




RESEARCH

Open Access



Investigating the trustworthiness of research evidence used to inform public health policy: a qualitative interview study on the use of predatory journal citations in policy documents

Marc A. Albert^{1,2} , Manoj M. Lalu^{2,3,4}  and Agnes Grudniewicz^{1*} 

Abstract

Evidence-based policymaking has increased policymakers' capacity to make scientifically informed health policy decisions. However, reaping the benefits of this approach requires avoiding untrustworthy research – potential sources of which are predatory journals. In this study, we sought to understand how research cited in policy documents is sourced and evaluated, and identify factors that may be contributing to the citation of predatory journals or other less trustworthy evidence. To this end, we conducted semi-structured interviews with individuals who have prepared public health policy documents. These interviews were thematically analysed, and five key overarching themes were generated regarding the process of deciding how to develop policy documents (e.g. which individuals to involve) and how this may impact which information is included; obstacles such as limited evidence that may hinder policy document development; and concerns around transparency throughout the development process. Our findings highlight that in many cases, information cited in policy documents is sourced and evaluated with variable rigour. This may contribute to the citation of untrustworthy research in policy documents. Certain steps can be taken to help minimize any potential negative impact of relying on such sources (e.g. improving transparency), but a better understanding of policymakers' perspectives regarding how taking these steps would impact their decision-making process may be required to ensure successful implementation.

Keywords Health policy, Evidence-based policy, Trustworthiness of research, Predatory journals, Knowledge translation

*Correspondence:

Agnes Grudniewicz
grudniewicz@telfer.uottawa.ca

Full list of author information is available at the end of the article



© The Author(s) 2025. **Open Access** This article is licensed under a Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License, which permits any non-commercial use, sharing, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if you modified the licensed material. You do not have permission under this licence to share adapted material derived from this article or parts of it. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by-nc-nd/4.0/>.

Introduction

Policymakers often rely on policy documents to inform their decisions since they cannot be experts in every area for which they are responsible [1, 2]. A channel between researchers and policymakers is critical to ensure that policymakers can support their decisions with evidence. Policy documents are evidence syntheses such as policy briefs, guidance documents and working papers [3], which are produced by academic researchers, government agencies and other individuals (see Box 1 for definitions).

Existing guidance for developing policy documents, such as the SUPPORT tools for evidence-informed policymaking (STP) – a set of tools developed through the SUPPORTing Policy relevant Reviews and Trials (SUPPORT) [2], suggests that the ideal approach to developing policy documents is by conducting a systematic review of the scientific literature because it allows for the identification, evaluation and synthesis of the best-available evidence [4, 5]. While such approaches may be considered best practice, it remains resource intensive and time consuming. This presents significant barriers to developing evidence-based policy documents, which often faces time constraints and financial barriers [2, 6].

Nonetheless, since policy documents inform and support policy decisions [2], the sources of evidence cited in these documents should be trustworthy – meaning they should be transparent about their methods and reliably report high-quality research. This is especially important in the health domain, where policies based on unreliable information can have adverse effects at individual patient and population levels. Sources of evidence can be untrustworthy for many reasons, including, but not limited to, employing poor methodological rigour or failing to declare conflicts of interest. Some sources, such as predatory journals or publishers – “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” [7] – are more likely than others to be unreliable. These predatory entities have little-to-no quality control, which reduces the trustworthiness of the studies they publish [8, 9]. For example, a study from 2017 by Moher et al. demonstrated that studies published in predatory journals tend to have significantly poorer reporting quality than those from legitimate (non-predatory) sources, which already have much room for improvement in many cases [10]. While it is possible for untrustworthy studies to be found in all journals, they are more likely to be found in predatory journals given their lack of quality control (e.g. poor or no peer review, lack of transparent publishing practices). This in turn means

that policymakers may not be able to rely on the information and/or recommendations provided to them in policy documents citing predatory journal articles to inform their decisions, or if they do, the resulting policy decisions are more likely to be based on false or low-quality evidence.

Box 1 Key definitions

Policy document: An evidence synthesis (policy brief, guidance document, working paper, etc.) produced by researchers, government agencies or other individuals, intended to help inform policymakers’ decision-making (i.e. policy development) [3].

Predatory journal: “Predatory journals and publishers are 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” [7].

Legitimate source: For this study, legitimate source refers to an academic journal or other source of research that is reliable and trustworthy (e.g. non-predatory).

Despite their poor quality, predatory journals and publishers can be very difficult to identify [11]. Thus, individuals developing policy documents and policymakers may not even be aware that they are relying on potentially less trustworthy sources. In an earlier study analysing the Overton database – the world’s largest searchable index of policy documents [3] – we discovered more than 1200 policy documents with citations to the OMICS publishing group [12]. OMICS is a widely recognized predatory publisher and it has been successfully sued by the United States Federal Trade Commission for engaging in predatory practices [13]. This number of policy documents citing just one of many predatory publishing groups demonstrates the large potential influence of predatory journals on policy. This also prompted us to contemplate how work from these sources could be finding its way into policy documents.

In this study, we investigated two main questions: 1. How is research cited in public health policy documents sourced and evaluated? and 2. Which factors contribute to the citation of predatory journals or other less trustworthy evidence?

Materials and methods

Study design

We conducted a qualitative semi-structured interview study with individuals involved in the development of public health policy documents for use by policymakers. We adopted a qualitative descriptive research design with a pragmatist approach [14–16]. This study was approved by the University of Ottawa’s Social Sciences and Humanities Research Ethics Board (# S-07-22-8094). We adhered to the consolidated criteria for reporting

qualitative research (COREQ) reporting checklist [17] (see Additional file 1).

