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THE KNOWLEDGE, ATTITUDES, AND PRACTICES OF FACULTY TOWARDS SCHOLARLY AND PREDATORY OPEN ACCESS PUBLISHING

Julie Schiavo
julie.schiavo@usm.edu

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by

Julie H. Schiavo

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Dr. Masha Krsmanovic
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_____

Dr. Noal Cochran
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ABSTRACT

Faculty have many options regarding publishing their scholarly research. Yet, along with the growth and development of scholarly open access, predatory open access publishing was created as a business devoted to making a profit at the expense of high-quality scholarship. Many faculty are not aware of the process to publish in an open access journal, the benefits of choosing such a model for their research, or the differences between a scholarly and a predatory open access publisher. The problem addressed in this study was the lack of knowledge about the motivations and behaviors of faculty when choosing publication venues for their research. Thus, this study aimed to establish some understanding of why a faculty member might choose to publish their research in a traditionally published journal, a scholarly open access journal, or a predatory open access journal. A qualitative approach to this study allowed to researcher to interact with participants through interviews and gain a full understanding of their experiences with open access publishing, the meaning they ascribed to the publication experiences, and the ways these experiences shaped their behavior when considering future publications. The population of interest in this study was the faculty of an academic health sciences center in the south who were engaged in scholarly publishing. This study found that faculty's knowledge about both scholarly and predatory open access publishing was lacking. Based on the results of this study, it is determined that faculty need further training in the practice of scholarly publishing, choosing a publication venue, and ethical issues involving publication.

Keywords: open access publishing, predatory publishing, scholarly communication, scholarly publishing, health sciences faculty, publication ethics

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DEDICATION

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LIST OF ABBREVIATIONS

APC	Author Processing Charge
BOAI	Budapest Open Access Initiative
HSC	Health Sciences Center
IRB	Institutional Review Board
OA	Open Access
P&T	Promotion and Tenure

CHAPTER I – INTRODUCTION

Faculty have many options regarding publishing their scholarly research including open access a relatively new publishing model which allows free access to research to scholars worldwide. Yet, along with the growth and development of scholarly open access, predatory open access publishing was created as a business completely devoted to making a profit at the expense of high-quality scholarship. Many faculty are not aware of the process to publish in an open access journal, nor do they know the benefits of choosing such a model for their research. Furthermore, many faculty are not aware of the differences between a scholarly and a predatory open access publisher. This lack of knowledge can result in mistakes that jeopardize the reputation of the faculty member, institution, and even science itself. Predatory publishing has caused the open access publishing movement to be viewed with skepticism by many in academia resulting in doubts about the veracity of any open access publishing model.

Background

The recent development of the open access (OA) publishing model allows free and unlimited access to scholarly scientific literature without subscription or pay per use fees or a transfer of copyright from the author to the publisher as is common in traditional scientific publishing. Scholarly OA publishers conform to the same standards as traditional publishers including meaningful peer review to ensure high quality and accurate literature (Björk & Solomon, 2012). Publication in high quality OA journals has been shown to increase author citations and visibility within scientific communities (Björk & Solomon, 2012). Along with the increase of high-quality OA publications, there has also been a rise in illegitimate or predatory OA publishers that are not intended to provide scholarly information, but instead exist only for the profit to the creators of the publishing company (Beall, 2016). Predatory OA publishers

aggressively pursue authors, charge high article processing fees, and provide little to no meaningful peer review (Butler, 2013; Shen & Björk, 2015). This practice has significant negative effects on authors, institutions, and the scientific community (Butler, 2013; Haug, 2015).

Faculty at health sciences institutions are expected to publish their research to obtain promotions or tenure and to increase the reputation of both themselves and the institution among the scholarly community (Creaser, 2010; Harvey & Weinstein, 2017). Faculty need to demonstrate research productivity has led to a growing number of manuscripts submitted and published by predatory OA publishers. However, as publications in predatory OA journals undergo no meaningful peer review, scientifically inaccurate, misleading, or poorly conducted research is often found in predatory OA publications (Herndon, 2016). The reputation of scholars, institutions, and the overall scientific community can be damaged by an association with inaccurate or deliberately false information published by predatory OA publishers (Butler, 2013; Harvey & Weinstein, 2017; Haug, 2015).

Literature concerning OA publishing has largely focused on raising awareness of OA publishing and warning researchers about the existence and practices of such publishing models (Beall, 2016; Bindon, 2018; Cartwright, 2016; Masten, 2016). Research has been conducted on faculty attitudes concerning OA publishing and their willingness to publish in such journals (Cusker & Rauh, 2014; Rodriguez, 2014; Zhu, 2017). However, few studies discussed faculty knowledge, attitudes, or publication practices concerning predatory OA publishing (Christopher & Young, 2015; Gaines, 2015).

Problem Statement

The problem addressed in this study was the lack of knowledge about the motivations and behaviors of faculty when choosing publication venues for their research. The researcher hoped this study would establish some understanding of why a faculty member might choose to publish their research in a traditionally published journal, a scholarly open access journal, or a predatory open access journal. The researcher also hoped this study would provide more insights into faculty members' experiences with predatory open access journals. The overall goal of this study was to identify specific reasons why a faculty member may choose one publishing model over another and to learn their views on predatory open access publishing.

Purpose Statement

The purpose of this study was to explore the knowledge, attitudes, and practices of health sciences faculty towards scholarly open access publishing. Specifically, this study addressed the faculty awareness of predatory open access publishing. This study also investigated faculty attitude towards and practices concerning publishing in both scholarly and predatory open access journals. For the purposes of this study, predatory open access publishing and predatory open access journals were defined as open access publishers or journals that publish articles after a processing fee is charged but do not follow best practices established for academic publishing.

Research Questions

This study sought to answer the following research questions:

1. How familiar are health sciences faculty members with the open access model of scientific publishing?
2. How familiar are health sciences faculty members with predatory practices of some open access publishers?

3. What are health sciences faculty members' opinions regarding publishing in possibly predatory open access journals?

Significance

Faculty knowledge, attitudes, and practices towards open access and predatory publishing are significant in the academic health sciences because research has demonstrated that often faculty do not have adequate knowledge to discern between an open access publication and a predatory open access publication (Gaines, 2015). To prevent being taken advantage of by predatory publishers, many faculty will eschew publication in the open access model thus closing off avenues for their work to reach other researchers who may not have the financial backing to pay for articles.

If open access publishing is to survive and predatory publishing to fail, it is vital that faculty know the difference between the two, commit to open access venues for their publications, and follow through on those commitments. Librarians and scholarly communications professionals within academic health sciences centers must have an idea of the baseline knowledge, attitudes, and practices of their faculty to provide effective educational and promotional programs concerning open access publishing on campus. As many publications seek to provide readers with an explanation of scholarly and predatory publishing or with a checklist to determine the nature of the publication, this study contributes to the smaller body of research which addresses the relationship of health sciences faculty with scholarly and predatory publishing.

Definition of Terms

The following terms were used throughout this study. Definitions were taken from current literature and scholarly sources.

Academic Promotion: movement from one academic rank or status to a higher academic rank or status often including an increase in salary, prestige, and responsibilities (Shamos, 2002). Eligibility for promotion generally is based on one's accomplishments in education, research, and service

Academic Rank: the designation of position within an academic promotion series for one involved in teaching, research, or academic librarianship. The usual academic ranks in the United States are Instructor, Assistant Professor, Associate Professor, and Professor (Shamos, 2002).

Basic Science Research: investigation which provides the foundational knowledge for applied research. Basic science research is also known as often called fundamental or bench research (American Association of Medical Colleges, 2021).

Beall's List of Potential, Possible, or Probable Predatory Publishers: a list started in 2008 by librarian Jeffrey Beall of publishers and/or journals which met this standard as not reputable (Butler, 2013).

Clinical Research: a type of applied research intended to increase medical knowledge including the understanding, diagnosis, prevention, and treatment of diseases by studying humans through direct interaction or analysis of blood, tissue, or other samples (National Institutes of Health, 2020).

Open Access Publisher: a publisher that provides electronic access to scholarly articles freely and without most copyright and/or licensing restrictions. Users can read, copy, distribute, and print materials without charge (Stuber, 2004).

Peer Review: a process used to ensure a scholarly publication contributes to the accumulated knowledge in a field. Peer review involves the careful review of submitted works

by scholars in the field of interest to ensure the work is original, rigorous, and a significant contribution to the field (American Psychological Association [APA], 2020).

