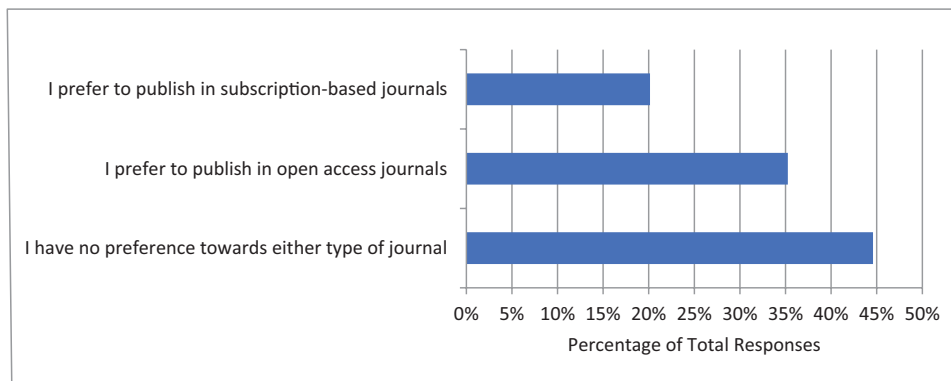
publishing in a subscription-based journal also did so for a number of reasons. Reasons included: 1) open access journals have a higher cost (article processing fee), 2) subscription-based journals have a reputation for more rigorous review standards, 3) the respondents' research was very specialized and felt it would not appeal to the general public.

Additionally, respondents were asked which factors they generally valued when selecting a journal for submission. Of 139 respondents who expressed an opinion, the impact factor (n = 107, 77.0%) and journal reputation (n = 105, 75.6%) were valued by more than three of every four respondents. More than half of respondents valued the scope (n = 92, 66.2%), indexing (n = 83, 60.0%), readership (n = 79, 56.8%), and cost/affordability (n = 73, 52.5%) when selecting a journal for submission. However, when probed for which factor they valued most when selecting a journal for submission, the 124 participants who responded to this question principally selected the impact factor (n = 81, 65.3%), the journal reputation (n = 58, 46.8%), and the scope of the journal (n = 54, 43.6%) (Figure 2).

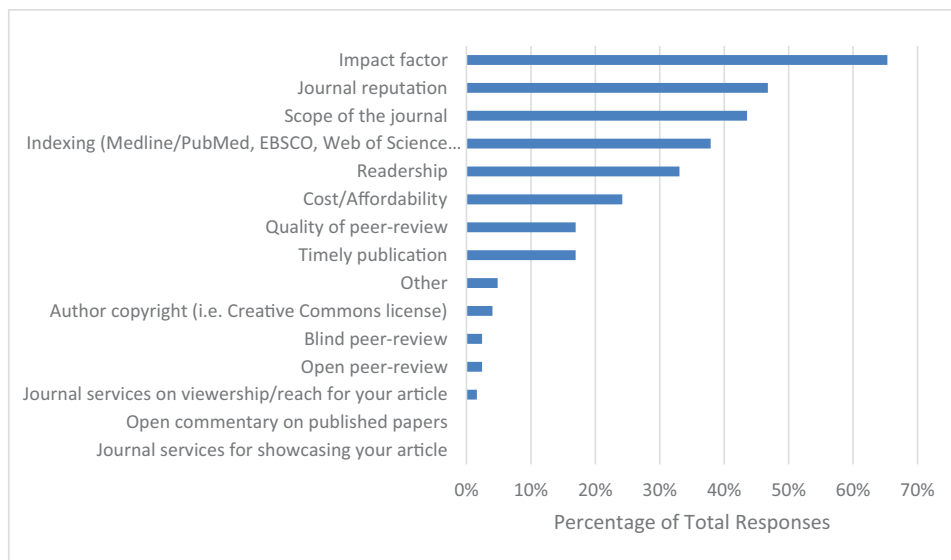
When participants were asked how article processing fees influenced their decision to choose a given journal to publish their scientific work, almost one third (n = 39, 31.5%) of 124 respondents indicated that they would submit to an author-pays journal but only if it is highly reputable. Of the remaining respondents, roughly one fifth (n = 23, 18.6%) indicated that they would submit to any relevant author-pays journals with a good reputation, while roughly another fifth (n = 23, 18.6%) stated that author charges do not influence where they choose to submit their work. In addition, approximately one-sixth of respondents (n = 19, 15.3%) stated that they would submit to an author-pays journal but only if it was their only option for getting published, while the remaining one-sixth of respondents (n = 20, 16.1%) stated that they would not submit to any journal that charged article processing fees regardless (Figure 3).