We took a pragmatist approach to focus on developing a practical understanding of a real-world issue – the reliance on potentially untrustworthy research evidence to inform public health policy and practice – while also extending the knowledge base regarding how predatory journals influence academic literature into the policy space. Pragmatism posits that knowledge acquisition requires both objectivity and subjectivity [16], and we did so by combining deductive and inductive approaches to generate key themes from our participants' interview responses that helped answer our research questions.

Recruitment and sampling

To be eligible for an interview, individuals had to self-report that they were involved in the preparation of public health policy documents within the last decade (since predatory publishing became widely recognized in 2012) [18]. We did not restrict our sample to specific areas of public health; however, clinical practice guidelines were excluded from our definition of policy documents. We did not interview policymakers, only individuals preparing policy documents for use by policymakers. Participants working in any type of organization were included; we did not restrict the sample to only individuals working for the government. All interviews were conducted in English.

We recruited participants by email, using a mixture of purposive, snowball and convenience sampling. The purposive sampling method involved using contact information collected as part of the study examining the Overton database mentioned above [12]; these were individuals located anywhere in the world who had authored a public health policy document citing an article from a predatory journal. We chose not to restrict study participants to a geographic area to allow us to capture as diverse a sample as possible. We recruited additional interview participants via both snowball sampling and convenience sampling using pre-established relationships with organizations producing policy documents. These individuals had also produced public health policy documents; however, we do not know whether their policy documents had cited any articles from predatory journals.

Data collection

One-on-one interviews were conducted virtually via Zoom by the lead author. Participants were informed that this study was part of a master's thesis. Informed consent was obtained verbally, and the interviews were audio-recorded for transcription purposes. Although the interview guide (see Additional file 2) was followed throughout, the inherent flexibility of the semi-structured

design allowed for the use of probing questions to explore unforeseen or especially interesting topics [19]. Data saturation (the point at which no new themes appeared) was achieved after nine interviews; however, data collection continued beyond this point to ensure sufficient development of generated themes [20].

Data analysis

Data collection and analysis were initiated concurrently. Interview recordings were transcribed using an online automated transcription service, Otter (Otter.ai, Mountain View, United States). The transcripts were then manually checked to verify transcription accuracy. To protect participant identities, all potentially identifying information (e.g. names, professional affiliations) was removed. After each interview, contact summary forms were completed within three days. These forms briefly summarized the main points discussed and included reflections on key points highlighted in field notes taken [21].

For the primary analysis, we conducted a Template Analysis [22], which combines deduction with induction to create themes that “reflect data topics” [23]. This approach allowed us to incorporate some a-priori-developed themes on the basis of existing literature and questions in our interview guide, rather than relying solely on inductive theme generation [23]. For instance, “Theme 3: Relying on the best possible information is the objective”, was generated by combining knowledge from the existing literature around how the objective of evidence synthesis is to aggregate the “best available evidence” [4, 5] and interview participants' description of their objectives.

Our template analysis involved six distinct stages:

1. Data familiarization: We carefully reviewed the interview transcripts multiple times (two to three times each) to familiarize ourselves with the data [24].
2. Preliminary coding: All three authors independently coded two transcripts. This involved applying theoretical codes derived from existing literature (e.g. “Time required to develop policy document”), the interview guide and our research questions (e.g. “Knowledge and perceptions of predatory journals”), as well as inductively developed codes (e.g. “Utility of evidence”). Our resulting initial code list consisted of 40 unique, first-level codes.
3. Development of the coding template: Through subsequent discussions, we then refined the codes by merging overlapping ones, resulting in a more concise 29-code list (e.g. “Trustworthiness of evidence”, “Quality of evidence” and “Utility of evidence” were consolidated into “Evidence assessment”). We then organized these first-level codes under seven second-level codes. We then generated a coding template

with code descriptions and illustrative quotes (see Additional file 3). Table 1 presents a summary of this coding template.

4. Application and modification of the coding template: We applied the coding template to the remaining 13 interview transcripts using NVivo qualitative data analysis software (QSR International, Burlington, United States) [25]. This template was sufficient to effectively code the remaining data, thus we did not further modify the template and are confident that data saturation was achieved [20].
5. Organizing the data: We generated node reports (lists of all excerpts under that code) for each of the seven second-level codes. These reports were exported from NVivo for subsequent analysis in MS Word. We carefully reviewed all coded excerpts, which involved developing data matrices for each second-level code.

This step aimed to highlight key notes, takeaways and illustrative quotes (see Additional file 4 for these data matrices) [21, 24]. Developing these matrices facilitated subsequent comparisons across interviews, allowing us to identify commonalities (and differences) between participants' responses and capture diverse perspectives [24].

6. Mapping and theme generation: After multiple iterations of reviewing the matrices and consensus-reaching meetings involving all authors, we generated five overarching themes – each with several subthemes as is typical of template analyses [22]. Subsequently, we developed a thematic map to visually represent how these five overarching themes intersected and addressed our research questions [24].

