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Health science research articles in American English and Brazilian Portuguese: a comparison study based on intercultural rhetoric

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**Artigos científicos da área da saúde em inglês americano e português brasileiro:
um estudo comparativo baseado na retórica intercultural**

**Health science research articles in American English and Brazilian Portuguese: a
comparison study based on intercultural rhetoric**

Dissertação de Mestrado apresentada ao Programa de Pós-Graduação em Estudos Linguísticos e Literários em Inglês do Departamento de Letras Modernas da Faculdade de Filosofia, Letras e Ciências Humanas da Universidade de São Paulo, como parte dos requisitos para a obtenção do título de Mestre.

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To my beloved grandmother, and parents
Maria Rosa, Lucia Aparecida, and Jurandir Belém (*Im Memoriam*).

“I don't exactly know what I mean by that, but I mean it.”

J.D. Salinger, The Catcher in the Rye

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ABSTRACT

Intercultural Rhetoric (IR) is the study of written discourse between individuals with different cultural backgrounds (CONNOR, 2011). To understand how rhetorical organization works in different genres (SWALES, 1990), for instance, research articles (RAs) in English and other languages can help to grasp the significance of understanding some of the challenges faced by authors from peripheral countries (KACHRU, 1996, MONTEIRO; HIRANO, 2020). In addition, this can help those who intend to publish in international journals (HIRANO, 2009). Although many studies have investigated and compared rhetorical organization of RAs in different disciplines and languages, few studies have compared the writing of medical RAs in American English and Brazilian Portuguese (HIRANO, 2009; REZENDE; HEMAIS, 2012; CONNOR; TRAVERSA, 2014; SAMRAJ; 2016). The present study analyzed the rhetorical organization of 20 research articles (RAs) – Introduction-Methods-Results-Discussion-Conclusion - based on IR perspective. Of these RAs, 10 were written in American English and 10 were written in Brazilian Portuguese. The genre-analysis model proposed by Nwogu (1997) for medical RAs was used to the comparative analysis as starting point to identify rhetorical patterns in both languages. The major findings were the similarities and differences between both corpora related to rhetorical structure within difference sections of RAs, therefore, suggesting the existence of cross-cultural variation in academic writing between both languages. The results of the present study contribute with data related to rhetorical organization and linguistic features of RAs. This knowledge may help to improve awareness of writer and also may provide insights for language for academic purposes teachers in the writing classroom. The study briefly explores writing, publication, and pedagogical implications based on its findings.

Keywords: Intercultural Rhetoric; Contrastive Rhetoric; Genre Studies; Academic Literacy

RESUMO

A Retórica Intercultural (RI) é o estudo do discurso escrito entre indivíduos de diferentes origens culturais (CONNOR, 2011). Compreender a organização retórica em diferentes gêneros (SWALES, 1990), como por exemplo, artigos de científicos (ACs) em inglês e outras línguas pode ajudar a entender alguns dos desafios enfrentados por autores de países periféricos (KACHRU, 1996; MONTEIRO; HIRANO, 2020), e também aqueles enfrentados por quem pretende publicar em periódicos internacionais (HIRANO, 2009). Embora muitos estudos tenham investigado e comparado a organização retórica de ACs em diferentes disciplinas e línguas (HIRANO, 2009; CONNOR; TRAVERSA, 2010; SAMRAJ; 2016), poucos estudos compararam a escrita de ACs em inglês americano e português brasileiro e na área médica (REZENDE; HEMAIS, 2004). O presente estudo analisou a organização retórica de 20 artigos ACs – Introdução -Métodos-Resultados-Discussão-Conclusão - com base na perspectiva da RI. Desses ACs, 10 foram escritos em inglês americano e 10 foram escritos em português brasileiro. O modelo de análise de organização retórica proposto por Nwogu (1997) para ACs da área de medicina foi adotado como ponto de partida para identificar padrões retóricos em ambas as línguas. Os principais resultados foram as semelhanças e diferenças entre ambos os *corpora* relacionadas à estrutura retórica das diversas secções dos ACs, sugerindo, portanto, a existência de variação intercultural na escrita acadêmica entre as línguas. Os resultados do presente estudo contribuem com dados relacionados à organização retórica e às características linguísticas dos ACs na área de medicina. Esses conhecimentos podem contribuir para melhorar a conscientização dos autores e também apoiar professores de língua para fins acadêmicos em aulas de escrita. Com base nos resultados, o estudo explora brevemente as implicações pedagógicas, também como para atividade de escrita e publicação.

Palavras-chaves: Retórica Intercultural; Retórica Contrastiva; Estudos de Gênero Textual; Letramento Acadêmico

ABBREVIATIONS

AO	Artigo Original
CNPq	Conselho Nacional de Desenvolvimento Científico e Tecnológico
CR	Contrastive Rhetoric
EAL	English as an Additional Language
EAP	English for Academic Purposes
ELF	English as a Lingua Franca
IR	Intercultural Rhetoric
LSP	Language for Specific Purposes
OA	Original Article
RAs	Research Articles

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1 INTRODUCTION

The ability to communicate effectively in writing for research publication purposes has become urgent and relevant due to the pressure suffered by researchers and the highly competitive publishing world. This pressure originates from the scientific output of universities that struggle to maintain and/or improve their position in international rankings (LEE; LEE, 2013), and is related to the attempt to quantify and determine the quality of research production based on the number of citations that the studies receive (CURRY; LILLIS, 2019). Such pressure in publishing is not only a requirement for researchers and academics attempting to become visible and recognized by an international audience, but also an element of paramount importance for those applying for funding, or aiming for professional development, such as a promotion and a raise in salary (CURRY; LILLIS, 2019).

Adding to the issues of pressure and competitiveness, is the escalating use of English as a lingua Franca (ELF), whose consequences /characteristics may include : (1) the high number of well-ranked journals that are published in English (LEE; LEE, 2013), (2) the efforts towards promoting internationalization in academic settings and the private sector, and (3) the demanding requirement for researchers, professionals, and scholars to write, speak, and publish in the English language (DUSZAK, 1994; CURRY; LILLIS, 2019).

The concept of ELF adopted in this study is based on what is advocated by Intercultural Rhetoric (IR) (CONNOR, 2002), meaning that language is often used by individuals who share neither a common native language nor a common culture, and who express themselves in English to communicate. This concept is not tied to the notion of the standard English norms. The current notion supported by IR recognizes English as an international, world or global language (JORDÃO, 2014) and emphasizes the existence of rhetorical variety of English in academic texts and spoken interactions. Considering this variety is especially important, given that most typical speakers, writers and readers of English acquired it as an additional language (MCISTON; CONNOR; GOKPINAR-SHELTON, 2017) and often used it to function as a common means of communication in different contexts (JORDÃO, 2014).

Publishing in any language is a challenge; however, the dominance of English in research writing in some fields (BELCHER; YANG, 2020) represents an extra workload for English as an Additional Language (EAL) researchers trying to get published in

international journals. Moreover, this issue is particularly critical for EAL writers who often received little or no education on research writing even in their native language (FERREIRA, 2016). In Brazil, for example, education efforts on how to write research articles (RAs), both in American English and Brazilian Portuguese, are scarce, and most activities are isolated. In addition, writing disciplines are often not included as being part of the curricula of undergraduate and graduate programs at public and private universities across areas of knowledge (FERREIRA, 2016). Efforts to implement these disciplines are crucial, given that writers need to be instructed on how to familiarize themselves with the conventions of a variety of genres within their discourse communities (SWALES, 1990) and raise attention to their study (ALAMRI, 2017).

One of the approaches used in learning and teaching about writing includes the genre-based analysis perspective, which has been widely used to analyze the form and function of different types of text, such as RAs (HYON, 1996). The concept of genre includes three major approaches (HYON, 1996; HYLAND, 2004b). These approaches were based on different educational contexts, and they provide different weight and focus to the context or to texts.

The three major approaches on the concept of genre have different focus and pedagogy, as reported by Hyon (1996) and Hyland (2004b):

1- English for Specific Purposes (ESP) (SWALES, 1990, 2004);

ESP focuses on function and features of discourses and adopts pedagogical approach of raising awareness and analyzing language users' needs. Swales (1990) describes genre in the ESP perspective as characterized by communicative purposes with a number of patterns in terms of "structure, style, content and intended audience" (SWALES, 1990, p. 58). Scholars in this perspective often adopt the structure move analysis to demonstrate patterns in genres (HYON, 1996).

2- North American New Rhetoric (NR) (MILLER, 1984);

NR focuses on social purposes, the function of genre in situational contexts, and on the role that genre has in the real world. Differently from ESP, NR does not focus on genre's forms. Researchers on NR use ethnographic approaches instead of linguistics methods for text analyses. Ethnography studies often seek to understand participant observation by conducting interviews, recording attitudes, and improving comprehension of individuals towards genre (HYON, 1996).

3- Australian Systemic Functional Linguistics (SFL) (HALLIDAY 1994; MARTIN, 2001)

SLF focuses on the relationship of language and its function in social settings. This perspective considers that language is shaped by the key characteristics of enclosed social contexts, such as the relationship between participants of a given situation and the channel they use to communicate. SLF relies on register rather than in genre for analyzing language. Scholars of this perspective often focus on global text structure and sentence level features by using specific schemes for studying language (HYON, 1996).

ESP, NR, and SLF constitute different approaches for analyzing spoken and written genres. These theoretical perspectives have also contributed to understanding language not only as a tool for transmitting ideas and knowledge, but as a way to build meaning considering issues related to social context and culture. While ESP studies have focused on genre-based analysis for English for Academic Purposes (EAP) and English for Professional Communication classrooms, NR has considered social contextual aspects of genres. This latter concept is mainly concerned with helping students and professionals to understand functions of genres and the contexts in which they are used (HYON, 1996). In SFL, however, the contexts and goals of its genre-related approach differs from ESP and NR, given that SFL has concentrated its efforts towards child and adolescent contexts, adult migrant English education, and also workplace training programs (HYON, 1996). Another contribution of these perspectives is the common goal of analyzing writing also by taking into account the diversity of both contexts and cultures (HYON, 1996; HYLAND, 2004b; CONNOR, 2011).

Among academic genres, the RA is the most studied one in English for Academic Purposes (EAP) (SAMRAJ, 2016). Swales (1990) has defined RAs as texts including a few thousand words that aim to report findings from investigations conducted by their authors. In recent years, there has been a growing number of studies using this genre to explore rhetorical issues such as preferred patterns and identification on how interactions occur across cultures and languages (SWALES, 1990; NWOGU, 1997; HYLAND, 2004a; MOTTA-ROTH; MARCUZZO, 2010; CONNOR; ENE; TRAVERSA, 2016; AL-KHASAWNEH, 2017; MAHER; MILLIGAN, 2019; MORENO, 2021).

The majority of these studies investigated the introduction section of RAs by using the create-a-research-space (CARS) model by Swales (1990), and abstracts. However, the remaining sections, i.e., methods, results, and discussion/conclusion have been little

explored (SAMRAJ, 2016). Some studies, however, have advanced the knowledge concerning this genre within different discourse communities and languages such as Spanish and Saudi Arabian (WILLIAMS, 1999; SAMRAJ, 2016; CONNOR; TRAVERSA, 2010; ALAMRI, 2017; MORENO, 2021), albeit at a small scale.

Given that most of studies conducted to analyze RAs included only English journals (SAMRAJ, 2016; MORENO, 2021), there is an emergence of studies to contrast RAs in English with other languages, considering the need of understanding the complexity of the negotiation between multilingual writers and readers (CONNOR, 2004a; SHELDON, 2011) within the same research community. Despite this emergence of investigations to understand conventions across cultures and languages, studies comparing all sections of RAs written in American English and Brazilian Portuguese are scarce (REZENDE; HEMAIS, 2004; HIRANO, 2009; BERNANDINO; ABREU, 2018).

The investigation on cross-cultural writing began with Kaplan's study (1966) that explored discourse-level organizational patterns of EAL learners as an attempt to understand to what extent their culture influenced the structure of their discourse. From his study, the field of Contrastive Rhetoric (CR) emerged to observe the rhetorical transference strategies from L1 to L2. However, after the critics made to field for adopting a stable notion of culture, Connor (1996) proposed a new term to name the field: Intercultural Rhetoric (IR). IR embraces a more flexible view of culture and constitutes the study of written discourse of individuals who have a common communicative purpose, for example, to publish a RA, but who do not share the same language (CONNOR, 2011).

Despite the hypothesis that different languages have different rhetorical systems, given that individuals organize their ideas (MORENO, 1997) differently, little research has compared rhetorical structure of RAs in languages other than English (HIRANO, 2009; REZENDE; HEMAIS, 2004; ALAMRI, 2020).

Most Brazilian studies on rhetorical and genre analysis evaluated only Portuguese RAs, including areas such as linguistics (BERNANDINO, 2012), psychology (BERNANDINO; ABREU, 2018), and only English including science popularization news (MOTTA-ROTH; MARCUZZO, 2010), academic book reviews (MOTTA-ROTH, 1997), and parts of RAs such as in agronomy (OTARAN, 2018), to mention a few. However, little has been studied on comparisons of American English and Brazilian Portuguese RAs. In 2004, Rezende and Herais studied the use of hedging in all sections of RAs from the field of health sciences area in American English and Brazilian Portuguese. Later, in 2009, Hirano compared the introduction of RAs from the English for Specific Purpose

Journal written in English and Brazilian Portuguese. The organizational patterns of RAs comparing American English and Brazilian Portuguese in several fields, such as life science, requires further investigation.

1.1 Purpose of the study

This study aims to compare the four sections (introduction, methods, results, and discussion/conclusion) of RAs written in English and Brazilian Portuguese published in two different medical journals.

1.2 Research questions

The research questions that guided this study are the following:

- a) What are the rhetorical moves used in the medical RAs published by a Brazilian Portuguese journal and in an American English journal, and how can these moves be contrasted?

- b) What are the differences and similarities observed in genre structure and some linguistic features of each section of both Brazilian Portuguese and American English medical RAs?

1.3 Justification of the study

The motivation for this study emerged from my personal interest in learning more about the writing of RAs in a Brazilian Portuguese medical journal published by the institution at where I work as an in-house medical translator. Moreover, I was interested in comparing this journal's RAs with those published in an American English medical journal.

There is a lack of studies comparing Brazilian Portuguese with American English, particularly, investigations including the analysis of whole RAs. This type of research is crucial for extending the current knowledge in cross-cultural studies, and for providing research-based pedagogical support to the writing classroom, and to assist people to publish.

Understanding how rhetorical organization works in RAs in American English and Brazilian Portuguese can help to grasp the significance of some of the challenges faced by authors from peripheral countries (KACHRU, 1996) who intend to publish (HIRANO, 2009) in different fields, such as medicine.

This study may expand the current knowledge on the area of cross-cultural studies and contribute with Language for Specific Purposes (LSP) teachers by giving them research-based resources to raise awareness among EAL learners of, for example, how discourse preferences and cross-culturally conventions function (CASANAVE; VANDRICK, 2003; CONNOR, 2004b) in Brazilian Portuguese and American English journals. The analysis of rhetorical organization of RAs may also add to the knowledge of editors, novice writers, and translators who work and deal with academic genres.

This Master's dissertation is divided in 5 chapters. This chapter (Chapter 1) introduces the study and shows its relevance, and Chapter 2 presents the theoretical background that supports this study. The method employed for data collection and analyses is reported in Chapter 3. Chapter 4 includes the study's results and discussion. Finally, in Chapter 5, the final remarks and conclusions are presented.

2 REVIEW OF THE LITERATURE

The current growth of internationalization of research activity and the pressure under researchers to communicate new knowledge and publish it in international highly ranked journals have turned academic writing in English into an asset. Publishing in international journals is linked to career advancement, obtain funding, and greater visibility of researchers within their discourse communities (SWALES, 1990; MENEGUINI; PARCKER, 2007; LEE; LEE, 2013; MONTEIRO; HIRANO, 2020).

There is a number of studies, especially in English, addressing the internal organization of academic genres that aim to help those who need to write for publication to comply with the conventions imposed by their discourse communities (SWALES, 1990; NWOGU, 1997; HYLAND, 2004b; MOTTA-ROTH; MARCUZZO, 2010; CONNOR; ENE; TRAVERSA, 2016; AL-KHASAWNEH, 2017; MAHER; MILLIGAN, 2019). Various discourse communities have their own conventions on how to produce and consume a variety of genres, and different disciplines and languages seem to have different conventions for genre production (e.g., research articles) (SWALES, 1990; CONNOR, 2011). These communities and writing conventions are shared by those who experience a set of social, academic, and professional activities (SANTOS; SILVA, 2016).

Findings from studies on discourse organization of RAs written in English have been crucial to provide help and benefit novice writers to meet the expectations of academic writing (MORENO, 1997; REZENDE; HEMAIS, 2004; HIRANO, 2009; SHELDON, 2011). However, EAL writers are disadvantaged in this aspect since “they have to compete for academic recognition in a language other than their own” (SHELDON, 2011, p. 238). Studies conducted to compare discourse organization of academic genres in English with others languages (TAYLOR; TINGGUANG, 1991; DUSZAK, 1994; FREDRICKSON; SWALES, 1994; MORENO, 1997; 2004; REZENDE; HEMAIS, 2004; HIRANO, 2009; MUR-DUEÑAS, 2011; SHELDON, 2011) have encouraged comparisons of academic discourse, especially on the influence of culture in writing; as in the words of Mauranen (1993, p. 4) “It seems fair to assume, or hard to contest, that culture influences writing habits in an important way”.

Although cross-cultural comparison studies are important for the success of novice writers, few studies have compared the discourse organization of academic genres from different discourse communities in American English and Brazilian Portuguese (REZENDE; HEMAIS, 2004; HIRANO, 2009). To contribute towards the expansion of the

range of fields studied and to fill this gap, this research compares RAs in the medical field in American English and Brazilian Portuguese.

The aim of this literature review is to present cross-cultural aspects of academic writing, particularly the writing of RAs. The review begins by presenting briefly the concepts of rhetoric and culture in intercultural rhetoric, and an overview of IR. The last section introduces studies that compared part or the entire research article in American English with other languages.

2.1 The concept of rhetoric

Rhetoric is defined as the art of persuading and “the art of effective discourse (*ars bene dicendi*)” (FIORIN, 2015, p. 20). In a general sense, rhetoric is the use of language to impress and influence others against a certain course of action. It is believed that rhetoric is as old as “language itself and the beginning of social and political life” (FREESE, 1926, p. vii).

According to Fiorin (2015), Roland Barthes established that the birthplace of rhetoric was the island of Sicily, and it dates back from 485 B.C. History reports that after the expulsion of tyrants Gelon and Hieron from Sicily (467 B.C.), many civil processes were instituted by the citizens who had returned from exile. These civil processes aimed at recovering the property belonging to banished citizens which had been illegally confiscated by the tyrants, who had distributed their properties to mercenaries and to populate Syracuse. Such civil disputes, which involved probate courts, were conducted using a new format of negotiation, and claimants needed assistance from others to persuade the juries. This assistance was supplied by the experts Corax and Tisias, who wrote speeches for their clients to memorize. They also prepared a system with instructions including organized general rules of practices for claimants to deal with questions appearing in the disputes. Later, such instructions and general rules were detailed by Corax in the first of the numerous handbooks of rhetoric, titled “Art”. Corax and Tisias are claimed to have been the founders of technical rhetoric; however, Aristotle, in his lost work “The Sophist,” gives the credit to the philosopher Empedocles (FREESE, 1926; FIORIN, 2015). The concept of rhetoric at that time may be defined in short as the art of persuasion. Therefore, those who grasp the rhetorician method would have the power to convince anyone (THE STANFORD ENCYCLOPEDIA OF PHILOSOPHY, 2012).

