The emergence of preprints for Brazilian science: considerations from the Nursing area*

A emergência dos preprints para a ciência brasileira: considerações sob a ótica da enfermagem

La emergencia de los preprints para la ciencia brasileña: consideraciones bajo la óptica de la enfermería

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THEORETICAL STUDY

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ABSTRACT

This study aims to reflect on the process of adoption of the preprints publication model, briefly delimiting its history and current use by the national and the international scientific community. Departing from the literature and a consultation of preprint repositories, this reflection intends to highlight the main challenges that preprint implementation will face in the Nursing area, along with its specificities. While considering its benefits for scientific dissemination, this study points out the difficulties that may arise from the implementation of mostly north-American science models in a peripheral country such as Brazil. This work intends to contribute to an important theoretical discussion, which should precede the significant changes expected from the adoption of such a model in the Brazilian scientific context.

DESCRIPTORS

Publication Formats; Periodical; Editorial Policies.
INTRODUCTION

In the past few years, the word preprint has been emerging as a recurrent one in the scientific publishing and dissemination context, even though many people do not know exactly what it means. Regarding recent Brazilian journals, the term has been strongly connected with actions by SciELO (Scientific Electronic Library Online), in agreement with its proposal of consolidating its own preprint repository, following international tendencies of scientific publishing[1–6]. Emergent themes, particularly open science, open data, Big Data, journal professionalization and sustainability are also central to these tendencies.

In an article in the blog SciELO in Perspective, Isaac Farley defines preprints as “original versions of a work that have been submitted for possible publication. They are frequently sent to a preprint server, such as bioRxiv. Preprints have not been through peer review nor accepted for publication”[6]. These documents are then made available for free in open repositories and authors might simultaneously submit the same document to a peer reviewed journal. The authors are supposed to be the greatest beneficiary, since they would guarantee their priority over a discovery or a research topic while publishing quickly and free of charge.

In the international panorama, some of the main preprint repositories are multidisciplinary ones, such as arXiv (pioneer of the others, comprising several areas, especially physics and computer science), preprints.org, PeerJ, F10000, OSF Preprints (which aggregates preprints from other repositories), and area-specific ones, like bioArXiv for biological sciences, PsyArXiv (Psychology) and RePEc (Economy). In Brazil, SciELO Repository is a recent one, initially associated with the publication of papers presented in the SciELO 20 years anniversary event, in 2018[7–9].

The predominance of the discussion on preprints among the international scientific community also occurs due to a rise in this kind of submission, as the “registration rate of articles in preprints was ten times higher than the growing rate of journal articles, making preprints one of most increasing types of documents”[6]. However, this does not correspond to Brazilian reality, where this kind of publication is scarcely known, both by professors and young researchers. The limited literature on the theme in Portuguese corroborates this situation.

As an example, a search in Google Scholar, broad database of various scientific documents, whether or not indexed in traditional databases, with the search strategy ["preprint" OR "preprint"] in the last 10 years, in Portuguese, excluding citations and patents, has retrieved only 164 results, among which several duplicated. Such a result confirms the perception that this theme is still on the rise in the local academic community, justifying studies from the various areas perspectives on this topic, which is considered polemic and whose approach must not be neglected.

More recently, this theme has become an issue in areas such as Nursing and in the Brazilian context, peripheral and dependent also regarding its science. Nonetheless, when this topic is addressed, its history in other areas is sometimes forgotten. Some national authors, especially in the blog SciELO in Perspective[9], and also other international authors[4], highlight the history of this model of dissemination in physics and computer science, i.e. the hard sciences, mostly in the US. In this country, several preprint repositories are consolidated and present themselves as a reality to the researchers who must publish the results of their researches – in a higher quantity and more quickly. In Brazil, following a demand for an accelerated publication of research results[6], particularly of public health topics, the journal Memórias do Instituto Oswaldo Cruz is now a pioneer in accepting preprints[6].