Of 124 respondents who expressed an opinion, 117 showed a preference toward submitting their scientific articles to either an open access journal that makes an attempt to reduce author fees (i.e., publicly, donor, or society funded) or a subscription-based journal that is free to authors, while only a marginal number of respondents (n = 7, 5.7%) would submit to an open access journal that charges author fees (Figure 4).

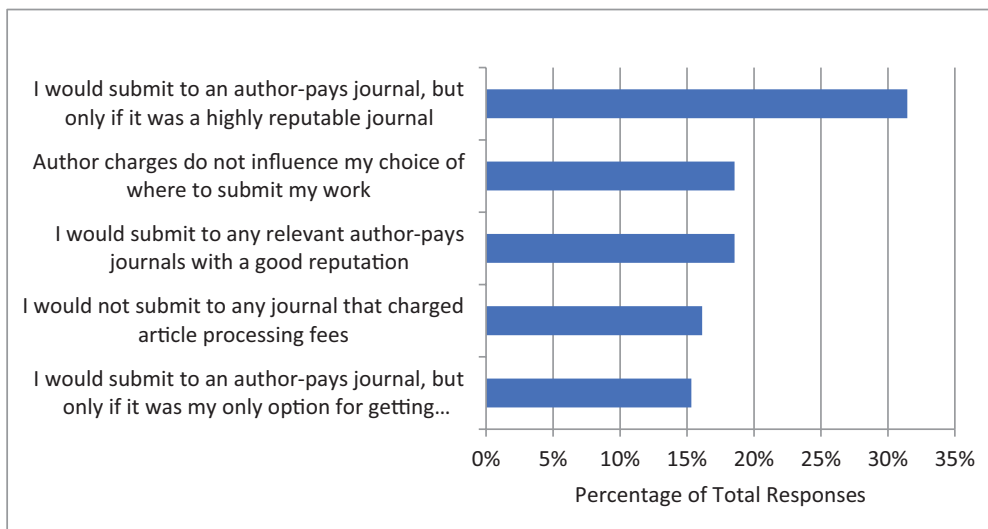
In regard to the publishing quality, almost half (n = 60, 48.4%) of our respondents were not sure whether there is a quality difference between open access journals and subscription-based journals. On the other hand, roughly a



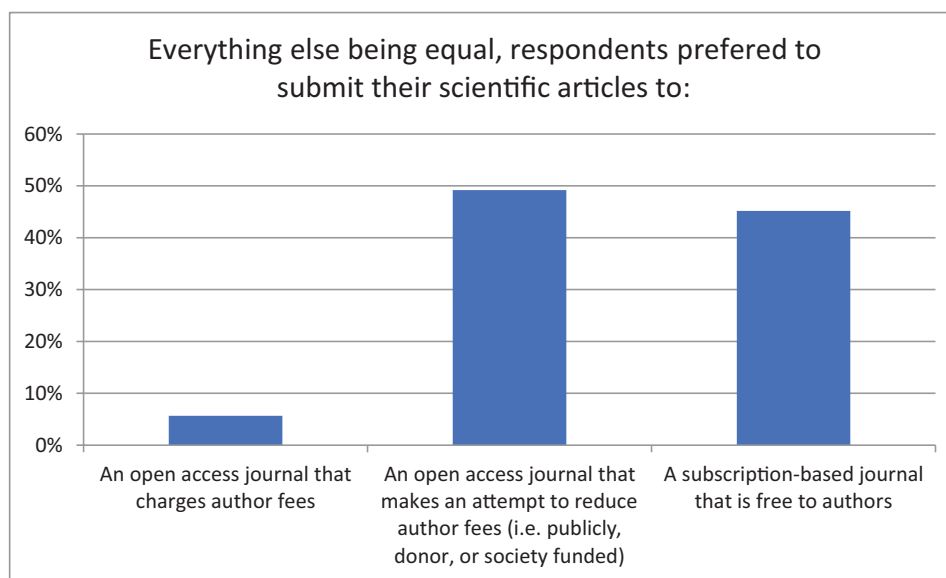
**Figure 1.** Respondents’ preference between publishing your research in open access vs subscription-based journals, with all other factors (i.e. journal quality and reputation) being equal.



**Figure 2.** The factors that respondents value the most when selecting a journal for submission.



**Figure 3.** How article processing fees influenced respondents’ decision of where to publish scientific work.



**Figure 4.** Respondents' preference on where to submit their scientific articles if all other factors were equal.

quarter (n=33, 26.7%) of respondents believed that open access journals and subscription-based journal were equal in quality and roughly a fifth (n=27, 21.8%) of respondents believed open access journals were of lesser quality.

