

THEORETICAL ARTICLE/ESSAY

Predatory journals and integrity in nursing research: A brief Aristotelian look at practical wisdom

Publicações predatórias e integridade na investigação em enfermagem: Breve olhar aristotélico da sabedoria-prática

Publicaciones depredadoras e integridad en la investigación en enfermería: Una breve mirada aristotélica a la sabiduría-práctica

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Abstract

Background: Predatory journals are pseudoscientific journals that charge to publish with non-existent double-blind peer review and editor's review, corrections, and indexing of questionable quality. Such journals threaten the scientific landscape. Reflecting on their impact through Aristotle's ethics and science conceptual frameworks helps to explore integrity in nursing research.

Objective: To reflect about predatory publications in the production of knowledge of the nurse researchers.

Main topics under analysis: This is a reflective analysis after a seven-step literature review. The analysis linked the topics of academic productivity and predatory journals with concepts such as intemperance, desire, intuitive reason and practical wisdom expressed by Aristotle in his book "From Ethics to Nicomachean". These were discussed as a deformity of the concepts of true knowledge and middle ground.

Conclusion: Practical wisdom can be a valuable path for good deliberation that guides integrity. It does not represent scientific knowledge itself but rather operates on it and the results of research and their dissemination in reliable journals.

Keywords: nursing research; philosophy, nursing; scientific integrity review; science; nursing; predatory journals

Resumo

Enquadramento: Revistas predatórias são periódicos pseudocientíficos que cobram para publicar com revisão por pares *double-blind* inexistente, tendo qualidade duvidosa no que concerne a revisão do editor, correções e indexação. Tais periódicos ameaçam o cenário científico. Refletir sobre os seus impactos por meio de marcos conceituais aristotélicos sobre ética e ciência é útil para explorar a integridade na investigação em enfermagem.

Objetivo: Refletir sobre as publicações predatórias na produção de conhecimento de investigadores enfermeiros.

Principais tópicos em análise: Trata-se de uma análise reflexiva após revisão de literatura de sete etapas. A análise relacionou os tópicos produtividade académica e as publicações predatórias, com conceitos como intemperança, desejo, razão intuitiva e Sabedoria prática expressos por Aristóteles no livro *Da Ética a Nicômaco*. Estas foram debatidas como uma deformidade dos conceitos de "conhecimento verdadeiro" e "meio-termo".

Conclusão: A Sabedoria-prática pode ser um caminho valioso para boa deliberação norteadora da integridade, não representa o conhecimento científico propriamente e sim opera sobre ele e sobre os resultados da investigação e sua divulgação em periódicos confiáveis.

Palavras-chave: investigação em enfermagem; filosofia em enfermagem; revisão de integridade científica; ciência; enfermagem; revistas predatórias

Resumen

Marco contextual: Las revistas depredadoras son publicaciones pseudocientíficas que cobran por publicar con una inexistente revisión por pares de doble ciego, que tienen una dudosa calidad en cuanto a la revisión del editor, las correcciones y la indexación. Estas revistas amenazan el panorama científico. Reflexionar sobre su impacto a través de los marcos conceptuales aristotélicos sobre ética y ciencia es útil para explorar la integridad en la investigación en enfermería.

Objetivo: Reflexionar sobre las publicaciones depredadoras en la producción de conocimiento de los investigadores enfermeros.

Principales temas en análisis: Se trata de un análisis reflexivo realizado tras una revisión bibliográfica en siete etapas. El análisis relacionó los temas productividad académica y publicaciones depredadoras con conceptos como intemperancia, deseo, razón intuitiva y sabiduría práctica expuestos por Aristóteles en *Ética a Nicómaco*. Se discutieron como una deformación de los conceptos de "conocimiento verdadero" y "término medio".

Conclusión: La sabiduría práctica puede ser un camino valioso para una buena deliberación que guíe la integridad, no representa el conocimiento científico en sí, sino que opera sobre él y sobre los resultados de la investigación y su difusión en revistas fiables.

Palabras clave: investigación en enfermería; filosofía en enfermería; revisión de integridad científica; ciencia; enfermería; revistas depredadoras



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Introduction

The philosopher Aristotle (384 BC to 322 BC) conceptualizes Science as everything susceptible to being taught, presenting objects that, to a lesser or greater degree, can be apprehended. They are pre-existent knowledge shared between generations by induction (reasoning that induces and instigates until it reaches the causes) or syllogism (reasoning that deduces from premises; Aristotle, 2015). The scientific conduct of the researcher in an undergraduate or postgraduate program provides ethics from the preparation of the pre-project to the dissemination of results in events or journals in the area.