Predatory Open Access Publishing: journals and publishers that do not follow best open access publication standards, including rigorous peer review and author held copyright, provide untruthful or misleading information, lack transparency, and exist only to generate a profit. These journals and publishers aggressively recruit and intend to deceive authors with promises of quick publication, peer review, editorial services, and/or including in major indexes for the discipline. (Grudniewicz et al., 2019).

Scholarly Communication: the process of creating, evaluating, disseminating, and preserving academic or scholarly research and writing such a publication in peer reviewed journals (American Library Association, 2006).

Scholarly Publication: work that has been peer reviewed and appear in a journal with an ISSN either in paper format or electronically. Standalone work with an ISBN is also considered a scholarly publication (APA, 2020).

Tenure: a continuous academic appointment, given after a probationary period, that can only be terminated by a college or university for cause or under unexpected conditions such as financial emergencies or upon the discontinuation of a program. Tenure is intended to ensure academic freedom (APA, 2020).

Assumptions

Several assumptions were accepted to be true by the researcher for the purposes of this study. It was assumed that all faculty members interviewed by the researcher were aware of open access and predatory open access publications and believed they knew the difference between the two publication methods. It was assumed that all faculty members interviewed had

experience publishing their research prior to the interviews. Finally, it was assumed that interviewees were willing to share their positive and negative attitudes, knowledge, and experiences with scholarly and predatory open access publishing openly and honestly with the researcher.

Delimitations

Delimitations are choices made by the researcher that set the scope and boundaries of the study. For the purposes of this study three delimitations applied. This study focused on health sciences faculty members or basic sciences only. Focusing the investigation on one discipline allowed the researcher to gather rich and detailed accounts of the attitudes and experiences of faculty members. The respondents were faculty members at a large public health sciences center in the southern United States. Health sciences faculty members at the institution are encouraged to publish research in scholarly journals with some schools requiring publications prior to consideration for promotions or tenure. Finally, the study analyzed scholarly open access publishing and predatory open access publishing only and did not address traditional publishing methods. Open access publishing models require authors to pay article publication fees prior to an article's publication whereas traditional publishing methods generate income by charging individual and library subscribers. As a result, open access publishing can be more easily exploited thus allowing predatory publishers to profit from authors. Although traditional publishers or journals may share some traits with predatory open access publishers or journals the intent to deceive is generally absent therefore not in the scope of this study.

Limitations

There are several limitations to this study which stem from the research. This qualitative study included a small number of faculty members at one university who were willing to be

interviewed. It also only included faculty members employed at that university at the time of the interviews. As such, the results may not be generalizable to other faculty at other universities or other locations.

Summary

Developments within academic publishing have made acquiring scholarly articles difficult and often cost prohibitive for most researchers so many are seeking other ways of disseminating research. Open access is intended to remove the cost barrier for researchers and allow the free exchange of scholarly information to support new ideas and improve society. However, with the development of open access publishing, a disreputable form of publishing arose designed solely for profit by publishing scholarly articles without holding to the standards of legitimate scientific publications. Predatory open access publishing threatens the reputations of researchers, institutions, and even scientific inquiry itself.

This study intended to provide a glimpse into the thought processes of health sciences faculty when choosing an outlet for their scholarly writing. It aimed to illuminate the amount and type of knowledge health sciences faculty have regarding open access and predatory open access publishing, their attitudes towards both types of publishing models, and their use of either or both models. With this aim in mind, this chapter presented the current trends in OA publishing, defined the operational terms to be used in this study, and identified main limitations, delimitations, and assumptions. The following chapter presents the overview of the contemporary literature aimed to serve as a theoretical foundation for this study.

CHAPTER II – LITERATURE REVIEW

Faculty have more options than ever before when choosing a venue for dissemination of their scholarly research. Many faculty authors from throughout the world are forgoing traditional publishing models and instead of publishing in open access (OA) publishing models. OA is more than a type of publication, it is an innovative movement in the publishing industry that strives to promote a more just world by making scholarly research and education available to all (Aulisio, 2014). In 2001 the Open Society Foundation convened an international panel of academics to explore how the many early attempts to provide free, uninhibited access to scholarly literature could come together to achieve their goal. One year later, Budapest Open Access Initiative (BOAI) Declaration was released stating:

> "An old tradition and a new technology have converged to make possible an unprecedented public good. The old tradition is the willingness of scientists and scholars to publish the fruits of their research in scholarly journals without payment, for the sake of inquiry and knowledge. The new technology is the internet. The public good they make possible is the world-wide electronic distribution of the peer-reviewed journal literature and completely free and unrestricted access to it by all scientists, scholars, teachers, students, and other curious minds" (BOAI, 2002).

In 2003, the Berlin Declaration of Open Access to Knowledge in the Sciences and Humanities reiterated the BOAI's statements and advanced the case for OA further (Berlin Declaration, 2004, Stuber, 2004).

Open Access Publishing Model

Most OA publications are identical to traditional publications in ways such as rigorous peer review, content preservation, prestige, career advancement, and other services provided to

authors by publishers (Stuber, 2004). The most notable difference between traditional and OA publishing is the cost to the consumer. Following the traditional publishing model, the creator of scholarly research must relinquish their copyright of the content to the publisher who then publishes the material while charging consumers, including libraries and individuals, for access to the work. Many times, the content creator, their institution, or the institution's library are charged thousands of dollars to provide the content of that journal to their employees or patrons. OA publishing employs a model whereby the author pays an article processing charge (APC) to the publisher to offset the cost of free access to the material (Stuber, 2004). In addition, the author of the published material retains the copyright. Although the concept of OA has existed since the early days of the internet, it has not been widely accepted by faculty. Literature recorded a variety of reasons for this lack of acceptance including lack of awareness of the OA publishing model, cost of the article processing charges, and concern for the quality of the journal and its peer review process (Aulisio, 2014; Beaubien & Eckard, 2014; Creaser, 2010; Gaines, 2015; Rodriguez, 2014; Zhu, 2017).

Faculty Knowledge of Open Access Publishing Model

Creaser (2010) determined that knowledge of OA varied across scholarly disciplines with researchers in the physical and biological sciences tending to be more aware and accepting of OA publishing. The same evidence further postulated that this awareness could be due to the requirement many physical and biological research funders stipulate that the research be available openly. Prior evidence has shown that, while many researchers claim to be familiar with OA publishing, yet lack actual knowledge, had trouble defining, or admit to confusion about OA (Gaines, 2015; O'Hanlon et al., 2020; Rodriguez, 2014). Researchers were divided as to if author demographics affected knowledge or acceptance of the OA publishing model

(Gaines, 2015; Rodriguez, 2014). However, Dallmeier-Tiessen et al. (2011) found in their survey of over 53,000 respondents that 90% of the authors surveyed believed OA was beneficial to their field of study.

Faculty Attitudes about the Open Access Publishing Model

Authors preferred to publish in journals with distinguished reputations and established citation patterns regardless of their beliefs about free access to research resulting in a disconnect between support of OA and actual practice (Gaines, 2015; Peekhaus & Proferes, 2016; Zhu, 2017). Although some researchers view OA as an important tool to promote equality and social justice, studies confirm that authors valued a journal's quality, prestige, and impact factor over a social responsibility to publish in a venue which allowed free access to research (Aulisio, 2014; Rowley et al., 2017; Woszczynski & Whitman, 2016). Gaines (2015) found that 80% of faculty believed publicly funded work should be made available openly and that 63% believed authors should retain copyright. However, when asked to rank the traits of a desirable journal, faculty ranked such journal traits as the retention of copyright and open access at the bottom of the list.

Much scholarly work has argued that OA publications are inherently lower quality than subscription publications, published research will not be visible to the intended audience, thus garner fewer citations in other publications, and, therefore, hinder chances for the author's promotion or tenure (Creaser, 2010; Dallmeier-Tiessen et al., 2001; Gaines, 2015; O'Hanlon et al., 2020). This perception has been demonstrated as not entirely accurate. Even though the citation patterns for subscription journals that had originated before 1996 were higher than OA journals, these patterns tended to be nearly equal for OA and subscription journals created after 1996 (Björk & Solomon, 2012). Similarly, OA medical journals had significantly higher citation scores than traditionally published medical journals (AlRyalat et al., 2019, Breuglemans et al.,

2018). Higher citation scores for OA journals were more pronounced in the fields of biology, science, and medicine and for OA journals with larger publishers (Li et al., 2018).

Studies have reported most authors surveyed viewed OA publications "as being 'lower quality', 'less prestigious' and 'less credible' than publications that were not OA in their specific disciplines" (O'Hanlon et al., 2020, p. 54). Scholars' most common concern tended to be a perceived lack of quality inherent in OA journals (Dallmeier-Tiessen et al., 2011). However, analyses have determined the quality of research published in OA and non-OA journals to be equal (Pastorino et al., 2016).