Considering the emergence of this issue and the polemics involving its adoption, comprising from publishing processes’ changes to the conflict with commercial publishers, this theoretical study is proposed. It aims to present different points of view on the adoption of the preprint model of publication in Brazil, from the outlook of the Nursing area, taking into account some of the particularities of this domain. Its theoretical frame is historical dialectical materialism, thus addressing the sociohistorical contradictions and the economic determinants of a dependent society, located at the periphery of capitalism, that the conditions of this debate in Brazil lately comprises.

In order to promote the discussion of this theme, some benefits of the adoption of the preprint model of publication, mentioned by the literature, are listed. Moreover, some of the main concerns regarding its emergence and expansion in the current scientific publications scenario are pointed out.

DELIMITING BENEFITS OF PREPRINTS

Agility – the document would quickly be available online to the scientific community for reading and citing[10–12];

Open access – the publication in preprints would provide open, free of charge and unrestrained access to scientific publications[11];

Guarantee of originality – a preprint would assure the author (and consequently their institution, laboratory or research group) the priority over a discovery or research topic[11–12];

Economy – the free availability of a document in an online repository would favor authors who currently pay for the publication of their articles through APC (Article Processing Charge), the so-called Submission/Publication charges or the payment to access articles, i.e., paywalls[11–13];

More publications – depending on how the financing agencies consider the preprints, the availability of these documents in repositories would mean more publications with a DOI (Digital Object Identifier);

Improvement – since the preprint would be able to receive comments (whether by peers or not), the document could be improved, and its subsequent versions made available to readers[10];

Simultaneous submission – the submission of a preprint would not prevent the manuscript from being submitted to a peer-reviewed journal[11–12];
**DELIMITING CONCERNS**

Whether major or minor, would not be disseminated and scientific advance before the community, assuring that errors, would be sovereign in the task of guaranteeing a scientific quality, i.e., whereas concentrating and managing journals as the “validators” of scientific knowledge quality their journal(7). Another positive aspect would be to define good articles, inviting authors to submit manuscripts to of editors-in-chief monitoring repositories for potentially preprints. One of them would be the possibility of publishing as the publication of their first version as a preprint are not cited and discussed by the global community, initiatives such as preprints receive comments from peers in the repositories; Retriving – it is questioned if preprints would be considered legitimate documents to be included in documental and bibliometric studies, and literature reviews, since they are mostly considered grey literature(12); Competitiveness – it is questioned how much the submission of preprints would encourage a greater competition among researchers and laboratories due to easiness of publishing; Specificity – it is questioned the indistinct adoption of a single model, which would disregard the characteristics of each area; Lack of policies – since it is a recent theme to some areas, most journals have no defined policies on the acceptance or not of manuscripts previously submitted to preprint repositories; Originality – for journals it would mean a loss of priority in publishing scientific discoveries, since repositories would be the first vehicle of dissemination of manuscripts(10); Risk of scoop – it is questioned the possibility of a research benefiting from the results of a preprint by publishing a similar study in a high impact journal, for example(11,13-14). Despite their long history in some areas, preprints are met with resistance, since they would change long running scientific publication processes, such as peer-review(10). For journals it is an enormous change, especially regarding the loss of exclusivity of dissemination and double-blind evaluation, predominant in Brazil. Another critique related to preprint adoption is that it would not solve the main challenge faced by scientific journals, which is to guarantee the good progress of the peer-review process, regardless of the adopted model. This can be seen, for example, in the “sorting” of articles in preprint repositories which in Brazil would stumble upon journal structural aspects such as the fact that they are allocated in public universities and, consequently, editors-in-chief and associate editors have other academic and administrative tasks.

Among the critiques, there is also the concern over the authors’ freedom of choice, in case preprints were recognized by funding agencies as legitimate publications for evaluations, the possible shortage of submissions to journals, which
The emergence of preprints for Brazilian science: considerations from the Nursing area

in the long term could reduce peer-reviewed journals to the most prestigious ones.

The “race” for scientific priority and publication could instigate a competition culture, already present, which could be escalated. In an economic model which since the 1970s is mostly based in the belief in the neoliberal doctrine(13), the stimulation of such a competition would corroborate the understanding of science as individualistic and meritocratic, as opposed to the possibility of a scientific practive as emblem of cooperation and collaboration towards the advancement of societies and their people. In this scenario, it is urgent to analyze even the constitution of the Brazilian university and its subjection to the interests of the ruling classes, as analyzed by the philosopher Álvaro Vieira Pinto(30).