The sophist movement was composed by a group of new philosophers who intended to explain all possibilities of knowledge. No matter what area of knowledge sophists explored, language was crucial for them, especially for the great interest of Greek culture in language. The sophists saw themselves as both philosophers and rhetoricians. They also tended to see all language use as rhetorical. Nevertheless, not all sophists were rhetoricians. The first famous rhetorician was Protagoras, who encouraged the study of the meaning of words. He was also recognized as a true rhetorician and philosopher by other influential scholars, such as Plato and Aristotle, although they also had disagreements about Protagoras's work. In the view of sophists, language worked as the way to induce beliefs rather than encourage audiences to remain uncritical and be moved by the power of persuasion (BIZZELL; HERZBERG; REAMES, 2001, p. 23).

The sophist movement drew the attention of Socrates, Plato, and Aristotle. They tried to establish the boundaries between rhetoric and philosophy. Many writers such as Corax, Tisias, Gorgias, Licymnius, Evenus, Thrasymachus and others who preceded the work of Aristotle, had almost entirely devoted their work to forensic rhetoric. The creator of a systematic and scientific rhetoric was Aristotle (FREESE, 1926 p. 22; MORAES, 2005, p. 41).

It is believed that Aristotle was a more "academic" thinker on rhetoric than any of his predecessors. Although he did not have a public role as a rhetorician and there is no register of remarkable speeches written by him, he wrote extensively and in a systematic order about almost all areas of knowledge of the ancient world, and rhetoric was one of them. He claimed that rhetoric is "the art of the discoveries the means of persuasion available for any occasion" (BIZZELL; HERZBERG; REAMES, 2001, p. 32).

Aristotle's rhetoric is comprised of three books which feature the three forms of persuasive appeal: the first: the enunciator and how *éthos* (self) constructs the enunciation; the second: the analysis of the audience and how the audience receives the *páthos* (emotional response); and the third: the *lógos* (*discourse or reason*), and how it expresses arguments (FIORIN, 2015). Although Aristotle's contributions have influenced others and have been widely used by many scholars. For example, in 1966, Robert B. Kaplan defined rhetoric as the way through which people see and interpret the world, and how they think in the attempt to reach specific goals, which relates to Aristotle's concept of rhetoric (BIZZELL; HERZBERG; REAMES, 2001, p. 32).

Rhetoric continued to grow and change over the years due to influence received from medieval times, the Renaissance, and rhetorical movements over the centuries. In

the beginning of the twentieth century, rhetoric was quite forgotten, and had lost its prominent position as an academic discipline in European and American universities. However, throughout the century, rhetoric regained importance as an interdisciplinary theory of language and meaning.

In the first decades of the twentieth century, the wealthiest colleges in the United States began to encourage students to express themselves in writing as artists; their writing should be original in thought and style. Communication became a way of thinking about language and rhetoric, and a means for sharing social experiences. The interest in rhetoric was revived in English departments in universities in the fifties and sixties, and the neo-Aristotelian movement also emerged in the University of Chicago, where the interest in rhetoric was stronger (BIZZELL; HERZBERG; REAMES, 2001, p. 1184).

After the 70s, when the discipline of composition became more independent from literary studies, the association between composition and traditional rhetoric became stronger. In academic discourse, the analysis of academic genres favors the use of rhetoric analysis, i.e., the analysis of how discourse is built for communication purposes (SWALES, 1990). Gradually, the link between composition and rhetoric analysis has been strengthened, especially with the professionalization of composition, the development of graduate programs in the field, and the increasing number of researchers who study rhetoric from the point of view of composition (BIZZELL; HERZBERG; REAMES, 2001, p. 1184-5).

Modern rhetoric includes the choices that race and genders make in the use of language and communication across linguistic, cultural, and ideological borders (BIZZELL; HERZBERG; REAMES, 2001, p. 1183). Furthermore, modern rhetoric considers the existence of different discourse genres with specific purposes within discourse communities (MORAES, 2005; SWALES, 1990). Modern rhetoric scholars consider context and give genre a more central place. They also claim that “analysis of actual genres can clarify certain social and historical aspects of rhetoric that might otherwise be missed” (SWALES, 1990, p. 43). These concepts of modern rhetoric enable the study of cultural differences in a number of genres and present a pedagogical value by drawing the attention of students to rhetorical structures that tend to recur in specific-genre texts.

2.2 Culture in intercultural rhetoric

Culture has been one of the most controversial issues in today's world. One of the major critiques relates to the common view that culture is used to interpret individuals' characteristics and behaviors as part of assumed traits of their national or cultural groups (ATKINSON, 2013). The traditional definition by anthropologists of culture as "the way of life of people" leads us to speak, for example, of Brazilian culture, American culture and Chinese Culture (MATHEWS, 2000, p. 1). However, defining all Brazilians or Americans based on a single label (i.e., as presenting the same characteristics or behaviors) is limited, given the diversity intrinsically related to the intercultural communication, and to the current global interactions of individuals with other cultures.

Models of culture have emanated mainly from the field of anthropology. One of these models was presented / introduced by the British anthropologist Edward Burnett Tylor in his book, *Primitive Culture* (2016). For Tylor, culture is extremely complex and involves many aspects of life, such as art, moral, law, behavior, belief. In addition, he claims that culture is responsible for habits and the power of acting as part of a given society. Therefore, culture seems to have a great influence on how individuals perceive the world based on their perspective frame of reference, i.e., their beliefs, values, language and environment (KAPLAN, 1966).

The definition of culture in IR is a work in progress. Atkinson (2012), one of the main applied linguists who has investigated culture in the field of IR, claims that, so far, IR does not have a definitive concept of culture. He states that the concept of culture in Contrasting Rhetoric (CR), and therefore, by logic, also in IR, is a received view, that is, a view that considers culture as ethnic, national, and static. However, the concept of culture adopted by Kaplan is that culture leads people to think in a predictive way (ATKINSON, 2012).

Atkinson suggests that a view of culture based on the changing nature of global communication is necessary in the field (ATKINSON, 2004; CONNOR, 2011). He believes in Franz Boas's concept. Boas was a German anthropologist who originally conceptualized that culture is "inherently unstable, or simply stable-for-the-moment" (ATKINSON, 2012: p. 126). However, Connor (2011) states that although CR/IR often defines culture in the received mode, researchers have not considered differences in writing of students in a second language as resulting from their first language or national culture. In general, researchers explain these differences in writing as stemming from

multiple reasons, such as students' level of formal education, genre characteristics, and mismatched expectations between readers and writers. Certainly, these reasons affect writing but, undoubtedly, culture still matters, especially in the writing of particular discourse communities.

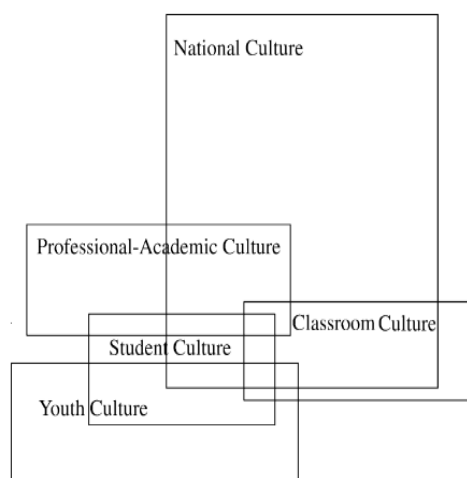
As a result of Atkinson's studies (2004, 2012) a number of useful culture concepts have been proposed for CR/IR: (1) postmodernist views (ATKINSON, 2004), which foreground the intense fragmentation of modern society; (2) neo-Marxist/cultural studies views (Frow & Morris, 1996 apud in Atkinson, 2004), which treats culture as sites of ideological struggle; (3) culture as process (ATKINSON, 2004), which views cultures as ever-changing, ever-evolving phenomena; (4) culture in the head versus culture in the world (Geertz, 1973 apud in Atkinson, 2004), which argues that culture is basically shared cognitive knowledge rather than anything external; and (5) large cultures versus small cultures (HOLLIDAY, 1999), which conceptualizes cultures in all shapes and sizes, from single classrooms, to institutions, to professional-disciplinary cultures, and examines their interactions.

Atkinson (2004) also wrote that there is still a need to define how culture as a product and culture as a process work, that is, how individual and social structures function, and how both structures relate to each other. Atkinson (2004) states that although individuals are influenced by society, their ability to adapt, make decisions, intervene, forget, and make mistakes influences how they will respond to the impact of the social systems.

According to Connor (2011), one of the most interesting concepts of culture for IR is the Holliday (1999) definition of 'large versus small cultures', as mentioned above. This concept states that in large and small social scenes there seem to be "methods of socialization, well-defined roles and hierarchies, and more or less durable norms, values, and social practices" (ATKINSON, 2004: p. 285). According to Holliday (1999, p. 1) "large signifies ethnic, national or international, and small signifies any cohesive social grouping". The motivation of his studies was to differentiate the small culture sense from the way that intercultural issues in Applied Linguistics seem to be dominated by the large culture concept.

Holliday (1999) established that equivalent small cultures - such as classrooms - can exist in different contexts and large cultures as an example, classrooms exist in different parts of the world with their own particular features, such as seating arrangements. He also stated that both large and small cultures are to some extent

connected among them. Atkinson (2004) adapted Holliday's diagram from the educational setting to represent how large and small culture interact (Figure 1).



Source: D. Atkinson / *Journal of English for Academic Purposes* 3 (2004) 277–289

Figure 1. Overlap of large cultures with medium and small cultures

The diagram shows how small culture, such as the student's culture, which may have its internal conventions and practices, overlaps with medium-sized culture, such as professional-academic cultures, which also overlap with a large culture, i.e., the national culture. This diagram helps to understand how complex these interactions can become in any setting.

Holliday (1999) claims that a small culture can be defined as a group that easily shares information to understand behaviors, beliefs, and concepts associated with a common understanding. Small cultures are constantly changing to provide meaning to specific needs of the group.

The academic writing conventions for any specific group or discourse community, such as the medical discourse community, can be based on such a view of culture. To Holliday (1999), discourse communities are a small culture, and the 'writing' activity has more to do with the small culture than with the group itself. He also believes that because small culture is related to how a set of a connected group's behaviors work, this argument allows one to think that this culture concept can be employed to any behavior process, not only to those connected to specific groups. This notion is clearly related to the dynamics of small culture concerning the writing of specific genres, i.e., the use of language in connection with a particular type of social activity (HOLLIDAY, 1999).

According to Connor (2011), the concept of culture is paramount for those dealing with writing and teaching of writing to understand the diversity in terms of age, gender, and the national and socio-economic background of every writer who normally needs to align their own experience with the conventions of their discourse community. In addition, it is also important to address diverse writing classrooms that include students from different disciplines, such as business, medicine, nursing, liberal arts and chemistry, for example. Language has a fundamental role in intercultural communication, especially in cross-cultural interactions.

2.3 Negotiation in the intercultural communication

Another concept of culture in IR defended by Connor (2011) that resonates with Holliday's concept is the need to consider "negotiation and communication among interlocutors" (Connor, 2011, p. 31). Connor highlights that, to fully understand each other, producers and consumers need to adjust to each other's styles and negotiate meaning.

The IR adopts this negotiation and communication approach as proposed by Michael Byram in his book *Teaching and Assessing Intercultural Communicative Competence* (1997). The schema proposed by Byram involves five different interdependent interaction principles. They are attitudes, knowledge, skills of discovery and interaction, skills of interpreting and relating, and the development of critical cultural awareness. The latter is the result of the interplay of the first four principles (p. 34). Regarding attitude, Byram (1997, p. 34) states that attitude is a precondition for intercultural interaction and that attitudes of curiosity and openness are needed to establish and maintain good social relations. Byram (1997) divides knowledge into two categories: the declarative knowledge, which refers to information about social groups and one's country, and the procedural knowledge, which is how to act in particular situations. The principle of the skills of discovery is defined by an important component, since the interaction with others from different social groups and cultures is paramount for intercultural learning. The skills of interpreting and relating lead to "pre-existing knowledge gained through formal or other types of education, and they do not necessarily involve...interaction..." (CONNOR, 2011, p. 34). The fifth principle, critical cultural awareness, therefore, is a consequence of the previous four. The importance of these principles to IR is the ability to lead teachers and students to think carefully about their

first language practice and how such practice gives information about their current language skills.

Byram (1997) states that regardless of the linguistic competence in a foreign language, when a person is interacting socially with someone from a different country (other), they need to bring to the table substantial knowledge about the country and some knowledge about its current events, for example, political climate. He mentions the concept of the “intercultural speaker”. Although the concept is mainly for spoken purposes, Connor (2011, p. 34) states that “it has important connections with intercultural rhetoric, which also views interactions as an integral part of communication”. She mentions that interaction is key for one to become an intercultural communicator, and understanding how individuals from different cultures interact is a central part of the learning process (CONNOR, 2011). Byram (1997) claimed that the success of interaction can be achieved when there is an effective exchange of information, and also by establishing and maintaining human relationships. In IR, applying this concept to writing may help writers to assimilate and associate relevant information in order to make culturally informed choices to address their discourse community’s expectation. (CONNOR, 2011)

Connor (2011, p. 34) claims that culture works in IR by “recognizing large cultures but values small cultures; it acknowledges individual variations; and it focuses on the give-and-take in intercultural interactions”. In IR, the goal is to balance old and new thoughts about culture, specially by considering the stability of culture in small and large cultures, and that traits of culture changes as time passes, due to the interactions among cultures, being large or small. In this study, the culture concept adopted is the large and small cultures.

2.4 Overview of intercultural rhetoric

Intercultural rhetoric (IR) is “the study of written discourse between and among individuals with different cultural backgrounds” (CONNOR, 2011, p. 1). The IR compares writing across languages for signs of cultural influence, and ultimately, for pedagogical purposes (ATKINSON, 2012). IR has evolved from Contrastive Rhetoric (CR), which was introduced by the study of the applied linguistics Robert B. Kaplan in 1966. Kaplan’s study was a systematic analysis of the hypothesis that an individual’s first language and culture influence the structure of his/her discourse (CONNOR; ENE; TRAVERSA, 2016).

2.5 From contrastive to intercultural rhetoric

To enable a better understanding of IR, the following sections present contrastive rhetoric (CR), the criticism against CR that influenced the evolution of CR to IR, the definition of the concept of IR, as well as how IR has progressed so far.

2.5.1 Contrastive rhetoric

Contrastive rhetoric (CR) began with the studies by the linguist Robert Kaplan in 1966. Kaplan's main concern was about issues faced by EAL students in organizing their academic texts. He claimed that international students who had learnt the syntactic structure of English language continued to demonstrate limitations to write their papers, thesis and dissertation. According to Kaplan, although students could write a full report, their production seemed to lack organization, cohesion and, to some extent, focus. This lack of focus is understood by Kaplan as the adoption, by second language students, of a rhetoric and sequence of thought that is different from the ones expected by English native readers (KAPLAN, 1966).

In his classical paper "Cultural thought patterns in inter-cultural education" (1966), Kaplan highlights the function that paragraphs follow in a division that gives the reader the signal that the material follows a unit of thought. In English, he claimed, speakers and readers appear to expect a paragraph division that follows a linear development, i.e.,

an English expository paragraph usually begins with a topic statement, and then, by a series of subdivisions of that topic statement, each supported by example and illustrations, proceeds to develop that central idea and relate that idea to all the other ideas in the whole essay, and to employ that idea in its proper relationship with the other ideas, to prove something, or perhaps to argue something (...) The English paragraph (...) may state a whole series of examples and then relate those examples into a single statement at the end of the paragraph (KAPLAN, 1966, p. 4-5).

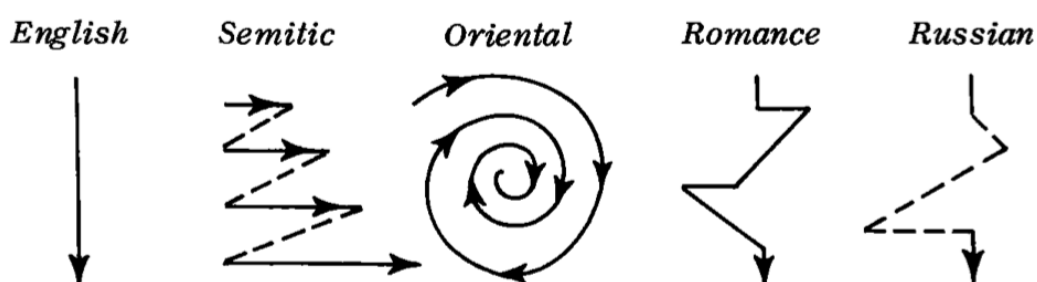
To investigate his main concern, Kaplan conducted a study to analyze the writing of learners' second language and attempted to figure out to what extent their culture influenced the structure of their discourse. In his study, 700 compositions written in English by foreign students were analyzed.

After a first screening, 100 compositions were excluded because Kaplan considered they represented a too small linguistic group to be recognized as significant.

Thus, the final sample of Kaplan's investigation included 600 compositions that represented three basic language groups. His paper included a few examples to present the differences in thought pattern of EAL students.

First, he analyzed two compositions written by an Arabic-speaking (Semitic) student in English to illustrate parallelism. He explained that Semitic writing includes a "complex series of parallel construction, both positive and negative" (KAPLAN, 1966: p 6). Subsequently, other examples included one composition by a Korean-speaking student to illustrate the "oriental writing by indirection" (KAPLAN, 1966: p 10), i.e., a tangential view, because in this type of writing the subject is rarely approached directly.

After that, he presented a translation from a French professional translator, one composition by a French-speaker, and another composition from a native speaker of Spanish to illustrate a "much greater freedom to digression or to introduce extraneous material...than in English" (KAPLAN, 1966: p 12) from speakers of these romance languages. Some paragraph patterns he found were graphically represented using the following diagram, which became widely known as Kaplan's Doodles (Figure 2):



Source: Kaplan 1966, p. 15.
Figure 2. Kaplan's Doodles

Kaplan claimed that the pattern of paragraphs should be further studied and compared with the pattern of English to enable the creation of practical means to teach structures for non-native users of English (KAPLAN, 1966). In his paper, however, he was clear that more accurate and clear descriptions were required before the establishment of a contrastive system.

In addition, he stated that the "art of learning a particular language is the mastering of its logical system" (KAPLAN, 1966, p. 14). Kaplan pointed out that teachers who teach paragraph structure to second language students, whether for reading or composition, need to be aware of differences in paragraph orders in different languages, and they

must present / introduce such differences to students. With that, to Kaplan, CR appeared as an important tool to be taught and to develop rhetorical awareness among EAL writers.

In his paper, he further detailed the advantages of CR, claiming that the field may help students in international contexts to respond to educational demands. In addition, Kaplan indicated that CR is useful to help students to grasp cultural aspects in different structures of the text, and also to improve not only their knowledge on grammar and acquired new vocabulary, but mainly unit structures within specific contexts. In Kaplan's words: "applied linguistics teaches the student to deal with the sentence, but it is necessary to bring the student beyond that to a comprehension of the whole context" (KAPLAN, 1966, p. 15).