With regard to knowledge production, the open science movement has taken timid steps in Brazil. The Scientific Electronic Library Online (SciELO) and the Brazilian Institute of Information in Science and Technology (IBICT) have increasingly encouraged Transparency and Openness Promotion, including open peer review by authors' choice, reduction in the practice of salami slicing research, indication of supplementary materials from which the results were extracted, and encouragement of citation of electronic content that has a DOI (Digital Object Identifier; Sousa & Barbosa, 2021).

To comply with the aforementioned, there is a pressing need for the professionalization of scientists, including the recognition of the authenticity and individuality of their knowledge production, internationalization, reasonable pragmatism, and permanent discussion about the quality and directions for future research suggested by them (Russo, 2014). However, currently, the *insanity of academic life* leads to a dominant trend often referred to as *publish or perish* (Nóvoa, 2015), as well as to the excessive valuation of quantity rather than quality - quantity has become an exchange for funding or salary progression, supplanting the pace of good science which is more moderate - *slow-science movement* (Leite & Diele-Viegas, 2021). This phenomenon is called *academic productivity* (Bianchetti et al., 2018) and is different from *academic productivity* since it exhausts the scientific field by feeding back into the publishing industry, thus making the teaching work unstable and sometimes, as in the case of predatory journals, not ensuring the debate, dissemination, or citations.

Another problem is the lack of integrity, which takes the form of fabrication (inventing data), plagiarism (copying data and ideas without citing sources), falsification (modifying or making up data) and fragmentation (Russo, 2014) and, more recently, publication in journals without peer review, with very short publication times (one week or less), even implying the certainty of publication, without associated refusals. University productivism lowers the quality of production and pasteurizes knowledge.

In this sense, as an alert, more than 200 editorials, comments, and articles warning about predatory journals have been published in Public Medline (PubMed; Iskandrian, 2018). However, these types of studies have not yet produced the desired effect in the scientific community as predatory journals grow and gain more supporters. Their harms are alteration in search results, systematic reviews

citing predatory journals, and evident compromise of current and future investigations due to the citation of erroneous or false data. In 2019, a total of 459 predatory journals were identified, detecting that 250 of these obtained at least one citation in any of their articles. In total, 6302 of the articles published in potentially predatory journals were cited. This is a worrying statistic even if not all research published in a predatory journal is fraudulent or dubious, as experienced and ethical researchers may do this unwittingly (Ross-White et al., 2019).

Thus, the problem that motivates this reflection is: How do predatory journals within the scope of academic productivism interfere with the integrity of nursing-science production? Thus, the main purpose of this reflexive analysis is to reflect on the impact of predatory journals on nurse researchers' knowledge production. For this purpose, the reflection intentionally considered Aristotelian concepts such as *middle ground*, *intemperance*, *ignorance*, *desire*, *true knowledge*, and *intuitive reason*, with a focus on *practical wisdom*.

Development

Reflexive analysis methodology

A reflexive analysis was conducted, guided by a literature review and anchored in Aristotle's concepts (2015). The review had seven flexible steps (Gil, 2019), with the intentional definition of relevant articles to the topic and proposed objective. The steps followed were: 1) determination of the central point according to the objective; 2) identification of the content sources to be consulted and the terms used for this research; 3) reading with identification of important information; 4) selection of excerpts; 5) note taking; 6) logical organization of the consulted literature; and 7) writing.

A search was conducted in the first half of 2021 on Google Scholar, using the keywords "publicações predatórias" and "revistas predatórias", considering the timeline 2018-2020, on the Virtual Health Library (VHL), using the keywords "publicações predatórias" and "revistas predatórias", and PubMed with the term "predatory publications". Editorials and scientific communications were included, and texts that only cited predatory publications were excluded without delving into concepts, impacts, and ways of detecting them.

The first author put the excerpts selected using the note-taking technique into tables and reference lists in Microsoft Word, and the other authors carried out the logical organization of the content, looking for similarities between the identified excerpts for the synthesis. At the same time, excerpts were selected from the book "Nicomachean Ethics", written from 335 BC to 323 BC (Aristóteles, 2015), and compared to the data collected in the databases.