When asking respondents to state how important it was for them to have their published scientific work publicly accessible, roughly two-thirds (n=82, 66.1%) said it was very important and more than a quarter (n=36, 29.0%) said it was somewhat important, while just a small number of respondents (n=6, 4.8%) said it was somewhat unimportant or not important. Each respondent was asked to provide a comment on how open access publishing, in general, could be improved for researchers. Among the comments received from 124 respondents, the three themes that emerged were 1) the reduction or elimination of article processing fees, 2) better indexing, and 3) greater quality and transparency of the peer-review process.

#### *General Attitudes Towards the Journal of Natural Health Product Research*

Finally, respondents were asked if they saw value in the JNHPR, which was launched in 2018 as the first journal to focus on publishing NHP research regardless of academic discipline or methodology. Of 124 respondents who expressed an opinion, 106 (85.5%) said they saw value in the new journal. These respondents were also asked to describe why they saw value or did not see value in the journal. Among the responses of those who saw value in the journal, three themes emerged: 1) there is a growing interest among the general public for NHPs, 2) it will bring NHP scientists together onto a single platform, 3) it provides an open access option to

the sometimes-restrictive subscription journals in NHP research, and 4) the fee structure is reasonable compared to other open access journals. Most of the responses of those who did not see value in the journal addressed the fact that there are existing journals with higher impact factors that publish NHP-related articles and the challenge of developing a reputation that attracts the highest quality research articles in new journals.

Additionally, respondents were asked whether they viewed the publication of non-academic research in a journal such as the JNHPR (given that all author conflicts of interest are declared) to be positive, neutral, or negative. Of 124 respondents who expressed their opinion, 64 (51.6%) viewed it as positive, 49 (39.5%) as neutral, and 11 (8.9%) as negative. Of 58 respondents who chose to explain their reasoning, a few themes emerged among the responses of those who selected positive: 1) non-academic research should be published provided transparency, ethics and validity is maintained and the peer review process is rigorous, 2) given that transparency is important and ascertained, wider access to industry research is beneficial, 3) it is difficult to access industry knowledge as most do not publish their findings. The respondents who selected a negative opinion often mentioned that: 1) tenets of evidence-based practice and methodological rigour can best be achieved in academic settings or 2) there is a potential for unethical parties to exploit journals who accept industry-conducted research and use them for 'cheap advertising'.

Respondents were then given a scenario: that the JNHPR intended to launch a donation campaign to help support the journal's operations, wanted to (partially

or totally) lower authors' article publishing fees, and sought to establish a grant fund for NHP research. Respondents were asked whether they viewed this journal donation campaign to be positive, neutral, or negative. Of 122 respondents who expressed their opinion, more than half (51.6%) were positive, while 40.2% were neutral and the remaining 8.2% were negative. Of 33 respondents who chose to explain their reasoning, two main themes emerged among the responses of those who expressed a positive opinion: 1) it is important to have a clear and stable funding system, and 2) this approach helps to support new researchers that may not have money for publishing. In addition, a few themes emerged among the responses of those who expressed neutral and negative opinions: 1) perceived challenges or lack of interest among potential donors, 2) the journal may be perceived to be under pressure to publish positive findings in regard to industry products as a result of an alternate funding model, and 3) the journal's reputation may suffer as a result of perceptions that publication of science can 'bought' by someone other than through the authors themselves.

More than 90% of our 122 respondents believed that more NHP research published in open access journals would benefit the NHP researcher community as a whole and more than three-quarters (78.7%) would consider submitting their research to the JNHPR if they were looking to publish their own NHP-related research. The respondents were also asked what would incentivize them to publish their research in the JNHPR. Among the responses, the five most cited factors were the impact factor, readership, reputation, as well as cost and speed of publication.

## Discussion

The present study involved the creation of an international database of NHP researchers who were recognized as prospective contributors as well as an audience for the JNHPR. After the researchers were identified, a survey was conducted to better understand their attitudes and opinions about OAP in general and the JNHPR in particular. The originality of this study rests in the stakeholder and community approach undertaken by academic representatives of a new journal, and the creation of an international NHP researcher database to survey the knowledge, attitudes, and opinions of the journal's potential readership. The present study and protocol registration can serve as a model for all researchers and publishers in all fields who are interested in developing their own field-specific journal in an era of open access and predatory publishing.

