Encontros Bibli

KNOWLEDGE AND USAGE OF THE EQUATOR REPORTING GUIDELINES: A SURVEY AMONG BRAZILIAN HEALTH RESEARCH GROUP LEADERS

Conhecimento e uso de guias de relato: pesquisa com líderes de grupos de pesquisa em saúde no Brasil

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RESUMO

Objetivo: Avaliar o conhecimento e o uso de diretrizes de relato entre líderes de grupos de pesquisa em ciências da saúde no Brasil.

Métodos: Estudo transversal com líderes de grupos cadastrados na plataforma do CNPq em áreas das ciências da saúde. Os participantes responderam a um questionário eletrônico com 70 perguntas divididas em cinco seções, abordando práticas de integridade científica nos programas de pós-graduação e grupos de pesquisa. O tempo estimado para resposta foi de 15 minutos. O instrumento foi testado previamente por dois revisores. Este relato seguiu os checklists STROBE e CHERRIES da biblioteca EQUATOR.

Resultados: O questionário foi enviado a 5.576 pesquisadores, com 430 respostas após três convites (taxa de resposta de 7,7%). A maioria dos respondentes era do sexo feminino (55,5%) e com mais de 11 anos de experiência em liderança (34,6%). Cerca de 56,4% desconheciam a biblioteca EQUATOR, embora 64,3% afirmassem seguir diretrizes de relato no estudo mais recente. Além disso, 45,8% enfatizaram a importância de outros grupos aderirem às diretrizes; 53,2% destacaram sua relevância para seus próprios grupos; e 54,6% consideraram essa adesão como extremamente importante.

Conclusões: Apesar da adesão às práticas de integridade científica relatada, há indícios de viés de seleção e cognitivo. Os resultados reforçam a importância de estratégias para promover a adesão às diretrizes de

relato e a completude científica, especialmente com apoio da Ciência da Informação. Investigações futuras são necessárias para explorar esses desafios e fortalecer a integridade na pesquisa acadêmica.
PALAVRAS-CHAVE: Ética na Informação. Comunicação Científica. Artigos de Periódicos. Questionários.

ABSTRACT

Purpose: To assess the knowledge and use of reporting guidelines among research group leaders in the health sciences in Brazil.

Methods: A cross-sectional study was conducted with leaders of research groups registered on the CNPq platform in health sciences disciplines. Participants were invited to complete an electronic survey comprising 70 questions across five sections, addressing scientific integrity practices within graduate programs and research groups. The estimated response time was 15 minutes. The questionnaire was pilot-tested by two reviewers. This report adheres to the STROBE and CHERRIES checklists from the EQUATOR Network.

Results: The survey was sent to 5,576 researchers, yielding 430 responses after three contact attempts (response rate: 7.7%). Most respondents were female (55.5%) and had over 11 years of leadership experience (34.6%). Approximately 56.4% reported being unaware of the EQUATOR Network, although 64.3% stated they followed an appropriate reporting guideline in their most recent study. Additionally, 45.8% emphasized the importance of adherence to reporting guidelines by other research groups; 53.2% highlighted their relevance to their own groups; and 54.6% considered such adherence to be extremely important on a personal level.

Conclusions: Although respondents reported adherence to scientific integrity practices, potential selection and cognitive biases must be acknowledged. These findings underscore the need for strategies to enhance the implementation of reporting guidelines and promote completeness and transparency in research reporting. Initiatives led by information science professionals may support this goal. Further investigation is warranted to explore these complexities and foster integrity in academic research.

KEYWORDS: Information Ethics. Scientific Communication. Journal Articles. Questionnaires.

1 INTRODUCTION

Researchers annually publish a substantial volume of scientific studies in academic journals, contributing to an ever-growing body of research (Ware; Mabe, 2015). The number of scientific papers is still used as an academic criterion for promotion and tenure in biomedical science (Moher *et al.,* 2018). The foundational assumption of the scientific publishing ecosystem posits that this body of literature functions as an accessible conduit of knowledge for fellow researchers and society, owing to its inherent reliability, reproducibility, and transparency (Page *et al.,* 2021). Nevertheless, the field of biomedical research is faced with preventable inefficiencies that can be mitigated by careful consideration of the technical-scientific components implicated in casting material research inquiries, carrying out investigations, presenting results, and distributing reliable information (The Lancet, 2017; The Lancet, 2019).

Establishing useful and robust public policies is dependent on reliable research (IAP, 2016). This reliance is cultivated through the implementation of openness and the execution of pertinent, repeatable, and morally upright research with meticulous methodological excellence. However, faith in research and the ability to reproduce outcomes are weakened by researchers disregarding the imperative of communicating their studies transparently (National Academy ff Sciences, 1992).