The organized corpus was summarized in a single document, supporting the final text conferred by all authors. An inductive analysis of the textual corpus was conducted to relate the data on predatory journals and the conceptual frameworks. The results were presented according to the

logical precepts of Descartes (2013): accept nothing as true that is not self-evident, divide problems into their simplest parts, check the problems by proceeding from simple to complex, and recheck the reasoning.

Results on the analyzed topics

There are about 10,000 journals that charge fees to publish, with dubious or non-existent review processes (Ortiz-Prado & Lister, 2019). The Ottawa consensus defines on predatory journals states: “are characterized by false or misleading information, deviation from best editorial and publication practices, a lack of transparency, and/or the use of aggressive and indiscriminate solicitation practices” (Grudniewicz et al., 2019, p. 211).

These unscrupulous groups use open access to seek profit at the expense of researchers who wish to publish and disseminate their work that is generally not accepted due to a lack of methodological rigor or who are interested in a quick acceptance (Pailaquilén, 2018; Aguerre & Ferrero, 2018). Thus, the lack of evaluation or corrections in the text during the process is obviously suspicious. The ideal editorial flow is characterized by editor’s review, response, spare corrections, editing and layout, indexing, and publication. In short, a work of months aiming at quality (Carvalho & Santos Júnior, 2019).

To recognize the integrity of a journal, it is recommended to check whether it is indexed in PubMed since many of these vehicles claim international prominence. Also, check if it is part of the Directory of Open Access Journals (DOAJ) and the Association of Open Access Academic Publishers (OASPA) (Ross-White et al., 2019; Dal-Ré, 2019). Good journals undergo rigorous indexing in major databases and repositories: JSTOR, PsycINFO, PubMed/Medline, ScienceDirect, Scopus, Web of Science, CINAHL, EMBASE, Cochrane, SAGE Research Methods, Europe PMC, NHS Evidence, TRIP database, SciELO, and LILACS.

There are also reliable search engines and publishing groups: EBSCO, Clarivate Analytics, ProQuest, OVID, Wiley-Liss, Wiley-Blackwell, Taylor and Francis Group, Springer Science+Business Media, Sage Publications, Pulsus Group, Oxford University Press, Nature Publishing Group, Medknow Publications, Lippincott Williams & Wilkins, Karger Publishers, John Wiley & Sons, BioMed Central, and Mary Ann Liebert (Ortiz-Prado & Lister, 2019).

The intense e-mail volume is one of the problematic conducts of predatory journals, using the attractiveness of open access to catch unsuspecting authors (Iskandrian, 2018). Thus, an example of such a message is: “Dear Professor, we read your article entitled ‘Global prevalence of predatory journals. We are impressed by the quality of your work and are contacting you to request that you submit your next study on this topic’ (Aguerre & Ferrero, 2018, p. 240). In 2012, Beall’s List compiled these dubious journals and has increased the list over the years (Ross-White et al., 2019). In Brazil, PREDAQUALIS is also used. Some means to combat this phenomenon include: 1) setting ethical research standards in universities through training and support, which discourages the search for illegitimate journals (Pailaquilén, 2018); 2) reviewing such journals and 3) “scientific literacy” (Oermann et al., 2019).

Table 1 shows the elements that characterize how predatory journals attract authors and the two conjunctures which are the subject of reflection: Knowledge for consumption and Disposal and Integrity of knowledge. The perspective on consumption is based on Bauman’s (2013, p. 109) for believing that, in universities, ethics must be invigorated: “Just as the ethical responsibility for Others tolerates no limits, consumption invested with the task of venting and satisfying moral impulses is not tolerant of any kind of constraint imposed on its extension”.

Table 1*Results and concepts of the reflective analysis*

Main topics analyzed	How to identify predatory journals	Related conjunctures and key concepts
Predatory journals within the scope of of productivism	Catchy names that are often confused with names of reputable magazines (Iskandrian, 2018; Aguerre & Ferrero, 2018)	Knowledge for consumption and disposal: intemperance, ignorance and desire Integrity of knowledge: Middle ground, true knowledge, intuitive reason, and practical wisdom
	They advertise a range of indexing services (Iskandrian, 2018)	
	Exacerbated sending of e-mails with invitations for publication (Aguerre & Ferrero, 2018; Iskandrian, 2018, Ortiz-Prado & Lister, 2019;)	
	False or misleading information, contradictory statements and false impact factors (Aguerre & Ferrero, 2018; Grudniewicz et al., 2019)	
	They promise publication in a short time (Aguerre & Ferrero, 2018)	
Lack of transparency and provision of unverifiable information (Grudniewicz et al., 2019)		

Discussion of the reflective analysis

Before addressing the integrity and lack of integrity, it is clear that the current situation as a regime of educational transition and superfluidity certainly interferes with the search for and production of knowledge, causing a constant educational revolution (Bauman, 2013). The Ideologies of Modernization in university life are expressed in four terms: “Excellence culminating in self-plagiarism and data slicing to increase production”; “Entrepreneurship in which universities are considered business institutions imposing accelerated rhythms of science”; “Employability in which science is dissociated from social content”, and “Europeanization” (Nóvoa, 2015).