The three most valued factors among respondents with respect to choosing a journal included the presence of an impact factor, the journal having a good reputation, and their manuscript fitting with the scope of the journal. This is consistent with previous research that has identified factors that researchers value the most when determining journal choice for submission. According to a survey of 429 international publishing authors from all disciplines, after fitting within the scope, the impact factor and speed of review/publication were the most valued [26]. Another survey of more than 6,000 international publishing authors from all disciplines found that peer-reviewing quality and speed were the most important factors influencing journal choice [27].

In addition to exploring NHP researchers' attitudes and beliefs toward the OAP model, the present study utilized the responses from the more NHP-field specific survey questions to inform future directions for growing and improving the JNHPR. According to the responses of what the NHP researchers valued the most in a scholarly journal, it was apparent that the JNHPR excels in a few areas. As reported, the survey participants consisted of NHP researchers from a wide range of NHP-related disciplines in academia, government and industry. The JNHPR's broad scope thus allows NHP researchers from all these disciplines to publish their work on a platform that provides rigorous peer-reviewed feedback and fills a significant gap that has been lacking for years. In addition, as the majority of the NHP researchers included in the survey were based at a university (n = 105, 75.6%), most were accustomed to publishing their work in a variety of scholarly journals which did not focus exclusively (or at all) on the topic of NHPs, but rather devoted a section of the journal to the topic of NHPs. Thus, the JNHPR provides a scholarly journal option that focusses exclusively on publishing high-quality, peer-reviewed, open access, multisector, and multidisciplinary research on NHPs. Furthermore, when asked which factors the NHP researchers valued when selecting a journal to submit their work, almost half (n = 57, 41.0%) selected "timely publication". Indeed, in the open-ended questions, many of the NHP researchers stated that this was especially important for them given that the field of NHP research is rapidly growing, with new findings being published daily. Many mentioned that their findings need to be published in a timely fashion in order to provide the justification for viable clinical studies, especially in cases where the general public is consuming a popularized NHP that currently lacks an evidence base for safety and/or efficacy (i.e., many reported conducting research on NHPs in clinical settings, the adverse effects of NHPs, and NHP-drug interaction). In addition, as a



substantial number of respondents conducted research in NHP regulatory affairs, many mentioned in the open-ended questions that the timely publication of their research is crucial in order to reach optimized models that balance NHP safety and efficacy, while respecting patient's cultural diversity and freedom of choice.

On the other hand, based on the survey responses, it is clear that the JNHPR may be improved in a few key areas, many of which exist largely due to the fact that the journal is still new. First, nearly two-thirds ( $n=83$ , 59.7%) stated that they valued journal indexing in major literature databases. While all articles published in the JNHPR are immediately indexed to Google Scholar, as a new journal, the JNHPR is not yet indexed in other well-known academic databases such as MEDLINE, EMBASE, Scopus, and Web of Science. However, the JNHPR has future plans for all articles to be indexed in these databases once the journal meets the eligibility criteria to apply for indexing. Additionally, more than three-quarters of respondents ( $n=107$ , 77.0%) stated that the journal's impact factor was important to them when choosing a journal to publish their work, with many noting in the open-ended questions that this was a requirement for annual performance reviews, tenure, and promotion at their university. As the JNHPR is a new journal, its impact factor will be established and will evolve over time. Furthermore, based on responses from the open-ended questions, several respondents mentioned that a waiver of publication fees for developing countries and nonfunded studies would incentivize them to publish their research in the JNHPR. Although the JNHPR strives to keep submissions free of charge, the journal requires that authors pay a minimal one-time publication fee per article in the event that it is accepted, which covers the journal's costs associated with maintaining its web domain/hosting, open access system, peer-review, copyediting, improving the visibility of articles, and membership fees (i.e. CrossRef).

With regard to comparative literature pertaining to the attitudes and opinions of researchers towards open access publishing, a 2017 study surveyed international and multidisciplinary researchers' use of and experience with OAP as well their perceptions of advantages and disadvantages [28]. Similar to the present study, the survey's findings revealed a high level of engagement and familiarity with open access publishing, as well as the importance of rigorous peer-review and rapid publication when selecting an open access journal to submit their research work [28]. Additional studies assessed reasons why scholars were supportive of the OAP model [28-35]. These reasons were similar to those expressed in our study and included: 1) since research is often

supported by taxpayer funds, members of the public should have access to study findings, 2) more individuals who otherwise would not be able to afford a subscription to a scholarly journal may now access and use the knowledge, and 3) findings can be disseminated more quickly and widely leading to more citations and more impact.