Faculty Practices with Open Access Publishing

Many authors found significant barriers to publishing OA including concerns about APCs, promotion and tenure requirements, and a belief that their peers may view OA journals negatively and see their work as of lower quality (Creaser, 2010; O'Hanlon et al., 2020; Woszczynski & Whitman, 2016). Several studies noted that lack of institutional funding to pay APCs was one of, if not the biggest deterrent to OA when seeking to publish (Cusker & Rauh, 2014; Odell, 2017; O'Hanlon et al., 2020; Peekhaus & Proferes, 2016). Some authors reported APCs were factored into grants or other funding for their research; however, not all scholarship was funded in such ways (O'Hanlon et al., 2020; Rowley et al., 2017). Researchers indicated that without institutional financial support, they often refused to pay APCs themselves (Cusker & Rauh, 2014; Odell, 2017; O'Hanlon et al., 2020).

Concerns about OA publications affecting an author's promotion or tenure eligibility generally stemmed from perceptions of low quality or lack of peer review for OA titles. Gaines (2015) determined that many researchers do not pursue OA publication venues because their institutions do not consider such publications acceptable for promotion or tenure review. As

Woszczynski and Whitman (2016) asserted, institutional culture must be changed for this barrier to be removed.

Predatory Publishing

Authors of scholarly publications are, for the most part, skeptical of OA publications because of concern of possible negative perceptions and the existence of predatory OA publishers. Predatory publishers capitalize on the OA publishing model by aggressively soliciting submissions by authors with the promise of quick publication of their work in a peer review OA journal; however, these publishers do not provide peer review and will publish all submitted work upon payment of the APC. Researchers have demonstrated the ease of publishing in predatory journals by deliberately submitting flawed research to predatory publishers and having it accepted for publication (Bohannon, 2013). As OA publishing has grown in popularity among scholars, so have predatory publishers. To many, the OA publishing has become synonymous with predatory publishing causing many misconceptions and dissuading authors from pursuing OA opportunities.

The term *predatory publisher* was first used by librarian Jeffery Beall in 2008 to refer to OA publishers who accept and publish any submission without peer review provided the APC is paid (Butler, 2013). “Then came predatory publishers, which publish counterfeit journals to exploit the open-access model in which the author pays. These predatory publishers are dishonest and lack transparency. They aim to dupe researchers, especially those inexperienced in scholarly communication” (Beall, 2012, p. 179). The concept has grown and evolved over time and has recently been defined by Grudniewicz et al. (2019), “Predatory journals and publishers are entities that prioritize self-interest at the expense of scholarship and are characterized by false or misleading information, the deviation for best editorial and publication practices, a lack of

transparency, and/or the use of aggressive and indiscriminate solicitation practices" (p. 211). Although the term *predatory publishing* is well established in the literature, Eriksson and Helgesson (2018) have advised moving away from that term because its meaning is not always clear, nor does it consider publishers who no longer uphold formerly established good practices. Many studies have discussed the characteristics of predatory publishers and developed checklists and strategies to aid authors in determining if a specific journal is predatory. A recent systematic review reported 93 articles containing checklists or criteria intended to aid authors in deciding the validity of a journal (Cukier et al., 2020). Scholars have begun to move beyond the development of checklists and into an examination of the knowledge and attitudes of authors who publish in these journals and the effects of published work that lacks the scholarly rigor and credibility has on the scientific community and general public.

Upon publication in many predatory journals, articles become available for discovery by researchers worldwide and are often cited in other works. Articles and journals published by predatory publishers were found in many bibliographic databases in which authors relied while working on literature reviews (Manca et al., 2018; Munn et al., 2021; Oermann, Nicoll, et al., 2020; Oermann, Wrigley, et al., 2020; Somoza-Ferandez et al., 2016). Articles published in predatory journals have been shown to appear in bibliographies and have been cited by authors who reported to be unaware of the lack of scientific rigor associated with such articles (Cortegiani et al., 2020; Munn et al, 2021; Oermann, Wrigley, et al., 2020; Ross-White, 2019). Further, it has been demonstrated that articles continue to be cited even after the journals were removed from bibliographic databases due to questions regarding their legitimacy (Cortegiani et al., 2020)

Predatory journals have been shown to jeopardize the reputations and integrity of authors, confidence in scholarly publishing, and the credibility of the scientific process (Ferris & Winker, 2017; McLeod, 2018). Studies have established that flawed articles published in predatory journals were later cited in nursing studies and evidence syntheses (Oermann, Nicoll, et al., 2020; Ross-White, 2019). Articles published in predatory journals without peer review risk spreading inaccurate and possibly harmful information. However, most studies in predatory journals do not contain conclusions that are potentially harmful if utilized as evidence by scientists or the public, but simply of poor quality (Björk et al., 2020; Harvey & Weinstein, 2017).

Faculty Knowledge and Perceptions of Predatory Publishing

Authors published in predatory or potentially predatory journals often do not know the journal is predatory. Many authors have reported they did not receive training in spotting predatory publications, had not heard of predatory publishers, or were only somewhat familiar with predatory publishing (Christopher & Young, 2015; Cobey et al., 2019; Cohen et al., 2019; Maurer et al., 2021; Richtig et al., 2019; Swanberg et al., 2020; Wang et al., 2021). Therefore, it can be argued that these authors would not be aware of the predatory nature of a chosen journal (Cohen et al., 2019; Swanberg et al., 2020). Several studies have ascertained that although most authors have heard of predatory publishing, many cannot identify one when asked (Christopher & Young, 2015; Richtig et al., 2019; Swanberg et al., 2020). For instance, 89% of authors published in predatory journals surveyed did not know the journal was predatory; 76% of the authors responded that they would not pay to have an article published in an OA journal of any quality after their experiences with the predatory journal (Cobey et al., 2019). Further, most interviewed authors disclosed that upon learning about predatory journals, they would not have

chosen to publish in such a journal (Cohen, 2019; Kurt, 2018). Scholars have demonstrated that faculty often confused OA and predatory journals. Although many faculty are not aware of the predatory nature of some journals, a survey of 206 faculty in academic radiology found that 98% had received an email from at least one predatory publisher soliciting articles for publication (VanDenBerg et al., 2021). Authors who are not well educated in the OA publishing movement tend to equate paying an APC with using financial means to subvert the peer review system and ensure publication of an article of low quality (Cohen, 2019; Swanberg et al., 2020). More education about the differences between these types of publishers is needed to ensure the survival and growth of OA publishing (Richtig et al., 2019; Swanberg et al., 2020).

Faculty Practices with Predatory Publishers

There were several reasons why an academic may select a predatory journal for publication of their research. Studies have found that young researchers from developing countries were more attracted to predatory publishers than their more experienced colleagues from wealthy countries; however, work by academics of all experience levels and countries can be found in predatory journals (Kurt, 2018; Xia et al., 2015). A recent study found 61.9% of Swedish nursing researchers published in predatory journals were classified as senior researchers (Gabrielsson et al., 2020). Authors from developing countries reported a belief that Western journals may choose not to publish their research because of prejudice, they were flattered by email solicitations, or their institution required them to publish their research to be considered for promotion and tenure (Demir, 2018; Kurt, 2018; Salehi, 2019). University promotion and tenure policies rarely have prohibitions against publishing in predatory journals. A recent study examined the promotion and tenure guidelines of 20 universities in Canada and determined that none discouraged publishing in predatory journals (McQuarrie et al., 2020). These findings were

echoed in a similar study of 92 biomedical institutions with a policy requiring faculty to publish peer-reviewed articles; none of the policies examined discussed the format, nature, or method of publication (Rice et al., 2020).

Although most authors who choose to publish in predatory journals do so out of ignorance, some were aware of the journal's predatory nature when they chose to submit their research (Cobey, 2019; Cohen, 2019; Kurt, 2018). It has been shown that, at times, authors decided to publish in predatory journals because of the rewards that can be gained when a scholar has several peer-reviewed publications listed on their curriculum vitae. Studies examining the curriculum vitae of applicants for faculty positions indicated many had publications in or served on editorial boards for predatory publishers (Pond et al., 2019; Pyne, 2017). Research has also demonstrated the financial benefits and prestige gained by the highly published faculty. These academics were promoted quicker and received higher salaries with more benefits than faculty of the same academic rank with fewer publications. Researchers who published in predatory journals tended to do so regularly, often having twice as many articles in predatory journals as other faculty in the same school, leading scholars to postulate that the choice of these journals was intentional (Pyne, 2017). A recent study by Yeo-Teh and Tang (2021) held that researchers who knowingly submit to predatory publications are attempting to avoid peer review and committing a form of scientific misconduct. However, Grey et al. (2020) urges that manuscripts published without rigorous peer review be reviewed for accuracy prior to concluding the author miscounduct.