Table 1 Coding template summary. Depicts the breakdown of first- and second-level codes used to code the interview transcripts ($n = 15$). The node tree consists of 29 first-level codes, each categorized under one of seven second-level codes. The full coding template (with key example quotes for each code) is available in Additional file 3

Second-level code	First-level codes
1. Participant background	1.1 Academic/professional background 1.2 Experience with previous policy documents 1.3 Research experience
2. Methodological and content experience or training	2.1 No formal training 2.2 Importance of policy knowledge 2.3 Importance of content knowledge
3. Approach to policy document development and evidence synthesis	3.1 Importance of clearly defined policy document objective 3.2 Teamwork on policy documents 3.3 Informal peer review for policy documents 3.4 Incorporating own empirical data with existing literature 3.5 Incorporating alternative (e.g. non-academic) sources into policy documents 3.6 Approach to dealing with potentially problematic studies or sources 3.7 External versus internal document development 3.8 Transparency of development process
4. Approach to literature search and review	4.1 Literature search strategies and objectives 4.2 Recognize limitations of non-systematic search strategy 4.3 Expert input to inform review Evidence assessment
5. Approach to knowledge translation	5.1 Timeliness of document development 5.2 Gathering stakeholder perspectives during the development process 5.3 Approach to knowledge dissemination
6. Challenges with policy document development	6.1 Availability of evidence 6.2 Limitations/challenges with systematic reviews 6.3 Making policy recommendations is difficult 6.4 Time required to develop policy document 6.5 Limited resources
7. Knowledge and perceptions of academic literature	7.1 Published literature is unreliable 7.2 Knowledge and perceptions of predatory journals 7.3 Knowledge and perceptions of academic publication models

Results

Participants

A total of 15 individuals were interviewed for this study. We sent out 119 recruitment emails for purposive sampling; 12 individuals/organizations declined to participate, 15 email addresses were unreachable and 84 did not respond. Of eight individuals who indicated interest, six ended up participating. We obtained one interview participant via snowball sampling through a recommendation from one of the first six. The eight remaining interview participants were recruited via convenience sampling. Participant demographic characteristics are outlined in Table 2. Participants had varying amounts of experience producing policy documents (ranging from five to 30+ years). Interview participants worked on policy documents from several different areas of public health. Some offered methodological expertise or content expertise, while some offered both. This was inferred through our discussions with them, although we did not explicitly collect this demographic information. All had completed graduate-level education, and most had health backgrounds and were currently affiliated with an academic institution. Interviews ranged from 25 min to 84 min (median duration was 49 min).

Thematic analysis

Below, we provide a narrative synthesis of the five themes generated through our analysis: 1. Having a clear plan of action is important for finding the best available evidence; 2. Involving the right people is key to finding the best available evidence; 3. Relying on the best possible information is the objective; 4. Overcoming obstacles to policy document development; and 5. Maintaining transparency throughout the development process. Figure 1 includes a thematic map depicting the interconnections between these five themes, and their relationships to our research questions. We present our results addressing the two research questions together due to their interrelated nature.

Theme 1 Having a clear plan of action is important for finding the best available evidence.

The first theme emphasized the importance of establishing a plan of action and clearly defined objectives prior to policy document development. This aspect directly influences the process of finding, evaluating and selecting evidence for inclusion in a policy document.

Table 2 Demographic characteristics of interview study participants ($n = 15$)

Demographic characteristics	<i>n</i> (%)
<i>Country</i>	
- Canada	5 (33%)
- Australia	5 (33%)
- Brazil	2 (13%)
- Denmark	1 (7%)
- Colombia	1 (7%)
- Philippines	1 (7%)
<i>Type of affiliation</i>	
- Academic institution	8 (53%)
- Government organization	4 (27%)
- Private think tank ^a	3 (20%)
<i>Professional background</i>	
- Health (public or community health, medicine, health technologies and assessments, clinical epidemiology)	9 (60%)
- Social sciences and humanities (psychology, other social sciences; philosophy)	3 (20%)
- Publication science or library/information studies	3 (20%)
<i>Education level</i>	
- Doctoral degree	9 (60%)
- Master's degree	6 (40%)

^a Think tanks are public policy research organizations that provide research, analysis and advice (e.g. via policy briefs). They are often non-profit organizations, and may be independent (e.g. non-governmental organizations, NGOs) or affiliated with another entity (e.g. government, academic institution) [26]. In this case "private" refers to independent think tanks