Dialectically, the adoption of a preprint model directly dialogues with the defense of the open science initiative, since it provides for free to authors and readers research results which frequently are behind paywalls, i.e. charges for article access, largely benefiting big publishers and databases through institutional or government subscriptions11,17. The same applies to the end of the double-blind model, which can be seen with concern by part of the scientific community and, conversely, can be taken as an advance towards more transparency in the manuscripts’ review process.

Thus, if on the one hand the consolidation of preprints could foster a greater competition among researchers and a superpopulation of documents of lower quality, on the other hand, it would be an important step towards universal and gratuitous access to knowledge produced by scientist all over the world, frequently financed by the public interest, that is, population itself. Nonetheless, it is questioned, among others, the adoption a new model without a broad debate over the contradictions surrounding this change. As highlighted, there are several benefits and also some possible reasons for concern, which cannot be overpassed in favor of a fast adequacy of Brazilian science in its diversity to the so-called international tendencies.

STRUCTURAL PROBLEMS

By bringing up the discussion over preprints, the fragilities of the peer-review model are frequently emphasized, especially its delay, to which the new model counterposes. Velterop highlights the need to consider the problem of the peer-review as a failed convention, which does not live up to the demands of the current scientific community, maintaining a costly, difficult, slow system, which does not guarantee the relevancy or quality of an article7.

According to this viewpoint, losing protagonism in the submission, evaluation and publication process would encourage journals to leave their passive position of receiving manuscripts to an active one of possibly monitoring preprint publications and, eventually, considering its scope, inviting authors of a promising work to submit it to the peer-reviewed journal. Ideally, to the author, the benefits of such a panorama are undeniable, since not only they would have a free of charge guaranteed publication in a repository, easily disseminating their academic production, but also, they could be the target of editors from high-visibility journals.

What this perspective seems to hide, however, is the existence of structural problems surrounding the Brazilian scientific practice, providing obstacles to the fulfilling of such an advantageous prospect. One of these obstacles is related to the fact that most Brazilian scientific journals belong to the universities and, as such, depend on the work organization in force in these environments. In this sense, editors-in-chief, associate editors and reviewers work voluntarily to the journals and simultaneously have other activities of teaching, supervision, research, and bureaucratic ones.

Connected to this panorama of non-professional and sometimes “homemade” editorial production, the slow character of the evaluation process may be in some cases inevitable, especially considering that most editorial processes are performed by the aforementioned professors or small editorial teams composed of employees who may have other attributions and not always a degree in library science, publishing (editoração) or languages (letras) or experience in the area. Additionally, there are also the editorial processes which may be outsourced, such as language revision and translation, layout formatting and XML coding. Therefore, it is erroneous to treat the slowness of the publication process superficially, taking it as simply a matter of incompetency of the journal or inefficiency of peer-reviewing, which ultimately is performed by the scientists themselves.

Considering the discourses which pertain this discussion, it is necessary to notice that concepts such as “competency”, “efficiency”, “optimization”, “professionalization”, “proactivity”, “competitiveness”, among others, which are frequently used in current times must be historicized and critically analyzed. Those concepts and terms have a history and are compatible to what the philosopher Marilena Chaui describes as the “ideology of competency”(15), constituting the discursive basis of neoliberalism, which as an economic model and therefore, defining perspectives – including in the academic and scientific environment, wrongly believed by some to be neutral and detached from the immediate material reality – should also be an object of analysis.

PREPRINTS AND NURSING

In Brazil, the preprint theme seems to be not duly explored, even in areas which abroad have traditionally adopted this model for decades. Nursing and Health Sciences still find scarce spaces for discussion on their particularities in relation to this “new” type of publication, which progressively integrate the debate in forums and specific events.

For example, a search in databases such as Web of Science, VLH (Virtual Library in Health), Scopus and CINAHL, the main databases for literature reviews in Nursing, using the search strategy [“Nursing” AND “Preprint”] retrieved only three documents related to the term “preprint” in the sense of scientific publication. Given the high volume of scientific publications, such a finding
signals the scarcity of studies addressing this model from the point of view of Nursing.

