Presentation - Doc. Forum

Gabriel Costa

PhD Student

Disciplinary and geographical background

- Rio de Janeiro, Brazil
  - → BSc Nutritional Sciences (UNIRIO - Federal Univ. of the State of RJ)
  - → MSc Biological Chemistry (UFRJ - Federal Univ. of RJ)
  - → PhD (ongoing) at the same university

Institutional embedding

→ Institute of Medical Biochemistry Leopoldo de Meis

- Advisor: Prof. Olavo Amaral

PI of BRI

BRAZILIAN
REPRODUCIBILITY
INITIATIVE

Motivation for doing research on research integrity

→ Motivation: Graduate program

Education, Management and Dissemination in Biosciences

- Overlap with meta-research
- 7th WCRI in Cape Town

Expectations of the doctoral forum

- Networking

- Opportunity to discuss my PhD’s side project
  (it can become my thesis and main project)

- Discover possible stakeholders interested in the preliminary results of the project outside of BR

Support for responsible research practices among Brazilian graduate programs in the life sciences

Criteria frequently valued in academia

→ **quantity of publications, impact factor** and funding as well

PLOS BIOLOGY

Assessing scientists for hiring, promotion, and tenure

David Moher, Florian Naudet, Ioana A. Cristea, Frank Miedema, John P. A. Ioannidis, Steven N. Goodman

CAPES - Funding in Brazil

- CAPES (Coordination for the Improvement of Higher Education Personnel) uses IF as it evaluates graduate programs in Brazil

- It ranks them and defines the ones that have a minimum rank to be valid to be offered in the country

- Courses with higher programs

  have higher funding

Aim

- In this study, publicly available data that is required by programs to CAPES was analyzed.

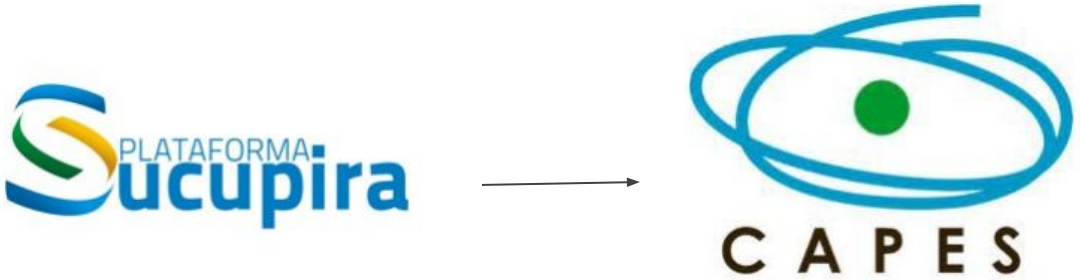
- Me and my co authors gathered information about values on productivity, integrity and transparency.

This said... Methods of the study

Methods

- 104 graduate programs were randomly selected from Sucupira Platform

    → Sucupira Platform: is a platform for managing information (open info.) related to graduate programs in Brazil



Methods

- Each program has in Sucupira Platform a section called **Program Proposal**.

Basically: it is a text where faculty needs to describe the program's mission and aim, its characteristics and research products

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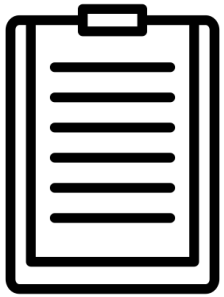
Based on that: subsections about



1.1) Program's **concentration, lines of research, ongoing projects** and curricular structures

1.2) **Faculty's profile**

1.3) **Strategic planning**

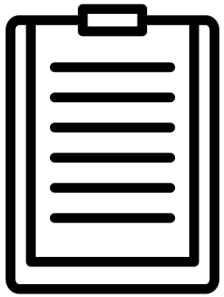
1.4) **Program's self-assessment**

2.1) Quality of the **theses**

2.2) **Intellectual production** (students and graduates)

2.3) Destination, performance and **evaluation of the graduates**

It describes as well: topics such as impact and innovative character, economic, social and cultural impact and internationalization of the program



2.4) Research activities and intellectual production

2.5) Quality and involvement of faculty in relation to training activities

3.1) **Impact and innovative character** of the intellectual production

3.2) **Economic, social and cultural impact** of the program

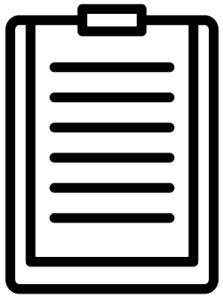
3.3) **Internationalization**, insertion (local, regional, national) and visibility of the program