Summary

Open access publishing has the potential to alter the landscape of scholarly publishing to the benefit of both authors and the consumers of their work. Free and open access to research can

allow scholars and practitioners to draw from a vast amount of intellectual work, increasing scholars' knowledge and allowing them to apply this newfound knowledge to their fields of study. However, academic publishing has been slow to embrace the open access movement and the path to free access to research has not been without obstacles. The advent of predatory open access publishing has cast a shadow on the open access movement, causing many scholars to distrust and bypass open publishing routes. Predatory publishing has also allowed false and even harmful scientific research to enter both the academic and public spheres. It has preyed on unknowing scholars and opened new avenues of academic dishonesty for knowing scholars. The potential for harm done to science, the scientific community, and the reputation of scholars by predatory publishers cannot be understated. It is necessary to understand the complex relationships between faculty, the open access movement, and predatory publishing to aid in the education of faculty and the promotion of open access principles.

CHAPTER III – METHODOLOGY

As discussed in the previous chapter, the open access publishing movement has the potential to change academic scientific publishing for the benefit of both researchers and consumers of scientific information. However, for open access publishing to be successful, it must be accepted, trusted, and utilized by faculty. Yet, there are significant reservations on behalf of faculty members preventing the academic community from taking advantage of all that open access publishing offers some of which are a direct result of the rise of predatory publishers who profit from the open access movement at the expense of scientific integrity. Study of faculty publication needs along with their understanding of open access publishing and their motivations and behaviors when choosing publication venues for their research.

This study sought to discover faculty members in a health sciences institution's knowledge, attitudes, and utilization of open access and predatory open access publishers. The study specifically addressed the following questions:

1. How familiar are health sciences faculty members with the open access model of scientific publishing?
2. How familiar are health sciences faculty members with predatory practices of some open access publishers?
3. What are health sciences faculty members' opinions regarding publishing in possibly predatory open access journals?

Research Design

Qualitative Research

The researcher took a qualitative approach to this study to gain a deep understanding of the faculty members' knowledge, attitudes, experiences, and practices when choosing a

publication venue for their research. A qualitative research approach provides a way to deeply explore and understand the meaning individuals attribute to a problem or experience and gain a broad appreciation of their experiences. Qualitative researchers focus on the individuals involved in the study and work to convey to complexities of an experience or situation as opposed to testing or measuring theories (Creswell & Creswell, 2018; Merriam & Tisdell, 2015; Roberts, 2010). A qualitative approach to this study allowed to researcher to interact with participants through interviews and gain a full understanding of their experiences with open access publishing, the meaning they ascribed to the publication experiences, and the ways these experiences shaped their behavior when considering future publications.

Qualitative research is based upon several different philosophical ideas, one of which, social constructivism, holds that individuals seek to understand their life experiences and develop their own meanings of these experiences. As these meanings are subjective and differ from person to person, a researcher holding to social constructivism looks for the complexity of meanings instead of fitting them into a few categories (Creswell & Creswell, 2018). Crotty (1998) discussed the basis of constructivism which shape qualitative research. In an effort to interpret their environment, individuals construct meanings. Culture, history, and social viewpoints contribute to the way an individual will engage with their surroundings and shape their experiences. Meaning is constructed socially through interactions with others and the community. To address these basic tenets, a qualitative researcher must allow participants to share their view through open-ended questions, interact with participants in their natural setting to learn the context from which the participant draws meaning, and generates meanings through the data collected (Crotty, 1998).

Phenomenology

More specifically, a phenomenological research design was used to shape this study. "Phenomenological research is a design of inquiry coming from philosophy and psychology in which the researcher describes the lived experiences of individuals about a phenomenon as described by the participants" (Creswell & Creswell, 2018 p. 13). In other words, the phenomenological researcher studies an individual's understanding of lived experiences, how these experiences shape their environment, and what their experiences signify to them (Merriam & Tisdell, 2015). The writings of Edmund Husserl (1859-1938) comprise a philosophical basis for phenomenology. Although his writings were abstract, current philosophical interpretations agree that phenomenology encompasses: a return to the Greek assertion that philosophy is a search for wisdom, Husserl's concept of "epoche" meaning the researcher suspends judgement, reality exists in an individual's consciousness of it, and a person's understanding of an object or experience is shaped by the meaning of the experience (Creswell, 2007). Phenomenological researchers seek to study the real world, as experienced by those who live in it, rather than the ways a quantitative researcher does, measuring, transforming, and breaking down the world (Vagle, 2016).

This study used Moustaka's concept of transcendental phenomenology, also known as psychological or descriptive phenomenology, in that the researcher focused on the participants' description of a phenomena rather than interpreting participants' perceptions (Creswell, 2007; Sanders, 2003). Transcendental phenomenology uses Husserl's "epoche" (or bracketing) to ensure the researcher views participants' descriptions without the influence of preconceived judgements about the phenomenon in question (Creswell, 2007). Further writings by Giorgi, Van Kaam, and Colaizzi have developed a specific method to conducting transcendental phenomenology. This method involves the researcher identifying a phenomenon of interest,

acknowledging one's own experience with the phenomena, gathering data from several individuals, analyzing the data, and organizing it into themes. The researcher then describes the participants' experience and the context of their experience to derive an overall essence of the experience (Creswell, 2007; Sanders, 2003).

Setting

This study took place on the campus of a large academic health sciences center (HSC) located in the southern region of the United States; the HSC consists of six professional schools and eight Centers of Excellence on two campuses. It is the largest public health sciences center in the state. Campus houses six schools: Allied Health, Dentistry, Graduate Studies, Medicine, Nursing, and Public Health, and two libraries.

"The mission of …. is to provide education, research, and public service through direct patient care and community outreach" (citation omitted). The academic HSC educated a majority of the healthcare professionals in the state and offers more than 40 degree and certificate programs including associate, baccalaureate, masters, and doctoral degrees, in addition to professional certificates. The institution is accredited by the Southern Association of Colleges and School Commission on Colleges. Each professional school is also accredited by its respective discipline's education association. Approximately 3,000 students and 900 residents are enrolled in programs in the health sciences center.

There are 1,091 faculty members engaged in teaching, research, and patient care. Most faculty members, 966, are involved in instruction and 125 dedicated to research or public service (Integrated Postsecondary Education Data System, 2021). Faculty members are expected to participate in scholarly publication to be eligible for promotion and tenure, however it is not mandated across all schools (citation omitted). The institution's Faculty Handbook (2017) states

"accomplishment in scholarly and other professional activities" which can be interpreted differently based upon the faculty member's role, discipline, and school requirements. Each school has specific requirements for faculty members regarding education, instruction, research, and service requirements.

This academic health sciences center was chosen as the site of this study because of the researcher's relationship and familiarity with the institution. The researcher has held a faculty position since 2000 and is currently an Associate Librarian and Assistant Director, Dental Library. The researcher has experience working with faculty during the publication process and with promotions and tenue publication requirements.

Population

The population of interest in this study was the faculty of a large public academic health sciences center who were engaged in scholarly publishing. Faculty publish approximately 1,000 scholarly communications in over 500 different scholarly journals and books annually including primary research such as original research studies or case studies, secondary research such as systematic reviews or narrative reviews, and special communications such as letters to the editor, commentaries, and editorials. Many published articles are the result of studies funded by grants obtained by the authors (citation omitted). According to the institution Faculty Handbook (2017), faculty are expected to participate in scholarly publication to be eligible for promotion and tenure.

Included in this study were individuals with faculty status of any rank. These faculty members must have experience with scholarly communication and have published or been in the process of publishing at least one article prior to the study. Each participant consented to be interviewed by the researcher through the Zoom communication platform (https://zoom.us/) and

have their voice recorded. Participants could have experience with either traditional or open access publishing models. Knowledge of or experience with predatory open access publishers was not required. Those who did not hold faculty status were excluded from participating in the study. Faculty who had no experiences in scholarly publishing, did not consent to be interviewed, or did not consent to their voice being recorded were also excluded.

Participants

Participants in this study were 22 faculty members at a large public academic health sciences center in the southern United States who had experience publishing their research in scholarly publications. The participants had been publishing scholarly research between four and 40 years. Their research included both basic and clinical studies. Faculty interviewed in this study were affiliated with all six schools within the HSC: Allied Health, Dentistry, Graduate School, Medicine, Nursing, and Public Health.