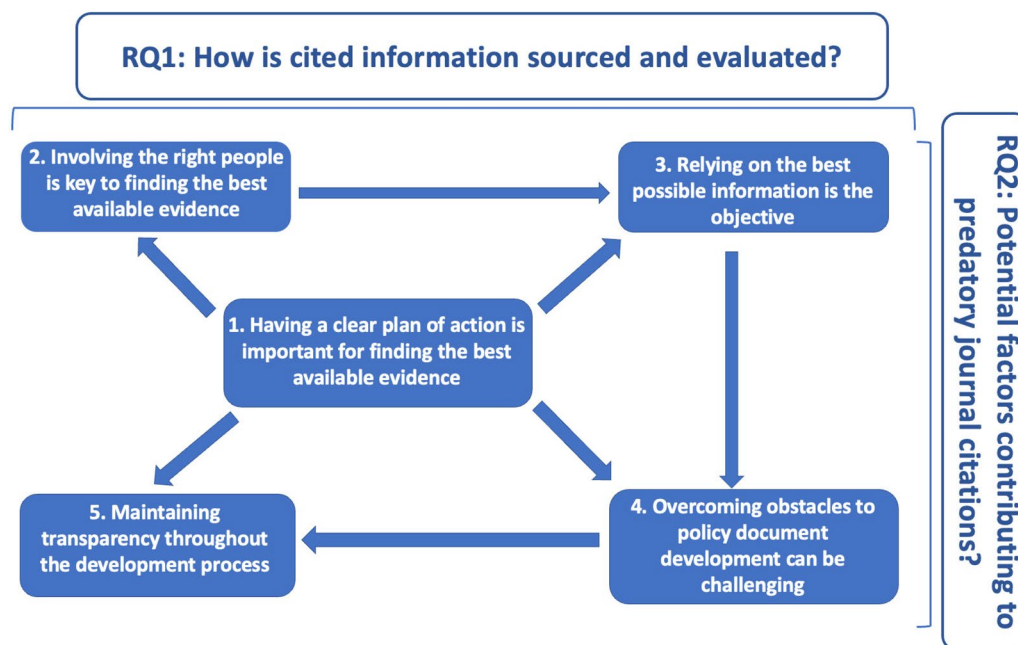


Fig. 1 Thematic map. Depicts the interconnections between the five overarching themes of public health policy document development generated by thematic analysis of 15 semi-structured interviews with individuals involved in the development process. Theme 1 outlines key contextual information for the policy document development process; Themes 2 & 3 directly answer our first research question (RQ1) by describing how evidence cited in policy documents is typically sourced and evaluated; Themes 3 & 4 answer our second research question (RQ2) by outlining potential factors that could contribute to predatory journal citations; and Theme 5 highlights the notion that maintaining transparency can help mitigate some of the potential negative consequences of citing untrustworthy sources.

1.1 Policy document objectives and role in evidence selection

Participants unanimously emphasized the importance of establishing terms of reference to clarify the scope and objectives prior to beginning document development. These terms of reference have a significant impact on the policy document as they influence all subsequent steps of its development. They determine the choice of synthesis method (e.g. narrative review, systematic review), sources of evidence to consider (e.g. academic literature, grey literature), and personnel required. One participant noted how methods can vary by document:

... we try to develop different types of documents, regarding who are we trying to inform or regarding... who the document is for... so our methods change on the type of documents that we include in the report that we are doing. (P11).

1.2 Strategies to ensure objectives are met

Multiple participants highlighted that the current relevance of a policy topic is a key factor influencing whether objectives can be met. For example, one participant noted that if other policy groups (especially large,

influential ones) are working on the same policy issue, document development can often be facilitated by incorporating their research:

... I mean everybody in the world is working on COVID right, so we lean heavily on systematic reviews done by other groups. (P13).

In addition, participants often mentioned the importance of ensuring that the intended end-users are also interested in the potential policy issue(s) being covered. This was especially important when working on non-commissioned projects (as opposed to projects where individuals/groups have been specifically hired) because a common interest from stakeholders greatly facilitates securing sufficient funding, resources and personnel for the project.

Theme 2 Involving the right people is key to finding the best available evidence.

The second theme underscores a unanimous belief among interview participants that the ideal policy document development process is a highly collaborative endeavour. Different parts of the process are delegated to various individuals (or groups) with diverse expertise

(e.g. methodological competencies). The importance of both methodological and topic expertise was emphasized by several participants:

... you need to have a methodological competency to develop these products... [On the] other hand, you need to understand about policy... if you just deal with the policy, or just deal with evidence, you have [in]complete work. (P12).

2.1 Policy documents are developed by individuals/interprofessional teams with a wide range of methods training

A common theme across all interviews was that those producing policy documents have diverse educational backgrounds, areas of expertise and levels of experience. Participants emphasized the importance of diversity in skills and knowledge since policy documents undergo several stages of development. Interestingly, while many participants reported receiving formal training in research methods (e.g. literature search and review), others acknowledged their own knowledge gaps when they began developing policy documents. For instance, one participant shared that while they had received training on overall literature search approaches, they learned the nuances of which databases to search “on the job” (P13).

Given the importance of methodological competency for ensuring effective policy document development, multiple participants reported actively recruiting experienced researchers to collaborate with when developing these documents. Several participants also mentioned situations where less experienced individuals were involved, in which case, they facilitated the necessary training for them. For example:

You know, over the last few years with COVID, we've really struggled to staff projects with graduate students ...who've got capacity and space to do this work. So, we have to sometimes even work with undergraduates and train them up. (P3).

2.2 Important to be as well versed on the topic as possible

Participants unanimously agreed that both policy knowledge and field of study knowledge greatly facilitated the process of policy document development. They reported using strategies to help maximize their familiarity with the relevant policy issues:

I think definitely, we need to understand the current context. So, context analysis is very important, we usually do literature review, looking at you know, what are the studies out there? (P8).

Furthermore, most participants expressed that familiarity with the research landscape is crucial for informed search strategies. They highlighted the importance of knowing the “best” places to look for relevant information – a sentiment well highlighted in the following:

... I would have conversations with information specialists in [field of study] where I have a lot less content expertise and I would be able to be less critical... but they would say “oh, well we aren't searching that database you brought up because we can tell you it has like 98% the same coverage as this database and it almost never identifies a study (P14).

Theme 3 Relying on the best possible information is the objective.

The third theme reflects the emphasis participants placed on the importance of relying on the best possible information – an objective for which they described several approaches to identify and evaluate evidence.

3.1 Literature search strategies and objectives

Participants reported relying on academic literature more often than any other type of literature. When asked which databases they usually search, most participants stated the “regular ones” (P11). The most common of these being PubMed (MEDLINE), Embase and Epistemonikos, although some participants also mentioned that they often rely on ad hoc Google searches. Notably, all participants agreed that one of the main reasons for searching these large, popular databases was the perception that they contained reliable evidence.

Evidence assessment

3.2.1 Assessing “quality” of evidence

Most participants typically thought of “quality” of evidence as pertaining to the methodological rigour and reporting completeness of a given article, as is demonstrated in the following quote:

... the quality in terms of, you know, how the analysis has been done, or how the research was documented... (P8).