Some initiatives – such as the EQUATOR Network - have been aiming to improve the reliability and value of published health research literature by promoting transparent and accurate reporting guidelines (Simera *et al.,* 2010). However, despite the widespread availability of the guidelines, the quality of reporting of medical literature remains suboptimal (Samaan *et al.*, 2013). This disparity emphasizes the necessity of coordinated efforts to close the gap between the availability and application of guidelines. The presence of reporting guidelines is a significant advancement. However, their full application requires not only their knowledge, but also active incorporation into editorial policies, peer review procedures, and researcher workflows (Peters *et al.,* 2022), to which Library and Information Science can contribute due to its interdisciplinary nature.

Research group leadership in Brazil assumes a pivotal role in the advancement of practices aimed at enhancing the quality of scientific knowledge dissemination, aimed at yielding societal advantages (Galvão; Silva; Garcia, 2016). It thus becomes imperative to examine their convictions, behaviors, and routines within the specific domain of practices of research and reporting integrity. Therefore, this study aimed to offer a comprehensive descriptive analysis of the characteristics of leaders of Brazilian research groups operating within the health field concerning their knowledge and adherence to reporting guidelines to try and answer the following question: do the researchers that hold leadership positions in the Brazilian scientific ecosystem sufficiently know and employ the EQUATOR research reporting guidelines?

2 METHODS

This study was conducted in compliance with the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) (Von Elm *et al*., 2008) and CHERRIES (Checklist for Reporting Results of Internet E-Surveys) (Eysenbach, 2004) guidelines, both available through the EQUATOR Network's online library. The following sections provide a detailed description of the methodological procedures adopted.

2.1 Study design

To try and answer that question, this study employed a cross-sectional design aimed at encompassing all accessible group leaders, thus adopting a census approach to ensure a thorough representation of the target population. An ethics clearance for the study was obtained in June 2021 from the Research Ethics Committee of the Faculty of Medicine, of

the Federal University of Pelotas (CAAE 48518021.2.0000.5317). This study was conducted according to the Declaration of Helsinki and to the Brazilian legislation on research ethics (Resolutions 466/2012, 510/2016 and 674/2022 from the National Council of Health, Brazilian Ministry of Health). All participants were informed about the study procedures, benefits, and risks, and formally consented before responding to the questionnaire.

Researchers who led research groups in Brazil and were registered in the Research Groups Directory of the National Council for Scientific and Technological Development (CNPq in the Brazilian Portuguese acronym) of the Brazilian Ministry of Science, Technology, and Innovation were eligible and invited to participate in the study through a questionnaire sent out via email. The eligibility criteria were a) leading a research group in Brazil; b) being registered in the National Council for Scientific and Technological Development platform; and c) conducting research in any area of the health sciences.

The development of the survey instrument, including the assessment of usability and technical functionality of the electronic questionnaire, was meticulously conducted, and tested. Two pilot tests were conducted to ensure the efficiency of the questionnaire, with particular emphasis on evaluating its duration and the ordering of the questions to avoid cognitive biases in the responses, such as respondents anticipating which responses would be more desirable and/or more conforming to the expectations of our research team (Bruton *et al.*, 2019). No incentives were offered to participants.

2.2 Setting

The email addresses of research group leaders were collected through CNPq platforms (Research Groups Directory and Lattes Platform, when the contact field in the Directory was incomplete), using research groups in the health field as a filter. Up to 3 emails were sent to each researcher. The emails were sent from May 2022 to August 2023.

All participants who agreed to take part in the study were invited voluntarily to complete the questionnaire (Google Forms). The questionnaire had an average of 5 items per page, consisting of objective questions divided into 05 sections (Box 1):

1. Characteristics of the leader, the research group, and the graduate program (general data).

2. Historical background of the graduate program to which the research group is affiliated regarding research and publication practices.

3. Characteristics of the research group.

4. Historical background of the research group regarding research and publication practices.

5. The leader's perception regarding their research and publication practices, the research group's practices, and the practices of other groups within the same graduate program.

Only users with a link to the questionnaire could respond. The number of times they could enter was not specified, but they needed to enter their corresponding email.

Box 1 - Questions related to research practices on reporting guidelines.

Question	Response
1) Did you know about the EQUATOR Network Initiative or reporting guidelines before starting the questionnaire (such as STROBE, CONSORT, PRISMA, etc.)?	(Yes/No)
2) Was the appropriate research reporting guideline, for the respective study design used in preparing the report in your group's most recent study?	(Yes/No)
3) In your opinion, how important is adherence to these reporting guidelines for other research groups in the health sciences, also within your postgraduate program?	(Important / Moderate / Not important)
4) In your opinion, how important is adherence to these reporting guidelines for your research group?	(Important/ Moderate / Not important)
5) In your opinion, how important is adherence to these reporting guidelines?	(Important/ Moderate / Not important)

Source: Prepared by the authors (2025).