Since the publication of Kaplan's seminal "Doodle" paper (CONNOR, 1996), CR studies analyzing writing across languages and cultures from different areas have contributed significantly to further the understanding of preferred patterns of writing in a variety of EAL writing classes (CONNOR, 2002, 2004ab). CR has expanded from the analysis of paragraphs of EAL students' composition to the interdisciplinary area of applied linguistics including both linguistics and rhetorical theoretical perspectives (CONNOR, 1996, 2002).

Studies on CR have contributed to the English for Academic Purposes (EAP) field, which is defined as the teaching of English with the goal to help learners who study and research using the English language (CONNOR, 2004a). EAP students have benefited from the studies on CR because this area of study has improved their cultural sensibility, and has offered them a type of mapping on how to write academic papers (LI, 2008).

2.5.2 Criticism to contrastive rhetoric

Despite contributions and developments in CR within the past 30 years, its focus on the study of contrasting and differences has generated significant criticism (CONNOR, 2002). The main critics of CR have been Spack (1997), Zamel (1997), Scollon (1997), and Kubota (1999). They claim that CR lacks an accurate sensibility in terms of culture and promote the idea of superiority of Western writing (CONNOR, 2002; LI, 2008).

Spack (1997, p.765) claimed that CR contributed to the "process of labeling students". She argues that the way that second language students have been classified, particularly in English studies, as, for instance, limited and foreign, does not add anything to their development and reinforces the "powerful position of rhetoric" (SPACK, 1997, p.

765) of the U.S. over other languages. Spack's main criticism is concerned with the idea that individuals are underestimated by English teachers due to the influence of their culture on the language learning process. She also pointed out that CR has perpetuated the notion that one student cannot think critically due to the nature of their education. In addition, Spack uses an example based on Chinese students whose education seems to be more focused on moral regulation and behavior than on the stimulation of students to develop a method of critical thinking. Atkinson (2012: p 125) challenges such critique by attesting that it "does nothing to help us understand complex phenomena such as language and culture". One cannot deny that the education of students from non-English speaking backgrounds involves specific literacy practice, writing conventions, expectations of instructors, and community. In addition, the way that writers see the world may be shaped by their culture, and this view is often different from those writers who were born and raised in English-speaking countries (Li, 2008).

Zamel (1997) also criticized CR, claiming that this area of studies promoted the belief that EAL students are unable to raise intelligent questions, and less capable than native counterparts of thinking critically and evaluating beliefs and values than their English-speaking counterparts. She also challenges the ideas of teaching students writing by raising awareness about conventions and lexico-grammatical features. Zamel proposed that CR should be replaced by the field of transculturation because it "reflects precisely how languages and cultures develop and change-infused, invigorated, and challenged by variation and innovation" (p. 350). Nevertheless, her idea of homogenization is challenged by Li (2008) due to Zamel's consideration (1997) that globalization has accommodated cultural differences. Connor, Nagelhout e Rozycki (2008, p. 3) resonates Li's comment by establishing that "it is unfortunate that these critics have begun referring to contrastive rhetoric as if it had been frozen in space".

The critique of Scollon (1997) claimed that CR relied too much on Chinese-English comparison, a fact that reduces the field's goal of discovering a broader range of issues related to diversity based on cultural situations of students with different origins and backgrounds. He also suggested that CR would benefit if it included comparisons of different structures within different genres in order to understand the different complexity of internal contrast. In his paper, he suggests the comparison of, for example, lyrical poetry with dramatic poetry. As the previous critics, Scollon believes that one's own language structure and culture should not be used as factors that influence how one may write. In addition, he claimed that students' writing is not affected by their language and

culture. Scollon claimed that the function of genres, e.g., in terms of structure, should be considered as insignificant.

Later, Kubota (1999) published an article to question the claim that Asian culture is often described as one that gives value to “collectivism and discourages self-expression, creativity and critical thinking, whereas, Western culture displays the opposite characteristics” (1999, p. 10). Similar to Spack (1997), Kubota emphasizes that the cultural dichotomy promoted by the published literature in Applied Linguistics has contributed to reinforce the discourse of creating power relations in which the dominant group defines the subordinate group as an “exotic Other” (Kubota, 1999, p. 11), which in her words represents “the West versus the East” (Kubota, 1999, p. 15). According to Kubota (1999), this cultural dichotomization has been promoted by areas of studies such as CR. She also criticizes the use of culture as an explanation for teaching and learning skills in EAL due to these areas of study overemphasizing cultural differences in terms of rhetorical preferences, and the approach used that all members of a certain culture think and behave equally. Her main critic is that Japanese studies have been stereotyped and misinterpreted specially based on orientalist discourse, but without robust research evidence for such claims. Kubota’s main critique is against the “cultural representation of the concept of discourse and power/knowledge” (KUBOTA, 1999, p. 15). However, she did not support the statement that culture difference does not exist; she believes that humans have different experiences and voices that might not be shared with all members of the same society and who share the same culture. In addition, her point is that this promotion comes from the colonial construction of the Other in terms of culture, race and ethnicity. Another issue emphasized by Kubota is that the Western culture has attempted to promote their unique ability of extending knowledge, compared with the Eastern culture, which is more involved in conserving knowledge.

The majority of critiques to CR seems to romanticize culture differences and give little attention to the students’ and authors’ needs of learning how to write for academic and publication purposes. Teaching differences in writing based on culture seem to be a useful approach to improve students’ understanding in terms of dominant codes, writing expectations, and how to respond to them. (CONNOR, 2011, MONTEIRO; HIRANO, 2020)

As an EAP teacher, I believe that students should learn about conventions and differences that exist in writing in L1 and L2. This knowledge may help them to improve their awareness and learn to apply, in practice, what is expected by their discourse

communities and gatekeepers. The lack of this knowledge may reduce their ability to get published internationally. Undoubtedly, further exploratory approaches are warranted to help students and writers to reflect critically on the issues of power and knowledge. However, at the same time, it is crucial to teach them how to comply with existing conventions to achieve their ultimate goal of being published, recognized, and cited by their research community (CONNOR, 2011; BHATTI; MUSTAFA; AZHER, 2019; MONTEIRO; HIRANO, 2020).

It is important to highlight that all critiques toward CR lead to improvements in the field, including the suggestion to change the name of the area to IR.

2.5.3 Intercultural rhetoric

A US-based Finland applied linguist named Ulla Connor became the leading promoter of CR studies. In 2002, she wrote a paper titled 'New Directions in Contrastive Rhetoric' suggesting the need to establish new ways to expand the CR to reduce the stigma that the area was frozen in time in terms of culture.

Connor's suggestion included changing Contrastive Rhetoric to Intercultural Rhetoric (IR), given the negative connotation and critiques that CR had received. Some of these criticisms were acknowledged by Kaplan himself, especially concerning that the area was considered static and associated with structural linguistic and behaviorism (CONNOR, 2004b). The author also reported that contributions made by the CR were totally ignored by postmodern and critical pedagogy writers. The new term IR, in Connor's words, would help "[t]o distinguish between the often-quoted 'static' model and the new advances that have been made, it may be useful to begin using the term intercultural rhetoric instead of contrastive rhetoric to refer to the current dynamic models of cross-cultural research" (CONNOR, 2004b, p. 272). In addition, according to Connor, the new term would include trans-cultural studies by enabling the comparisons of concept A in culture one and two. The studies of IR adopt the traditional linguistic approaches for text analysis such as genre analysis, corpus linguistic analysis, and suggest the introduction of ethnographic approaches to understand better the language in interactions.

IR is an umbrella term that better describes the trends on writing across languages and cultures (CONNOR, 2004b; ATKINSON, 2012), and studies of interactions of writers from a variety of languages, culture, and social backgrounds who need to communicate through speaking and writing (ATKINSON, 2012). IR analyzes the influence of first

language, culture and education on the writing of texts. It analyses the “inters”, i.e., the “in-between” spaces in which negation and accommodation occur among cultural/linguistics worlds (CONNOR, 2011).

According to Connor (2011), IR assumes that (1) the writing study should not be limited to texts but needs to consider the surroundings of social contexts and practice; (2) national culture and disciplinary culture interact in complex ways; and (3) accommodations and negotiations in inters “in-between” spaces are needed in cultural/linguistics worlds.

The studies on cross-cultural writing have had an impact on teaching of EAL students. Since the observations made by Kaplan (1966) on cultural differences in EAL writers, a number of studies have focused on cross-cultural issues of writing and on how to teach students to write in different contexts, and even writing for research publication purposes. (CONNOR, 2011)

It is important to mention that several factors are believed to affect reading and writing of EAL students. Students’ first language and cultural backgrounds are not solely responsible for predicting their performance. Other factors, such as their family’s level of education and socioeconomic factors may affect their performance (CONNOR, 2011).

According to Atkinson (2012), “IR is a working- in- progress” (p. 124), and the difference between IR and CR is relevant. He also states that the initial insights proposed by Kaplan should be maintained, because if languages differ at a linguistic level, they may differ at a textual organization level. This difference should be noticed by considering complicating factors such as context, genre, discourse community, individual preferences and experience, and cross-linguistics influence.

There are studies from Europe, the Middle East, and Asia reporting differences in the occurrence and sequence of moves and rhetoric structures in a number of genres. The study of genre is highlighted as the analysis of texts, and to date, a number of studies in CR/IR (e.g. CONNOR, 2000; MORENO, 2004; HIRANO, 2009; MOTTA-ROTH; MARCUZZO, 2010) have used Swales’ CARS model (1990) and other models based on Swales’ model. For example, the model by Nwogu (1991, 1997) to study popularized medical texts, medical articles, and to explore other types of texts such as grant proposals, science popularization news and oral presentations from different areas and across languages.

The use of genre analysis for IR studies have forced researchers to compare “apple with apples” (CONNOR, 2004a, p. 297), and benefits of this approach include the

analysis of structures and rhetorical functions of a variety of academic and professional genres. These studies are relevant to help to identify possible patterns used in languages under comparison, and the results may be relevant for pedagogical purposes (CONNOR, 2004a) and for teachers to guide their students in the writing process (CANAGARAJAH, 2002).

2.6 The Research Article and studies on research article comparing English with other languages

The establishment of scientific Research Articles (RAs), although in different form that we are currently used to, dates back from 1665 with the publication of the first scientific journal, the *Philosophical Transactions of the Royal Society* (SHAPIN, 1984). In the beginning, RAs were developed as informative and quite informal letters that scientists wrote to each other (SWALES, 1990). The first attempts to institutionalize scientific knowledge and popularize science were from Robert Boyle, who conducted experiments in pneumatics to test air pumps between 1665 and 1666 (SHAPIN, 1984). According to Shapin, Boyle proposed a witnessing experience claiming that an experience witnessed by only one individual was not significant. Boyle then presented his experience before an audience at the Royal Society, and in his opinion, the more witnesses present, the better. He believed that experiences extended to all individuals could be considered as significant and reliable (SHAPIN, 1984; SWALES, 1990).

The writing of RAs is approached in detail by Swales' in "Genre analysis" (1990), which presents an overview of concepts correlated to academic discourse, including the construction of RAs. Swales (1990) proposes that genres are more than texts; in his words "genre-type communicative events consist of texts themselves (spoken, written, or a combination) plus encoding and decoding procedures as moderate by genre-related aspects of text-role and text-environment" (SWALES, 1990, p. 9). Swales introduced the CARS (Create a Research Space) model, which was updated in 2004 to better precise the findings of studies conducted after the publication of the first CARS model. Swales' studies also focused on furthering knowledge on non-native English speaker writing of RAs (SWALES, 1990; 2004).

A few years after the first studies by Swales that included articles from different fields, Nwogu (1997) published a paper detailing the medical RA. Nwogu extended Swale's model to analyze the whole medical RA based on 15 articles from five well-

known medical journals - *The Lancet*, *The British Medical Journal (BMJ)*, *The New England Journal of Medicine (NEJM)*, *The Journal of Clinical Investigation (JcLInv)*, and *The Journal of the American Medical Association (JAMA)*. His analysis identified that a medical RA often includes 11 moves, and each move also includes sub-moves. The Nwogu's ordering of moves and their constituent elements are described in the method section. Of these moves, some of them occurred in all the corpus (2, 3, 4, 5, 7, 9, 10), and move 11 occurred in all but one article. Therefore, Nwogu classified them as "normally required moves" (NWOGU, 1997, p. 124). The remaining moves (1, 6, 8), which occurred less often in the corpus, were classified as "optional moves" (NWOGU, 1997, p. 124).

Given the need to understand the conventions and features of academic discourse within different communities, RAs from different areas and languages have been analyzed by a large number of studies particularly based on the genre perspective (e.g. MAHER; MILLIGAN, 2019; AL-KHASAWNEH, 2017; CONNOR; ENE; TRAVERSA, 2016; HYLAND, 2004a; MOTTA-ROTH; MARCUZZO, 2010; SAMRAJ, 2016; HIRANO, 2009; NWOGU, 1997). Studies based on genre, including Ras, have been conducted in a variety of fields, for example, Applied Linguistic (SHELDON, 2011; HIRANO, 2009; RUIYING; ALLISON 2003), Linguistics and Literature (BHATTI; MUSTAFA; AZHER, 2019), Economics (MORENO, 2004; MAURANEN, 1993), Business Management (MUR-DUEÑAS, 2011), Social Science (LU; CASAL; LIU, 2020), Biochemistry (KANOKSILAPTAHM, 2007a), Health Science (MARTIN; PEREZ, 2017), and Medicine (NWOGU, 1997).

Part of these studies has compared specific sections and the whole article in English with other languages. For example, the study by Taylor and Tinguang (1991) contrasted RA introductions written by Anglo-Americans writing in English, Chinese writing in English, and Chinese writing in Chinese. Mauranen (1993) studied the rhetoric of Finnish and English academic papers. Duszak (1994) compared RA introductions in English and Polish.

Other studies comparing intercultural rhetoric strategies in different languages were conducted by Moreno (1997, 2004), focusing on metatext, i.e. elements which primarily serve the purpose of textual organization, such as connectors, and the use of hedging in RAs written by English and Spanish writers. Another investigation was conducted by Sheldon (2011), who analyzed RA introductions written by English L1 and L2, and Castalian Spanish L1 writers. Kanoksilapatham (2007b) also investigated rhetoric

moves in the whole RA written in English and in Thai. Hirano (2009) conducted a study that compared RA introductions written in English and Brazilian Portuguese.

Abstracts and introductions are by far the most studied sections of RAs (SAMRAJ, 2016), and few studies have been conducted to compare English and Brazilian Portuguese across disciplines (HIRANO, 2009; REZENDE; HEMAIS, 2004).

Rezende and Herais (2004) conducted a study comparing Brazilian Portuguese and English, and it included RAs from the medical field to investigate the use of hedges. The results demonstrated that Brazilian authors often avoid expressing gaps and doubts in Portuguese. In addition, she observed an overuse of hedging strategies in RAs written in English by Brazilian writers compared with native-English speakers. Another study was conducted by Hirano (2009), and IT used the CARS model to investigate a corpus including 20 RAs, 10 in English and 10 in Portuguese, from the field of Applied Linguistics. Her study reported differences in rhetorical organization in both languages, and highlighted the tendency of Brazilian authors to be solidary and avoid conflict with the local discourse community. For example, while Brazilian RAs tended not to include clearing statements of the gap in previous research, American authors often did. In Hirano's corpus, almost all RA introductions in English followed the model proposed by Swales, and those in Brazilian Portuguese did not. This difference is one of the reasons that a culture difference exists in the discourse organization between Brazilian and American Scholars in the Applied Linguistics field.

Analyzing the entire RA from specific disciplines in a multilingual perspective for research and publishing practice (KUTEEVA; MAURANEN, 2014) may contribute to further the understanding of discourse preferences and conventions. IR analysis may help Language for Specific Purposes (LSP) teachers to raise metacognitive awareness among their students by helping them to understand that writing is about "making choices" (LEKY, 1991).

Based on this literature review, topics that need further investigation are the following: a) the comparison of the whole research article between English and Brazilian Portuguese; b) the improvement of the understandings on academic writing conventions in English and Brazilian Portuguese in specific fields, such as general medicine; c) the investigation of intercultural differences, if any, in the discourse preference in small cultural groups; such as physicians.

3 METHODS

3.1 Method of data collection and analysis

The present study analyzes medical RAs written in American English and Brazilian Portuguese using a genre-based framework proposed by Nwogu (1997). This chapter begins by presenting the genre model employed in this study, followed by the explanation of the research design and coding of moves. Subsequently, the description of the corpora is provided, along with a brief general comment of the two journals used in this study.

3.1.1 Nwogu's model

The model proposed by Nwogu (1997) for medical RAs presents 11 moves that include the following discourse functions often found in each section of RAs in the medical field (Table 1)

Table 1. Ordering of moves within an RA

Discourse function	Section
1- Begin by providing some background details about the subject matter of the research investigation; 2- Conduct a brief review of previous studies; 3- Introduce the new research and state research objectives;	<i>The Introduction Section</i>
4- Identify the source of data and the method adopted in collecting them; 5- Discuss the methods adopted in the analysis of data; 6- Discuss the statistical procedures adopted in the analysis of data, if any;	<i>The Method Section</i>
7- Discuss results which are consistent with the objectives of the study; 8- Discuss results which deviate from expected outcomes;	<i>The Result Section</i>
9- Discuss the main results and their significance; 10- Explain and justify results and approaches adopted in achieving them; 11 - Provide a conclusion and indicate implications of the research.	<i>The Discussion Section</i>

Source: Nwogu, 1997, p. 124.

The reason for this identification is to determine the types of move that can occur in each section of original RAs. A detailed description of moves and their constituent elements can be seen in Table 2.

Table 2. Nwogu's' ordering of moves and their constituent elements

Moves of each section of articles	Elements
<i>Introduction</i>	
Move 1:	Presenting Background Information: (1) Reference to established knowledge in the field. (2) Reference to main research problems.
Move 2:	Reviewing Related Research: (1) Reference to previous research. (2) Reference to limitations of previous research.
Move 3:	Presenting New Research: (1) Reference to research purpose. (2) Reference to main research procedure.
<i>Methods</i>	
Move 4:	Describing Data-Collection Procedure: (1) Indicating source of data. (2) Indicating data size. (3) Indicating criteria for data collection.
Move 5:	Describing Experimental Procedures: (1) Identification of main research apparatus. (2) Recounting experimental process. (3) Indicating criteria for success.
Move 6:	Describing Data-Analysis Procedures: (1) Defining terminologies. (2) Indicating process of data classification. (3) Identifying analytical instrument/procedure. (4) Indicating modification to instrument/procedure.
<i>Results</i>	
Move 7:	Indicating Consistent Observation: (1) Highlighting overall observation. (2) Indicating specific observations. (3) Accounting for observations made.
Move 8:	Indicating Non-Consistent Observations:
<i>Discussion</i>	
Move 9:	Highlighting Overall Research Outcome:

continues...

...continuation

Move 10:	Explaining Specific Research Outcomes: (1) Stating a specific outcome. (2) Interpreting the outcome. (3) Indicating significance of the outcome. (4) Contrasting present and previous outcomes. (5) Indicating limitations of outcomes.
Move 11:	Stating Research Conclusions: (1) Indicating research implications. (2) Promoting further research.

Source: Nwogu, 1997, p. 135.