Participants shared several strategies for assessing the “quality” of their cited sources. Often referring to it as a “critical appraisal of evidence”, they described objective processes involving the use of established assessment tools. The specific tools varied, but two commonly reported were A Measurement Tool to Assess Systematic Reviews (AMSTAR) and the Cochrane Risk of Bias tools (RoB, RoB 2, ROBINS-I). In addition, several participants reported using reporting checklists to verify that

their included studies were compliant with the expected reporting practices (e.g. Strengthening the Reporting of Observational Studies in Epidemiology, STROBE, for observational studies, Preferred Reporting Items for Systematic Reviews and Meta-Analyses, PRISMA, for systematic reviews).

3.2.2 Assessing the “trustworthiness” of sources

In contrast to “quality”, assessing “trustworthiness” was a much more subjective endeavour. “Trustworthiness” was seen as referring to the reputability of the source from which an article was found. The most frequently reported metric for trustworthiness was the journal’s “brand” (i.e. its reputation as a “high-impact” journal). Several participants noted that since this metric acts as a proxy for the trustworthiness of the published articles, they tend to prioritize research published in large, reputable journals (*Nature*, *New England Journal of Medicine*, etc.). In keeping with this notion of “brand” influence, participants also reported relying mainly on well-known, reputable databases (PubMed, Embase, etc.), which were perceived as having “already filtered” the information and were thus unlikely to contain unreliable sources (e.g. predatory journals):

The word “trustworthiness” is important, like where are your trusted sources? Where do you go?... You’re relying on you know PubMed, Embase, you’re relying on these other filters that have already filtered and harvested information to get it... (P14).

Among those who distinguished between quality and trustworthiness, most participants reported prioritizing content “quality” over source “trustworthiness” when evaluating research.

I don’t think we’ve ever specified the quality of the journal as an exclusion or inclusion criteria, we would accept all comers at that first pass... we would decide, you know, based on what’s inside the paper, whether it should be included or excluded. (P3).

3.3 Dealing with potentially problematic sources

A minority of participants believed that all published studies should be included, regardless of quality. One in particular highlighted the potential value of small, context-specific studies that could provide useful insight for policymakers. They also noted that these studies are more likely to be published in smaller, lesser-known journals, which are more likely to be potentially problematic sources. Thus, participants described several approaches to dealing with such sources.

3.3.1 How to manage articles from predatory journals

All but one participant had heard of predatory journals, and they collectively associated them with several characteristics, including, but not limited to, aggressive or “dopey” solicitation emails; limited or non-existent peer review; and prioritizing financial gain over scholarship by taking advantage of the Open Access publication model. Several participants also shared the belief that predatory journals are not indexed in reputable databases, while others noted this may not always be the case. Participants’ collective understanding of the notion of predatory journals is generally captured in the following:

... that’s what I think people think of in terms of predatory, is that it’s really a scam which is motivated by finances... lots of people don’t have the money to publish in Open Access journals, and so here’s an avenue to do that potentially. (P14).

Many participants expressed uncertainty about how to identify predatory journals. One participant mentioned that, while they were quite familiar with predatory journals, they were unaware of any effective checklists to identify them, and that even if such a list did exist, they did not have the “capacity or methods to search a list of predatory journals” (P14). Others reported using lists of predatory journals (e.g. Beall’s List) guidance tools such as the Think.Check.Submit resources, or simply noted that they look for “red flags” such as “grainy-looking pictures and spelling mistakes, and stuff like that” (P13).

While participants generally agreed that it would be ideal to avoid articles from predatory journals, many also believed that occasionally citing them might be unavoidable and that their impact would likely be minimal, with one participant stating:

I don’t think that it actually has that much of an implication to be honest... if you have a health policy document with eighty citations and one of them is from a predatory journal... It’s obviously unfortunate, and you would like to try to avoid it, but I don’t think it really matters that much to be quite honest. (P13).

3.3.2 The importance of considering the trustworthiness of sources goes beyond predatory journals

Another recurring point was that “potentially problematic studies” are by no means exclusive to predatory journals. In fact, all participants agreed that even literature published in legitimate and typically trustworthy sources may be unreliable, as is demonstrated by the following:

...it's not necessarily a seal of quality if it's published in BMJ (P13).

So, we don't have to rely only on peer-reviewed public literature in [field of study], most of which is garbage anyways because it's just a bunch of academics monkeying around and they're not doing a good job of it. It's not the rigorous stuff done by industry. (P14).

Theme 4 Overcoming obstacles to policy document development.

Systematic reviews were described by most participants as the preferred approach due to their rigour and comprehensiveness:

... general advice was to use rigorous evidence synthesis methods, like systematic reviews... the evidence synthesis methods that we use [have] largely been based off Cochrane methods... (P14).

Yet, many participants also reported several obstacles that led them to opt for alternative approaches (e.g. conducting less rigorous narrative reviews) when faced with time or resource constraints.

4.1 Systematic reviews may not capture all relevant information

Participants raised two key limitations to systematic reviews that impact their ability to effectively access information. The first limitation is that conducting a systematic review is an arduous, time-consuming and resource-intensive endeavour – luxuries not often afforded to those producing policy documents. One participant elaborated on this:

... sometimes it's, we need this in three months. So, to do a systematic review can be really challenging to get everything together and understand the whole picture... (P9).

The second key limitation of systematic reviews, as reported by participants, was that they could limit the researcher's ability to capture key contextual information. For example, one participant stated their reluctance to use systematic reviews for policy documents was because "although they're expansive, they're also limiting... [and they do not] look at things that haven't been indexed in commercial databases. (P1).

Multiple participants expressed concerns regarding how published literature is not always representative. For example, several participants pointed to the dominance of the English language and the Global North in academic

literature, making it challenging to find context-specific studies relevant to the Global South.