In contrast, several studies in the comparative literature looked into why scholars were critical of the OAP model [28-30, 32, 33, 35-38], and two explanations were found to be consistent: 1) scholars generally agreed that the number of high-quality, open access journals varied substantially among disciplines. According to one study, more than three-quarters of all tropical medicine scholarly journals and more than half of all biomedical research scholarly journals are open access, yet just 7% of pharmacy scholarly journals are open access [39], 2) some scholars believed that the OAP model creates a two-tiered system in which peer review is not the only element determining who gets published, but also who can afford the article processing fee. Scholars said that this raised concerns about the quality of research and strengthened the dominance of wealthy nations' scientific outputs. In relation to the present study, many of the NHP researchers who found value in the JNHPR perceived benefit because it introduced another open access journal to the field of NHP research's limited number of open access journals. Furthermore, because of its broad scope, scholars conducting NHP-related research across many different fields may publish their findings on a single platform that offers rigorous peer-reviewed feedback at an affordable cost. Indeed, in the open-ended questions, NHP researchers often acknowledged that paywalls continue to be a significant barrier to freely accessing scientific information, owing in part to the fact that academic publishing is a highly profitable industry.

The findings of the present study may further be connected to the broader picture of research and scientific development. Among the most important implications is that the polarization in attitudes and opinions toward OAP may create problems for less recognized scholars. The quality of open access journal articles was a major concern for respondents who were critical of this model. This reflects an attitude that has surfaced in the existing literature: not only do some researchers voice concerns about the quality and reputation of open access journals, but they also frequently do not associate peer review with the publishing process in these journals [40, 41]. If individuals with more negative and sceptical views toward open access analyse the work of those who actively publish in these venues, this bias may seriously jeopardise an early career scholar's development.

Therefore, education will be key in helping active members of the research community understand the distinction between legitimate, peer-reviewed open access journals and predatory ones. Furthermore, predatory publishers are increasingly exploiting the open access publication model [42, 43]. Predatory publishers are characterized by poor quality or unethical editorial and/or publishing practises, as well as the primary intention of profiting from unsuspecting, unscrupulous, or early-career authors [1, 4]. Though predatory publishers may not consider the implications of their unethical behaviour, they are both terrifying and substantial. According to recent research, papers published in predatory journals are referenced in legitimate scientific literature indexed in reputable academic databases like PubMed [17, 18]. Healthcare providers and policy makers rely on the legitimacy and validity of published scientific research to make well-informed decisions that can have life-changing impacts on professional practice, policy, and society. The quality of these decisions can therefore be directly influenced by the quality of published research. This highlights the need for new OAP journals like the JNHPR to establish their legitimacy. In this sense, this survey provides a valuable tool. Indeed, it presented the JNHPR to its potential authorship and readership while asking for direction to improve the publication services and better cater to the requirements and expectations of researchers. It thus demonstrates the willingness to listen to and engage with the community in this field to offer a legitimate broad-scope NHP journal.

### Limitations

While the present study has revealed a rich range of insights, its scope is limited. Though the present study is based on an English speaking, international sample, it does not consider the impact of national policies on attitudes and opinions toward open access publishing. Moreover, it is acknowledged that many NHP researchers exist in countries outside those we selected in creating our NHP database and this limits the scope of our study. However, it was found that most faculty profiles in these countries were largely in foreign languages, which hinted at a potential language barrier to complete the survey. This limitation was partly addressed, however, by the snowball recruitment strategy used, which did result in a number of participants from countries not included in our list, thereby reducing bias in collecting responses. Additionally, it is acknowledged that the sample size is relatively small. Due to the novelty of our study, the survey items were neither validated nor used in prior research. Future research in this area may

benefit from development and testing of survey questions for construct validity and reproducibility.

Lastly, while some of the authors serve as editors or other staff members of the JNHPR, we acknowledge that it is an unusual situation to have submitted this article for peer review in this very same journal. Despite this, we made attempts to reduce biases in this process by assigning a handling editor who subsequently assigned peer reviewers (all of whom did not contribute to this study). One of the primary reasons we opted for an editor and peer reviewers to provide feedback on our manuscript was to gain an external opinion of how we framed both our positive and negative findings, from the standpoint of the utility of the JNHPR.

### Conclusions

The present study created a database consisting of an international sample of NHP researchers who were identified as the potential contributors/audience of a new field-specific scholarly journal that was recently launched. An online survey then determined their knowledge and attitudes towards open access publishing, while gathering their opinions regarding a new field-specific scholarly journal specifically focused on NHP-related research and their suggestions and concerns about such a journal. The attitudes and opinions provided represent a valuable contribution to the field of academic publishing and the needs of the NHP researcher community. To our knowledge, this is the first study of its kind that ensures that the community of researchers that a journal serves can contribute to its improvement as a new field-specific scholarly journal. This study can therefore be used as a model for any other academic researchers from any discipline that may have an interest in establishing a new, open access scholarly journal with a similar participatory approach. Indeed, taking such a stakeholder-based approach to assessing researchers' concerns, needs, and preferences may help avoid pitfalls inherent in today's predatory publishing climate, and this methodology may be found useful and/or be adapted by other ethical publishers in the future.