3.2. The corpus

A total of 20 original RAs published in 2019 (10 in each language) were randomly selected. The criteria for journal selection followed the characteristics suggested by Nwogu (1997), that is, representativity, reputation and accessibility. In terms of representativity, the journals selected were published by well-known and referral hospitals, one in Brazil (Hospital Israelita Albert Einstein) and one in the United States of America (Mayo Clinic). Concerning reputation, both journals are peer-reviewed and indexed in MEDLINE/PubMed³. The accessibility can be attested by on-line availability of the journals.

The total corpus size was established using the tool AntConc (ANTHONY, 2019) for Macintosh OS X 10.6-10.12 (3.5.8) (Waseda University, Japan). The corpus included about 96,760 running words (Table 3). The values described in Table 3 are for informative purposes only for the reader, given the difference in terms of proportion of the number of words (tokens) and number of different words (types) in the corpus (BIBER, 1993).

Table 3. Corpus size, word tokens and word types

Research article	Word tokens (# words)	Word types (# different words)
einstein – São Paulo	45,914	15,302
Mayo Clinic Proceedings	50,846	12,038
Total	96,760	27,340

In the present study, to define the sample representativeness during the design of the corpus, the researcher considered factors such as genre (research article), field (general medicine), year of publication (2019), and source features (two medical journals

published by two renowned hospitals, one in the USA and the other in Brazil). For this reason, the issue of proportional sampling, i.e., the number of observations, is not appropriate to be considered in this study, since finding a balance between the number of tokens and types was not the goal.

3.3 The journals

The following sections present information on both Brazilian and American journal from which papers were selected to compose the corpus of this study.

3.3.1 The Brazilian journal: *einstein* (São paulo)

einstein (São Paulo) is the official scientific publication of the Albert Einstein Research and Education Institute at Hospital Israelita Albert Einstein, in São Paulo, Brazil. This is an online only (<https://journal.einstein.br>), open access, and continuous publication that has been published since 2003. The journal is designed to communicate contributions of the health scientific community from General Medicine, and it accepts contributions from authors worldwide. Manuscripts to the journal may be written both in English or Portuguese. The journal is indexed in MEDLINE/PubMed, SciELO, Scopus, PubMed Central, EMBASE and currently is in the Emerging Sources Citation Index (Web of Science - WoS). This indexing database contains journals that are under evaluation for inclusion in the classical citation indexes of the WoS and this is the first step that any journal should take before receiving an impact factor (CLARIVATE, 2021).

einstein (São Paulo)¹ is a peer-reviewed journal that offers a complimentary translation and an editing service for authors submitting their contributions to the journal. Therefore, if an author submits a paper in English or in Portuguese, the version in the other language will be provided free of charge by the journal, as well as the editing of the language of the original submission.

The journal's sections include Original Article, Health Economics and Management, Case Report, Review, Reviewing Basic Sciences, Learning by Images, Medical Developments, and Letters to the Editor. The journal also publishes a subsection of thematic reviews.

¹ Further information related to the journal is available in the journal's instruction for authors homepage at <https://journal.einstein.br/instructions-for-authors/>.

Based on information available in Web of Science (2021), **einstein** (São Paulo) published 556 articles between 2016 and 2020. Of these, 186 were published by authors linked to the journal sponsoring institution, i.e., the Hospital Israelita Albert Einstein, and the remaining 370 articles were from different institutions in Brazil (506), USA (21), Portugal (15), Spain and the Netherlands (3), Australia, Canada, and Turkey (2), Belgium (1) (see Figure 3).

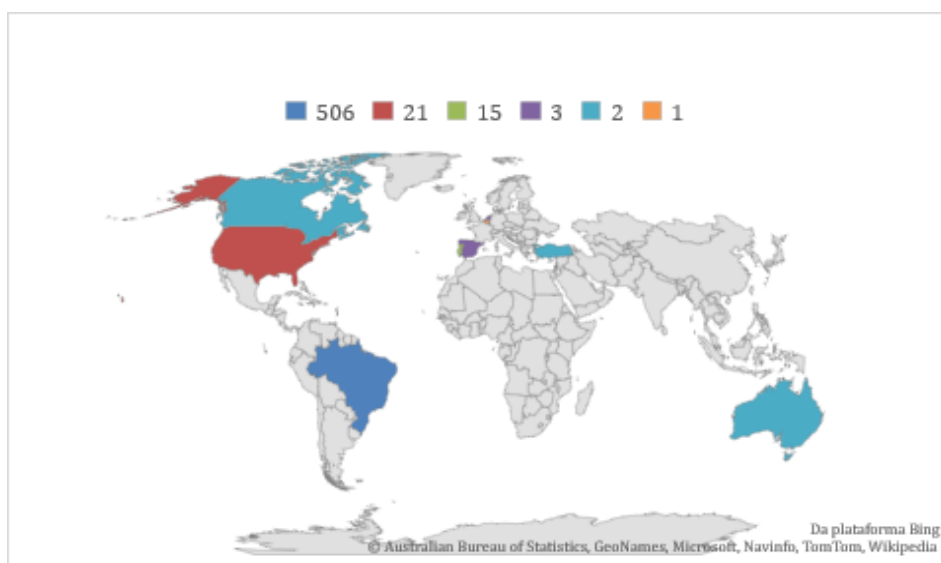


Figure 3. Number of einstein (São Paulo) publications between 2016 and 2020 based on authors' affiliation countries

3.3.2. The American Journal: Mayo Clinic Proceedings

Mayo Clinic Proceedings² is a publication sponsored by the Mayo Clinic - one of the largest not-for-profit academic health systems in the United States located in different states of the country such as Arizona, Florida, Minnesota, and also internationally, for example, London and Abu Dhabi. This is a peer-reviewed journal published continuously since 1926.

The journal accepts submissions in General Medicine, and it is indexed in MEDLINE/PubMed³, Scopus, EMBASE, and Web of Science – WoS; Mayo Clinic

² Further information related to this journal is available in the journal's instruction to authors homepage at <https://www.mayoclinicproceedings.org/content/authorinfo>.

³ MEDLINE® is one of the most comprehensive databases for indexing biomedical literature. To be considered for analysis and indexing in this database, a journal needs to comply with several requirements, such as quality of content, quality of editorial board, geographic cover, and audience of the database (NATIONAL LIBRARY OF MEDICINE, 2020).

procedures impact factor is 7,199 (Web of Science, 2021). Submissions to the journal must be in English only, and the journal welcomes contributions that focus on Clinical and Laboratory Medicine, Health Care Policy and Economics, Medical Education and Ethics.

Mayo Clinic Proceedings accepts the following types of submissions: original articles, review articles, solicited review, concise review for clinicians, understanding diseases, my treatment approach, clinical practice guidelines, special articles, commentary, perspectives and controversies, brief report, editorials, letter to editors, medical images, thematic review, case reports, residents' clinics.

According to information available in Web of Science (2021), Mayo Clinic Proceedings published 1,836 articles between 2016 and 2020 (Figure 4). Of these, 1,007 were published by authors linked to the journal sponsor, the Mayo Clinic. The other 829 articles were published by authors from other institutions in the USA (1,510), as well as in England (63), Canada (44), Italy (41), Spain and Australia (39), China (30), France (25), Taiwan (23), and Germany (22).

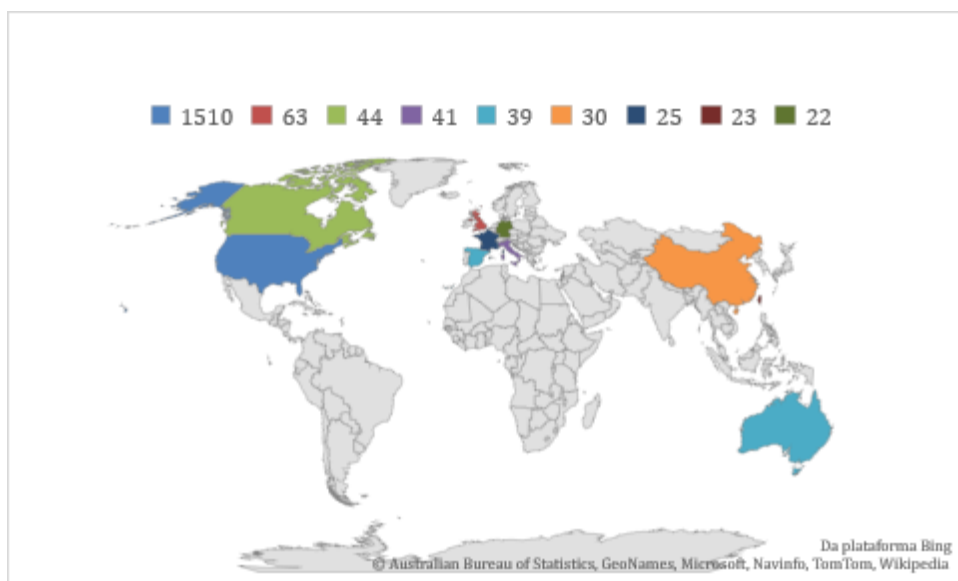


Figure 4. Number of Mayo Clinic Proceedings publications between 2016 and 2020 based on authors' affiliation countries

3.4. Research Design and Coding moves

Genre analysis was employed to identify differences and similarities between the two corpora of Brazilian Portuguese and American English journals. Move identification requires a systematic identification and coding of all moves (KANOKSILAPATHAM, 2007a). Moves were defined by following Swales' concept (1990, 2004) that describes

them as functional units of different lengths classified based on the purpose of the text, and the steps are defined as the choices that writers made to perform moves.

In the first phase of this study, three individuals (two physicians and the researcher) coded the corpus, which included 3 articles from each journal, totalizing 6 articles to assess intercoder reliability of move assignment (Figure 5).

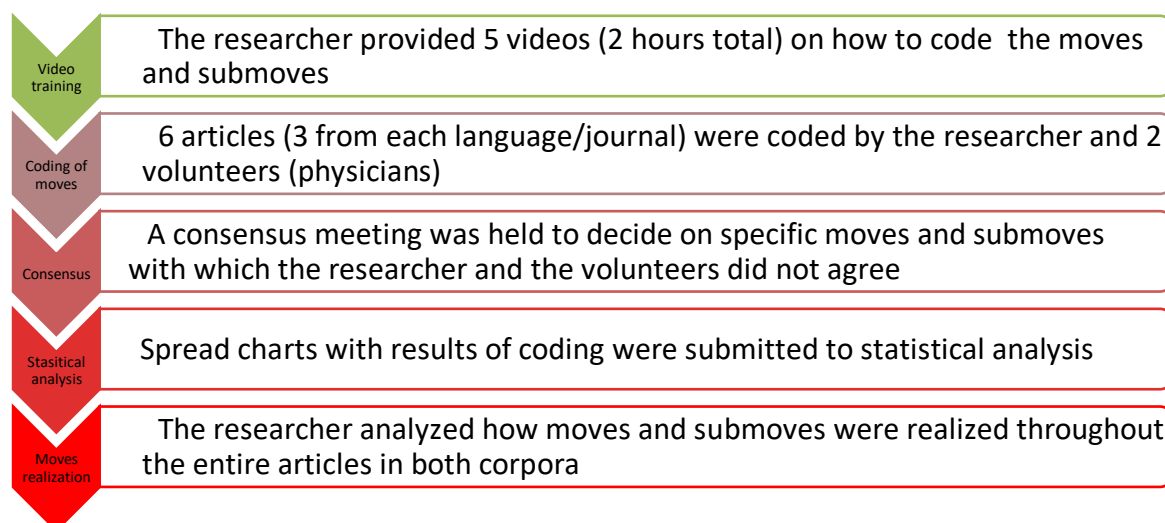


Figure 5. First phase of the research design

In the second phase, one of the physicians left the study due to personal reasons. The analysis of the 14 remaining articles (7 from each journal) were conducted by the researcher and the other volunteer physician (Figure 6).

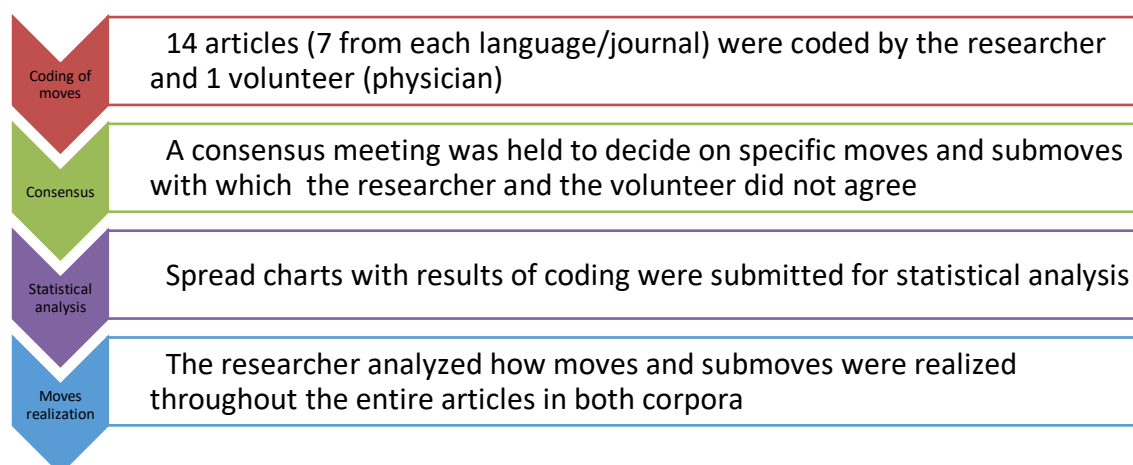


Figure 6. Second phase of the research design

The goal of determining intercoder reliability is to ensure that move demarcation was conducted in comparison to other experts in the field, such as conducted in the study

by Nwogu (1997), Williams (1999), and Kanoksilapatham (2007a), to mention a few. Although the experts (general physicians) were not native speakers of English, they had extensive experience in reading RAs in both languages and writing in this genre at least in L1, in the field of general medicine. Both participants signed an informal agreement written in Brazilian Portuguese (Appendix II).

The volunteers were trained for coding moves in the corpus by video presentations containing a detailed explanation of the model used in this study (Table 2). A total of 5 videos (two hours total), recorded by the researcher, were made available for participants (https://youtube.com/playlist?list=PLxTBPZvH44oRAa6L-_dt-kE_Sb_3YLh94).

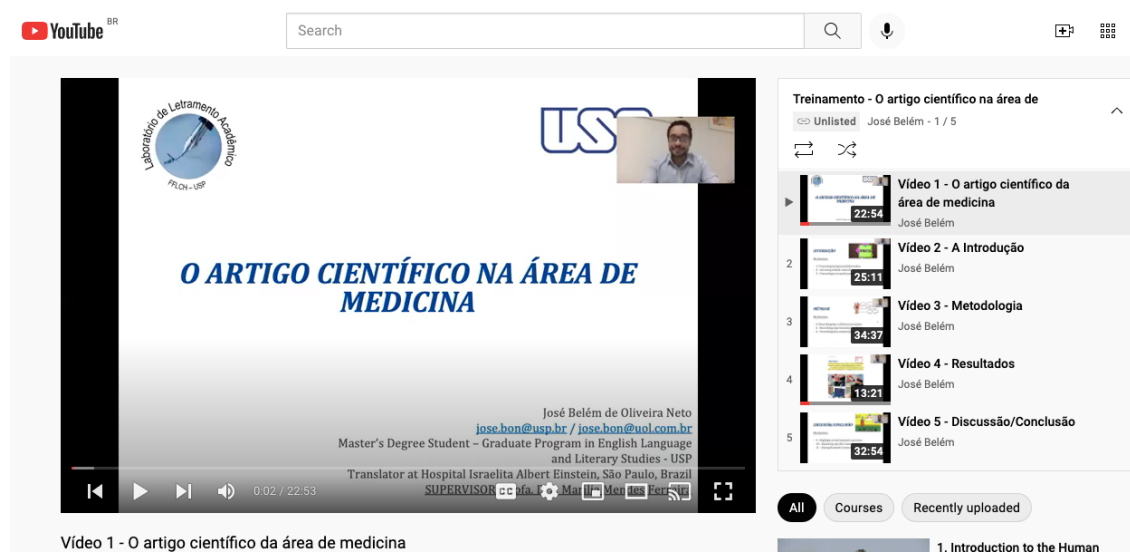


Figure 7. Training videos for coding moves and submoves

The videos covered the function of each move and submoves within the RA. In the second stage of the video training, the analysis of 2 articles that were not part of the corpus, one from each journal and chosen randomly, was sent to acquaint coders and help them with the coding. During this stage of video training, coders were also invited to highlight any text segment that was not presented in the training sessions, for example, the existence of disclosing ethical issues.

It is important to highlight that volunteers were instructed to identify a text segment based on discourse markers (connectors and metadiscourse signals) and linguistic features (lexical meaning, lexicogrammar features, and lexico-grammatical patterns). A text segment could be either a full sentence, part of a sentence, or phrase within a sentence (SWALES, 1990, 2004). The identification of elements was made mainly based on text comprehension, and inferences from the context. After the coding, both in phases

one and two, each rater completed a spreadsheet to identify which moves and submoves of each article they found (yes) or not (no). Based on the information provided independently by each coder, the inter-rater reliability of 20 articles was determined using Gwet's AC coefficient. This coefficient was adopted due to its higher sensibility for measurements that present imbalances between coders.

Each text was tagged following a logical organization, for example, E meaning *einstein* (São Paulo) for the Brazilian Portuguese RAs, and M meaning Mayo Clinic Proceedings for English RAs. The code of the texts is followed by the number of the article in the corpus (1 to 10). This tagging should facilitate the identification of each text.

After the coding of all 20 articles to identify coding disagreements and to discuss possible unclear points, a consensus meeting was held between the volunteer and the researcher. Finally, the spreadsheet with moves and submoves was analyzed by a professional statistician.

4 RESULTS AND DISCUSSION

This section offers the results and discussion of the study on the analysis of five sections (Introduction, Methods, Results, Discussion, Conclusion) of RAs published in two journals – one in American English and the other in Brazilian Portuguese. The section begins by presenting the findings in terms of interrater reliability among raters. Next, the statistical analyses of the study performed at two different times (first and second part) are reported.

Sub-section 4.1 shows the interrater reliability that included the two coders and the researcher, and sub-section 4.2 presents the reliability by one coder and the researcher. The first phase served as a pilot of the study, and it included 6 articles. The second phase of analysis included the remaining 14 papers, therefore, totalizing the final sample of 20 RAs.

Sub-sections 4.1. to 4.4. illustrate and discuss quantitative results, whereas sub-section 4.5. describes and discusses qualitative data extracted from the RAs in both languages.

4.1 Interrater reliability: two coders and the researcher

In the first stage of this study, the inter-rater reliability obtained aimed at testing the training given to volunteers and rating the reliability coefficient, according to table 4.

Table 4. Altman's classification scale on interrater reliability coefficient

Altman's Classification	Strength of reliability
<0.2	Poor
0.2 to 0.4	Fair
0.4 to 0.6	Moderate
0.6 to 0.8	Good
>0.8	Very Good

Volunteers received training for coding moves and submoves manually during a series composed of 5 videos recorded by the researcher for the purpose of this study, after which a deadline of 30 days was set for the coding of 6 RAs (3 in American English and 3 in Brazilian Portuguese). A total of 168 moves and submoves were identified by the two coders and the researcher. The first rater found 123 (73.2%) moves/submoves, the second rater 129 (76.8%), and the third rater 140 (83.3%).