4.2 Policy document development is very complex

Several participants described the complexity of the policy document development process – it involves several steps requiring training and expertise – as a significant barrier to overcome. One participant even admitted to having "made a lot of mistakes" while they were still learning the ropes:

... I made a lot of mistakes. I must say... for the first five years, I was doing it unsystematically... until I realized how important it is and how much information you can get to if you do it right... (P7).

Furthermore, the complexity of the development process means that it often requires significant time and resource commitments. All participants agreed that both time constraints and limited resource access can negatively impact policy document development by restricting the level of rigour which can be applied to evidence collection and assessment. This was important because having tight time constraints often changes the type of document which will be produced (e.g. narrative review instead of systematic review), in turn resulting in a streamlined, and therefore less rigorous, evidence assessment.

Theme 5 Maintaining transparency throughout the development process.

Participants unanimously agreed on the importance of being as transparent as possible about the policy document development process. They believed that in cases where systematic approaches were used, they should be clearly described, and in cases where more ad hoc approaches were employed, the rationale for doing so should be provided.

This notion of maintaining transparency also extends beyond simply describing the process through which policy documents were developed. Participants noted that all approaches to finding and assessing evidence have limitations. They emphasized the importance of recognizing these limitations and outlining them for the intended end-users. One participant explained that when they conduct reviews on short timelines, they make sure to clearly communicate the limitations to policymakers and be explicit about how the recommendations should (and should not) be implemented.

... if it has huge limitations... We usually present the policymakers with some narrative report... So, I say, "from our systematic review with very low quality"

and then I explain in a footnote or a box, whatever quality means in that case... (P10).

Discussion

Interpretation of results

This study captured the thoughts, beliefs and perceptions of a sample of international public health policy document developers regarding how they source and evaluate the research they cite. Interview participants provided detailed accounts of how they carry out literature searches and evidence assessments.

Despite describing systematic literature searches as the ideal approach – a sentiment that echoes existing guidance for developing policy documents [2] – participants also noted several limitations which often force them to resort to non-systematic approaches (e.g. systematic reviews can limit the researcher’s ability to capture key contextual information), many of which have been reported in the literature (e.g. systematic reviews often rely on only a limited number of databases [27]). Participants shared a similar sentiment regarding approaches to evidence assessment, noting that while objective “quality” appraisals are ideal, they are very time and resource intensive and are thus often replaced by more subjective “best judgements” of quality. Indeed, these findings have revealed several potential factors that could explain how predatory journal articles and other potentially untrustworthy sources come to be cited in evidence syntheses.

First, we found that participants often relied on non-systematic approaches to assessing evidence. Understandably, conducting a systematic review is not always feasible (e.g. because of time or resource constraints; or the need to rely on smaller, context-specific studies); however, reverting to less rigorous assessment methods (e.g. “best judgements” of quality) nonetheless increases the risk of including lower-quality studies. Similarly, prioritizing “quality” of evidence over “trustworthiness” of the source could partially explain why predatory journals are cited in policy documents.

The varying levels of expertise possessed by those producing policy documents may also contribute. In particular, the limited methodological training that some of these individuals reported having received could impact their ability to properly use complex evidence assessment tools (e.g. Cochrane Collaboration’s risk-of-bias tools [28]). In many cases, having skills in quality assessment was not reported to be a prerequisite for policy document development. Thus, since some individuals decide whether studies ought to be included/excluded on the basis of their risk-of-bias [29], misusing these assessment

tools may result in the inclusion of studies that would have otherwise been excluded. Additionally, limited resources and/or access to training could also restrict individuals’ capacity to identify predatory journals (if they are even aware of their existence), thereby potentially explaining how some predatory journal articles come to be cited.

Finally, another potential explanation for predatory journal citations is that several participants believed predatory journals are not indexed in large academic databases (e.g. PubMed, Embase) – a claim that we know to be false [30]. Regardless, because of this belief, participants reported often relying on the “brand” of these databases, which may provide a false sense of security thereby potentially leading to some predatory journal citations.

Limitations

It is important that these results are interpreted within the limitations of this study. First, given the low email response rate for our purposive sampling, we were forced to rely on snowball and convenience sampling to attain data adequacy. These results should also be interpreted while considering the potential effects of biases such as social desirability bias [31]. However, our interactions with interview participants suggests that such biases were limited as participants were candid with their responses. Additionally, the transferability of this research may be limited. For example, all interviews were conducted in English, and given that individuals producing non-English documents may have more difficulty finding relevant evidence, their development process may differ. The transferability of these findings may also be limited, since while we spoke to individuals from various public health policy domains, there remain many others for which the specific strategies employed to develop policy documents may differ.

Implications for policy development

Our results highlighted that regardless of the degree of rigour applied to policy document development, there will likely always be the risk of citing certain potentially untrustworthy evidence. Thus, on the basis of our study results, we provide three broad recommendations for minimizing the potential negative impacts of relying on such sources.

First, minimizing the negative impact of accidentally citing low-quality, unreliable sources, may be facilitated by increasing transparency regarding how the document was produced (i.e. explicitly documenting source selection and evidence assessment methods). Even in cases where systematic approaches were not employed (e.g.

ad hoc search strategy was used), the process should be described. The importance of maintaining transparency also extends to clearly outlining any limitations of the employed methods. These measures will help intended end-users (i.e. policymakers) judge the strength of the evidence summarized and recommendations provided.