Among the articles found, the study “Open Access Part I: The Movement, The Issues, and The Benefits” addresses various aspects which surround the movement towards open access, an issue present in the current discussions over the future of the scientific publications. However, the article does not cover preprints, even though it is one of its keywords. The word appears five times in the document, one of them in a chart related to the differences among the types of publication. In this chart, the author defines preprints as “a work draft, a preliminary version”, “not reviewed” and which “is not considered a publication”.

In the second document, a 2018 editorial from the Journal of the American Psychiatric Nurses Association, some concerns are raised, corroborating the ones pointed here. According to the author: “The predominant questions involve the confidentiality protection of participants, the guarantee that the research was conducted ethically, and the erroneous interpretation by authors of results which were not revised in the peer-review”. The author points out that since preprints do not receive a formal evaluation of an expert, they may not reach the rigor demanded from a high quality journal; from an ethical point of view this would imply in the process of totally trusting the authors’ honesty, what can be seen as concerning in times of ethics’ violations in publications coming to light more frequently.

The editorial emphasizes the emergence of a preprint server for Medicine, medRxiv, with release due in mid-2018 and postponed to June, 2019. For Nursing, this would mean a new point to be considered in the discussion, since the server has Nursing as one of its areas. The subordination of Nursing to Medicine is a polemic issue, involving from power and gender issues to appropriation of specific knowledge by a more general area such as Medicine, all of which should also emerge in the debate here drafted.

In the only Brazilian study found, a recent editorial for Revista Brasileira de Enfermagem, Barbosa and Padilha comment on the ethical dilemmas involving the publication of preprints in Nursing, reproducing and questioning some concerns are raised, corroborating the ones pointed here. Considering that the pre-print model questions exactly the monopolization of knowledge by the big publishers and databases which commercialize scientific discoveries and studies, which were frequently financed by public investment. This conflict of commercial interests encounters a new chapter with the due date for the implementation of Plan S, which defines that the results of researches funded by the European Union must be published in open access.

The complexity of such a debate has been highlighted in a letter to Science, written by Brazilian authors, who question if the financing of open access will be transferred to authors through the APCs. The postponing of Plan S to 2021 shows the imbroglio in the current panorama, in which the interests of authors, readers, funding agencies, publishers, databases, universities, and society are confronted. This same society depends on science’s advances and, in contexts such as Brazil, supports research through their taxes.

The proposal of universalizing open access encounters obstacles in the interests of publishers which want to maintain their paywalls or charge authors high APCs for open access. In countries such as Brazil, of expressive contradictions, if on the one hand this discussion seems distant – even considering the progressive cuts on governmental funding for the education, science and technology areas, which has fostered protests all over Brazil –, considering the journal subscriptions by the universities and the maintenance of the Journals Portal of CAPES, a government body; on the other hand the popularization of alternative publication models faces deeply rooted problems which encompass issues ranging from the constitution of Brazilian universities to the country’s project of science and development.

Ratifying this contradictory horizon, Barbosa and Padilha question the ethical issues involving the preprint model, a sensitive point to Health Sciences, which deal primarily with researches involving human beings: “Through this innovation in the form of presentation of scientific knowledge, health sciences and Nursing see themselves facing an ethical dilemma due to having their production, since their early days, sustained by the pillars of Helsinki Declaration, FAPESP and SciELO’s Good Practices in Science, knowledge acquired in national and international events on integrity in research and the canonical process of peer-review”. In this first comment on preprints published in a Brazilian journal from the viewpoint of Nursing’s specificities, the authors end: “A question remains: a new form of disseminating knowledge? Do these shoes fit us?”.

As mentioned, the international peer-reviewed literature does not broadly cover this theme, in accordance with the mentioned search on databases. Even in national databases of information sciences, the theme appears scarcely, as in BRACJ, database on information sciences, the CAPES database, which includes dissertations catalog or in a thematic search in Currículo Lattes, a government platform of researcher profiles.