Sources of Data

Data were gathered using semi-structured interviews conducted by the researcher through the Zoom virtual meeting platform. Interviews as a method for data collection are very common when conducting qualitative research, especially phenomenological research (Creswell, 2007; Merriam & Tisdell, 2015). Interviews allow the researcher and participant to engage in a focused conversation and discuss the knowledge, attitudes, and behavior of the participants. The interviews were conducted in a semi-structured format to enable flexibility on the part of the researcher to be guided by a list of questions but still probe for follow-up when necessary. Some specific data, essential to each interview, was addressed with structured questions, yet most questions allowed for great flexibility (Merriam & Tisdell, 2015). The interview guide is included in Appendix A.

The interview guide contained questions intended to discover the participants' knowledge, attitudes, and behavior concerning open access publishing and predatory open access publishing. Questions were mostly open-ended. The interview contained several types of questions following Patton's (2015) qualitative interview question construction recommendations, including questions centered on the participants' experience, behavior, opinions, values, emotions, and knowledge (Merriam & Tisdell, 2015). Questions were grouped in a manner which allowed participants to draw direct comparisons between open access publishing and predatory open access publishing.

The interview began with structured questions addressing the participants' baseline knowledge about the subject and demographic information to allow for both the participant and the interviewer to develop a rapport and become comfortable (O'Leary, 2017). Semi-structured questions addressed the participants' knowledge of open access and predatory open access publishing, confidence in and ability to discern legitimate open access from predatory open access publishers, and any training they had received on either form prior to the study. The interview allowed participants to discuss their opinions on open access and predatory open access publishing in the sciences along with their experiences with either or both forms. The researcher also inquired to their opinions of scholars who publish in either form of publications and their willingness to publish their own research in either form of publications.

As this study was considered human research, it was required to be approved by the Institutional Review Board (IRB) at the University of Southern Mississippi (USM). The application was submitted including a description of the study, the complete interview guide, and all participant recruitment materials. This study, IRB-21-205 was approved by the USM IRB. A

copy of the IRB Approval is included in Appendix B. Interviews took place in August and September 2021.

Data Collection

An invitation email was distributed to all faculty by the office of the Vice Chancellor for Academic Affairs which described the study and invited them to participate in the research. Participation was voluntary, and participants could choose not to participate. The invitation email detailed the requirements for participation and requested that interested faculty members contact the researcher through the included contact information. The researcher did not obtain the contact information of potential participants until the participant volunteered and contacted the researcher. To ensure participants from all schools were represented, the researcher contacted some participants upon the recommendation of other participants. Upon contact, the researcher verified that the participant met the inclusion criteria then scheduled a time at the participants' convenience for an interview through Zoom. Each interview lasted less than one hour and included a voice recording.

Interviews were conducted from August-September 2021 through the video conferencing and communication system Zoom. Prior to the actual interview, the researcher emailed a consent form to each participant to verify the participants understanding of the study, satisfaction of the inclusion criteria, and age of the participant. It was confirmed that the consent form was signed and returned to the researcher before beginning the interview. The interview followed a semi-structured format which allowed the researcher to ask follow-up questions and further explore any participant's unique experience. Following the conclusion of each interview, the researcher transcribed the recording of the interview. Interviews were de-identified by assigning each

transcription a unique code and any identifying information removed from the transcript. Transcriptions were sent to the participant and the recording was deleted upon approval.

Data Analysis

Data were analyzed using thematic coding. Thematic coding is considered a suitable method of analysis for qualitative studies, in particular phenomenological studies and interviews (Saldana, 2012). This method allows the researcher to derive meaning through rigorous examination of interview transcripts. Themes are generated from the data rather than entering analysis with pre-determined themes (Saldana, 2012).

Upon completion of the interviews, transcripts were read and critically analyzed to discover the similarities and differences in participants' experiences, knowledge, and attitudes of open access publishing and predatory open access publishing. Themes were developed by paying specific attention to the amount of repetition, participant expression, particular issues, and matters not represented in the data (Saldana, 2012). The number of themes were then grouped by similarity for analysis.

Summary

This chapter discussed the research methods employed to complete this study. To gather the detailed, rich data on participants' experiences, a qualitative research approach, phenomenology, was utilized. Using the research question, an interview guide was developed to guide semi-structured interviews with faculty members. Questions addressed faculty members' knowledge, attitudes, and experiences while publishing scholarly journal articles and focused on open access publishing and predatory open access publishing. The following chapter will present a detailed analysis of the data gathered during the interviews.

CHAPTER IV – FINDINGS

This qualitative study was designed as a phenomenological analysis of faculty experiences with scholarly and predatory OA publications. Phenomenological research studies an individual's understanding of lived experiences, how these experiences shape their environment, and what their experiences signify to them (Merriam & Tisdell, 2015). The researcher focused on the real world as experienced by the participants and the meanings they constructed to interpret the changing environment of scholarly publishing (Crotty, 1998; Vagle, 2016). To discover the participants' experiences, knowledge, attitude, and utilization of the OA publication model and predatory OA publications, participants were interviewed using a semi-structured format that allowed the researcher the flexibility to be guided by a list of questions but still probe for follow-up when necessary. Some specific data, essential to each interview, were addressed with structured questions, yet most questions allowed for great flexibility (Merriam & Tisdell, 2015).

Participant Profiles

This chapter presents the findings of interviews with 22 faculty members who volunteered to be interviewed on their scholarly publishing knowledge, attitudes, and practices. The faculty members represented the six schools in the health sciences center: Allied Health, Dentistry, Graduate Studies, Nursing, Medicine, and Public Health. Most interview participants published clinical research or research relating to the education of future health sciences professionals. The participants had a wide range of experience in scholarly publishing, ranging from five to 42 years (M=22). There were 10 male and 12 female faculty members interviewed. All participants were classified as full-time faculty and had both research and teaching

responsibilities. Six of the faculty members published scientific research with the other 16 publishing clinically based research. Participant demographics are further explained in Table 1.

Table 1:

Participant Demographics

Participant	School	Research Engagement	Publication Experience (years)
Participant 1	Allied Health	Clinical	9
Participant 2	Allied Health	Clinical	5
Participant 3	Allied Health	Scientific	28
Participant 4	Dental	Clinical	25
Participant 5	Dental	Clinical	20
Participant 6	Dental	Clinical	12
Participant 7	Graduate School	Clinical	19
Participant 8	Graduate School	Scientific	35
Participant 9	Graduate School	Scientific	40
Participant 10	Graduate School	Scientific	40
Participant 11	Medicine	Clinical	25
Participant 12	Medicine	Clinical	8
Participant 13	Medicine	Clinical	42
Participant 14	Medicine	Clinical	10
Participant 15	Medicine	Scientific	35
Participant 16	Medicine	Scientific	15
Participant 17	Medicine	Clinical	10
Participant 18	Medicine	Clinical	11
Participant 19	Nursing	Clinical	10
Participant 20	Nursing	Clinical	35
Participant 21	Public Health	Clinical	35
Participant 22	Public Health	Clinical	15

Thematic Results

The results of this study revealed the following seven themes related to scholarly OA publishing: (1) complexity of the OA publishing model, (2) professional ethics involved in scholarly publishing, (3) choice of publication models, (4) impact of scholarly and predatory OA publications, (5) the changing nature of peer review, and (6) experiences with predatory OA publishing. Not all the 22 faculty members were represented in the quotes reported in this study. However, those not quoted directly represented the sentiments of others.