2.3 Variables and their measurements

The data presented in this section are related to questions about the characterization of research group leaders, including information such as sex (female and male), time leading the group in years, and the program's grade in the last quadrennial evaluation by the Coordination for the Improvement of Higher Education Personnel (CAPES in the Brazilian Portuguese acronym), bureau of the national Ministry of Education (which ranges from 1 to 7). Additionally, we addressed questions presented in Box 1 related to research practices concerning reporting guidelines:

After data collection, a spreadsheet was generated in MS Excel® to organize this data, and each participant was assigned a specific code (ID) for anonymous identification. The "research field" variable was standardized according to the Brazilian Knowledge/Assessment Areas Table (Brasil. Ministério da Educação, 2020). Data for all answer options are available in the Open Science Framework (OSF) (https://osf.io/4zhu3/).

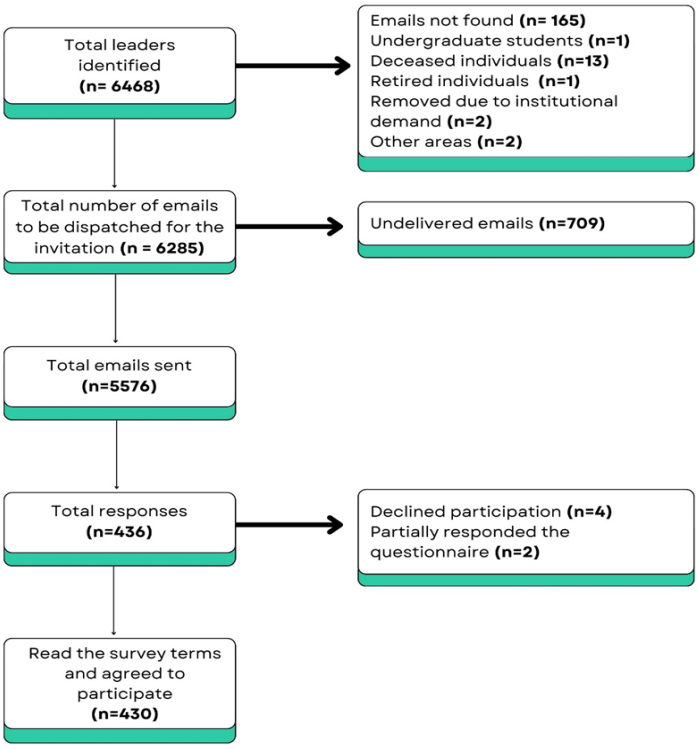
2.4 Statistical methods

Absolute and relative frequencies were described for categorical variables. Bivariate analyses testing factors associated with gender, leadership time, and between grades evaluated by CAPES were performed using the Chi-square test and Fisher Exact Test. For all analyses, the significance level was defined as $p<0.05$. All analyses were performed in STATA v.14.

3 RESULTS

Initially, 6,468 researchers who had registered on the CNPq platform were identified (Figure 1). Of those, 165 (2.5%) individuals did not have registered email addresses, 13 (0.2%) researchers were deceased, 1 (0.01%) was an undergraduate student, 1 (0.01%) was a retiree, 2 (0.03%) belonged to other areas and not health, and 2 (0.03%) were temporarily unavailable due to institutional commitments. In addition, 709 (10.9%) email addresses were deemed invalid. Therefore, 5,576 researchers were eligible and received email invitations. Finally, 4 (0.07%) researchers declined participation in the study, resulting in a final response rate of 432 (7.7%) researchers. Two respondents did not answer all questions and were subsequently excluded from the analyses (n= 430). Thus, the response rate was 7.7%. The flowchart of the study selection process is presented in Figure 1.

Figure 1 - Flowchart of study stages.



Source: Prepared by the authors (2025).

Table 1 shows the characteristics of the participants included in this study and their research areas. Most participants were female (n=239; 55.8%). Of this group, 34.6% (n=149) possessed more than 11 years of leadership experience, and 62.56% stated that their program had received a grade of 4 or 5 in the last CAPES evaluation (n=269), which is considered average. Among the survey participants, 242 (56.2%) were not acquainted with the EQUATOR initiative; however, 276 (64.1%) acknowledged using the appropriate reporting guidelines in their most recently published study. The majority responded that there was importance in adhering to reporting guidelines for the betterment of other groups (n=286; 66.51%), while 309 (71.86%) underscored its relevance for their groups. Furthermore, 321 (74.65%) expressed that compliance with reporting guidelines is paramount at an individual level.

Table 1 - Demographic characteristics of researchers and their research groups, 2023.