### List of Abbreviations

JNHPR: Journal of Natural Health Product Research  
NHP: Natural Health Product  
NHPRS: Natural Health Product Research Society of Canada  
OAP: Open Access Publishing  
STROBE: Strengthening the Reporting of Observational Studies in Epidemiology

## Conflicts of Interest

JYN is the Journal Manager and Publisher of the JNHPR. FA is an editorial board member of the JNHPR. KC and PSH are Co-Editors-in-Chief of the JNHPR. None of the authors received any financial compensation for this study.

## Authors' Contributions

JYN: designed and conceptualized the study, collected the data, interpreted and analysed the data, co-drafted the manuscript, and gave final approval of the version to be submitted.

 <https://orcid.org/0000-0003-0031-5873>

HQ: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

 <https://orcid.org/0000-0002-7879-3093>

JPS: interpreted and analysed data, co-drafted the manuscript, and gave final approval of the version to be published.

 <https://orcid.org/0000-0002-6697-9069>

MZ: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

TD: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

JVTD: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

AH: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

BJ: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

KJ: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

LK: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

XWL: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

NR: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

JS: collected the data, revised the manuscript critically, and gave final approval of the version to be published.

FDA: made substantial contributions to the design of the study, revised the manuscript critically, and gave final approval of the version to be published.

KC: made substantial contributions to the design of the study, revised the manuscript critically, and gave final approval of the version to be published.

 <https://orcid.org/0000-0001-7960-6504>

PSH: made substantial contributions to the design of the study, revised the manuscript critically, and gave final approval of the version to be published.

 <https://orcid.org/0000-0002-8782-5165>

## Funding

The establishment of the Journal of Natural Health Product Research was funded in part by a grant from the Federal Government of Canada.

## Supplemental Files

Supplementary File 1: NHP Researcher Survey

## References

- [1] Laakso M, Welling P, Bukvova H, Nyman L, Björk B-C, Hedlund T. The development of open access journal publishing from 1993 to 2009. *PLOS ONE* 2011;6:e20961. <https://doi.org/10.1371/journal.pone.0020961>.
- [2] Richtig G, Berger M, Lange-Asschenfeldt B, Aberer W, Richtig E. Problems and challenges of predatory journals. *Journal of the European Academy of Dermatology and Venereology* 2018;32:1441-9. <https://doi.org/10.1111/jdv.15039>.
- [3] Dawson D. Research guides: predatory publishers: home n.d. <https://libguides.usask.ca/c.php?g=614236&p=4269097> (accessed November 23, 2021).
- [4] Predatory publishing is the "black sheep" of open access journals. *ZB MED – Informationszentrum Lebenswissenschaften* n.d. <https://www.publisso.de/en/advice/publishing-advice-faqs/predatory-publishing/> (accessed November 23, 2021).
- [5] Harvey HB, Weinstein DF. Predatory Publishing: An emerging threat to the medical literature. *academic medicine* 2017;92:150-1. <https://doi.org/10.1097/ACM.0000000000001521>.
- [6] Memon AR. Revisiting the term predatory open access publishing. *Journal of Korean Medical Science* 2019;34. <https://doi.org/10.3346/jkms.2019.34.e99>.
- [7] Cukier S, Lalu M, Bryson GL, Cobey KD, Grudniewicz A, Moher D. Defining predatory journals and responding to the threat they pose: a modified Delphi consensus process. *BMJ Open* 2020;10:e035561. <https://doi.org/10.1136/bmjopen-2019-035561>