Tables 5, 6 and 7 show descriptions of agreements and disagreements on move identification by the coders. These tables provide data on agreements and disagreements of pairs of coders (rater 1 and 2, rater 1 and 3, and rater 2 and 3) in order to assess which pair had the highest interrater reliability. The first column of the table includes the raters' decision (agreement or disagreement), and the second and third columns illustrate the type of agreement (Yes/Yes) and disagreement (No/Yes). The last two columns show the number and percentage of each type of agreements and disagreements (n%), and the total number and percentages. The calculations of percentages were conducted using the packages R (R FOUNDATION FOR STATISTICAL COMPUTING, 2018) and irrCAC (GWET, 2019).

In the agreement line of table 5, raters 1 and 2 found 108 moves/submoves (Yes/Yes), which represents 64.3% of agreements. These coders disagreed more when rater 1 did not find the moves/submoves, and rater 2 did. Overall, pairs of rates had 78.6% of agreement.

Table 5. Description agreements and disagreements on moves identification by coder 1 and 2

Raters' decision	Identification - rater 1	Identification - rater 2	n (%)	Total n (%)
Agreement	No	No	24 (14.3)	132 (78.6)
	Yes	Yes	108 (64.3)	
Disagreement	No	Yes	21 (12.5)	36 (21.4)
	Yes	No	15 (8.9)	
Total				168 (100)

N=168.

Table 6 provides the agreement and disagreement between coders 1 and 3, and shows a slightly higher consistent concordance and discordance between them compared with coders 1 and 2. Coders 1 and 3 agreed on the identification of 139 moves/submoves (82.7%) and disagreed on identifying 29 moves/submoves (17.3%).

Table 6. Description of agreements and disagreements on moves identification by coder 1 and 3

Raters' decision	Identification by rater 1	Identification by rater3	n (%)	Total n (%)
Agreement	No	No	22 (13.1)	139 (82.7)
	Yes	Yes	117 (69.6)	
Disagreement	No	Yes	23 (13.7)	29 (17.3)
	Yes	No	6 (3.6)	
Total				168 (100)

N=168.

Table 7 shows the most consistent coding among coders 2 and 3 with the highest (83.9%) agreement and lowest (16.1%) disagreement, among them.

Table 7. Description of agreements and disagreements on moves identification by coder 2 and 3

Raters' decision	Identification - rater 2	Identification - rater3	n (%)	Total n (%)
Agreement	No	No	20 (11.9)	141 (83.9)
	Yes	Yes	121 (72.0)	
Disagreement	No	Yes	19 (11.3)	27 (16.1)
	Yes	No	8 (4.8)	
Total				168 (100)

There was an imbalance during identification of moves among raters, so the Gwet's AC coefficient (GWET, 2014) was considered the preferable statistical analysis because it presents a better performance when imbalances occur.

The reliability coefficient measured in this first part resulted in 0.721, which is considered evidence of a 'good' interrater reliability. This reliability is based on a confidence interval of 95% that ranged from 0.638 to 0.804, and p value of <0.001; these numbers mean that reliability was achieved .

The good reliability between coders achieved in the first part of this study indicated that video training was efficient. This positive result was crucial to the continuing of the second phase of the study, which is described in the following section.

4.2 Interraters reliability: one coder and the researcher

In the second phase of the study, interrater reliability was redone, and the analysis included the remaining 14 articles (7 in American English and 7 in Brazilian Portuguese). Because one of the raters left the study due to personal reasons, manual coding was conducted at this time by rater one and the researcher. For the analysis of these remaining papers, almost 3 months were given for coding. In addition, to general interrater reliability, this second phase shows the reliability per section of the RAs, i.e., Introduction, Methods, Results, Discussion, and Conclusion.

A total of 196 moves and submoves were identified by coder 1 and the researcher in the second phase of the study. Rater 1 found 133 moves/submoves and rater 2 found 125 moves/submoves.

The first line of Tables 8 and 9 illustrate the overall agreement and disagreement between coders and the subsequent lines show their agreement and disagreement in each section of the RAs in both languages. These two tables include 6 columns, where the first indicates raters' decisions, and the second and third the type of agreement (Yes/Yes) and disagreement (No/No). The fourth column includes the number and percentages of each type of agreements and disagreements (n%). Finally, the fifth column illustrates the total percentage of agreements and agreement observed, and the sixth provides the reliability coefficient based on Altman's classification (Table 8).

Table 8 demonstrates that overall agreement for the American English RAs between raters was 84.2%, with a reliability coefficient of 0.748, which is a good reliability according to the classification adopted (Table 4). The analysis of each section of papers showed an excellent reliability coefficient between raters for the American English RAs introduction (0.895) and discussion sections (0.915), a good reliability for results (0.676), and a moderate reliability for method (0.494) sections.

Table 8. Overall and per section of RAs agreements and disagreements in American English between coders 1 and 2

	Rater 1	Rater 2	n (%)	Agreement observed (%)	Reliability coefficient CI 95%
Overall					
Agreement	No	No	33 (16.8)	84.2	0.748 (0.657; 0.839)
	Yes	Yes	132 (67.3)		
Disagreement	No	Yes	17 (8.7)		
	Yes	No	14 (7.1)		
Total			196 (100.0)		
Introduction					
Agreement	No	No	7 (16.7)	92.9	0.895 (0.768; 1,000)
	Yes	Yes	32 (76.2)		
Disagreement	No	Yes	3 (7.1)		
	Yes	No	0 (0.0)		
Total			42 (100.0)		
Methods					
Agreement	No	No	16 (22.9)	72.9	0.494 (0.280; 0.709)
	Yes	Yes	35 (50.0)		
Disagreement	No	Yes	8 (11.4)		
	Yes	No	11 (15.7)		
Total			70 (100.0)		
Results					
Agreement	No	No	7 (25.0)	82.1	0.676 (0.384; 0.968)
	Yes	Yes	16 (57.1)		

continues...

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Disagreement	No	Yes	4 (14.3)		
	Yes	No	1 (3.6)		
Total			28 (100.0)		
Discussion					
Agreement	No	No	3 (5.4)		0.915
	Yes	Yes	49 (87.5)	92.9	(0.826; 1,000)
Disagreement	No	Yes	2 (3.6)		
	Yes	No	2 (3.6)		
Total			56 (100.0)		

N=196.

Table 9 shows that, in Brazilian Portuguese, overall agreement was 87.2% with reliability coefficient of 0.722 between the two raters, therefore also showing a good reliability based on Altman's classification (Table 4). When analysis was performed within sections of RAs in this language, the reliability was very good for the introduction (0.878) and discussion (0.804) sections, good for results (0.716), and moderate for method (0.574) sections. Both overall and per section reliability presented similar results to the findings observed in the American English RAs.

Table 9. Overall and per section of RAs agreements and disagreements in Brazilian Portuguese between coders 1 and 2

	Rater 1	Rater 2	n (%)	Agreement observed (%)	Reliability coefficient CI 95%
Overall					
Agreement	No	No	52 (26.5)	84.7	0.722 (0.624; 0.819)
	Yes	Yes	114 (58.2)		
Disagreement	No	Yes	11 (5.6)		
	Yes	No	19 (9.7)		
Total			196 (100.0)		
Introduction					
Agreement	No	No	11 (26.2)	92.9	0.878 (0.733; 1,000)
	Yes	Yes	28 (66.7)		
Disagreement	No	Yes	0 (0.0)		
	Yes	No	3 (7.1)		
Total			42 (100.0)		
Methods					
Agreement	No	No	25 (35.7)	78.6	0.574 (0.377; 0.771)
	Yes	Yes	30 (42.9)		
Disagreement	No	Yes	5 (7.1)		
	Yes	No	10 (14.3)		
Total			70 (100.0)		
Results					

continues...

...continuation					
Agreement	No	No	11 (39.3)	85.7	0.716 (0.440; 0.992)
	Yes	Yes	13 (46.4)		
Disagreement	No	Yes	2 (7.1)		
	Yes	No	2 (7.1)		
Total	No	No	28 (100.0)		
Discussion					
Agreement	No	No	5 (8.9)	85.7	0.804 (0.659; 0.950)
	Yes	Yes	43 (76.8)		
Disagreement	No	Yes	4 (7.1)		
	Yes	No	4 (7.1)		
Total			56 (100.0)		

n=196.

In this second phase, an imbalance also occurred between raters in terms of finding and not finding the moves/submoves. Therefore, the Gwet's AC coefficient (GWET, 2014) was also adopted.

After each rater coding independently each RA, a consensus meeting regarding the coding of RAs in both languages was conducted to resolve moves/submoves on which coders did not have a consensus. Of the 31 disagreements in the American English RAs, a consensus was achieved in 20 cases (64.5%). In Brazilian Portuguese, out of the 30 cases of disagreement, raters achieved a consensus in 21 cases (70%).

In terms of reliability, the method section of RAs in American English and Brazilian Portuguese was the section that presented the lowest reliability among raters, although it was within the range that is considered good.

Other studies (PEACOOK, 2002; DING, 2007; BASTURKMEN, 2011) have reported difficulty to identify moves and submoves, even when using an existing framework. This is particularly challenging because one move can be within another, or even two or more moves and submoves can be found in the same sentence in complex genres. One of the reasons for this challenge pointed out by studies (HOLMES, 1997; BASTURKMEN, 2011) is the highly interpretative nature of move/submove identification. The difficulty in finding moves/submoves in the method section may be justified due to this section's complexity and specificity and study types, for example, experimental and/or qualitative research (HOLMES, 1997; BASTURKMEN, 2011). In sub-section 4.5. of his dissertation, examples from RAs are provided in an attempt to understand the challenge observed in each section of the RAs in both languages.

4.3 General distribution of Move and Submoves

Two tables were designed after the consensus meetings in phases 1 and 2 to identify distribution of moves and submoves found or not in both corpora. Tables 10 and 11 aim at helping the readers to visualize distribution of moves and submoves found in each of the 20 RAs (E1 – E10 for the Brazilian journal and M1 – M10 for the American journal). The sign of + in green is to indicate the moves and/or submoves that were found, and the sign of - in red shows the moves and/or submoves that were not found in the RAs.

Table 11. Distribution of moves and their submoves in articles in English

Article	Move 1		Move 2		Move 3		Move 4			Move 5			Move 6				Move 7			Move 8	Move 9	Move 10					Move 11	
	1.1	1.2	2.1	2.2	3.1	3.2	4.1	4.2	4.3	5.1	5.2	5.3	6.1	6.2	6.3	6.4	7.1	7.2	7.3			10.1	10.2	10.3	10.4	10.5	11.1	11.2
M1	+	+	+	-	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+
M2	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+
M3	+	+	+	+	+	+	+	+	+	-	+	-	+	+	+	-	+	+	-	+	+	+	+	+	+	+	+	+
M4	+	+	-	-	+	+	+	+	+	-	+	-	-	-	-	-	+	+	-	-	-	+	+	-	+	+	+	-
M5	+	+	+	+	+	+	+	+	+	-	+	+	+	-	+	+	+	+	-	-	+	+	+	-	+	+	+	+
M6	+	+	+	+	+	-	+	+	+	-	+	+	-	-	+	-	+	+	-	-	+	+	+	+	+	+	+	+
M7	+	+	+	+	+	-	+	+	+	-	+	-	-	-	+	+	+	+	-	+	+	+	+	+	+	+	+	+
M8	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+	+	+	+	-	+	+	+	+	+	+	+	+	+
M9	+	+	+	+	+	-	-	+	+	+	+	-	-	-	+	-	+	+	+	+	+	+	+	+	+	+	+	+
M10	+	+	+	+	+	-	+	+	+	+	+	+	-	-	+	-	+	+	-	+	+	+	+	-	+	+	+	+

Table 10 shows that RAs in Brazilian Portuguese have the highest absence of moves and/or submoves, particularly in the following: 2 (Reviewing Related Research), 5 (Describing Experimental Procedure), 6 (Describing Data-Analysis Procedure), 7 (Indicating Consistent Observations), and 8 (Indicating Non-Consistent Observations). In American English the most infrequent moves and/or submoves were 3 (Presenting New Research), 5 (Describing Experimental Procedure), 6 (Describing Data-Analysis Procedure), and 7 (Indicating Consistent Observations). 5 and 8 (Indicating Non-Consistent Observations). In American English the most infrequent moves and/or submoves were 3 (Presenting New Research), 5 (Describing Experimental Procedure), 6 (Describing Data-Analysis Procedure), and 7 (Indicating Consistent Observations).

A previous study (HIRANO, 2009) also observed this tendency of Brazilian Portuguese to adopt a different pattern of moves and submoves of models (SWALES, 1990, 2004, 2105; NWOGU, 1997) and American English to follow more closely models, e.g., CARS model. The analysis of Tables 10 and 11 clearly shows this tendency of Brazilian Portuguese RAs of not using the English-based framework (SWALES, 1990; NWOGU, 1997) is also seen in the field of general medicine.

The next sub-section addresses the differences in both languages in terms of number of words and diversity of words observed using an automatic tool for linguistic analysis – AntConc for Macintosh OS X 10.6-10.12 (3.5.8) by Anthony, 2019.

4.4 Descriptive information of the corpus

This section provides the length and variety of words of each RA from both languages. The reason to show these descriptions is due to the importance of highlighting whether each language has longer RAs, and observing the linguistic diversity used by authors. Such information may help both writers and instructors to observe these macro differences in a given language, and also to make decisions when writing/teaching about specific genres.

The description includes the percentage of number of words (tokens ratio), percentage of form of words (types ratio), and also the institutional location of authors (Tables 12 and 13). This latter was observed to check the international status of authorship of journals. Tokens consist of all examples of words found in a given text, and types constitute the different words occurring in a text (BIBER; CONNOR; UPTON, 2007).

The Brazilian Portuguese (Table 12), articles tokens ratio ranged from 2,987 to 5,317 (average of 4,591) words and had a types ratio from 1,039 to 1,749 (average of 1,530). Most authors of the journal published in Brazilian Portuguese were affiliated to Brazilian institutions; in only one study the authors were affiliated to an organization located in Portugal.

Table 12. Details of the RA from einstein (São Paulo)

RA	Tokens	Types	Institutional Location
E1	4,011	1,361	Brazil
E2	5,186	1,618	Brazil
E3	5,194	1,668	Brazil
E4	2,987	1,039	Brazil
E5	4,830	1,739	Brazil
E6	5,317	1,749	Brazil
E7	5,228	1,694	Brazil
E8	3,913	1,152	Brazil
E9	4,843	1,730	Brazil & Portugal
E10	4,405	1,552	Brazil
Average	4,591	1,530	

In American English (Table 13), tokens ratio varied from 4,745 to 6,929 (average of 5,084) and presented a types ratio from 932 to 1,532 (average of 1,203). In the American journal, most authors were affiliated to US-based organizations; only two studies had authors from different countries Israel, Spain and Portugal-based institutions.

Table 13. Details of the RA from Mayo Clinic Proceedings

RA	Tokens	Types	Institutional Location
M1	5,630	1,355	USA
M2	5,889	1,485	USA
M3	4,745	1,082	USA
M4	3,482	932	USA
M5	4,431	1,202	USA
M6	6,929	1,411	USA
M7	5,463	1,492	Israel
M8	6,174	1,532	USA, Spain and Portugal
M9	6,311	1,217	USA
M10	5,274	1,262	USA
Average	5,084	1,203	

These tables (12 and 13) show that Brazilian Portuguese RAs are on average shorter compared with American English RAs that are longer. Brazilian Portuguese papers also had a higher variability of words than the American English ones. Other

studies (BIBER; CONNOR; UPTON, 2007) have pointed out that American English RAs are longer and use a smaller number of unique words than other languages. The small variety of words in American English is specially acknowledged given that English accepts more easily the repetition of words (BIBER; CONNOR; UPTON, 2007; KANOKSILAPATHAM, 2007b) than Brazilian Portuguese, which repetition is often discouraged. In agreement with this study, another research (HIRANO, 2009) also observed that Brazilian Portuguese RAs often include a lower average number of words than the American English papers.

Although the Brazilian journal also accepts submissions in English that may encourage more international submissions, the scarcity of international authors in the Brazilian Portuguese publication may suggest that the journal struggles to attract international submissions. This was a similar finding reported in a study conducted by Hirano (2009) that identified a predominance of authors affiliated to Brazilian institutions in a sample of 10 articles published in a Brazilian journal on Applied Linguistics.

The authorship of the American journal is also little internationalized. These findings showed that most contributions are from local authors particularly for the limited number of international affiliations of the articles. Contrary to what would be expected, the international status of the official language (English) of the American journal, this result does not allow to affirm that the US-based journal has a higher international status than the Brazilian one.

4.5 Rhetorical moves in selected RAs written in Brazilian Portuguese and American English

The following sections provide a qualitative analysis of the 10 articles written in each language, for a total of 20 included research articles. The findings of this study showed that medical articles written in Brazilian Portuguese are less likely to include all moves and submoves, compared to those written in American English. Because the framework used in this research (NWOGU, 1997) was developed using medical RAs written in American English, the difference in the use of moves and submoves found in this study may be attributed to particularities of Brazilian Portuguese rhetorical patterns. Other studies comparing RAs written in English with those written in other languages (MAURANEN, 1993; KANOKSILAPATHAM, 2007b) showed that RAs written in, for example, Finnish and Thai, often do not follow the same rhetorical patterns observed in

English. The reasons are likely cultural and other research-related differences, such as differences in the size of research communities (KANOKSILAPATHAM, 2007b) and the authors' writing, for example, being more or less reader-oriented (MAURANEN, 1993).

This study's results on the use of moves and submoves in the selected RAs written in both languages are presented in the subsections below, starting with the Introduction section followed by the Methods, Results, and Discussion/Conclusion sections. Examples of each submove from the included RAs are provided. Appendix 1 offers examples of rhetorical moves from the Brazilian Portuguese journal, which were taken from a version of the journal written in English. To help the reader identify the article from which each example was taken, each excerpt was coded with a term, with terms E1 through E10 used to tag articles published in the Brazilian Portuguese journal and terms M1 through M10 used to tag articles published in the American English journal.

4.5.1 Moves and submoves in the Introduction section

The framework identifies 3 moves, with 2 submoves each, in the Introduction section (NWOGU, 1997). Move 1 presents background information composed of submove 1.1, which establishes knowledge in the field and submove 1.2, which addresses the main research problem. Move 2 reviews previous published studies related to the study and includes submove 2.1, which refers to previous studies, and submove 2.2, which refers to limitations of previous studies. Move 3 states the study's objective and procedures. More specifically, submove 3.1 refers to the objective of the study, and submove 3.2 refers to the main study procedures.

The frequencies of Introduction-related moves and submoves found in both corpora are shown in Figure 8. All included RAs had submoves 1.1 (Established Knowledge in the Field) and 3.1 (Reference to Objective of the Study). However, more prominent differences were observed with the use of submoves 2.1 (Reference to Previous Studies) and 2.2 (Reference to Limitations of Previous Studies), which were both less common in Brazilian Portuguese RAs compared to American English RAs.