Variables	**N=430**	**%**
Sex[a]		
Female	239	55.58
Male	191	44.42
Program Grade in the CAPES Assessment[b]		
1- 3	70	16.28
4 - 5	269	62.56
6 - 7	91	21.16
Leadership time		
< 5 years	137	31.86
6-10 years	144	33.49
> 11 years	149	34.65
Research area		
Medicine	86	20.00
Nursing	76	17.67
Public Health	75	17.44
Physical Education	59	13.72
Multidisciplinary	28	6.51
Pharmacy	17	3.97
Nutrition	27	6.28
Dentistry	22	5.12
Physiotherapy and Occupational Therapy	21	4.88
Other[c]	19	4.19
Not applicable	1	0.23

a) Two participants were excluded from the study due to incomplete responses; b) The CAPES assessment assigns grades to postgraduate programs based on quality, ranging from 1 to 7. Grades 1-3 indicate programs that do not meet the minimum standards; grades 4-5 are considered good or very good; grades 6-7 represent programs of international excellence; c) Other= Biological Sciences; Human Sciences; Applied Social Sciences; Biomedical engineering; Speech therapy; Psychology.

Source: Prepared by the authors (2025).

Analysis of the data presented in Table 2 reveals the relationship between adherence and involvement with reporting guidelines and the sex of Brazilian research leadership in 2023. No significant association was observed for any of the questions when analyzed concerning sex. This suggests that, within the scope of this study, there are no discernible differences in adherence and involvement with reporting guidelines among Brazilian research leadership based on sex.

Table 2 - Adherence and involvement of reporting guides and their association with sex among Brazilian researchers, 2023.

Question	N=430 (%)	Female (% (IC 95%)	Male (% (IC 95%)	p-value[1]
Prior to responding to this questionnaire, were you familiar with the Equator Initiative?				
Yes	188 (43.71)	109 (45.61(38.94 - 51.58)	79 (41.36 (35.03 - 49,06)	0.38*
No	242 (56.28)	79 (41.36 (48,41 - 61.05)	112 (58.28(50.93 - 64.96	
In your group's most recent study, was the research reporting guide suitable for the respective study design employee?				
Yes	276 (64.40)	153 (64.02 (38,94 - 51.58)	86 (35,98 (35.03 - 49.06)	1.00*
No	154 (35.81)	123 (64.40 (48.41 - 61.05)	68 (35.60 (50.93 - 64.96)	
In your view, how significant is adherence to these reporting guides for other health sciences research groups within your postgraduate program?				
Not important	39 (9.07)	22 (9.21 (6.11 - 13.62)	17 (8.90 (5.58 - 13.90	0.86**
Moderate	105 (24.42)	56 (23.43 (18.45 - 29.26)	49 (25.65 (19.91 - 32.38)	
Very important	286 (66.51)	161 (67.36 (61.11 - 73.04)	125 (65.45(58.36 - 71.90)	
In your view, how significant is adherence to these reporting guides for your research group?				
Not important	38 (8.84)	21 (8.79 (5.78 - 13.13)	17 (8.90 (5.58 - 13.90)	0.73**
Moderate	83 (19.30)	43 (17.99 (13.59 -23.42)	40 (20.94(15.70 - 27.35)	
Very important	309 (71.86)	175 (73.22 (67.20 - 78.48)	134 (70.16 (63.22 - 76.26)	
In your view, how important is adherence to these reporting guides?				
Not important	33 (7.67)	19 (7.95 (5.11- 12.16)	14 (7.33(4.36- 12.04)	0.838**
Moderate	76 (17.67)	40 (16.74 (1.24 - 22.05)	36 (18.85(13.87-25.08)	
Very important	321 (74.65)	180 (75.31(69.40 - 80.40)	142(73.82(6.70-7.96)	

*Fisher Exact Test; **Chi-square; [1]Level of significance 95%
Source: Prepared by the authors (2025).

Table 3 presents the comparison between adherence to reporting guidelines and leadership tenure. A statistically significant positive association was observed specifically to knowledge of the EQUATOR Initiative, where a longer tenure in leadership roles (>11 years) was correlated with less knowledge about the EQUATOR Initiative (p=0.01). No other significant associations were found.

Table 3 - Association between leadership time (in years) and adherence to reporting guidelines, 2023.