Second, although our study focussed on predatory journals, it is important to note that the trustworthiness of all cited information must be considered. We cannot assume all studies published in “legitimate” journals are of high quality. In fact, there are countless instances of “legitimate” journals publishing studies which were later retracted – two prime examples being those from the *Lancet* and *New England Journal of Medicine* [32, 33]. Hence, predatory journals are but one small piece of the puzzle. In an ideal world, individuals producing policy documents would possess the knowledge and skills to assess the quality of research and identify the best available evidence. While this is not always possible, efforts can be made to improve training in these areas and create easily accessible resources that help policy document writers differentiate between trustworthy and potentially untrustworthy sources.

Third, since our interview participants mentioned on several occasions that they were either unaware of available tools to help identify trustworthy sources of evidence, or did not feel properly equipped to operationalize them, it would be helpful to better disseminate tools and available resources in this area. Researchers have been working to develop practical guidance on reducing the threat of predatory publishers (e.g. the establishment of a consensus definition of predatory journals [7]), but there is additional progress to be made. As one example, while various resources exist to help individuals differentiate between trustworthy and untrustworthy sources of research (e.g. the Directory for Open Access Journals [34, 35] and Cabell’s Scholarly Analytics [36]), continued efforts to make these resources accessible to all and easy to use would be beneficial.

Conclusions

This study adds to an important field of research regarding the potential impact of untrustworthy sources on evidence-based policymaking. We describe several potential factors that could contribute to the inclusion of information from predatory journals in public health policy documents. These findings suggest the potential for policy decisions to be based on untrustworthy research evidence, which could have widespread consequences. While this study focused primarily on predatory journal citations, the importance of ensuring the trustworthiness

of cited information extends beyond these entities to all relied-upon sources.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12961-024-01282-9>.

Additional file 1: COREQ reporting checklist.

Additional file 2: Semi-structured interview guide.

Additional file 3: Coding template with code descriptions and example quotes.

Additional file 4: Data matrices developed throughout analysis to organize all codes with illustrative quotes.

Acknowledgements

The authors would like to thank the interview participants for their participation.

Author contributions

CRedit author statement M.A.A.: conceptualization, methodology, validation, formal analysis, investigation, writing – original draft, writing – review and editing, visualization, project administration, funding acquisition. A.G.: conceptualization, methodology, validation, formal analysis, writing – review and editing, supervision. M.M.L.: conceptualization, methodology, validation, formal analysis, writing – review and editing, supervision.

Funding

M.A.A. was supported by the Social Sciences and Humanities Research Council Canada Graduate Scholarship-Master’s (SSHRC CGS M). The funding body was not involved in the study design, data collection, analysis or interpretation, nor the decision to submit the article for publication. A.G. is funded in part by a Telfer Fellowship from the Telfer School of Management, University of Ottawa.

Availability of data and materials

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

Ethics committee approval of the study was obtained from the University of Ottawa’s Social Sciences and Humanities Research Ethics Board (file no.: S-07-22-8094), compliant with the Tri-Council Policy Statement: Ethical Conduct for Research Involving Humans (TCPS2 (2014)). All participants gave explicit informed consent prior to starting the interview.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

¹Telfer School of Management, University of Ottawa, 55 Laurier Ave E, Ottawa, ON K1N 6N5, Canada. ²Blueprint Translational Research Group, Ottawa Hospital Research Institute, Ottawa, ON, Canada. ³Clinical Epidemiology Program, Ottawa Hospital Research Institute, Ottawa, Canada. ⁴Department of Anesthesiology and Pain Medicine, The Ottawa Hospital, University of Ottawa, Ottawa, Canada.