- [8] Grudniewicz A, Moher D, Cobey KD, Bryson GL, Cukier S, Allen K. et al. Predatory journals: No definition, no defence. *Nature*. 2019 Dec;576:210–212. <https://doi.org/10.1038/d41586-019-03759-y>
- [9] Guest. What does it take to run your own journal? *Research in Progress Blog* 2014. <https://blogs.biomed-central.com/bmcblog/2014/06/17/what-does-it-take-to-run-your-own-journal/> (accessed November 23, 2021).
- [10] International Journal of Pediatrics and Adolescent Medicine, Al Hajjar S. Challenges for Launching a New Journal. *EON* 2016;9:13–4. <https://doi.org/10.18243/eon/2016.9.3.4>.
- [11] Kurt S. Why do authors publish in predatory journals? *Learned Publishing* 2018;31:141–7. <https://doi.org/10.1002/leap.1150>.
- [12] Gades NM, Toth LA. How to avoid becoming easy prey for “predatory” journals and why it matters. *Comparative Medicine* 2019;69:164.
- [13] Elmore SA, Weston EH. Predatory journals: what they are and how to avoid them. *Toxicologic Pathology* 2020;48:607. <https://doi.org/10.1177/0192623320920209>.
- [14] Bosch X. An open challenge. Open access and the challenges for scientific publishing. *EMBO Reports* 2008;9:404. <https://doi.org/10.1038/embor.2008.60>.
- [15] Jandrić P. A peer-reviewed scholarly article. *Postdigit Sci Educ* 2021;3:36–47. <https://doi.org/10.1007/s42438-020-00202-8>.
- [16] Siler K. Future challenges and opportunities in academic publishing. *The Canadian Journal of Sociology / Cahiers Canadiens de Sociologie* 2017;42:83–114.
- [17] Elsevier. How to successfully expand your society's journal portfolio. *Elsevier Connect* n.d. <https://www.elsevier.com/connect/how-to-successfully-expand-your-societys-journal-portfolio> (accessed December 15, 2021).
- [18] Publishing partnerships can help society journals | *Research Information* n.d. <https://www.researchinformation.info/feature/publishing-partnerships-can-help-society-journals> (accessed December 15, 2021).
- [19] Drahota A, Meza RD, Brikho B, Naaf M, Estabillo JA, Gomez ED, et al. Community-academic partnerships: a systematic review of the state of the literature and recommendations for future research. *The Milbank Quarterly* 2016;94:163. <https://doi.org/10.1111/1468-0009.12184>.
- [20] Cooley K, Haddad PS, Ng JY. Off with a Bang! Introducing the journal of natural health product research. *J NHP Res* 2019;1:1–4. <https://doi.org/10.33211/jnhpr.4>.
- [21] *Journal of Natural Health Product Research*. Natural Health Product Research Society of Canada n.d. <https://nhprs.ca/jnhpr/> (accessed November 23, 2021).
- [22] Ng JY, Quach H, Ashbury FD, Cooley K, Haddad PS. Favouring responsible publishing: a protocol for creating a database of researchers and surveying their knowledge, attitudes and opinions towards open access publishing and a new field-specific journal. *J NHP Res* 2019;1:1–6. <https://doi.org/10.33211/jnhpr.9>.
- [23] Canada H. Natural health products 2004. <https://www.canada.ca/en/health-canada/services/drugs-health-products/natural-non-prescription.html> (accessed November 24, 2021).
- [24] Research J of NHP. *Journal of Natural Health Product Research* n.d. <https://jnhpresearch.com> (accessed November 24, 2021).
- [25] von Elm E, Altman DG, Egger M, Pocock SJ, Gøtzsche PC, Vandenbroucke JP. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies. *Ann Intern Med* 2007;147:573–7. <https://doi.org/10.7326/0003-4819-147-8-200710160-00010>.
- [26] Solomon DJ, Björk B-C. Publication fees in open access publishing: Sources of funding and factors influencing choice of journal. *J Am Soc Inf Sci* 2012;63:98–107. <https://doi.org/10.1002/asi.21660>.
- [27] Mulligan A, Mabe M. The effect of the internet on researcher motivations, behaviour and attitudes. *Journal of Documentation* 2011;67:290–311. <https://doi.org/10.1108/00220411111109485>.
- [28] Dalton ED, Tenopir C, Björk B-C. Attitudes of north american academics toward open access scholarly journals 2020. <https://doi.org/10.1353/pla.2020.0005>.
- [29] Day S, Rennie S, Luo D, Tucker JD. Open to the public: paywalls and the public rationale for open access medical research publishing. *Research Involvement and Engagement* 2020;6:8. <https://doi.org/10.1186/s40900-020-0182-y>.
- [30] Nobes A, Harris S. Open Access in low- and middle-income countries: attitudes and experiences of researchers. *Emerald Open Res* 2019;1:17. <https://doi.org/10.35241/emeraldopenres.13325.1>.
- [31] Williams SC, Farrell SL, Kerby EE, Kocher M. Agricultural researchers' attitudes toward open access and data sharing. *Issues in Science and Technology Librarianship* 2019. <https://doi.org/10.29173/istl4>.
- [32] Narayan B, Luca EJ, Tiffen B, England A, Booth M, Boateng H. Scholarly communication practices in humanities and social sciences: a study of researchers' attitudes and awareness of open access. *Open Information Science* 2018;2:168–80. <https://doi.org/10.1515/opsis-2018-0013>.
- [33] Swan A. The culture of Open Access: researchers' views and responses. In: Jacobs N, editor., Chandos; 2006.
- [34] Togia A, Korobili S. Attitudes towards open access: A meta-synthesis of the empirical literature. *Information Services & Use* 2014;34:221–31. <https://doi.org/10.3233/ISU-140742>.