Question	N=430 (%)	<5 years (%(IC 95%)	6-10 years (%(IC 95%)	>11years (%(IC 95%)	p-value[1]
Prior to responding to this questionnaire, were you familiar with the Equator Initiative?					
Yes	188 (43.72)	70 (51.09 (42.66 - 59.46)	66 (45.83 (37.78-54.10)	52 (34.90(27.60-42.97)	0.018*
No	242 (56.28)	67 (48.91(40.53 - 57.33)	78 (54.17(45.89-62.21)	97 (65.10(57.02-72.39)	
In your group's most recent study, was the research reporting guide suitable for the respective study design?					
Yes	276 (64.19)	87 (63.50 (55.02 - 71.22)	98 (68.06(59.91 -75.22)	91 (61.07(52.92-68.64)	0.451*
No	154 (35.81)	50 (36.50(28.77 - 44.97)	46 (31.94 (24.77-40.08)	58 (38.93(31.35-47.07)	
In your view, how significant is adherence to these reporting guides for other health sciences research groups within your postgraduate program?					
Not important	39 (9.07)	13 (9.49(5.55-15.75)	16 (11.11(6.87-17.45)	10 (6.71(3.62-12.10)	0.705**
Moderate	105 (24.42)	32 (23.36(16.95-31.27)	37 (25.69(19.15-33.54)	36 (24.16(18.89-31.76)	
Very important	286 (66.51)	92 (67.15(5.87-74.57)	91 (63.19(54.92-70.75)	103 (69.13(61.11-76.09)	
In your view, how significant is adherence to these reporting guides for your research group?					
Not important	38 (8.84)	14 (10.22(6.10-16-61)	14 (9.72(5.80-15.83)	10 (6.71(3.62-12.10)	0.782**
Moderate	83 (19.30)	25 (18.25(1.25-25.71)	26 (18.06(12.53-25.29)	32 (21.48(15.55-28.88)	
Very important	309 (71.86)	98 (71.53(63.31-78.53)	104 (72.22(54.25-78.99)	107 (71.81(63.97-78.51	
In your view, how important is adherence to these reporting guides?					
Not important	33 (7.67)	12 (8.76(5.00-14.88)	12 (8.33(4.76-14.18)	9(6.04(3.14-11.27)	0.794**
Moderate	76 (17.67)	25 (18.25(1.25-25.71)	22 (15.28(10.22-22.20)	29(19.46(13.81-26.69)	
Very important	321 (74.65)	100 (72.99(64.84-79.83)	110 (76.39(68.67-82.68)	111 (74.50(66.80-80.91)	

*Fisher Exact Test; **Chi-square; [1]Level of significance 95%
Source: Prepared by the authors (2025).

Table 4 presents the outcomes of the analyses of respondents' familiarity with the EQUATOR Initiative, their awareness of reporting guidelines, and their consistent utilization of these resources. Notably, no statistically significant results were found regarding the CAPES-assigned grades. Statistical analysis using Fisher's test demonstrated a statistically significant association between responses related to knowledge of the EQUATOR initiative and the use of the appropriate guideline in its latest publication ($p < 0.001$).

Table 4 - Association between adherence to reporting guidelines and CAPES evaluation grades, 2023.

Question	N=430 (%)	1-3 (% (IC 95%)	4-5(% (IC 95%)	6-7(% (IC 95%)	p-value
Prior to responding to this questionnaire, were you familiar with the Equator Initiative?					
Yes	188 (43.72)	34 (48.57(36.87-39.57)	115 (42.75(36.93-48.77)	39 (42.86(32.94-53.38)	0.67*
No	242 (56.28)	36 (51.43(39.57-63.12)	154 (57.25(51.22-63.06)	52 (57.14(46.61-67.05)	
In your group's most recent study, was the research reporting guide suitable for the respective study design employee?					
Yes	276 (64.19)	39 (55.71(43.68-67.10)	175 (65.06(59.12-70.55)	62 (68.13(57.69-77.01)	0.23*
No	154 (35.81)	31 (44.29(32.89-56.31	94 (34.94(29.44- 40.87)	29 (31.87(22.98-42.30)	
In your view, how significant is adherence to these reporting guides for other health sciences research groups within your postgraduate program?					
Not important	39 (9.07)	8 (11.43(3.83-5.71)	24 (8.92(1.74-6.03)	7 (7.69(2.80-3.65)	0.94**
Moderate	105 (24.42)	16 (22.86(5.05-14.32)	67 (24.91(2.64-20.07)	22 (24.18(4.51-16.35)	
Very important	286 (66.51)	46 (65.74(5.71-53.60)	178 (66.17(28.90-60.27)	62 (68.13(4.91-57.69)	
In your view, how significant is adherence to these reporting guides for your research group?					
Not important	38 (8.84)	9 (12.86(6.71-23.21)	24 (8.92(6.03-12.99)	5 (5.49(2.26-12.72)	0.26**
Moderate	83 (19.30)	13 (18.57(10.95-29.72)	57 (21.19(16.68-26.51)	13 (14.29(8.39-23.26)	
Very important	309 (71.86)	48 (68.57(56.53--78.54)	188 (69.89(64.10-75.10)	73 (80.22(70.56-87.27	
In your view, how important is adherence to these reporting guides?					
Not important	33 (7.67)	8 (11.43(5.71-21.53)	21 (7.81(5.13-11.70)	4 (4.40(1.62-11.32)	0.20**
Moderate	76 (17.67)	10 (14.29(7.74-24.87)	54 (20.07(15.68-25.32)	12 (13.19(7.56-22.00)	
Very important	321 (74.65)	52 (74.29(62.51-83.34)	194 (72.12(66.42-77.18)	75 (82.42(73.00-89.04)	

*Fisher Exact Test; **Chi-square ¹Level of significance 95%
Source: Prepared by the authors (2025).