Background and contextualization of the program

COVID’s impact on program actions

In the program proposal:

- Terms related to integrity and transparency but also productivity and impact were searched in program proposals and information was filled in Google Forms



Keywords for each term:

- **Reproducibility:** reprodut/replica/repetibilidade
- **Open access:** abert/acesso/open
- **Data Sharing:** dados/data sharing
- **Preprint:** print/publicação/impressão
- **Ethics:** ética/biossegurança/anima/roedor/rato/camundongo/boas práticas em laboratório/seres humanos
- **General Scientific Formation:** método/planejamento de experimentos/estatística/filosofia da ciência
- **Productivity and Impact:** impacto/produtividade/quantidade/fator de impacto/número
- **Transparent Reporting:** relato/report
- **Pre registration:** registro/inscrição
- **Peer Review:** peer/revisão

In the same sample of programs:

- Courses related to the development of scientific training of a researcher (important skills irrespectively of its area in biology/biomedicine) were searched.

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Results

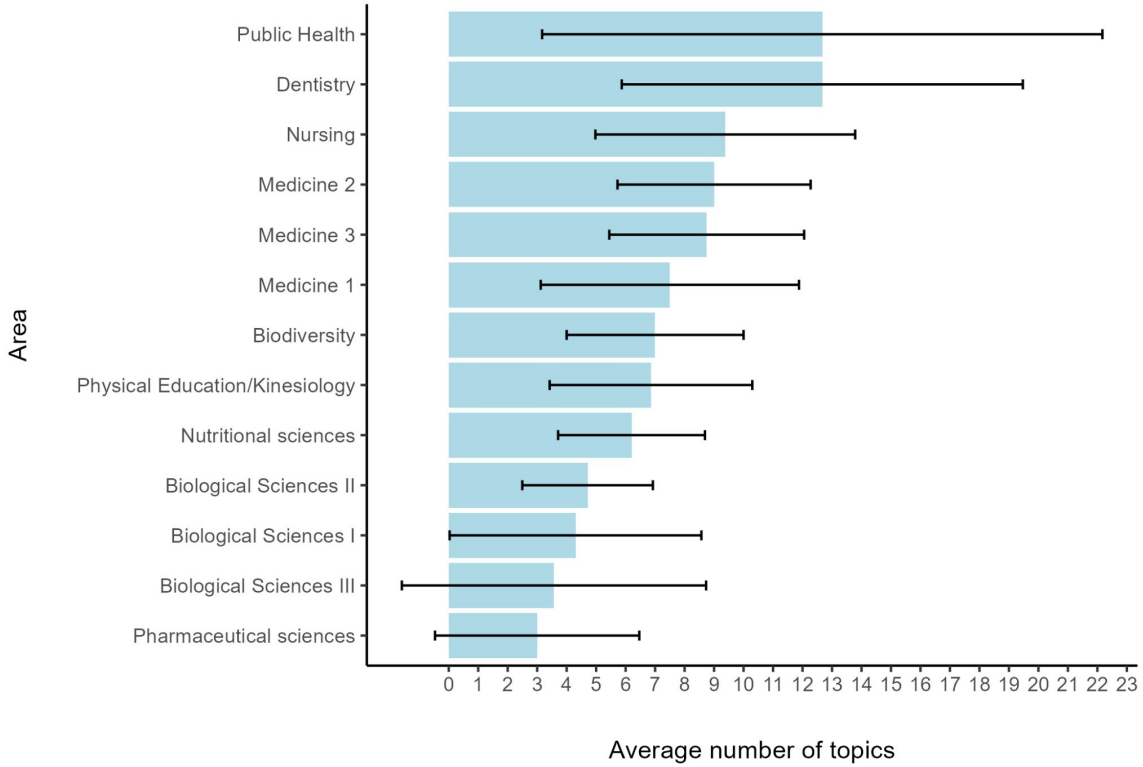
Concepts	Health Sciences (n = 65)	Life Sciences (n = 35)
Productivity and Impact	100%	100%
Basic Scientific Training	81%	63%
Ethics	80%	66%
Open Access	42%	31%
Data Sharing	29%	29%
Reproducibility	30%	23%
Peer Review	10%	11%
Transparent Reporting	12%	3%
Preprints	9%	6%