Given that, in the current academic panorama, unpublished information does not seem to exist because it is validated by publication, accepting the criticism of reviewers is part of the development of researchers. In this sense, the “race” for publishing without quality for unethical profit by predatory journals creates an obstacle for young researchers or unsupervised researchers (Ortiz-Prado & Lister, 2019). Such circumstances show the inversion of ethical principles, as professional charges make it so that, mainly, teacher-researchers prefer to choose a (false) career progression over moral obligations, uncommitting themselves to scientific quality and ethics (Bauman, 2013).

The neoliberal, fluid, and fundamentalist superficiality of the modern world has slipped into the production of knowledge, making higher education seem like a passing expectation of success, given the unbridled expansion of higher education courses. While society increases panic over the existence of individuals with no profile of researchers, entrepreneurs, computer geniuses, or inventive potential in higher education (Bauman, 2013), public universities are forced to demand “production”, especially innovative production, to justify taxpayer spending. In this context, productivism rankings are a well-known problem for experienced researchers for salary progression (Pailaquilén, 2018; Carvalho & Santos Júnior, 2019).

Thus, it is necessary to analyze the conjuncture of “know-

ledge for consumption and disposal” and the elements of ethics, science, and practical wisdom, reflecting on the profile of those who resort to predatory journals: Would they all be unsuspecting? Analyzing the concept of Virtue (intellectual and moral) - virtue not impregnated by Christianity but as the faculty of “doing well” in scientific research. In this way, Measure also applies, whereby intellectual virtue needs teaching, time, and experience to reach its peak; whereas moral virtue needs habit (Aristóteles, 2015).

Building habits takes time, and it is known that not all those who aim at academia are experts in methodology and publishing results. When committing plagiarism, something common at the beginning of academic life when there is a lack of training in this area, individuals are unaware that the harmful conduct of predatory journals includes not reporting possible plagiarism and not writing retractions (Dal-Ré, 2019; Ross-White et al., 2019). It is important to note that the “lust for production” (productivism) gets confused with Aristotle’s designs of Intemperance - the voluntary action for pleasant things -, overlapping its appetite and desire with important notions such as measure and virtue. In this way, the concept of Middle Ground is significant: it lies between excess and lack, resting at an equal distance between extremes; excess and lack destroy the excellence and virtue of any human endeavor (Aristóteles, 2015), including the scientific one. Focusing on attitudinal aspects of the conduct itself, it is inferred that the justifications for making such a publication include, “I did not know!” or even “I never heard anything about predatory journals”. Thus, according to Aristotle (2015), there are righteous acts performed under the prism of Ignorance and lack of knowledge according to ethics. We do not address ignorance in the pejorative sense since it is related to the circumstances of the actions and factors - in the case of predatory journals, sometimes evident, but that the authors ignored when selecting the journal, for example, visually polluted journal portal, aggressive and/or oversimplified strategies to obtain submissions, questionable veracity and suitability of its

editors' committee, low quality of their accepted papers and fast acceptance time.

Faced with the concepts, some questions arise that allow expanding the debate: Should an article with insufficient methodological standards be published? What does the rejection of articles by prestigious journals indicate (Pailaquilén, 2018)? It is believed that reflection on the type of research, its limitations, and its weaknesses is part of scientific integrity and maturity.

Still, from the perspective of Ignorance, when an act joins Desire - the pleasant sensation of productivism - the action becomes voluntary because the choice for this productivist model is a mere craving, fed by the rise of metrics and recognition of the academic-lay public. The Middle ground in scientific life exists thanks to Correct reason, which is the intellect before it has passed through the senses and which is of fundamental importance for the elaboration of any true knowledge (Aristóteles, 2015).