Complexity of the OA Publishing Model

Overall, participants expressed a varied understanding of the OA publishing model. While most had a general understanding of how OA differed from traditional scholarly publishing, some had not heard of it prior to agreeing to the interview. Participant 13 admitted, "I had looked that up, I guess it means that you pay them to publish your work." Some faculty tended to equate scholarly OA with predatory OA and do not value such publications: "I don't even count those articles. If you've paid to have it published, it's not peer reviewed." (Participant 8) Collectively, they agreed that it can be difficult to know the difference. When asked about this issue, one interviewee expressed:

> I would say it's an evolving process of understanding, sort of what is a good journal and what is not. I've seen some journals that have odd titles that seem to have appear out of nowhere. And yet, when I look at them online, they have some good the articles. (Participant 22)

In participants' view, if an APC is required for an article to be published by a journal, it must be of lower quality than an article in a traditionally published venue. As one participant expressed this concept:

> I think from what I have seen in the peer review process, I'll say conventional journals seems to be at a higher standard than it does in the predatorial. I'm concerned that if their business model is to make money from the authors, they do not want to get a reputation that it's difficult to publish in my particular journal. Otherwise, authors will not give them the money. Thinking that it's a guarantee that my article will get published good, bad, or indifferent. So, I think the scientific rigor associated with conventionally peer reviewed journals is at a higher level. (Participant 4)

There was also a pervasive belief among the participants that OA articles would be available to readers faster than traditionally published materials. However, as most faculty noted, because of the speed in which the articles are published, the quality and peer review for the publication must be substandard as compared to traditional publishing. Talking about this issue, Participant 8 stated, “So, there's a financial interest for the publications to publish everything that comes in, which means, I think the articles they publish aren’t quite as good. And the turnaround times a lot faster as a result of that.” Alternatively, as stated by one interviewee, a quick turnaround between submission and publication makes OA an ideal method of disseminating high impact scientific discoveries. “I think traditional publishers have recognized that open access is legitimate, and it gets work out there faster. And so that's one avenue of open access that is, I feel, very safe for those legitimate publishers.” (Participant 20)

Professional Ethics Involved in Scholarly Publishing

Faculty members interviewed expressed concern for the ethical dilemmas posed by predatory OA publishing. As many saw no difference between scholarly and predatory OA publications and the assumption that all OA publications were of low quality, they tended to

have a lower opinion of researchers who chose OA and the research they perform. As Participant 20 shared:

> If your research is good, but you're publishing in a predatory venue, who can take you seriously? Who can take your work seriously? If you're a professional person in a practice discipline and you choose to publish in a predatory journal, it's your own risk and the risk of the public. It's just morally and ethically wrong. I don't see a justification for that.

Yet, many were willing to utilize OA publication venues under certain circumstances such as if they believed the article was not of high enough quality to be accepted in traditionally published journals. Some sought an OA title when they required quick publication of an article prior to promotion and/or tenure review or applying for employment at a different institution. When asked about this issue, one interviewee admitted:

> I take advantage of it. Someone publishes my paper and doesn't ask for any changes, great. You know, move onto the next one. But it does put more impetus on you to try to be good, if you want to be honest. It really does. (Participant 17)

Faculty members who were on the promotions and tenure committees for their schools stated that not all committees checked the titles included on an applicant's curriculum vitae against a list of predatory titles or evaluated the titles and articles for quality. As the comment below illustrates:

> I can honestly say that we don't necessarily look for publications that are from predatory titles. We tend to look at the list of publications to recognize high impact journals, but I could say that there could be publications in predatory journals, and I wouldn't know it. (Participant 15)

However, interviewees from other schools stated that having a publication in a predatory OA journal is not considered appropriate for promotion and tenure. This was illustrated through one interviewee's thoughts:

> I'm the chair of our P and T [promotion and tenure] committee. And that's one of the things we look for too – is this a legitimate source here for publication? And like I said, you have a feel for the ones that you just know are legitimate. (Participant 20)

However, those who did evaluate the journals in which a candidate is published tended to place great importance on their quality. As Participant 4 reported:

> That's what I am concerned with that the credibility of academia is on the downslide because of these predatory open access journals. I take a very strong stance and say, okay, you can publish there, but it's not going to hold the same value as if you published in a more conventional normal type of journal.

Many participants felt that if a researcher appeared to be regularly choosing lower quality publications or publications with an APC, they would question their ethics and abilities; such choices were considered a detriment to the researcher's career. Participant 4 conveyed that attitude by stating:

> That's already telling me something about the personality behind who is publishing or who is submitting that particular article. If you're going to do it, I mean, research is not easy, so do it the right way, you know, we're all trying to move science ahead. Do it correctly, with integrity.

The participants who felt strongly about a researcher's decisions to publish in predatory OA publications, believed choosing such a route was tantamount to academic dishonesty. As one participant demonstrated:

> I was on the search committee for the department chair last year and, you know, all these people with impressive resumes and hundreds of publications. And one of the people on the committee went to the effort of looking at the publications to see where they were and found that a lot of them were predatory. And so, this guy was putting himself off as, you know, some big academic. (Participant 14)

Throughout the interviews, the participants seemed to agree that a researcher's reputation, professional ethics, and scientific integrity were closely related to their publishing history. They recognized the minefield that academic publishing had become and the potential damage that could be done to their careers through ill-advised choices.

Choice of Publication Model

The faculty members interviewed had varied reasons for their choice of publication models for their research. Faculty members asserted they generally chose a journal to submit their publications based on their knowledge of the main journals in their field, experience with specific journal titles, the titles which appeared in the literature review for their article, suitability of the article for the Aims and Scopes of the journal, advice of mentors and colleagues, and their intent by publishing the article.

Some faculty members expressed a willingness to publish their research in OA publications provided the journal met their specifications. Others felt the choice of an OA title was advantageous for the dissemination of the research due to free access to the article or rapid publication. As stated by one informant:

> I think as long as editors of the journal are reputable, associate editors and editorial board members are reputable. There's a strict peer review process, stringent acceptance criteria. Having an open access is awesome as I'm able to read journal articles for which I don't

have to pay a subscription and the library doesn't have to pay a subscription." (Participant 15)

However, others believed that OA journals are inherently substandard publication venues and refused to either publish or work with OA journals. When asked their thoughts on the quality of OA journals, one participant stated:

> If they're not accepting it [an article] to the top tier journal, but yet they think it's suitable for their open access, that also tells me that I could probably get this published in a non-open access journal if I just put in some more time to it. (Participant 12)

The APC that is part of the OA publication process was also a factor in determining if a researcher chose OA for their research. Many expressed a reluctance to choose OA unless funding for the APC is included in the grant funds for the research or the fee was paid by the institution. When discussing this topic, this interviewee postulated:

> If you have big, funded research where a portion of it could go towards paying for publications, I guess I could see that that could work, but it certainly, marginalizes or makes it harder for small time people to keep up. Where am I supposed to get that kind of funding to publish on a regular basis? (Participant 14)

The possibility of a higher readership was not considered valuable enough for the faculty members to pay the APC from their personal funds. As Participant 1 expressed, "I'm not interested in paying a fee to provide research to benefit all." Ultimately, the decision to pay the APC was determined by what the author hoped to accomplish by publishing the article. As stated by Participant 17: "Sometimes if I'm working with a company or some sort of corporate support, they may choose to do open access just because they're doing it for an immediate release."

All participants spoke of a standard method they used when determining publication venues for their work. For some, OA was a legitimate option, but others expressed no interest in utilizing such means due to a perceived lack of quality or seeming unfairness of the APC.

Impact of Scholarly and Predatory OA Publications

Faculty had conflicting opinions on how OA publications can impact the future of scientific communication and the public's view of the scientific community. Many stated that the fundamental purpose of OA publication, making research available to everyone without the need for a subscription or a paywall, would result in higher readership and more widespread dissemination of the research. Others expressed the belief that being able to publish quickly in OA publications could be beneficial to the scientific community when attempting to communicate major scientific discoveries. This publication strategy was discussed by one participant:

> I think it's got a great potential, the main one being getting the knowledge out there faster because [of the] the lag time in publication. You need science that is current, relevant, and something that takes two years just to get published isn't relevant. (Participant 20)

However, others felt that OA will have no real impact on scientific communication. They believed that if a researcher felt a copy of an article was vital to their research, it may be obtained through many different means beyond purchasing it from the publisher, thus the OA publication model was unnecessary and only served to confuse. Participant 7 asserted, "People who were really very interested in that paper, because they were doing a project, that they were writing a paper, I feel like they could always get it if they needed it."

All believed that the nature of predatory OA publications, publication of research without rigorous and proper peer review, had the potential to damage both the public's trust in science

and scientific research and the reputation of scientists. This concept was summarized by one participant:

> I think that people who use that method are almost falsifying their CV and they're potentially publishing work that's not critically reviewed, which could really cause problems because there will always be people that don't know that journal is not critically accepted, and the work is subpar. (Participant 15)

Participants further agreed that the public has no way to identify flawed research published in a journal that is advertised as a professional or scientific but has not been vetted in any form. They also noted that this practice can lead to misunderstandings and distrust especially as flawed scientific articles have gotten past peer reviewers in the past and been published in highly respected publications. However, interviewees disagreed on who would be affected more, scientists or the public. The comment below illustrates this issue:

> I don’t know if it’ll affect people on the science side too much but, the public, who’s not aware that these are predatory journals? They’re still seeing the articles get out there, but they haven’t actually been reviewed by the scientific community. Then that could be a problem. More misinformation under a scientific heading is always a very big concern. (Participant 16)

Another interviewee stated their concern that such misinformation could result in errors by scientists:

> Do people or readers of information understand the importance of peer reviewed versus non-peer reviewed? And so, if they read a predatory [journal] with the misinformation and then go to a colleague and say, I read this article on X and X, I think we should implement this. And if it's accidentally a predatory journal, then we have a problem. So, I

> think there is the potential for predatory open access to really muddy the water. (Participant 19)

Interviewees did not agree if the OA publication model would have a significant impact upon the scientific conversation. However, they agreed that publication without substantial peer review of some type had the potential to negatively impact future research and the public's trust in scientific discoveries.