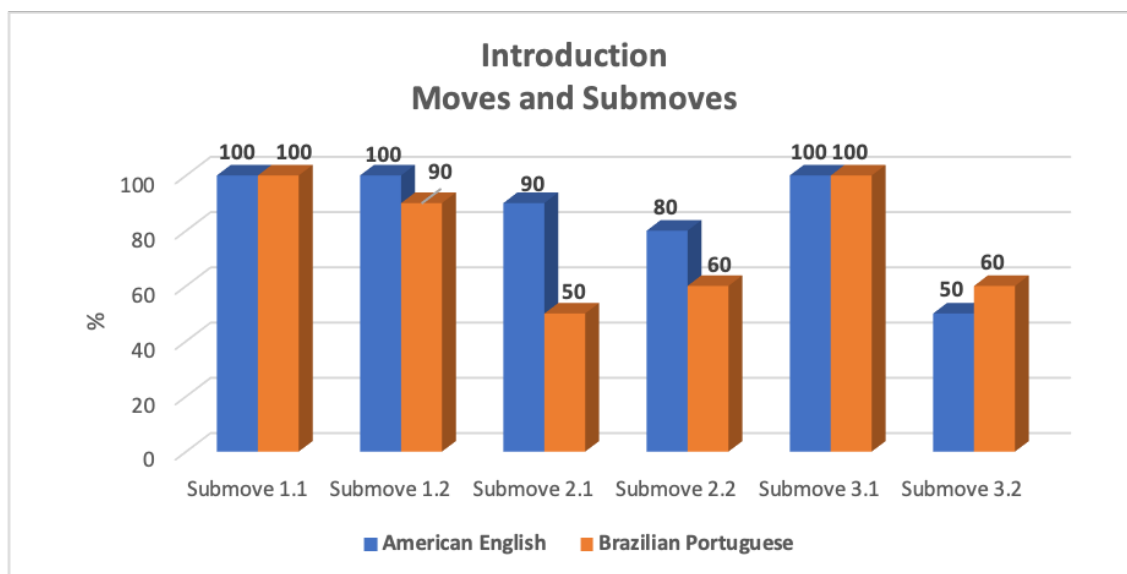


Figure 8. Frequency of Introduction-related moves and submoves in selected journal articles

Findings of this study agree with previous investigations that compared American English RAs with Brazilian Portuguese RAs (HIRANO, 2009) and Chinese RA (LOI, 2010). Particularly, move 2 and its submoves are less often included in articles written in languages other than American English compared with those written in English. These aspects will be discussed further in the following subsections.

Examples of each Introduction-related move and its associated submoves are provided in the following subsections. Two examples of each submove are presented and discussed first in Brazilian Portuguese and then in American English.

4.5.1.1 Move 1 (Presenting Background Information) in Brazilian Portuguese RAs

Submoves 1.1 (Established Knowledge in the Field) and 1.2 (Main Research Problem) were considered optional moves by NWOGU (1997). However, this study classified obligatory moves as those that occurred in at least 60% of the RAs in a corpus and optional moves as those that occur in less than 60% of the RAs in a corpus. In the Brazilian Portuguese corpus, move 1 and submove 1.1 occurred in all articles, and submove 1.2 was present in nine articles. Therefore, in the Brazilian Portuguese RAs, moves 1 and its submoves were considered obligatory. Below, we discuss the particularities of Brazilian Portuguese related to submoves 1.1 and 1.2 .

Submove 1.1 (Reference to Established Knowledge in the Field) often used verbs in present tense and started with a noun (for example, *adolescents* and *years*) or a preposition (for example, *during* and *in*). Often, the function of submove 1.1 was to state the established knowledge in the field related to the topic being presented:

1. *A adolescência é um período de desenvolvimento caracterizado por várias mudanças biológicas, psicológicas, e sociais...[E1]*

2. *Durante os processos inflamatórios agudos e crônicos, semelhantemente à aterosclerose, ocorrem alterações importantes no perfil lipídico e metabolismo.[E3]*

Submove 1.2 (Reference to the Main Research Problems) often included adjectives (for example, *characterized*, *important*, *potential*, and *higher*), which could be a rhetorical strategy to define the importance of the chosen topic and state the generalizability of the chosen topic (ALAMRI, 2017). Additionally, this step provided the reasoning for discussing the topic by pointing out its applicability to the current times or by connecting it to real-life issues, for example, by citing professional workload or cost-related burdens:

3. *Nos últimos anos, a razão neutrófilo-linfócito (RNL) e a razão plaqueta-linfócito(RPL), derivadas de um cálculo matemático dos parâmetros do hemograma, foram introduzidos como potenciais marcadores inflamatórios em doenças cardíacas, neoplasias e complicações associadas com o diabetes.^(REFERENCE)[E4]*

4. *A não adesão ao tratamento medicamentoso do DM está entre os maiores problemas enfrentados pelos profissionais que atuam nessa área, acarretando no aumento dos custos para os sistemas de saúde, em função das baixas taxas de controle do DM alcançadas, responsáveis por elevadas taxas de morbimortalidade pela doença.^(REFERENCE) [E6]*

4.5.1.2 Move 1 (Presenting Background Information) in American English RAs

Submoves 1.1 (Established Knowledge in the Field) and 1.2 (Main Research Problem) were present in all the American English RAs. For this reason, move 1 was considered obligatory. Below, we discuss the particularities of American English related to submoves 1.1 and 1.2 .

Submove 1.1 (Reference to Established Knowledge in the Field) was often written in present tense (for example, *is*) or present perfect tense (for example, *have increased*) and often started with a noun (for example, *stroke* and *electronic health records*) or a preposition (for example, *among* and *however*). The function of submove 1.1 was usually to state the established knowledge related to the topic being presented:

5. *Electronic health record (HER) implementation rates have increased and so has clinician HER burden...* [M2]

6. *Stroke prevention is a cornerstone in the management of patients with atrial fibrillation (AF).* [M3]

Submove 1.2 (Reference to the Main Research Problems) detailed the novelty and importance of the topic, emphasizing the topic in relation to important cost-related issues and impacts on individuals' life. This submove usually included adjectives (for example, *significant*, *considerable*, and *increased*):

7. *However, long-term OAC carries a significant risk of bleeding and is associated with considerable cost, lifestyle changes, and strict compliance requirements.*^(REFERENCE) *Hence, patient understanding of the role of OAC in stroke prevention and its accompanied risks and benefits is key.* [M3]

8. *Given the increasing maternal mortality from cardiovascular disease and recognition that myocardial dysfunction is already present during pregnancy in women with HDP,¹⁸ we hypothesized that women with HDP would have increased rates of readmissions related to newly diagnosed heart failure or PPCM in the immediate postpartum period as well as an increased likelihood of readmission with those conditions.* [M5]

4.5.1.3 Comparing Move 1 in Brazilian Portuguese RAs and American English RAs

No significant differences between both corpora were observed in relation to move 1 and its submoves. Move 1 had similar features, such as verbs in present tense and the use of adjectives to state importance, between the Brazilian Portuguese and American English RAs. The rhetorical functions seem to be quite standard among writers in these two languages. Previous studies (HIRANO, 2009; LOI, 2010; ALAMRI, 2017) also found

similar patterns concerning move 1 in RAs written in English and those written in a variety of languages, such as Chinese and Arabic. The use of move 1 is common in the literature of other fields, such as biochemistry (KANOKSILAPATHA, 2007a) and educational psychology (LOI, 2010). The results of this study indicate that general medical RAs should include move 1 and its submoves.

4.5.1.4 Move 2 (Reviewing Related Research) in Brazilian Portuguese RAs

Moves 2.1 (Reference to Previous Studies) and 2.2 (Reference to Limitation of Previous Research) were less common in Brazilian Portuguese RAs. In this study, submove 2.1 was considered optional, and submove 2.2 was defined as obligatory. The following subsections give examples of how submoves 2.1 and 2.2 were likely to occur in Brazilian Portuguese RAs. Below, we discuss the particularities of Brazilian Portuguese related to submoves 2.1 and 2.2 .

Submove 2.1 (Reference to Previous Studies) was often presented via generalized references. Areas of knowledge were emphasized without specifying or highlighting what previous studies observed. Citations were used, but these citations often did not identify author-date, given that in medical field the use of numerical citation is far more common:

9. *As escalas de atividades anticolinérgica disponíveis foram desenvolvidas e validadas nos Estados Unidos, na Europa e na Austrália.*^(REFERENCE) [E2]

10. *Estudos observacionais destacaram o potencial das estatinas na prevenção de lesão renal aguda induzida por contraste (LRAIC), sugerindo que os efeitos pleiotrópicos desses fármacos podem exercer também ação nefroprotetora.*^(REFERENCE) [E3]

Submove 2.2 (Reference to Limitation of Previous Research) usually neither established a negative evaluation nor clearly stated the gap in previous studies. When stating limitations, authors focused on limitations of the field as a whole rather than limitations of specific studies. Authors also seemed to prefer to use a hedging approach when doing so. In other words, when authors were offering criticism, they often used cautious language (emphasis added in the examples below):

11. **Apesar da relação bem estabelecida** entre o consumo de tabaco dos pais e o uso de tabaco pelos filhos,^(REFERENCE) até agora não se sabe se o consumo de tabaco dos pais **estaria associado** com o uso de álcool e drogas ilícitas por seus filhos. **Nem se tal relação também se aplicaria** aos adolescentes não fumantes, visto que o uso de cigarro pelos jovens está associado com o uso de drogas ilícitas^(REFERENCE) e álcool,^(REFERENCE) sendo tais comportamentos considerados fatores de confusão e variáveis importantes a serem controladas. [E1]

12. **No entanto, poucos estudos encontraram** relação direta entre o uso de estatinas, a mortalidade e a necessidade de terapia renal substitutiva (TRS),^{(REF)(REFERENCE)} no que consiste o principal objetivo deste estudo. [E3]

4.5.1.5 Move 2 (Reviewing Related Research) in American English RAs

In English, almost all articles showed submoves 2.1 (Reference to Previous Studies) and 2.2 (Reference to Limitation of Previous Research). In this corpus, both submoves were obligatory. Below, the following examples demonstrate how these submoves were used in American English RAs.

Submove 2.1 (Reference to Previous Studies) usually specified previous studies' methods or results as an attempt to prepare the reader for reading about how the current topic filled a gap in the literature. Citations were used, often without identifying the authors:

13. *Further, an increased risk of parenchymal hematoma after mechanical thrombectomy with first-generation devices has been reported in patients with moderate or severe WMH,*^(REFERENCE) [M1]

14. *To ease the clinician EHR burden, organizations have tried to boost clinician efficiency in using the EHR*^(REFERENCE) *by disseminating EHR tip sheets and holding various types of training sessions.* [M2]

Submove 2.2 (Reference to Limitations of Previous Research) usually used evaluative and negative expressions (emphasis added in the examples below). The authors focused on previously conducted studies, and also gaps in previous research:

15. At our institution, **similar tactics have generally failed to** increase either clinician efficiency or satisfaction with the EHR. Previously, given limited resources, we had prioritized EHR improvements that affected the largest number of clinicians. [M2]

16. **No previous studies have investigated whether and to what extent** physical activity could attenuate the effect of cognitive frailty on mortality. [M8]

4.5.1.6 Comparing Move 2 in Brazilian Portuguese RAs and American English RAs

The most significant difference related to move 2 and its submoves was that move 2 and its submoves were far more commonly observed in American English RAs than Brazilian Portuguese RAs. In Brazilian Portuguese RAs, authors tended to indirectly refer to previous studies and did not establish the article's niche, which is similar to the findings of a previous study (SWALES, 1990). In this study, authors of Brazilian Portuguese RAs clearly stated limitations of the published literature. Similarly, another study that evaluated Applied Linguistics RAs (HIRANO, 2009) claimed that Brazilian writers seem to be uncomfortable in criticizing gaps in their peers' research. Another study comparing health science RAs written in Brazilian Portuguese and in English also found that Brazilian authors often avoid criticizing others because doing so may appear as a negative behavior towards other researchers (REZENDE, HEMAIS; 2004). In the examples, 11 of the Brazilian journal authors established the niche of their article by using a positive attitude strategy (*Apesar da relação bem estabelecida*. In other words, *despite the well-established relation*). These explanations seem to be the most plausible in justifying the lack of Brazilian authors who define the knowledge gaps in the literature in their RAs. It is interesting to note that the strategy of avoiding negative evaluations of previous studies were also observed by other studies that compared RAs written in English with those written in other languages, such as Chinese (LOI, 2010), Thai (KANOKSILAPATHAM, 2007b), and Arabic (AL-QAHTANI, 2006). The increased use of move 2 in English RAs compared to other language RAs was also reported by previous researchers (LOI, 2010; HIRANO, 2009; KANOKSILAPATHAM, 2007b; AL-QAHTANI, 2006). Findings of this analysis show that Brazilian authors adopt move 2, particularly submove 2.1 (Reference to Previous Studies), less often when constructing their rhetorical strategies to establish the gap of their research. This could have consequences for those publishing in English

journals that often require this move. However, general medical RAs written in American English often adopt move 2 and its submoves, supporting its obligatory natures.

4.5.1.7 Move 3 (Presenting New Research) in Brazilian Portuguese RAs

In the Brazilian Portuguese corpus, submoves 3.1 (Reference to Research Purpose) and 3.2 (Reference to Main Research Procedure) were obligatory submoves given they occurred in 100% and 60% of the Brazilian Portuguese RAs, respectively. The following examples show how these moves were realized in the Brazilian Portuguese corpus.

Submove 3.1 (Reference to Research Purpose) was likely to use verbs in simple present tense to establish the purpose of the study, and often a brief explanation was provided to state the goal of the study:

17. *Avaliar o modelo atual de ensino das técnicas ultrassonográficas de emergência e urgência a estudantes de Medicina. [E5]*

18. *Comparar massa gorda, massa magra, conteúdo mineral ósseo, densidade mineral óssea e indicadores de aptidão física entre um grupo de jogadores de futebol com anos de prática da modalidade competitiva amadora e um grupo de jovens adultos, da mesma idade, ativos, mas não praticantes de desporto federado. [E9]*

Submove 3.2 (Reference to Main Procedure) generally adopted specific terms (for example, *retrospective study* and *cross-sectional study*) to clarify the study's procedures. Authors often used verbs in simple past tense when writing this submove. It is also important to note that this submove was found in the Methods sections of Brazilian Portuguese RAs, not in the Introduction sections.

19. *"Trata-se de estudo retrospectivo realizado entre os anos de 2012 a 2015..." [E8]*

20. *"Estudo observacional, descritivo e transversal..." [E10]*

4.5.1.8 Move 3 (Presenting New Research) in American English RAs

In the American English corpus, submove 3.1 (Reference to Research Purpose) was obligatory, and the submove 3.2 (Reference to Main Procedure) was optional. The following examples show how these moves were realized in American English corpus.

Submove 3.1 (Reference to Research Purpose) commonly used simple present tense and verbs in simple past tense. Hedging, in other words, indirect and uncertain language to qualify claims, evident (emphasis added in the examples below):

21. *The purpose of this study was to test **whether** WHM severity...was associated with all-cause mortality within a heterogenous clinical population within a heterogenous clinical population with cerebrovascular diseases (CVD). [M1]*

22. ***We sought to** identify independent risk factors for postoperative RRT and investigate the clinical outcomes of patients requiring RRT after LVAD implantation. [M6]*

Submove 3.2 (Reference to Main Procedure) often provided more detailed explanations, used simple verbs in past tense, and also adopted specific terms (for example, *retrospective study* and *cross-sectional study*) to clarify the study's procedures. This submove was found as part of the Introduction of American English RAs:

22. *Using the National Readmissions Database (NRD), we examined readmissions within 90 days of delivery discharge...We performed a retrospective cohort study using the 2013 to 2014 NRD. [M5]*

23. *We conducted a cross-sectional study at a tertiary academic center to assess patient perception of the risks and benefits of OAC for stroke prevention in the setting of AF, and we compared patient perceived and estimated annual risks of stroke and bleeding. [M3]*

4.5.1.9 Comparing Move 3 in Brazilian Portuguese RAs and American English RAs

Move 3.1 (Reference to Research Purpose) was observed in all articles regardless of language, as was expected, given the importance of establishing the purpose of a study. However, move 3.2 (Reference to Main Research Procedure) was missing in 5

American English RAs and in 4 Brazilian Portuguese RAs. Notably, submove 3.2 in Brazilian Portuguese RAs was located in the Methods section, not the Introduction section, as observed in the American English RAs. The lack of the submove 3.2 in American English RAs is not an unexpected result, given the dominance of submove 3.1 (Reference to Research Purpose) in move 3 (Presenting New Research) (NWOGU, 1997). Previous studies also reported the use of move 3 in RAs written in English and those written in other languages (HIRANO, 2009; LOI, 2010). A previous study (LOI, 2010) observed a higher prevalence of more elaborate methodological descriptions in move 3 in English RAs compared to Chinese RAs. Similarly, our study observed that Brazilian Portuguese methodological statements were more brief compared with American English methodological statements. However, this difference in Brazilian Portuguese may be justified by the fact that further details were provided in the method section. Li and Ge (2009) reported a significant increase in the use of verbs in simple past tense in move 3 in English medical RAs. Similarly, this study showed the use of verbs in simple past tense in move 3 and its submoves, in both American English and Brazilian Portuguese RAs. The frequent use of hedging observed in the Introduction section of American English medical RAs was also observed in a previous study (REZENDE, HEMAIS; 2004). More specifically, American English RAs were found to more commonly adopt hedging strategies compared to Brazilian Portuguese RAs. Rezende and Herais (2004) tried to explain this finding by stating that authors who write in Brazilian Portuguese tend to use less hedging owing to the smaller size of the scientific community and its less competitive environment compared to the American English scientific community. However, this explanation seems to be questionable given that Brazilians face a very competitive research environment when publishing in their native language or in an additional language (CANAGARAJAH, 2002; HIRANO, 2009). This is competitive environment is mainly due to the growing demands required by universities from authors to get published in order to improve their rankings as well as the pressure by funding agencies, such as CNPq - The National Council for Scientific and Technological Development in Brazil – which establish as a pre-requisite that authors have had a higher scientific output to obtain funding (MONTEIRO, HIRANO; 2020). The high frequency of move 3.1 (Reference to Research Purpose), in addition to move 3 and its other submoves, indicates that the field of general medicine should employ this submove.

Submoves 1.1, 1.2, 2.2, 3.1, and 3.2 were regularly present in the included Brazilian Portuguese RAs, and submoves 1.1, 1.2, 2.1, 2.2, and 3.1 were regularly present in the included American English RAs.

4.5.2 Moves and submoves in the Methods section

The Methods section employs moves 4, 5, and 6 with 3 to 4 submoves each. Move 4 describes the data collection process and is often obligatory (NWOGU, 1997). It is composed of submove 4.1, which indicates source of data, submove 4.2, which indicates data size, and submove 4.3, which indicates criteria for data collection. Similarly, move 5 describes the experimental procedures and is often considered obligatory (NWOGU, 1997), and it is composed of submove 5.1, which identifies the main research apparatus, submove 5.2, which recounts experimental processes, and submove 5.3, which indicates criteria for success. Move 6 describes the data collection process and is commonly found in studies involving statistical and quantitative data (NWOGU, 1997). Thus, it is composed of submoves 6.1, which defines terminologies, submove 6.2, which indicates process of data classification, submove 6.3, which identifies analytical instrument/procedure, and submove 6.4, which indicates modification to instrument/procedure.

The frequencies of moves 4, 5, and 6 and their submoves are demonstrated below in Figure 9. In both corpora, most articles included move 4 (Describing Data Collection Procedure) and its submoves. Among the submoves of move 5, the least common was submove 5.3 (Indicating Criteria for Success) for the Brazilian Portuguese RAs and submove 5.1 (Identification of Main Research Apparatus) for the American English RAs. Move 6 and its submoves were more common in Brazilian Portuguese RAs than in American English RAs, except for submove 6.4, which was more common in the American English RAs than in the Brazilian Portuguese RAs. The most remarkable finding regarding move 6 was that submove 6.3 (Identifies Analytical Instrument/Procedure) occurred in all Brazilian Portuguese RAs and in 90% of the American English RAs.