Results

Course	All	Mandatory
Statistics	56 (54%)	14 (13%)
Scientific Communication/Readership	47 (45%)	7 (7%)
Scientific Methodology	42 (40%)	14 (13%)
Epidemiology/Study Design	26 (25%)	4 (4%)
Ethics	25 (24%)	6 (6%)
Literature Review	21 (20%)	0 (0%)
Experimental Design	19 (18%)	3 (3%)
Philosophy, Sociology or History of Science	15 (14%)	5 (5%)
Article Analysis/Readership	9 (9%)	3 (3%)
Science Dissemination	9 (9%)	0 (0%)
Mentorship of Projects	7 (7%)	3 (3%)
Research Integrity	6 (6%)	1 (1%)
Peer Review	2 (2%)	0 (0%)

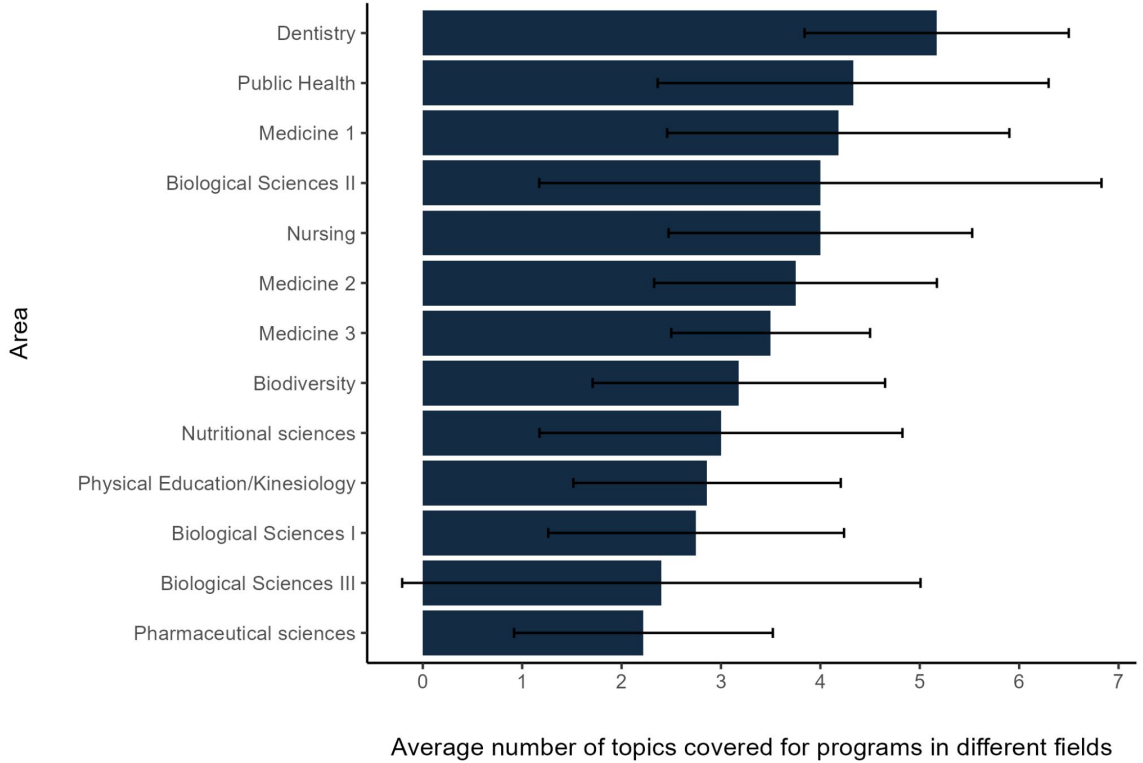
Percentages are relative to n = 104 (number of programs analyzed).

Results



Average amount of courses per CAPES's area

Results



Average number of topics covered for programs in different fields per CAPES's area

Conclusions

- **Analysis of Concepts:** The descriptions of Brazilian graduate programs in Biological Sciences tend to focus on number of publications, impact and novelty, rather than transparency and integrity.

Conclusions

- **Analysis of disciplines:** Most of the courses related to general and important scientific skills of a researcher irrespectively of its area in biology/biomedicine are offered in a non-mandatory manner.

- **Analysis of disciplines:** Few programs offered courses in a mandatory manner

  (n = 45 mandatory vs. n = 104 non mandatory + mandatory).

Questions

- Is there any analogous study conducted elsewhere which has examined a similar question?

- For whom might these results be of interest beyond the borders of Brazil?

- Is there a better way to categorize concepts or courses, perhaps merging some of them (e.g., merging research integrity with ethics/bioethics or scientific communication/writing with scientific outreach)?

Conflicts of Interest

- I work with meta-research and reproducibility

- Member of the Brazilian Reproducibility Network (BRN)

Thank you.