The fact that the main source on preprints are preprint repositories and scientific blogs seems to corroborate the understanding that the topic needs to enter the academic and scientific traditional discussion and be considered by the different prisms of each areas’ specificities. Dialectically, considering that it is a current topic, it is symptomatic that...
it appears firstly and mostly in fast dissemination means, in counterpoint to peer-reviewed journals, taken by many as obsolete exactly because of the time they take to evaluate and cement consolidated knowledge.

In this sense, areas as Nursing and others which are strongly settled in the human sciences are questioned if they fit such an agile model of dissemination. In fact, each area should assess the time needed to consolidate knowledge, which may be in agreement or dissonant with the preprint model. Nursing, especially, should consider this issue, since it has great repercussion on practice, thus impacting patients’ health, which ratifies its concern over the published articles’ quality in the area.

It should be noted that among the journals listed in Wikipedia’s List of academic journals by preprint policy(25), which enumerates some journals compatible with the preprint model and usually mentioned as a reference for authors to choose a journal for submission, no Nursing journal is present, indicating that the theme is seldom addressed in the area and there seem to exist no consensus or tendency over its adoption.

Even in initiatives such as the UK’s SHERPA/RoMEO portal(26), which presents data on journals regarding open access and preprint policies, collecting data, among others, from DOAJ (Directory of Open Access Journals), the information is sparse. This occurs due to the portal's search device which does not allow filtering areas, restricting the search to individual journals.

On the other hand, prestigious journals published by commercial publishers, such as the International Journal of Nursing Studies, edited by Elsevier, accept this model through a connection via DOI of the preprint with the peer-reviewed published article, using repositories as arXiv or RepEc. Notwithstanding, most repositories do not have Nursing as an area and the cited journal accepts the submission of manuscripts deposited in a repository of a different area, in this case Economy. As mentioned, this situation may change with the medRxiv preprint server release.

Nursing, as well as the other Health Sciences, seem to encounter some challenges in the adoption of such a model, which go through ethical issues of data availability, anonymity of subjects, quality of analyses, interpretation errors, among others. The adoption of preprints must thus be preceded by a broad discussion in academic circles and universities, and among journals, publishers and funding agencies. In Nursing, this discussion is starting, being therefore open to appraisal, dialogue and debates, weighing benefits and limitations of an emergent model in relation to the area’s specificities, the structural issues and recent problems of the Brazilian current scientific scenario and the necessity of preserving publication quality.

BRZILIAN SCIENCE IN THE PERIPHERY OF CAPITALISM

As a reflection, Roberto Schwarz (1938– ), when approaching the work of Brazilian writer Machado de Assis (1839-1908), defines him as “A master in the periphery of capitalism”(27), title of his seminal book which started a new tradition in the analysis of the most prominent Brazilian author, based on considering mainly the sociohistorical conditions that emerge from his novels. Thus, the literary critic analyzes the work evidencing the contradictions that emerge through the novels’ form, i.e., how sociohistorical contents consolidate in literary form.

Expanding such a metaphor to the present reflection, it is necessary to analyze and question the form in which the adoption of the preprint model occurs. Confrontations, resistances, discussions and questionings occur, among others, from the capitalism periphery, i.e., from a peripheral and dependent economic position in relation to global capitalism, whose center comprises the developed countries of the north hemisphere; contradictions coming from following the tendencies dictated by these countries inexorably come to the fore.

Following this point of view, the urgency and importance of the discussion on preprints is acknowledged, which cannot neglect considering the internal socioeconomic conditions, the peripheral and dependent character of Brazilian science and historical contradictions involving the local phenomena and which demand a local dialectical and critical apprehension of the issues so called “global”.

As representative of the global tendencies in scientific dissemination, the preprint model faces practical and ideological aspects involving its adoption in countries currently called “developing”. In ideological terms, a point to be considered is to which extent should peripheral countries adopt so-called “international” policies, products and tendencies without at least consolidating an internal discussion, considering the local particularities, which certainly come across issues of investment in education and science, strongly threatened nowadays and which must be broadly approached by the scientific community considering the current economic and political crisis(24,28-29).