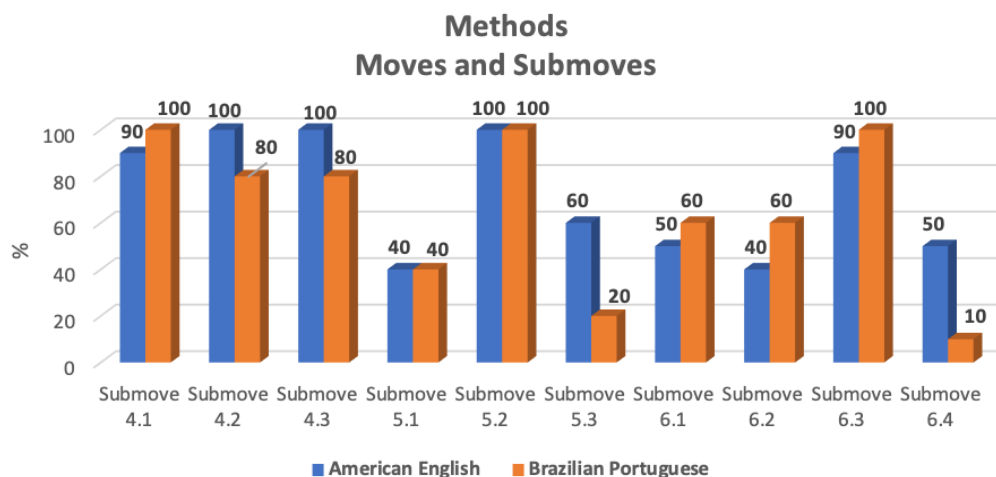


Figure 9. Frequency of moves and submoves in the method section in both languages

Below, two examples of each submove of moves 4, 5, and 6 are presented and discussed first in Brazilian Portuguese and then in American English.

4.5.2.1 Move 4 (Describing Data-Collection Procedure) in Brazilian Portuguese RAs

Across the Brazilian Portuguese RAs, submoves 4.1 (Indicating Source of Data), 4.2 (Indicating Data Size), and 4.3 (Indicating Criteria for Data Collection) were present. For this reason, move 4 and its submoves were considered obligatory. Examples are provided to help readers to understand how these submoves were realized in this corpus.

Submove 4.1 (Indicating Source of Data) often used verbs in past simple tense to indicate the source of data, both the physical location where the study was conducted and the database from which the data were collected:

24. *Estudo prospectivo conduzido no Hospital Geral do Grajaú, em São Paulo (SP), com estudantes matriculados no sexto ano do curso de graduação em Medicina da Universidade Santo Amaro, de maio a setembro de 2015.*). [E5]

25. *Os dados foram obtidos de forma retrospectiva, em prontuários do Sistema de Informação Hospitalar do Hospital de Clínicas da Universidade Federal do Paraná (UFPR).* [E7]

Submove 4.2 (Indicating Data Size) usually adopted verbs in present and past tense to indicate sample size, and this statement is often briefly stated using numbers and statistics:

26. ...**tendo sido selecionados no total** 1.027 indivíduos no período proposto. [E4]

27. Desta forma, **incluímos aleatoriamente** 466 internações em UTI, o que correspondeu a 26% do total de internações. [E7]

Submove 4.3 (Indicating Criteria for Data Collection) was often adopted using specific lexemes (emphasis added in the examples below) and verbs in past tense to indicate criteria adopted for data collection:

28. Todos os alunos das turmas sorteadas **foram convidados** a participar do estudo, independentemente da idade. **O critério de inclusão** adotados foi adolescentes regularmente matriculados em escolas da rede pública de Ensino Médio do Estado de Pernambuco. **Os critérios de exclusão** recaíram no preenchimento inadequado dos questionários, nos adolescentes com idade menor que 14 anos e maior que 19 anos, na ausência no dia da aplicação do instrumento ou na recusa em participar da pesquisa por parte dos alunos e/ou responsáveis. [E1]

29. Todos os pacientes admitidos na UTI no período de estudo com tempo de internação maior que 24 horas e mais de dois medicamentos prescritos **foram considerados elegíveis. Foram excluídas** as pacientes readmitidas na UTI. [E10]

4.5.2.2 Move 4 (Describing Data-Collection Procedure) in American English RAs

In American English RAs, submoves 4.2 (Indicating Data Size) and 4.3 (Indicating Criteria for Data Collection) occurred in all RAs, and submove 4.1 (Indicated Source of Data) occurred in all but one RA. For this reason, move 4 and its submoves were considered obligatory. Examples below show how these submoves were realized in the American English corpus.

Submove 4.1 (Indicating Source of Data) usually adopted verbs in past simple tense to indicate the source of data, both the physical location where the study was conducted and the database from which the data were collected.

30. *Data were obtained from the Univesidad Autonoma de Madrid cohort, a representative cohort of the noninstitutionalized population aged 60 years and older in Spain. [M8]*

31. *50 patients with multiple sclerosis....who were evaluated at Mayo Clinic between February 1, 2016 and June 30, 2017. [M10]*

Submove 4.2 (Indicating Data Size) generally used verbs in past tense to indicate sample size, and this submove was often briefly stated using numbers and statistics:

32. *The study response rate was 71% with a total of 4008 individuals (2,269 women) recruited.^{REFERENCE} [M8]*

33. *3122 patients enrolled in 18 of 25 cardiology departments in Israel were randomized to...[M7]*

Submove 4.3 (Indicating Criteria for Data Collection) often presented specific lexemes (emphasis added in the examples below) and verbs in past tense to indicate criteria adopted for data collection:

34. ***We excluded records if** patient death status was missing, the order of admission could not ascertained, **or if** the delivery discharged occurred in October, November, or December...[M5]*

35. ***Patients who required** a biventricular assist device or a total artificial heart at the time of surgery **were excluded** from the study. **Patients were censored** for LVAD exchange and **were not included** as separated cases. [M6]*

4.5.2.3 Move 5 (Describing Experimental Procedures) in Brazilian Portuguese RAs

In Brazilian Portuguese RAs, only submove 5.2 (Recounting Experimental Process) was observed in all the RAs, indicating that submove 5.2 was obligatory. Both submoves 5.1 (Identification of Main Research Apparatus) and 5.3 (Indicating Criteria for Success) occurred in less than 60% in the corpus, indicating that these submoves were

optional. Examples below show how these submoves were realized in the Brazilian Portuguese corpus.

Submove 5.1 (Identification of Main Research Apparatus) generally used specific lexemes (emphasis added in the examples below), and the apparatus was used both as subjects and adjuncts in passive constructions:

36. O instrumento criado foi denominado **Alfabetização em Saúde Relacionada à Adesão Medicamentosa entre Diabéticos** (ASAM-D). [E6]

37. O software **Lexi-Interact foi utilizado para identificar** as IMP nas prescrições médicas. **Caracteriza-se** em um **banco de dados de acesso on-line restrito**, com informações atualizadas sobre mais de 8.000 termos de fármacos únicos. [E10]

Submove 5.2 (Recounting Experimental Process) normally used verbs in past tense and gerunds to briefly recount the study's experimental process:

38. Os estudantes foram divididos em grupos de oito ou nove alunos, segundo a escala de rodízio da instituição, tendo sido submetidos a uma carga horária teórica e prática de 5 horas. [E5]

39. Dados como idade, tipo de UTI, tempo de internação hospitalar, presença de sepse, gravidade da sepse (choque séptico), local da infecção e desfecho (óbito ou alta) foram avaliados. Paralelamente, a taxa de positividade das hemoculturas e os microrganismos isolados também foram avaliados. [E7]

Submove 5.3 (Indicating Criteria for Success) often reported the basis of the study (emphasis added in the examples below) and provided reasons to guarantee the study's success and reliability (emphasis added in the examples below):

40. As respostas **foram graduadas de acordo com a seguinte escala Likert**: 1 para nada; 2, pouco; 3, neutro; 4, muito; e 5, extremamente. [E5]

41. Após a incorporação de todas as sugestões, o instrumento foi liberado para aplicação em parte da população a ser pesquisada, com o objetivo de **determinar a confiabilidade do instrumento**, ou seja, **a certeza, de que o resultado encontrado iria se repetir quando o**

instrumento fosse replicado em outro momento, outro local, ou por outras pessoas, para o mesmo objeto de estudo.^(REFERENCE) [E6]

4.5.2.4 Move 5 (Describing Experimental Procedures) in American English RAs

In the American English RAs, submoves 5.2 (Recounting Experimental Process) and 5.3 (Indicating Criteria for Success) occurred in 100% and 60% of the RAs, respectively. Thus, these submoves were obligatory. Submove 5.1 (Identification of Main Research Apparatus) occurred in only 40% of the RAs; therefore, this submove was considered optional. Examples of each submove are provided below to show how they were realized in the American English corpus.

Submove 5.1 (Identification of Main Research Apparatus) often used specific lexemes (emphasis added in the examples below), and the apparatus was used both as subjects and adjuncts in passive constructions. Further, the use of gerunds and verbs in past tense seemed to be preferable:

42. ...*using probabilistic sampling* by multistage cluster. [M8]

43. A *structured diagnostic interview*, the NIAAA Alcohol Use Disorder and Associated Disabilities Interview Schedule-5 (AUDADIS-5) 32, *was used to assess* a range of DSM-5-defined psychiatric disorders and their criteria, including specific information for AN, BN, and BED diagnoses. [M9]

Submove 5.2 (Recounting Experimental Process) normally used verbs in past tense and gerunds to briefly recount the study's experimental procedures:

44. Lipid profile and fibrinogen levels *were measured* in a central laboratory at randomization, at 4 months, and annually thereafter until the end of the trial (median [range] duration, 6.2 [4.7-7.6] years). [M7]

45. Renal function *was measured by calculating* eGFR *using* the abbreviated Modification of Diet in Renal Disease equation: $GFR \frac{1}{4} 175 \times (\text{serum creatinine [mg/dL]}) \times 1.154 \times (\text{age [years]}) \times 0.203 \times 0.742$ (if female) $\times 1.21$ (if African American).^(REFERENCE) [M6]

Submove 5.3 (Indicating Criteria for Success) often adopted verbs in simple past tense and explicit lexemes to indicate success (emphasis added in the examples below):

46. The total charges **were combined** with HCUP hospital-specific cost-to-charge ratio files **to create** estimated hospital costs. [M5]

47. Thus, **we adjusted** some survey questions over time **to provide better insight**, and thus the total number of respondents to some questions will differ from others. For each of the 6 clinics, **the most updated** survey at the beginning of that Sprint was sent to all clinicians in that clinic both before and after Sprint. [M2]

4.5.2.5 Move 6 (Describing Data-Analysis Procedures) in Brazilian Portuguese RAs

In Brazilian Portuguese RAs, move 6 (Describing Data-Analysis Procedures) and its submoves were common than in American English. The submoves 6.1 (Defining Terminologies), 6.2 (Indicating Process of Data Classification), and 6.3 (Identifying Analytical Instrument/Procedure) occurred in 60%, 60%, and 100% of RAs, respectively. The submove 6.4 (Indicating Modification to Instrument/Procedure) occurred in only one RA. Examples of each submove are provided below to show how they were realized in the Brazilian Portuguese corpus. However, given that submove 6.4 occurred in only one article, only one example is provided.

Submove 6.1 (Defining Terminologies) often included explanations of specific measures and topics (emphasis added in the examples below). The use of verbs in past tense (emphasis added in the examples below) was common:

48. A estatística descritiva (**amplitude, média, erro padrão da média, intervalo de confiança de 95% da média e desvio padrão**) foi calculada para a totalidade da amostra. [E9]

49. Sepse **foi definida como** casos de infecção com repercussão sistêmica (atendendo a pelo menos dois dos seguintes critérios: temperatura central $>38^{\circ}\text{C}$ ou $<36^{\circ}\text{C}$, frequência cardíaca $\geq 90\text{bpm}$, frequência respiratória $\geq 20/\text{minuto}$ e/ou pressão parcial de dióxido de carbono – $\text{PaCO}_2 < 32\text{mmHg}$). [E7]

Submove 6.2 (Indicating Process of Data Classification) generally adopted specific lexemes (emphasis added in the examples below) and the use of verbs in past tense.

50. **Consideramos como** LRA qualquer redução na função renal nas últimas 48 horas, caracterizada por aumento no valor absoluto da creatinina sérica (CrS) de, no mínimo, 26,5µmol/L (0,3mg/dL), aumento na CrS ≥50% (1,5 vez o valor basal), ou redução do débito urinário (DU) para <0,5mL/kg/hora, por mais de 6 horas. [E3]

51. Os **dados foram analisados** com bases nos escores médios.^(REFERENCE) **Considerou-se** que os estudantes que atingiram média de 4 ou superior **foram capazes** de fornecer respostas satisfatórias.[E5]

Submove 6.3 (Identifying Analytical Instrument/procedure) commonly presented statistic tests, names of software, and longer sentences, which included verbs in past tense. Specific lexemes were also present (emphasis added in the examples below):

52. **Utilizaram-se como referência** os seguintes limites: alfa <0,30 (muito baixa); alfa entre 0,30 e 0,60 (baixa), alfa entre 0,60 e 0,75 (moderada); alfa entre 0,75 e 0,90 (elevada); alfa >0,90 (muito elevada).(27)A confiabilidade do instrumento **foi medida pelo** cálculo da concordância **estimando-se** os coeficientes Kappa. **Foram considerados os seguintes critérios** de interpretação dos valores do Kappa: sem concordância (<0), concordância pobre (0 a 0,19); concordância razoável (0,20 a 0,39); concordância moderada (0,40 a 0,59); concordância substancial (0,60 a 0,79) e excelente concordância (0,80 a 1,00)^(REFERENCE) [E6]

53. **A análise estatística foi executada usando** Stata release 11 (Stata Corporation, College Station, TX, EUA). Na análise descritiva, as características dos pacientes **foram apresentadas** em média e desvio padrão, ou frequências relativas ou absolutas, quando apropriado. **Foi calculada** a taxa de exposição às interações medicamentosas, por meio da razão entre o número de dias **expostos** ao evento e o tempo total de internação. [E10]

Submove 6.4 (Indicating Modification to Instrument/procedure) included specific lexemes (emphasis added in the examples below) to suggest adjustments, and verbs in past tense were often adopted:

54. O modelo de regressão logística multivariada final incluiu apenas os fatores que permaneceram de forma independente e estavam significativamente associados ao desfecho durante a internação hospitalar, após o ajuste para os efeitos de todas as outras variáveis. [E7]

4.5.2.6 Move 6 (Describing Data-Analysis Procedures) in American English RAs

In American English RAs, move 6 (Describing Data-Analysis Procedures) and its submoves were less common compared to Brazilian Portuguese RAs. Submoves 6.3 (Identifying Analytical Instrument/Procedure) only occurred in 90% of RAs. Thus, submove 6.3 was considered obligatory. The remaining submoves, i.e., 6.1 (Defining Terminologies), 6.2 (Indicating Process of Data Classification), and 6.4 (Indicating modification to instrument/procedure) occurred in 50%, 40%, and 50% of RAS, respectively. For these reasons, these submoves were considered optional. Examples of each submove are provided to show how they are realized in the corpus.

Submove 6.1 (Defining Terminologies) often included explanations of specific measures and topics (emphasis added in the examples below). The use of verbs in past tense (emphasis added in the examples below) was common:

55. *The International Academy of Nutrition and Aging and the International Association of Gerontology and Geriatrics established a first definition for cognitive frailty in older adults in 2013.*
(REFERENCE) [M8]

56. *All adverse events were defined according to the standard Interagency Registry for Mechanically Assisted Circulatory Support definition.* [M6]

Submove 6.2 (Indicating Process of Data Classification) generally adopted specific lexemes (emphasis added in the examples below) and used verbs in past tense:

57. *We used similar Cox models to examine the stratified association of physical activity (ie, active vs inactive as a reference category) and mortality by cognitive frailty status.* [M8]

58. *Physical activity was categorized into 3 groups: (1) less than 1 time per week, (2) 1 to 3 times per week, and (3) 4 or more times per week.* [M1]

Submove 6.3 (Identifying Analytical Instrument/Procedure) commonly presented statistical tests and names of software, included verbs in past tense, and employed specific lexemes (emphasis added in the examples below):

59. The model predictive performance (discrimination value) was assessed using the C-statistic (area under the receiver operating characteristic curve) on the validation set. [M3]

60. Patient characteristics were compared between groups using the X^2 test for categorical variables, the independent *t* test for normally distributed continuous variables, and the Mann-Whitney *U* test for continuous variables with skewed distribution. [M6]

Submove 6.4 (Indicating Modification to Instrument/Procedure) included specific lexemes to suggest adjustments to instruments and procedures and to discuss similar prior attempts using the instrument and procedure of interest (emphasis added in the examples below). The use of verbs in past tense was often adopted for this submove:

Cox regression models. Repeated measurements of blood lipids and fibrinogen levels during the 6-year trial were used for the latter purpose, with the bezafibrate-cancer association compared before and after adjusting for the aforementioned variables. [M7]

Preliminary analysis revealed no significant interaction between physical activity and cognitive frailty status in relationship to mortality risk ($P=0.110$ for interaction). [M8]

4.5.2.7 Comparing Moves 4, 5 and 6 in Brazilian Portuguese RAs and American English RAs

In the Methods section, corpus in Brazilian Portuguese RAs had more moves than American English RAs. In American English RAs, move 4 (Describing Data-Collection Procedure) and at least one of its submoves were missing in seven articles, and move 5 (Describing Experimental Procedures) and at least one of its submoves were absent in 9 of the 10 American English RAs. Move 6 (Describing Data-Analysis Procedures) and at least one of its submoves were missing in 9 articles. Although normally required (NWOGU, 1997), moves 4 (Describing Data-Collection Procedure) and 5 (Describing Experimental Procedures) in Brazilian Portuguese were clearly not commonly adopted, and move 6 was optional for this language, as well. Move 6 (Describing Data-Analysis

Procedures) was previously reported as obligatory in medical RAs written in English (LI; GE, 2009). This result was different from that seen in our study for Brazilian Portuguese and other studies that compared RAs written in English with those written in other languages, such as Thai (KANOKSILAPATHAM, 2007b). The lack of submoves 5.3 (Indicates Criteria for Success) and 6.4 (Indicates Modification to Instrument/Procedure) seems to be a possible indication of the absence of persuasion when indicating the credibility of the chosen methods. However, submoves 4.1 (Indicates Source of Data), 5.2 (Recounts Experimental Process), and 6.3 (Identifies Analytical Instrument/Procedure) were identified in all Brazilian Portuguese articles, and this rhetorical strategy may suggest that authors often prioritize moves concerning the source of information and how the study was conducted. These rhetorical strategies seem to be used to persuade readers by emphasizing the idea that the study follows the accepted standards of the field and to indicate the source of data as a way to establish the credibility of the chosen methods, which will generate the study's results (COTOS; HUFFMAN; LINK, 2017). In terms of verb tense in the methods section of Brazilian Portuguese RAs, past tense was the most common verb tense in our study. This finding is similar to the finding of a previous study that analyzed linguistic features across RAs published in English (LI; GE, 2009) and that of another study that compared entire RAs written in Arabic and English (ALAMRI, 2017).