Changing Nature of Peer Review

Although those faculty members interviewed agreed that peer review of scholarly publications was necessary, many believed that the traditional method of peer review was not effective or practical. Participant 17 expressed his thoughts, "I think the peer review process is fatally flawed already. I already think it sucks. And reason why I think it sucks is I think it's; it's inconsistently applied." Another interviewee expressed an apprehension that peer review and publishing had become corrupt.

> You're just going to publish your stuff, even if it's bad. And that bothers me because I think that what we had in the past, (in my first 20 years of my career, really), if it was published, I felt it was at least reasonable. Reviewers may miss something, there may be some critiquing that anybody could do to anything, but I felt it was legit. My last 15 years, I'm not sure. I'm not sure how legit some science is that's published. It's just, it's really hard to know anymore. And I think that is hurting, I think that's hurting science in general. (Participant 10)

Many spoke to the atmosphere of academics as influencing the peer review process. The workload of both teaching faculty and researchers made performing a proper peer review difficult if not impossible. "With how much it takes me to go through manuscripts, think about

them, come back, and make good reviews. I can't do that and my other job." (Participant 6) Publishing was viewed by the interviewees as an especially profitable industry, and the assumption that a scholar would spend time reviewing and correcting another's manuscript was considered antiquated. Some felt that publishers should financially compensate peer reviewers for their time and intellectual labor to ensure they perform a high-quality peer review. As stated by one participant: "I think there's something inherently wrong with authors not getting some reimbursement from the journal since we are the, if you will, oil to their engine for profitability." (Participant 4)

Others alleged that traditional peer review is no longer necessary to ensure the high quality of scholarly communication, especially in an OA publication model. It was asserted that if an article has been read by many researchers in an open format, the other qualified researchers will inevitably review and comment on the article thus providing peer review.

> It [research] probably can get vetted stronger because more people are seeing it faster. And if someone is reading it, they can say, wait a second here, folks, this is absolutely wrong. So, I actually prefer these free access articles, as long as there's a sufficient amount of vetting. (Participant 22)

Peer review was viewed as necessary in some form to ensure the integrity of scientific publications, but participants voiced dissatisfaction in the current system. Although, the faculty members agreed that modifications to the traditional process were necessary to maintain reliability, there was a wide array of opinions as to what this transformation would require.

Experiences with Predatory OA Publishing

All faculty reported having some interaction with predatory OA publishers in the form of mass emails requesting they submit an article to a journal. Many, especially young researchers,

reported being flattered to be asked to publish in a journal. Participant 22 spoke of an experience earlier in his career:

> I get a lot of that stuff and I just delete, delete, delete, delete, delete, right? I've gotten burned once; I never have to be burned again. I was just so excited to be asked, to be, you know, to be requested.

The authors who submitted to predatory OA publications had a wide range of experiences during the publication process. While some reported that a peer review was conducted to some extent, others did not have that experience. Such as this participant expressed:

> I was so new into publishing, and I was just so excited that somebody wanted to publish my article. I didn't realize then that there wasn't a lot of back and forth. Like there were some edits supposedly and some review, but in hindsight it really wasn't a stringent review because it wasn't a real editor. (Participant 18)

Several others discussed issues regarding the payment of the APC such as credit card fraud immediately following a payment or the university being unable to pay because the editors insisted on payment in the form of PayPal or Venmo. When asked about past experiences, Participant 12 recalled an experience when mentoring a resident through the publishing process: "I think the resident did pay the fee. And then like a week later there was a fraud on his card. And, obviously he doesn't know, but he's highly attributed it to this open access journal."

Summary

This chapter discussed the perspectives of faculty involved in scholarly publishing concerning scholarly OA and subsequently predatory OA publishers. Interviews were conducted and demonstrated that faculty members were not universally informed of the nature or intent of the OA publishing model. While not all interviewees were familiar with the term "predatory"

OA publishers, they were familiar with the traits of these publications such as aggressive marketing to authors. Ultimately, there were strong opinions regarding the ramifications of the choice to submit manuscripts to both scholarly and predatory OA journals. Faculty members expressed dissatisfaction with the publishing industry and agreed that it must be changed; however, they also agreed that the current incarnation of scholarly OA publishing is not sufficient to supplant the traditional system.

CHAPTER V – DISCUSSION, RECOMMENDATIONS, AND CONCLUSION

This chapter presents the broader ramifications of this study from the literature discussed in Chapter Two and the findings presented in Chapter Four. It offers insights into the findings in the context of the research questions presented in Chapter One. This study strived to provide an understanding into the faculty's familiarity, opinions, and experiences with both scholarly OA and predatory publications within the health sciences. Through interviews with faculty members who are actively publishing in the field, it can be stated that there was a wide range of understanding and interpretation of the OA publishing model and its objective. Through these disclosures, implications of the research and recommendations for further study were determined.

Discussion

The findings reported in Chapter Four of this study largely echoed the findings of many of the studies discussed in Chapter Two although there were some differences. While participants' perspectives corroborated several strands from contemporary research, they also provided novel insights or even disconfirmed some of the existing evidence.

Faculty Members' Knowledge of Scholarly and Predatory Open Access Publishing

As postulated by Gaines (2015), O'Hanlon et al. (2020), and Rodriguez (2014), most faculty interviewed for this study felt they had a proper understanding of OA publishing yet were not able to identify accurately most of the characteristics of OA publishing. Participants were aware of one basic concept that makes OA different from traditional publishing, that the author was responsible for providing the funds that support the publisher. They agreed that the defining characteristic of OA was the requirement that the author or another entity pay prior to publication. Most did not consider the issues of an author-retained copyright or equity of access

to scientific advances. They tended to be aware of the high profits of traditional publishers and inequity of peer review.

As discussed in the research, the faculty interviewed who reported a familiarity with predatory publishing found them very difficult to identify (Christopher & Young, 2015; Richtig et al., 2019; Swanberg et al., 2020). Several participants discussed their knowledge of the OA publication model was limited to unanticipated emails they received regularly. Again, such participants did not differentiate between scholarly OA and predatory OA publishers. Mass email invitations and aggressive marketing techniques are a primary marker of predatory publishers (Grudniewicz et al., 2019); however, without prior experience or education, the recipients did not know of any difference between the two.

Largely, faculty participants saw no difference between scholarly OA and predatory publishing. They believed the requirement of an APC was the determining factor that made all OA publishing predatory and substandard. This evidence reiterates the assertions of both Cohen (2019) and Swanberg et al. (2020) that authors deem paying an APC as an attempt to subvert peer review. Participants reasoned that as publishing is a for-profit business, it is in the financial best interests for publishers to accept as many articles as possible. Faculty participants also believed that publishing in an OA model would result in a quicker publication process.

Faculty Members' Attitudes Regarding Scholarly and Predatory Open Access Publishing

Participants in this study generally had a lower opinion of any type of OA publishing and would not regularly publish in this model. When seeking recommendations for publication, participants reported seeking advice from mentors and colleagues who had a large amount of experience with the traditional publication process; rarely did they consult the library. These advisors already had preferred journals, usually high-profile titles and society specific journals

published within the traditional model. As such, OA titles were considered inadequate venues to present their research. In many cases, the participants asserted that articles published as OA were lacking in content, employed substandard methodology, or advanced hypotheses unsupported by scientific knowledge. Yet, they admitted that on occasion both scholarly OA and predatory publications produced good quality research; conversely, they also admitted that research of poor quality could be found in traditionally published journals. Their thoughts mirrored the assertion made by Grey et al. (2020) that researchers must stringently evaluate all manuscripts prior to utilizing the content in clinical or teaching settings.

Most interviewees had strong opinions regarding the ethical issues which scholarly OA, predatory publications, and the peer review process. As predatory publications do not to offer a robust peer review process, several participants expressed negative opinions of colleagues and their work who regularly choose predatory publications and thus evaded the peer review process. They spoke of a less favorable view of the character of fellow researchers who amassed a large record of publications which had not undergone the stringent peer review process. Yeo-Teh and Tang (2021) discussed the possibility that authors subverting the peer review process often gained these faculty members high prestige, academic promotions, and substantial financial rewards through what some considered scientific misconduct, an argument repeated by participants in this study.