Following other terms imported from the debate in central countries, concepts such as “internationalization” and “innovation” gained space in universities and are presently usually used indistinctly without the knowledge of what the sender or the receiver understand as its meaning. The process of using terms in an imprecise way and the immediate adoption of the aforementioned tendencies may signal processes of subjection to imperialist interests which do not necessarily correspond and connect to those that Brazilian science wants or is able to sustain.

In this scenario, two conflicting standpoints are presented, at least a priori. One, whose aim is to insert Brazilian science in the most advanced international conditions and models, enabling it to dialogue and integrate itself into a globalized science in order “not to be left behind”. On the other side, a point of view which reclaims the need to choose our own means, from parameters defined internally, not subjecting the national science to foreign rules. Even though opposites, such viewpoints do not exclude themselves and, in a context of constant contradictions such as the Brazilian one, they coexist in approximations and departures, which makes the approach to themes such as preprints a complex task.
Evidently, each area has specificities and being part of a big scientific high-standard ecosystem is not only desirable, but also necessary so the advances here achieved may be known, read and cited internationally. This ranges from the presence of Brazilian journals in databases and the bibliometric indicators to the recognition of scientists and their researches in international universities and events. Conversely, the discussion on preprints presents itself as an important opportunity to reflect on the financial and structural investments conditions aiming at Brazilian integration in the international debates and tendencies. In summary, in light of the ideas held by Argentinian researcher Oscar Varsavsky[30], it is progressively required that Brazilian scientists present their political positions, and the importance of their research and its contribution to the national sovereignty.

FINAL CONSIDERATIONS

Finally, it is difficult to predict the adherence of authors to preprints, the future of less prominent journals, and especially, the position of funding agencies, which indeed have the economic power to define the space of this publication model, its value and legitimacy. Pondering possible benefits and concerns brought by the adoption of the preprint model to all actors involved is necessary, considering the so-called global tendency and, notably, recognizing the specificities and the needs of the Brazilian context.

As a conclusion, even though preprints constitute an important and present-day theme and their adoption is considered by some people as inevitable, Brazilian researchers, including the ones from the Nursing science, should not neglect analyzing the potentials and limits of this international model. In a continental country such as Brazil, dependent and located at the periphery of capitalism, under the rule of neoliberalism, it is urgent that these publication processes changes are considered in detail, so as to verify if they really correspond to the needs and possibilities of our specific context of historical contradictions and socio-economic structural issues.

RESUMO
Este estudo pretende refletir sobre o processo de adoção do modelo de publicação em preprints, delineando brevemente seu percurso histórico e seu uso na atualidade por parte da comunidade científica nacional e internacional. Partindo da literatura sobre o tema e da consulta aos repositórios de preprints, esta reflexão tem por intenção salientar os principais desafios que sua implementação enfrentará na área de Enfermagem e suas respectivas especificidades. Se, por um lado, os ganhos para a divulgação científica são considerados, apontar-se as dificuldades que podem resultar da implantação de um modelo de ciência majoritariamente norte-americano num país periférico como o Brasil. Este trabalho pretende contribuir para uma discussão teórica importante, que deve preceder as mudanças significativas esperadas na adoção do modelo no contexto científico brasileiro.

DESCRITORES
Formatos de Publicação; Publicações Periódicas; Políticas Editoriais.

RESUMEN
Este estudio pretende reflexionar acerca del proceso de adopción del modelo de publicación en preprints, delineando brevemente su recorrido histórico y su empleo en la actualidad por parte de la comunidad científica nacional e internacional. Partiendo de la literatura acerca del tema y la consulta a los repositorios de preprints, esta reflexión tiene el fin de subrayar los principales retos que su implementación enfrentará en el área de Enfermería y sus respectivas especialidades. Si, por una parte, se consideran las ganancias para la divulgación científica, se señalan las dificultades que pueden resultar de la implantación de un modelo de ciencia mayoritariamente estadounidense en un país como Brasil. Este trabajo pretende contribuir a una discusión teórica importante, que debe preceder los cambios significativos esperados en la adopción del modelo en el contexto científico brasileño.

DESCRRIPTORES
Formatos de Publicación; Publicación Periódica; Políticas Editoriales.

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