4 DISCUSSION

This cross-sectional study aimed to describe the profile of leaders of Brazilian research groups in the field of health sciences regarding their adherence to research integrity and practices in scientific publications, with a focus on their knowledge and usage of EQUATOR reporting guidelines. That is, do the researchers that hold leadership positions in the Brazilian scientific ecosystem sufficiently know and employ the EQUATOR research reporting guidelines? The main findings indicate that: a) No significant associations were found between adherence to reporting guidelines with sex and graduate program grades in the CAPES evaluation system. b) There was a positive association between lack of knowledge of the EQUATOR Initiative and leadership time. c) A significant association between respondents' familiarity with the EQUATOR Initiative and their utilization in their most recent published paper was found.

Scientific writing is crucial both in research planning and research reporting. In the health sciences, various initiatives aim to improve the reliability of scientific literature (Atallah; Logullo, 2019; Institute of Medicine (US) Committee on Health Research and the Privacy of Health Information, 2009). Our study shows approximately fifty percent of the respondents may lack familiarity with the EQUATOR initiative, though many still reported using appropriate reporting guidelines in their most recent publications. This increase could be due to recent journal requirements (Song, 2022), which have been making compliance

to EQUATOR guidelines mandatory. However, researchers may use these guidelines without fully understanding their development, simply downloading checklists online or from journal websites to submit their manuscripts. While using the guidelines is important, understanding their development is essential for proper application, a process which could be aided by librarians from the institutions to which the researchers are affiliated to.

But there could be more to this uptick. A behavioral effect has been documented in the literature on decision-making and persuasion called the Third Person Effect, in which the individual presumes better behavioral and/or cognitive traits within their ingroup in comparison to their outgroup. Originally, the Effect was first described in studying reporting how individuals expected themselves, their ingroups, and outgroups to be more gullible to mass media messages, that is, more prone to persuasion regardless of the merit of the arguments of the message (Brosius; Engel, 1996; Chapin, 2000; Duck; Hogg; Terry, 1999; Gunther; Chia, 2001; Peiser; Peter, 2000; Perloff, 1989; Perloff, 1993; Rucinski; Salmon, 1990; Song, 2022; Watts *et al.*, 1999). A social distance corollary has also been posited in which the further one is perceived from the ingroup, the worse they are perceived when it comes to presumed traits that are desirable to the ingroup, that is, those that are considered positive traits by peers (Eveland *et al.*, 1999). This theory connects to what recent papers on persuasion and behavior have framed as motivated reasoning. It has been described as a set of phenomena through which implicit biases motivate perception and decision-making, aiming not to harm ingroup belonging to the extent that decisions may appear irrational or illogical (Williams, 2021).

It is noteworthy that as we further evaluated the personal viewpoints of the leaders, it became increasingly apparent that their assertions of accurate tool usage (74.65%) were more prevalent when compared to their perceptions of their peers' usage of the same tools (71.86%) and perception of outgroup's usage (66.51%). This trend is consistent with a meta-analysis indicating a potential amplification of the Third Person Effect among individuals who viewed themselves as more intellectually capable in the sample. Optimist bias or the First-Person Effect—a phenomenon in which we tend to think of ourselves as superior to others, even our closest peers—is how the Third Person Effect refers to it in classical literature. Although implicit biases may be at play among a population of scientists who are generally well-evaluated and very rational, this does not imply that the respondents purposefully attempted to promote themselves or their research groups (Paul; Salwen; Dupagne, 2000). It is also important to note that while there is an 8% difference in perception of differences between individuals and perception of difference with outgroups, there is a 3% difference

between individual self-perception and ingroup expectations regarding tool usage. The way leaders portray the significance of the guidelines to their groups varies by three factors. And the sample as a whole lacked sufficient knowledge about the EQUATOR Initiative. The Third Person Effect body of research, which describes the cognitive biases at work, is strengthened by this notable difference in our findings.

It is worth noticing that the last iteration of the Helsinki Declaration positions completeness of research reporting as a fundamental aspect of research ethics in the health sciences. Therefore, the biomedical research ecosystem seems to be moving towards sharing the burden of research reporting completeness with ethical committees as well as with journal editors. And it seems to be, at the same time, increasing pressure on health research authors to adhere to better reporting practices (World Medical Association, 2025). However, per our findings, if authors do acknowledge that completeness of reporting is important but still to not properly report their research findings due to cognitive biases, this means a research agenda on motivated reasoning among scientific authors is needed. It stands to reason that Library and Information Science could benefit from pressing on that research agenda to further investigate biases that may hinder scientific research efforts because historically this field has been concerned with access to knowledge and information and its curatorship and dissemination. Said research agenda could further help librarians assist scientific authors in adhering to better scientific reporting behaviors, increasing research reporting reliability (The Lancet, 2017; The Lancet, 2019). As of April 2025, if the descriptor “Equator Network” is searched along with descriptors “librarian” and/or “information science” both in SciELO (in Portuguese) and in MEDLINE (in English) the search engines’ output is zero, meaning there is indeed a research gap in the field concerning reporting guidelines.