It signals the existence of intellectual parts of the soul that seeks truth (Aristóteles, 2015). In the case of researchers and scientists, it consists of delineation to propagation within society. In Nicomachean Ethics these parts of the soul are, namely, Art, Scientific Knowledge, Practical Wisdom, Philosophical Reason and Intuitive Reason.

Practical wisdom and its connection with scientific knowledge are conceived as follows: it is a virtue, correct and advantageous deliberation and judgment of the true reason of things, thus requiring a certain amount of time (Aristóteles, 2015). Integrity is related to a proper pace, and fast science raised several reflections in young scientists during the SARS-CoV-2 pandemic, for instance, the demands of civil society in the 20th century and the context of privilege as society confronted academia: who has time to do slow science? In this sense, a terrible normative speed is set, destroying the reflexive process implied in the epistemology of each field, something experienced by health scientists seeking an interface with human and education sciences, affecting the personality and principles of those in training who do not know the slow-science movement (Leite & Diele-Viegas, 2021).

Concerning the union of Integrity with Practical wisdom, the acquisition of intelligence and insight does not mean having Practical wisdom, which enables knowing particular facts, including intelligence (learning and knowledge) and discernment. The fusion of both allows for immediate action. At this point, Practical wisdom pervades Intuitive reason, albeit briefly, since intelligence and discernment are objects of the latter and not of reasoning. Intuitive reason is responsible for equating immutable terms with practical reason and variable terms with lesser points of knowledge, which are generally those lacking analysis. Thus, universal cases are often observed from particular cases, and the perception of the particular towards the

universal is the Intuitive reason (Aristóteles, 2015).

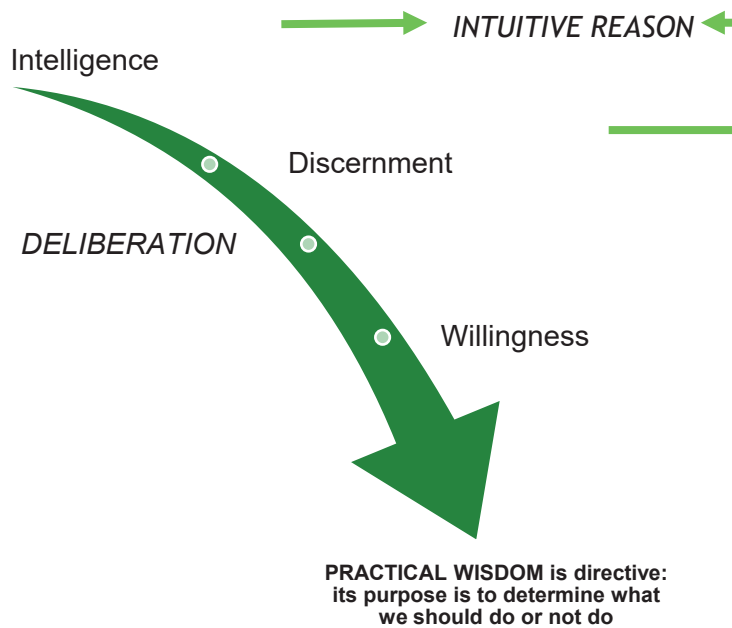
Wisdom, therefore, is the most perfect of the forms of knowledge useful to researchers. The wise man knows the conclusions of first principles and, yet, the truth arising from them. Wisdom is the marriage between Intuitive reason and Scientific knowledge, in which the latter is the judgment of universal things and necessary to society, being of a reasoned/rationalized nature (Aristóteles, 2015). Practical wisdom is different from the concept of Science, because the object of science is demonstrable. At the same time, it deliberates on the "achievable good" that scientific knowledge and concrete facts bring about (simultaneously occupying itself with universal and transcendental things). In this reflection, Practical wisdom is used to guide integrity, not constituting a synonym for scientific knowledge (Aristóteles, 2015), but operating on it and not on the studied object itself, but on what to do with it and the perception of its qualities, ultimately guiding the acts implied in virtue and middle ground.

Therefore, publishing in high-impact journals is an intricate task that requires planning (Ortiz-Prado & Lister, 2019). It implies the dissemination of true knowledge based on integrity and combining intuitive reason and Practical wisdom. To tread this arduous path, Good Deliberation (Aristóteles, 2015) is considered an epistemological perspective initiated after, or just before, the conclusion of research, guided by: What is the scope and what is the size of the data and implications?; What is the journal's profile?; What are the most ethical actions to be taken aiming at its dissemination? The researcher deliberates by correcting inaccurate reasoning and methods of their work (Aristóteles, 2015), confronting the current conjuncture: "Why publish in an uncontrolled way?" or "Why publish in unreliable vehicles?"