- [35] Rowley J, Johnson F, Sbaffi L, Frass W, Devine E. Academics' behaviors and attitudes towards open access publishing in scholarly journals. *Journal of the Association for Information Science and Technology* 2017;68:1201–11. <https://doi.org/10.1002/asi.23710>.
- [36] Fox M, Hanlon SM. Barriers to Open Access uptake for researchers in Africa. *Online Information Review* 2015;39:698–716. <https://doi.org/10.1108/OIR-05-2015-0147>.
- [37] Spezi V, Fry J, Creaser C, Proberts S, White S. Researchers' green open access practice: a cross-disciplinary analysis. *Journal of Documentation* 2013;69:334–59. <https://doi.org/10.1108/JD-01-2012-0008>.
- [38] Severin A, Egger M, Eve MP, Hürlimann D. Discipline-specific open access publishing practices and barriers to change: an evidence-based review. *F1000Research* 2018;7. <https://doi.org/10.12688/f1000research.17328.1>.
- [39] Piwowar H, Priem J, Larivière V, Alperin JP, Matthias L, Norlander B, et al. The state of OA: a large-scale analysis of the prevalence and impact of Open Access articles. *PeerJ* 2018;6:e4375. <https://doi.org/10.7717/peerj.4375>.
- [40] Nicholas D, Jamali HR, Watkinson A, Herman E, Tenopir C, Volentine R, et al. Do younger researchers assess trustworthiness differently when deciding what to read and cite and where to publish? *International Journal of Knowledge Content Development & Technology* 2015;5:45–63. <https://doi.org/10.5865/IJKCT.2015.5.2.045>.
- [41] Dalton ED, Tenopir C, Björk B-C. Attitudes of north american academics toward open access scholarly journals. *Portal: Libraries and the Academy* 2020;20:73–100. <https://doi.org/10.1353/pla.2020.0005>.
- [42] Beall J. Predatory publishers are corrupting open access. *Nature* 2012;489:179–179. <https://doi.org/10.1038/489179a>.
- [43] McCann TV, Polacsek M. False gold: Safely navigating open access publishing to avoid predatory publishers and journals. *J Adv Nurs* 2018;74:809–17. <https://doi.org/10.1111/jan.13483>.

## Article Information

Managing Editor: Jennifer Hunter

Peer Reviewers: Ava Lorenc, Susan Arentz

Article Dates: Received May 15 22; Accepted Oct 21 22; Published Nov 24 22

## Citation

Please cite this article as follows:

Ng JY, Quach H, Steen JP, Zheng M, Dhawan T, Dychiao JVT, Hashmani A, Jameel B, Jegathesan K, Kogan L, Li XW, Reyes N, Shah J, Ashbury FD, Cooley K, Haddad PS. Favouring Responsible Publishing: Creating a Database of Researchers and Surveying Their Knowledge, Attitudes and Opinions towards Open access Publishing and a New Field-Specific Journal. 2022 Nov 24: 4(2). <https://jnhpresearch.com/index.php/jnhpr/article/view/27>

DOI Link: <https://doi.org/10.33211/jnhpr.27>

## Copyright

© Jeremy Y. Ng, Halton Quach, Jeremy P. Steen, Ming Zheng, Tushar Dhawan, Julian Vincent T. Dychiao, Aisha Hashmani, Bismah Jameel, Kirrthana Jegathesan, Leah Kogan, Xiao Wen (Vivian) Li, Natasha Reyes, Jill Shah, Fredrick D. Ashbury, Kieran Cooley, Pierre S. Haddad. (2022). Published first in the Journal of Natural Health Product Research. This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work, first published in the Journal of Natural Health Product Research, an NHP Publications journal, is properly cited. The complete bibliographic information, a link to the original publication on <https://www.jnhpresearch.com>, as well as this copyright and license information must be included.



**Does the safety, efficacy, and quality of natural health products matter to YOU?  
Submit your research article to the [Journal of Natural Health Product Research!](https://www.jnhpresearch.com)**

**Pre-submission inquiries? Send us an email at [editorial.office@jnhpresearch.com](mailto:editorial.office@jnhpresearch.com)  
[Facebook](#), [Twitter](#) and [LinkedIn](#)**