A guide to providing clear instructions for reporting a study proves extremely valuable for both authors and readers (Moher *et al.*, 2020) . Furthermore, it acts as a catalyst for enhancing transparency, integrity, and reproducibility, which are essential aspects of scientific investigation (Costa; Alves; Luizeti, 2020). Practices that promote transparency, such as data sharing, reporting manuscripts according to specific guidelines, and preregistration of studies in platforms, promote open workflows by enabling the capture of different aspects and products of the research lifecycle (Simera *et al.*, 2010). Therefore, researchers and institutions must actively support and practice responsible conduct in their research endeavors (Mwaka, 2017) to foster the reliability of the scientific record, an effort which can be supported by librarians and information scientists

This study did not reveal a statistically significant difference when assessing the association between sex (male and female) and the survey questions. It is significant to observe that, according to data derived from the 2023 Directory of Research Groups in Brazil, there has been a notable change in the gender representation among registered researchers. Specifically, in 2023, 52% of researchers were female, compared to 44% in 2000. This shift indicates an increasing presence of female researchers in the field, marking a significant change from previous years (Brasil Centro Nacional de Desenvolvimento Científico e Tecnológico (CNPq), 2016). The parity observed in our study and the census data could be attributed to the implementation of gender equity policies in specific regions or may reflect the ongoing societal shift in the debate regarding gender inequalities (Vargas *et al.*, 2020). Literature studies underscore the importance of incorporating discussions on race/ethnicity and gender into research integrity education as an effective strategy for fostering a conducive research environment (Lingras; Alexander; Vrieze, 2023). Therefore, in the context of our study, it is plausible that we did not identify gender-related disparities in reporting behavior.

However, a research investigation aimed at ascertaining whether the gender of authors bears significance in determining the level of authority they possess within the top 100 articles in the field of dentistry concluded that female authors are not accorded the same status as their male counterparts when it comes to occupying prestigious positions of authority in dental research publications. Furthermore, it can be posited that gender bias continues to manifest prominently within the community of dental researchers (Moreno *et al.*, 2023). This could imply an enduring presence of gender prejudice within the research community, underscoring the imperative for collaborative endeavors aimed at acknowledging and reducing these disparities.

Principal researchers face a variety of leadership and management responsibilities in their professional activities. Our results suggest a possible association between time dedicated to leadership and a lack of knowledge of the Equator Network. This connection can be explained by the wide range of responsibilities that leaders face, which demonstrates a need for updating, as they play a crucial role as group guides and mentors. Leadership not only has the power to implement compliance processes but also serves as an object of ethical reflection (Santos *et al.*, 2012).

In certain instances, leaders of research groups may have a sense of obligation to yield noteworthy outcomes and top-notch publications to secure financial support and uphold their standing. This dynamic can potentially engender inducements for unscrupulous

behaviors, such as manipulating data or exercising selective publishing (Dwivedi *et al.*, 2022). However, it is important to note that this pressure is not intrinsically tied to the amount of time dedicated to leadership responsibilities, but rather stems from the research milieu within which the individual operates. University policies on the career progression system may also solidify the presence of publication pressure and competition (Haven; Woudenberg; van, 2021; Santos-D'Amorim *et al.*, 2021). Such behavioral tendencies potentially threaten research integrity principles (Stavale *et al.*, 2019, Stavale *et al.* 2022).

In Brazil, graduate programs undergo evaluation for quality and excellence, employing a grading system administered by the Coordination for the Improvement of Higher Education Personnel (CAPES), an agency under the Brazilian Ministry of Education. The grading scale spans from 1 to 7, with 7 being the highest level of excellence. However, it's noteworthy that this study did not find any association between the program's level of excellence and adherence or level of involvement with reporting guidelines. This lack of knowledge has the potential to not sufficiently encourage students and researchers to embrace ethical conduct in their research reporting. It may also contribute to a culture of scientific overproduction, engendering a competitive atmosphere in which some researchers may be tempted to compromise integrity, including data manipulation, to meet these expectations (McManus *et al.*, 2022; Stavale *et al.*, 2022). Adherence to research reporting guidelines could countereffect those incentives stemming from the evaluation system and pressure to publish.