The faculty members interviewed agreed that the OA publishing model has the potential to change scholarly publication practices significantly. Participants expressed a dissatisfaction with the traditional scholarly publishing model, the profitability of the business of publishing, and the antiquated peer review process. Although research has demonstrated that most articles published in predatory publications do not come to inherently dangerous conclusions (Bjork &

Solomon, 2012), faculty members expressed concern for the trend and future possibilities of scientific misinformation becoming legitimized by its appearance in journals which seem legitimate. Many spoke to a necessary alteration of the scholarly publication process to ensure the continuation of high-quality scholarly communication. Yet, participants agreed the OA publishing model may not be the answer to the issues present in the current scholarly publication process given the distrust demonstrated by the participants.

Faculty Members' Practices When Publishing in Scholarly or Predatory Open Access Venues

When interviewed, faculty members expressed a general reluctance to publish in OA venues. Nearly all of them chose to publish in prestigious traditional journals with established reputations over OA, as discussed by Gaines (2015), Peekhaus and Proferes (2016), and Zhu (2017). They perceived lack of quality, recognition, and prestige of OA publications as being sufficient reason to reject them as potential publication methods. Although Bjork and Solomon's (2012) research did not support this view, the perception continues and has resulted in OA largely becoming an undesirable model. Although not often reported in the literature, some faculty members in this study simply refused to work with any publication that requires an APC due to the cost to the author or the perception of purchasing rather than earning publication.

However, the participants who described having published in OA titles or predatory titles did so for several reasons. Some interviewees made the decision to submit to a predatory journal to ensure publication of their manuscript if they believed their article was of lower quality, apt to be rejected by top traditional journals for some reason, or they required a publication added to their curriculum vitae quickly. Pyne (2017) previously reported the tendency of some to use the lack of robust peer review through predatory titles to their advantage, by bolstering their CV, and

increasing their promotion potential. Yet others stated when they submitted their manuscript, they did not know about predatory publications, would not have chosen one if they had known, and would not do it again for future manuscripts which was analogous to research conducted by Cohen (2019) and Kurt (2018).

Implications

The evidence from this study suggests that there must be a significant change in the conversation regarding scholarly communication. The current iteration of OA publishing is confusing and viewed with skepticism by faculty who are actively involved in scientific research and publication. While a re-examination of the traditional publication model is necessary due to high article and journal prices which have resulted in a significant barrier to access to information. In addition, this study suggests that faculty members have lost trust in peer review. The current peer review system requiring non-compensated effort is not effectively preventing false or misleading concepts from entering the scientific conversation nor from public access. The findings of this study also indicate a need to question if the substantial number of suspected predatory publishers are truly affecting the veracity of available scientific information. Traditionally published, OA, and predatory publications may contain both accurate and inaccurate conclusions that has the potential to increase scientific disinformation and doubt.

Limitations

In addition to the initial limitations presented in Chapter One, additional limitations were noted upon completing this study. The terminology used during the interviews may have biased the participant responses. As noted by one subject, the term “predatory” carries definite negative connotations. Grudniewicz et al. (2019) considered a departure from that term due to the term “predatory” not truly representing all situations where a manuscript may be published without

rigorous peer review and instead recommended terms such as “dark”, “deceptive”, “illegitimate” or “acting in bad faith” (p. 211). However, as the term has become ubiquitous to the phenomenon, they choose to retain it as did the author of this study. During the interview process, participants without prior knowledge of predatory publishing immediately reacted negatively to the concept before asking for clarification.

While there are many types of OA, each with its own level of openness and financial implications, the majority of study participants did not know the basics of OA nor that there are levels of it. As such, the decision was made to focus the study on OA as an overarching concept rather than specific aspects of the model.

Recommendations

As this study only investigated faculty at one health sciences center, additional insights could be gained by replicating this study at multiple institutions; also, the utilization of quantitative methods and objective measures could prove valuable. Further, the interviews revealed that many authors were not familiar with the differences between scholarly OA and predatory publishing. Giving participants an opportunity to demonstrate their thought processes when determining the trustworthiness of publications could foster a deeper understanding of the traits valued by authors and provide potential educational opportunities. Another possible area of future research would be to investigate how to effectively provide such education to both early career and established researchers in the publication process, publication ethics, and the nature of scientific communication.

Faculty members who participated in this study demonstrated a significant distrust of the OA publishing movement. Thus, exploring potential ways to establish trust in this publishing model is desirable in future analyses. Higher education administrators should establish

institution-wide policies regarding scholarly publishing, acceptability of publication venues, and publication ethics so hiring, promotion and tenure, and other committees hold all faculty to the same behavior standards. A rigorous educational program should be introduced and required for all scholars who are interested in publishing research. Finally, national standards for scholarly scientific publishers should be established so as to reduce confusion and profit-driven publishing. The current business model of academic and scientific publishing no longer serves the needs of modern researchers and must be re-considered to build a more reliable and equitable system. As scholarly publishing has become an extremely profitable business, academia must address the rising costs of journals, increasing information divide, and victimization of scholars.

Conclusion

Scientific publishing is a difficult and complex system that has been in place for generations. OA began as a radical departure from the traditional practices to provide a more just and equitable system of information dissemination. Yet it has not lived up to such expectations or aspirations. Faculty are primary authors of scientific manuscripts, and it is vital that they understand the academic publishing cycle for them to succeed in their careers and advance scientific discovery. Through this study, the researcher hopes to provide insight into the reluctance of many faculty to embrace OA publishing and continue to hold on to the traditional publication practices. Through these insights, the researcher hopes to develop effective educational opportunities for the benefit of faculty members at all stages of their careers. OA publishing may prove not to be the revolutionary force as it those who developed it intended, able to remedy the scientific information access divide and provide more equitable opportunities for researchers across the world. However, with understanding and innovation, the scientific conversation can extend to all, regardless of their location, finances, or privileges.

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APPENDIX A

Interview Guiding Questions

- With what school are you affiliated? Do you publish basic science or clinical research? How long have you been in publishing?
- How do you determine where to publish your research?
- What do you know about OA publishing? Have you had any experience with OA journals? What's the difference between it and traditional publishing?
- What do you know about predatory OA publishing? Have you had any experience with predatory OA journals? What's the difference between it and OA publishing?
- How would you distinguish between them? How confident are you in distinguishing between them? Have you had any training on OA and/or predatory publishing?
- What is your opinion about how OA publishing might affect scientific information / publishing? Do you or would you publish your research in an OA journal?
- What is your opinion about how predatory OA publishing might affect scientific information / publishing? Do you or would you publish your research in a potentially predatory OA journal?
- What are your opinions of colleagues' decisions to publish in an OA journal? What are your opinions of colleagues' decisions to publish in a potentially predatory OA journal?
- Do publications in OA journals count toward promotion and/or tenure in your school? Do publications in potentially predatory OA journals count toward promotion and/or tenure in your school?

APPENDIX B

IRB Approval Letter

Friday, September 3, 2021 at 15:34:10 Central Daylight Time

Subject: IRB-21-205 - Initial: Sacco Committee Letter - Expedited and Full
Date: Wednesday, June 9, 2021 at 7:59:38 AM Central Daylight Time
From: do-not-reply@cayuse.com
To: Julie Schlavo, Masha Kramarovic
Attachments: ATT00001.png, ATT00002.png

Office of Research Integrity

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NOTICE OF INSTITUTIONAL REVIEW BOARD ACTION

The project below has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 26, 111), Department of Health and Human Services regulations (45 CFR Part 46), and University Policy to ensure:

- The risks to subjects are minimized and reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered involving risks to subjects must be reported immediately. Problems should be reported to ORI via the Incident template on Cayuse IRB.
- The period of approval is twelve months. An application for renewal must be submitted for projects exceeding twelve months.

PROTOCOL NUMBER: IRB-21-205
PROJECT TITLE: Knowledge, Attitudes, and Practices of Faculty towards Scholarly and Predatory Open Access Publishing
SCHOOL/PROGRAM: Educational Research and Admin
RESEARCHER(S): Julie Schlavo, Masha Kramarovic

IRB COMMITTEE ACTION: Approved
CATEGORY: Expedited

7. Research on individual or group characteristics or behavior (including, but not limited to, research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices, and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

PERIOD OF APPROVAL: June 8, 2021

Donald Sacco Jr.

Donald Sacco, Ph.D.
Institutional Review Board Chairperson

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