Received: 31 October 2024 Accepted: 23 December 2024

Published online: 09 January 2025

References

- Brownson RC, Chiqui JF, Stamatakis KA. Understanding evidence-based public health policy. *Am J Public Health*. 2009;99:1576–83. <https://doi.org/10.2105/AJPH.2008.156224>.
- Lavis JN, Oxman AD, Lewin S, Fretheim A. SUPPORT tools for evidence-informed health Policymaking (STP). *Health Res Policy Syst*. 2009;7:11. <https://doi.org/10.1186/1478-4505-7-S1-I1>.
- Overton Documentation. Overton 2021. <https://www.overton.io/>. Accessed 18 Jan 2022.
- Munn Z, Barker T, Stern C, Pollock D, Ross-White A, Klugar M, et al. Should I include studies from “predatory” journals in a systematic review? Interim guidance for systematic reviewers. *JBI Evid Synth*. 2021;19:1915–23. <https://doi.org/10.11124/JBIES-21-00138>.
- Lavis JN. ‘Policy Brief’ Workshop 2022.
- Jewell CJ, Bero LA. “Developing good taste in evidence”: facilitators of and hindrances to evidence-informed health policymaking in state government. *Milbank Q*. 2008;86:177–208. <https://doi.org/10.1111/j.1468-0009.2008.00519.x>.
- Grudniewicz A, Moher D, Cobey KD, Bryson GL, Cukier S, Allen K, et al. Predatory journals: no definition, no defence. *Nature*. 2019;576:210–2. <https://doi.org/10.1038/d41586-019-03759-y>.
- 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>.
- Cobey K, Lalu MM, Skidmore B, Ahmadzai N, Grudniewicz A, Moher D. What is a predatory journal? A scoping review. *F1000 Res*. 2018;7:1001. <https://doi.org/10.12688/f1000research.15256.2>.
- Moher D, Shamseer L, Cobey KD, Lalu MM, Galipeau J, Avey MT, et al. Stop this waste of people, animals and money. *Nature*. 2017;549:23–5. <https://doi.org/10.1038/549023a>.
- Severin A, Low N. Readers beware! Predatory journals are infiltrating citation databases. *Int J Public Health*. 2019;64:1123–4. <https://doi.org/10.1007/s00038-019-01284-3>.
- Brandts-Longtin O, Lalu MM, Adie EA, Albert MA, Almoli F, Almoli F, et al. Assessing the impact of predatory journals on policy and guidance documents: a cross-sectional study protocol. *BMJ Open*. 2022;12: e059445. <https://doi.org/10.1136/bmjopen-2021-059445>.
- Brainard J. U.S. judge rules deceptive publisher should pay \$50 million in damages. *Science* 2019. <https://www.science.org/content/article/us-judge-rules-deceptive-publisher-should-pay-501-million-damages>. Accessed 27 Apr 2023.
- Doyle L, McCabe C, Keogh B, Brady A, McCann M. An overview of the qualitative descriptive design within nursing research. *J Res Nurs JRN*. 2020;25:443–55. <https://doi.org/10.1177/1744987119880234>.
- Kim H, Sefcik JS, Bradway C. Characteristics of qualitative descriptive studies: a systematic review. *Res Nurs Health*. 2017;40:23–42. <https://doi.org/10.1002/nur.21768>.
- Patton MQ. Pragmatism and generic qualitative inquiry. In: *Qualitative research & evaluation methods: integrating theory and practice*. 4th ed. Thousand Oaks: SAGE Publications Ltd; 2015. p. 152–7.
- Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *Int J Qual Health Care J Int Soc Qual Health Care*. 2007;19:349–57. <https://doi.org/10.1093/intqhc/mzm042>.
- Beall J. Predatory publishers are corrupting open access. *Nature*. 2012;489:179–179. <https://doi.org/10.1038/489179a>.
- Hennink M, Hutter I, Bailey A. In-depth interviews. In: *Qualitative research methods*. 2nd ed. Thousand Oaks: SAGE Publications Ltd; 2020. p. 115–36.
- Hennink M, Kaiser BN, Marconi VC. Code saturation versus meaning saturation: how many interviews are enough? *Qual Health Res*. 2017;27:591–608. <https://doi.org/10.1177/1049732316665344>.
- Miles MB, Huberman AM, Saldaña J. Ch. 6: Methods of exploring. In: *Qual. Data Anal. Methods Sourceb*. 4th edn. Los Angeles: Sage; 2020; p. 119–53.
- Brooks J, McCluskey S, Turley E, King N. The utility of template analysis in qualitative psychology research. *Qual Res Psychol*. 2015;12:202–22. <https://doi.org/10.1080/14780887.2014.955224>.
- Braun V, Clarke V. One big happy family? Understanding similarities and differences between reflexive thematic analysis and its methodological siblings and cousins. In: *Themat. Anal. Pract. Guide*, SAGE Publications Ltd; 2022, p. 223–58.
- Hennink M, Hutter I, Bailey A. Ch.11: Textual data analysis. In: *Qual. Res. Methods*. 2nd ed., Thousand Oaks: SAGE Publications Ltd; 2020, p. 235–65.
- QSR International. Best qualitative data analysis software for Researchers|NVivo 2022. <https://www.qsrinternational.com/nvivo-qualitative-data-analysis-software/home>. Accessed 9 Mar 2022.
- MacOdrum Library—Carleton University. Think Tanks n.d. <https://library.carleton.ca/guides/subject/think-tanks>. Accessed 5 Dec 2024.
- Dahabreh IJ, Chung M, Kitsios GD, Terasawa T, Raman G, Tatsioni A, et al. Discussion. *Compr. Overv. Methods Report. Meta-Anal. Test Accuracy Internet*, Agency for Healthcare Research and Quality (US); 2012.
- Savović J, Weeks L, Sterne JA, Turner L, Altman DG, Moher D, et al. Evaluation of the Cochrane Collaboration’s tool for assessing the risk of bias in randomized trials: focus groups, online survey, proposed recommendations and their implementation. *Syst Rev*. 2014;3:37. <https://doi.org/10.1186/2046-4053-3-37>.
- Harvey LA, Dijkers MP. Should trials that are highly vulnerable to bias be excluded from systematic reviews? *Spinal Cord*. 2019;57:715–6. <https://doi.org/10.1038/s41393-019-0340-y>.
- Singh CD. Hundreds of ‘predatory’ journals indexed on leading scholarly database. *Nature*. 2021. <https://doi.org/10.1038/d41586-021-00239-0>.
- Nikolopoulou K. What is social desirability bias? | Definition & Examples. Scribbr 2022. <https://www.scribbr.com/research-bias/social-desirability-bias/>. Accessed 4 Dec 2024.
- Joseph A. Lancet, New England Journal retract Covid-19 studies, including one that raised safety concerns about malaria drugs. *STAT* 2020. <https://www.statnews.com/2020/06/04/lancet-retracts-major-covid-19-paper-that-raised-safety-concerns-about-malaria-drugs/>. Accessed 1 Feb 2022.
- Ellis R. The Lancet Retracts Hydroxychloroquine Study. *WebMD* 2020. <https://www.webmd.com/lung/news/20200605/lancet-retracts-hydroxychloroquine-study>. Accessed 1 Feb 2022.
- DOAJ. Directory of Open Access Journals n.d. <https://doaj.org/>. Accessed 27 Jan 2022.
- DOAJ, INASP, ISSN, LIBER, OASPA, STM, et al. Think. Check. Submit. n.d. <https://thinkchecksubmit.org/>. Accessed 28 Jan 2022.
- Cabell’s Scholarly Analytics. Cabell’s International - Homepage n.d. <https://www2.cabells.com/>. Accessed 27 Jan 2022.

Publisher’s Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.