Higher CAPES evaluation grades might be expected to correlate with greater knowledge of reporting guidelines, given EQUATOR's long existence and the overlap between research seniority and the EQUATOR Initiative's implementation. However, the Third Person Effect suggests that this bias operates at an individual rather than an institutional level, meaning CAPES assessments may capture institutional research excellence but not individual shortcomings in research reporting. This could imply that the significant correlation between respondents' familiarity with the EQUATOR Initiative and its use in their recent publications ($p<0.001$) might result from cognitive biases, selection bias, or inherent statistical limitations of p-values.

Overall, our results could imply the need to address these cognitive biases at an individual level in the classroom when forming the next generation of researchers. And/or within the knowledge and information management services in the higher education and research institutions. In this context, librarians could prove essential to bridge the gap

between author publishing needs and research integrity imperatives as they have been bridging the gap between authors, journals and publishers.

4.1 Limitations and Strenghts

Although our study presents significant results for the scientific community, some limitations should be noted. One challenge was locating email addresses not accessible through CNPq records. Additionally, the low response rate (7.7%) may have introduced selection bias, potentially overestimating positive results, as respondents likely differ from non-respondents. If the Third Person Effect is indeed present, it may also have been overestimated. Therefore, these findings should be interpreted with caution. Despite typically low questionnaire response rates (Perneger *et al.*, 2014), strategies like email reminders were used to improve participation.

This study is the first of its kind to examine the practices of health science research leaders, in Brazil offering an insight into the landscape of health research in the country. The findings could shape research agendas, policy-making, and collaborative efforts nationally. Moreover, it sheds light on the possible biases that may influence adherence to practices in research reporting providing insights into why certain editorial interventions are successful while others fall short. (Blanco *et al.*, 2020) This underscores the significance of self-perception and group dynamics, in shaping research conduct (Bruton *et al.*, 2019; Ghannad *et al.*, 2021; Haven *et al.*, 2021).

Further studies should try and replicate our findings with larger samples and within other scientific fields. And also investigate whether stemming from an undergraduation major from outside the health sciences domain holds some implication on knowledge and attitude towards usage of EQUATOR Network guidelines. There are EQUATOR Network guidelines which can be used within other domains of knowledge such as the COREQ (Tong; Sainsbury; Craig, 2007) for qualitative research designs (which can be employed in applied social sciences research) and the ACCORD (van Zuuren, 2024) for consensus exercises in any field or domain of knowledge.

5 CONCLUSION

In conclusion, this study has provided insights into the attitudes of research group leaders operating in the field of health sciences concerning their knowledge, adherence, and implementation of reporting guidelines and possible cognitive biases. Respondents were overall favorable when it came to adherence to better research reporting practices, yet a

knowledge gap has been found concomitantly, which calls for further scientific inquiry within the Information Science and related applied social sciences. Considering our objective to offer a comprehensive descriptive analysis of the characteristics of leaders of Brazilian research groups operating within the health field concerning their knowledge and adherence to reporting guidelines, therefore, answering our research question, we conclude that there is room for improvement regarding their knowledge and usage towards research reporting guidelines.

Funding

This study was financed in part by the Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES) – Finance Code 001.

Competing interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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AGRADECIMENTOS
We gratefully acknowledge CAPES for their financial support, which was essential for the completion of this manuscript. We also thank all individuals who contributed their expertise and collaboration throughout this project.

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Discussão dos resultados: L. G. dos Santos, C. P. de Lucena Alves, J. D. Barreto Segundo, M. S. Cenci, I. C. Mohnsam da Silva, D. Moher, T. Pereira-Cenci
Revisão e aprovação: L. G. dos Santos, C. P. de Lucena Alves, J. D. Barreto Segundo, M. S. Cenci, I. C. Mohnsam da Silva, D. Moher, T. Pereira-Cenci

CONJUNTO DE DADOS DE PESQUISA

FINANCIAMENTO
This study was financed in part by the Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES) – Finance Code 001.

CONSENTIMENTO DE USO DE IMAGEM
Not applicable.

APROVAÇÃO DE COMITÊ DE ÉTICA EM PESQUISA
An ethics clearance for the study was obtained in June 2021 from the Research Ethics Committee of the Faculty of Medicine, Federal University of Pelotas (CAAE 48518021.2.0000.5317).

CONFLITO DE INTERESSES
The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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PUBLISHER
Universidade Federal de Santa Catarina. Programa de Pós-graduação em Ciência da Informação. Publicação no Portal de Periódicos UFSC. As ideias expressadas neste artigo são de responsabilidade de seus autores, não representando, necessariamente, a opinião dos editores ou da universidade.

EDITORES
Edgar Bisset Alvarez, Patrícia Neubert, Genilson Geraldo, Camila De Azevedo Gibbon, Jônatas Edison da Silva, Luan Soares Silva, Marcela Reinhardt e Daniela Capri.

HISTÓRICO
Recebido em: 28-11-2024 – Aprovado em: 30-06- 2025 – Publicado em: 11-08-2025