A meeting in Ottawa, Canada, gathered researchers in three rounds to reach a consensus on predatory publications, including 18 questions and 28 sub-questions, with about 12 hours of debate. At the meeting, part of the working group wanted the definition to include that some authors seek out these journals, aware that there is no scientific review (Grudniewicz et al., 2019). Consequently, there is a need for acts aiming at the integrity of knowledge. Still, inevitably, the ethical issues intrinsic to each person and academia eventually influence Deliberation. Figure 1 shows that Practical wisdom rests upon the just, beautiful, and good, recognizing that good action is not facilitated merely by recognizing that the Virtues are beneficial. Integrating Practical wisdom and related virtues does not make anyone more prone to integrity, according to Aristotelian precepts. To acquire it, one must follow a path: deliberation, combining intelligence, discernment, and willingness when deciding where and how to disseminate research results.

Figure 1

Deliberation in the dissemination of research results according to Practical wisdom



Source: Adapted from "Ética a Nicômaco" by Aristotles (2015, p. 167).

We warn about the dangers of educational sophistry, represented by researchers who fail from the epistemological point of view and yet triumph in the productivist rhetoric. A parallel is drawn with the *delicious* dangers of sophistry in the artificial publicity of a scientific curriculum full of publications. However, it ends up falling into utilitarianism and a false discourse of *publishing to appear*, something that is aggravated when such practices are advertised in groups of researchers. They incur in what Aristotle fought against in the polis: the illusory promises of forming wiser people when, in reality, such lure only contributes to massification (Silva, 2004).

Consequently, the predatory publishing market meets expectations after being well paid, eliminating the short- or medium-term questions of conscience of the researcher-publishers. Consumption gains a moral and emotional facet (morality), there is no point in blaming the market for the weaknesses of postmodern nurse researchers, for the impetus and ego implied in acts of intemperance and desire. In short, the following sentence is transposed to the postmodern context and in the face of the predatory publishing market: 'Our intentions to do good to others have been commercialized' (Bauman, 2013, p. 108). Instead of publishing or perishing, predatory journals lead to publishing and perishing (Carvalho & Santos Junior, 2019).

Conclusion

This reflection on predatory publications within the scope of production of knowledge by nurse researchers corroborates that the analysis based on Practical wisdom and

related concepts is a pressing contribution to guide the conduct of scientists who wish to tread the last stage - the dissemination of results. The discussed data demonstrate the offsets associated with the production of a frenetic low-quality science, especially in the profile of undergraduates and postgraduates who begin to fall into massified knowledge, feeding the impulse to consume and dispose of results that are increasingly fragile and serve the current logic. In this sense, the heuristic potential of this reflection is in unveiling that the impulse to publish cannot be associated with a mere desire, craving, or intemperance. Contributions to nursing are the rescue of Aristotelian principles not only for the scientific work but also the epistemological logic, which involves the deliberation on behaviors that impact on scientific production in the area. Thus, we hope that the prescriptions and reflections contained herein have the potential to alert and inform researchers.

Practical wisdom is not characterized as the "magic key" in the face of the issues addressed, especially evidencing its relation to the universal, experience, and familiarity, which Aristotle defends as an attribute acquired with time. Good deliberation is materialized in the determined or absolute end and the achievable good coming from the research findings. To this end, we need to refer to the applied utility knowing how to equalize the Results achieved and their Purposes, sometimes in more objective determined terms, sometimes in more general absolute terms, depending on the nature of the research (applied sciences or not).

In conclusion, this study reflects on a current problem, and the authors hope that the production of knowledge in the area provides a basis for clear and safe interventions,

more effective public policies, and a professionalization of scientists that fights against superfluidity and exacerbated speed imposed on university life. Seeking to fight against the productivism imposed on researchers in university life, we suggest some strategies to support interventions for more effective policies: production rankings have a qualitative nature that prioritizes real metrics over the journals' impact factor; undergraduate and postgraduate courses and training with epistemological conceptions of what characterizes science, misconduct in research, and its consequences and difficulties expressed by researchers; full financial incentive with inductive policies for the development of robust projects allowing the slow-science movement to become a reality. Focusing on ethics and knowing about the virtues of good science allows nurse researchers to place themselves on one of the sides, answering whether they will be authors of articles or producers of responsible ethical knowledge.

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