Overall, in the American English corpus, verbs in past tense, active voice, and passive voice were used in moves 4 (Describing Data-Collection Procedure), 5 (Describing Experimental Procedures), and 6 (Describing Data-Analysis Procedures). When active voice was used, first person plural pronoun "we" was also used. The increased use of "we", particularly in the Methods section, was also observed in a recent study that analyzed the use of first-person pronouns in medical RAs (LI; GE, 2009). Moves 4 (Describing Data-Collection Procedure) and 5 (Describing Experimental Procedures) and their submoves were often found in American English RAs. However, similar to other studies (NWOGU, 1997; KANOKSIPATHAM, 2007ab) move 6 was not often adopted by authors of American English RAs.

The categorization of moves 4, 5, and 6, particularly the latter, by raters disagreed, probably owing to the limited explanation of the moves and the lack of examples provided in the model adopted for this study (NWOGU, 1997). This finding may also be justified by the lower, but good, reliability among raters who annotated the moves and submoves. Few studies so far have studied methods and provided a move scheme for this section

(PEACOCK, 2011; ALAMRI, 2017; COTOS, HUFFMAN, LINK; 2017; BERNARDINO, ABREU, 2018), although this section is one of the main reasons for a RA being rejected by a publisher (SWALES, 2015).

Rhetorical strategies in this section were different in both languages, although some similarities were observed, such as the use of verbs in simple past and the use of highly specific terms. In this sample, general medical Brazilian Portuguese RAs likely avoided detailed descriptions of experiments and data analyses, given the infrequent use of moves 5 (Describing Experimental Procedures) and 6 (Describing Data-Analysis Procedures) and their submoves. Both corpora adopted most of the moves and submoves to construct their methods section. For this reason, moves 4 (Describing Data-Collection Procedure) and 5 (Describing Experimental Procedures) should particularly be adopted when writing general medicine manuscripts in Brazilian Portuguese or American English.

The model for moves analysis adopted in this study (NWOGU, 1997) did not mention any ethics-related move or submove. This seems to be an important topic to consider given that all included articles in American English and in Brazilian Portuguese indicated that the study had been submitted to an ethics committee. The growth of this move or submove to indicate ethical committees was highlighted by another study that analyzed rhetorical patterns in the Methods section of psychology Brazilian Portuguese RAs (BERNARDINO, ABREU, 2018). Scientific integrity is a growing topic, especially given the current reports on scientific fraud, questionable research conduct, and plagiarism (SØRENSEN, et al., 2021). Because academic writing evolves along with expectations and practices adopted by different research communities (SWALES, 2004), this growing type supports the need for revised models based on rhetorical moves.

In conclusion, submoves 4.1, 4.2, 4.3, 5.3, 6.1, 6.2, and 6.3 were regularly present in the included Brazilian Portuguese RAs, and submoves 4.1, 4.2, 4.3, 5.2, 5.3, and 6.3 were regularly present in the American English RAs.

4.5.3 Moves and submoves in the Result section

The results section includes moves 7 and 8 (NWOGU, 1997). Move 7 (Indicating Consistent Observations) includes 3 submoves. These are submove 7.1 (Highlighting overall observation), 7.2 (Indicating specific observations), and 7.3 (Accounting for

observations made). The move 8 (Indicating Non-Consistent Observations) does not have submoves (NWOGU, 1997).

The frequency of moves and submoves found in this study corpora in American English and Brazilian Portuguese related to the results section provided is shown in Figure 7. In both corpora, all articles included move 7 (Indicating Consistent Observations), particularly, submoves 7.1 (Highlighting overall observation) and 7.2 (Indicating specific observations), which showed that move 7 and its associated two submoves are often obligatory. Because of the low frequency of the submove 7.3 (Accounting for observations made) in both languages, this submove was considered optional.

Move 8 was seen in several American English RAs and occurred in few Brazilian Portuguese articles. For this reason, this move seems to be obligatory in the former, given that it occurred in more than 60% of RAs, but optional in the latter because it was employed in less than 60% of RAs.

The most remarkable findings concerning the results section in both corpora was the lack of submove 7.3 (Accounting for observations made), and the significant difference related to the identification of move 8 in RAs when the results in the two languages were compared.

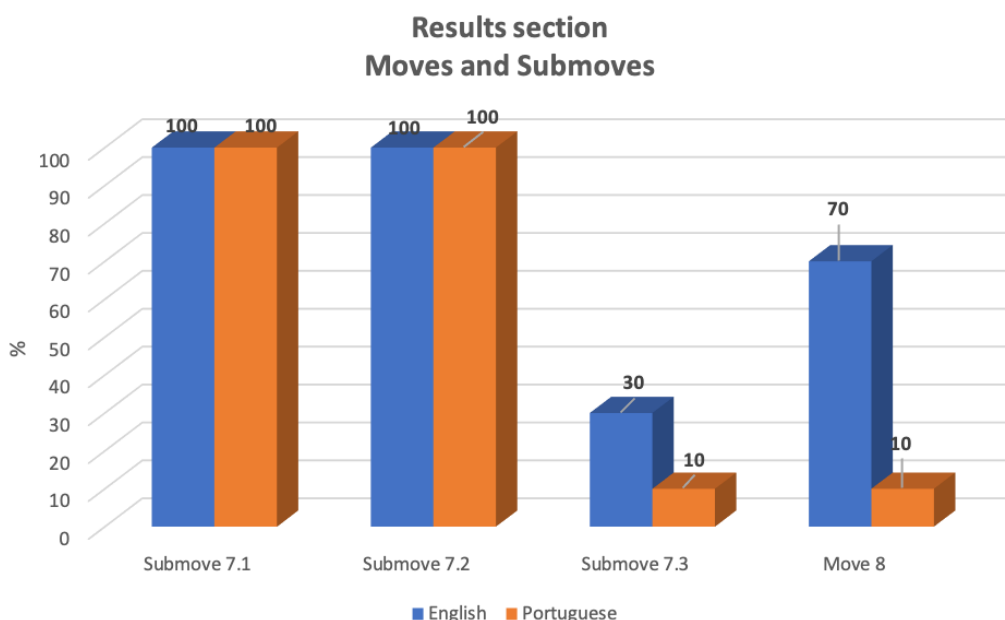


Figure 10. Frequency of moves and submoves in the result section in both languages

Examples of each move and its associated submoves of the results section are presented and discussed first in Brazilian Portuguese, then in American English.

4.5.3.1 Move 7 (Indicating Consistent Observations) in Brazilian Portuguese RAs

In Brazilian Portuguese move 7 (Indicating Consistent Observations) and its first two submoves (7.1 [Highlighting overall observation], 7.2 [Indicating specific observations]) occurred in 100% of the RAs in Brazilian Portuguese. Submove 7.3 (Accounting for observations made) occurred only in 10% of RAs. Examples of each submove are provided to show how they are realized in the corpus.

Submove 7.1: Highlighting overall observations - often presents general findings, and present information on tables, graphs, and other visual elements. Present tense and past tense are commonly used.

63 - Na tabela 1, são apresentados os valores descritivos obtidos por meio da metodologia antropométrica, incluindo pletismografia de ar deslocado, e relativos à saúde óssea e composição tecidual, bem como os relativos à avaliação funcional. Verificou-se, em diversas variáveis, a violação da distribuição normal, refletindo a heterogeneidade entre grupos. [E9]

64 - Durante o estudo, 348 pacientes foram avaliadas (Tabela 1). A média de idade das pacientes foi de 26,4 anos, com histórico de duas gestações, em média. Na amostra, observou-se predomínio de parto cesáreo (57,8%), mas cerca de 37% ainda se encontravam grávidas. [E10]

Submove 7.2: Indicating specific observations - often presents specific results. Prepositions (emphasis added) and past tense (emphasis added) are used to provide some degree of specificity for the finding presented.

*65 - **Entre** os outros alimentos, a categoria dos alimentos processados **apresentou** tendência significativa de mudança, sendo, entretanto, de redução, passando de 30,8%, em 2012, para 15,6%, em 2015, nos lactentes com idade de introdução de 6 meses (Tabela 4). [E8]*

*66 - **Entre** os pacientes com sepse, 57 (39%) **foram** a óbito. O grupo sepse **apresentou** risco de morte cinco vezes maior, além de tempo de permanência na UTI duas vezes mais longo que o grupo não sepse. Mais da metade dos pacientes admitidos com diagnóstico de sepse*

(52%) **desenvolveram** choque séptico, o que **foi** relacionado a maior risco de mortalidade (OR: 38, IC95%: 12,3-116,8). [E7]

Submove 7.3: Accounting for observations made in general - adopts past tense and specific lexemes (emphasis added) to indicate reflections of authors on the results.

67 - A terapia com estatinas antes da admissão hospitalar **demonstrou** papel protetor em nossa coorte de pacientes críticos, **resultando em** melhora dos desfechos renal e geral. [E3]

4.5.3.2 Move 8 (Indicating Non-Consistent Observations) in Brazilian Portuguese RAs

Move 8 (Indicating Non-Consistent Observations) often indicates negative findings by using negative qualifiers and negative sentences, and generalizations (emphasis added). This move occurred in only 10% of RAs; for this reason, only one example is provided.

68 - **A maioria** dos estudantes **não foi capaz** de responder corretamente às perguntas relacionadas às aplicações clínicas da US, mesmo após a conclusão do curso. O número de resposta corretas **decaiu** entre o teste pós-curso e o teste de 90 dias. [E5]

4.5.3.3 Move 7 (Indicating Consistent Observations) in American English RAs

In American English, move 7 (Indicating Consistent Observations) and its first two associated submoves (7.1 [Highlighting overall observation], 7.2 [Indicating specific observations]) occurred in 100% of the RAs. Submove 7.3 (Accounting for observations made) occurred only in 30% of RAs in this language. Examples of each submove are provided to show how they are realized in the corpus.

Submove 7.1: Highlighting overall observations - often present general findings and present information on tables, graphs, and other visual elements. Past tense (emphasis added) and existential construction (emphasis added) are generally adopted.

69 - **A total of** 2980 participants **were included** in the analyses (age, 60.0±6.8 years; 2729 [91.6%] male). [M9]

70 - Among patients with OM, 6 **had** compressive myelopathy, 4 **had** neuromyelitis optica, 3 **had** neurosarcoidosis, 3 **had** amyotrophic lateral sclerosis, 2 **had** intrinsic spinal cord tumors, 1 each **had** hereditary, paraneoplastic, and ischemic myelopathy, 1 **had** syringomyelia, and 2 **had** undetermined but thought unlikely to be demyelinating disease. [M10]

Submove 7.2: Indicating specific observations - often present specific results, prepositions (emphasis added), and the use of present and past tense (emphasis added) to provide some degree of specificity for the finding presented.

71 - Table 2 **shows** the association between physical activity and mortality risk stratified by cognitive frailty status. In cognitively frail individuals, those who **were** physically active vs inactive **had** significantly lower mortality (HR, 0.64; 95% CI, 0.53-0.79; $P < .001$), but this association **did not** achieve statistical significance for the rest of cognitive frailty categories (robust, $P = .163$; physical prefrailty, $P = .057$; cognitive prefrailty, $P = .083$). [M8]

72 - **Of these**, 1486 **were treated** with bezafibrate, and 1494 **were administered** a placebo. [M8]

Submove 7.3: Accounting for observations made - in general, adopts past tense and hedging devices (emphasis added) to indicate observations made.

73 - We reviewed the EHR metric data (PEP). The versions of PEP at that time **did not** track “minutes in system after 7pm” and **did not** accurately capture data on APPs, and the measurement tool definitions changed during the timeline of our interventions. The pre- and post-Sprint PEP **data were thus not comparable**. [M3]

74 - Hispanics were significantly **less likely to** ever seek treatment for AN and BED, relative to non-Hispanic Whites. [M9]

4.5.3.4 Move 8 (Indicating Non-Consistent Observations) in American English RAs

Move 8 (Indicating Non-Consistent Observations), in American English, commonly presents negative findings by using negative qualifiers and negative sentences (emphasis added). This move occurred in 70% of RAs and it can be considered obligatory.

75 - ...although a heterogeneity test for variation between cancer types **was not statistically significant** ($P = .20$). [M7]

76 - All individual and combined analyses were repeated after excluding participants with depression, and the strength of the associations **did not materially change** (data not shown). [M8]

4.5.3.5 Comparing Moves 7 and 8 in Brazilian Portuguese RAs and American English RAs

The Results section in both languages had similarities and differences in terms of rhetorical moves. Submoves 7.1 (Highlighting overall observation) and 7.2 (Indicating specific observations) seem to be mandatory in both languages, given that they occurred in 100% of the RAs in Brazilian Portuguese and American English RAs. In addition, these results are similar to findings reported by other studies in the literature that analyzed the rhetorical organization of results sections in different areas, such as sociology (Brett, 1994) and applied linguistics (RUIYING; ALISSON, 2003), and studies with different languages, for example, Saudi Arabia (ALAMRI, 2020). These studies observed that authors often use the results section to report findings and comment on them. The rhetorical movement of reporting and commenting on results is generally represented by submoves 7.1 (Highlighting overall observation) for reporting and 7.2 (Indicating specific observations) for commenting.

However, the occurrence of submove 7.3 (Accounting for observations made) and move 8 (Indicating Non-Consistent Observations) were rarer, especially in Brazilian Portuguese. The lower frequency of submoves 7.3 (Accounting for observations made) and the move 8 (Indicating Non-Consistent Observations) is also consistent with a previous study (WILLIAMS, 1999), which analyzed the results section of medical RAs and divided the rhetorical strategies in this section within a number of categories. The categories, defined by the author as *explanation of findings* and *non-validation of findings* (WILLIAMS, 1999), were fairly uncommon in English RAs of his study corpus. These categories have the same rhetorical function as submoves 7.3 (Accounting for observations made) and move 8 (Indicating Non-consistent Observations). In the present study, submove 7.3 (Accounting for observations made) has the function of providing

reasons or causes for the results being uncommon, in both Brazilian Portuguese and American English. This submove's occurrence was only 10% in the Brazilian Portuguese RAs and in only 30% in American English RAs. A possible reason for the lack of this submove is because its function overlaps with submove 7.2 (Indicating specific observations) whose major function is to comment about the result. Ruying and Alisson (2003) also pointed out this similarity of Nwogu's model related to submove 7.3 with the "commenting on results" category found in Brett's (1994) rhetorical model for results section. Therefore, during classification, raters probably understood the submoves 7.2 and 7.3 as similar, and gave preference to submove 7.2, whose function seems clearer, i.e., commenting on results. The notable absence of move 8 (Indicating Non-Consistent Observations), observed mainly in Brazilian Portuguese, was also reported by studies investigating English-only journals as very uncommon, particularly in the medical field (NWOGU, 1997; RUYING; ALISSON, 2003). Consequently, these two categories (7.3 and 8) are probably not required, and should not be taken into account for the writing of the results section in general medicine both in Brazilian Portuguese and American English.

Overall, both corpora shared similarities in terms of structure. The preferred verb tense both to present overall and specific observations was past tense. Nevertheless, to specify findings such as those reported in tables and figures the simple present tense was usually applied. In addition, the use of contradictory and negative lexical items was commonly observed as a common strategy used by authors to indicate non-consistent findings. To account for the observation in the submove 7.3, the use of hedging strategies (*thus, as likely to*) and negative lexemes (*did not, not*) were quite common. Interestingly, several years since Nwogu's study (1997), many of the results section features seem to still be valid, based on what his findings suggested as characteristics of these moves and its associated submoves.

The results section is still to be significantly neglected by researchers (ALAMRI, 2020). In Brazilian Portuguese this scarcity seems to be even higher, given the few rhetorical analyses addressing this section (OTARAN, 2018) across areas.

In conclusion, in this present analysis of the result section, submoves 7.1 and 7.2 were regularly presented in Brazilian Portuguese RAs, and submoves 7.1, 7.2 and 8 were regularly presented in American English RAs.

4.5.4 Moves and submoves in the discussion/conclusion section

The discussion/conclusion section includes 3 moves (NWOGU, 1997). Move 9 (Highlighting Overall Research Outcome), move 10 (Explaining Specific Research Outcomes), and move 11 (Stating Research Conclusions). Move 9 has not submoves and the move 10 presents 5 submoves. These are submove 10.1 (States a specific outcome), submove 10.2 (Interprets the outcome), submove 10.3 (Indicates the significance of the outcome), submove 10.4 (Contrasts present and previous outcomes), and submove 10.5 (Indicates limitations of outcomes). Move 11 has 2 submoves, submove 11.1 (Indicates research implications), and submove 11.2 (Promotes further research).

The frequency of moves and submoves found in American English and Brazilian Portuguese is presented in Figure 11. In both corpora, all articles included move 9 (Highlighting Overall Research Outcome), move 10 (Explaining Specific Research Outcomes) and its associated submoves, as well as move 11 (Stating Research Conclusions) and its submoves. The most remarkable findings was the low frequency of submove 10.3 (Indicating significance of the outcome), particularly in Brazilian Portuguese RAs.

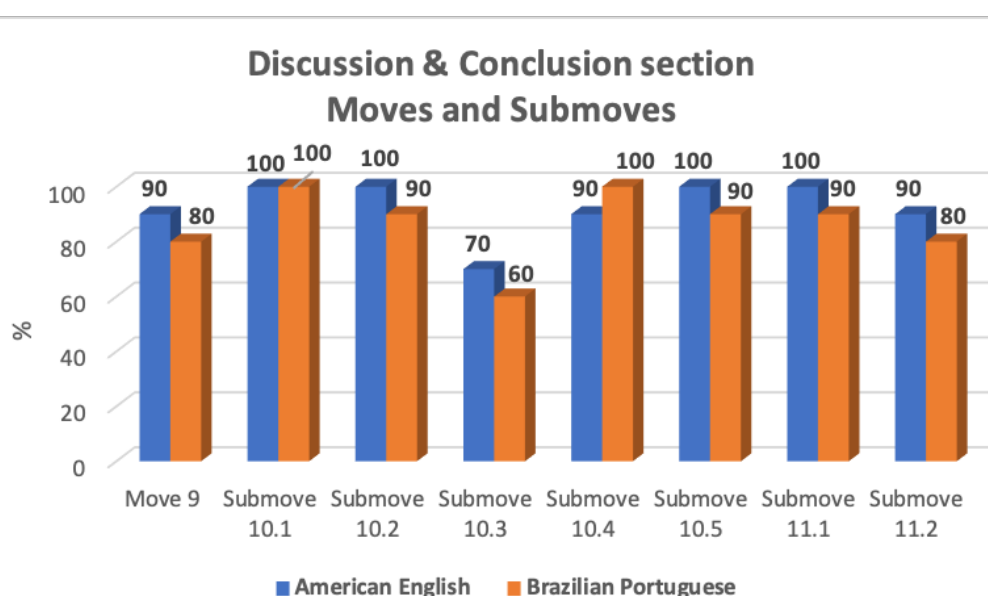


Figure 11. Frequency of moves and submoves in the discussion section in both languages

Examples of each discussion and conclusion-related move and its associated submoves are presented and discussed in the following sections. The first examples provided are from Brazilian Portuguese RAs, followed by examples from American English RAs.

4.5.4.1 Move 9 (Indicating Consistent Observations) in Brazilian Portuguese RAs

Move 9 often includes information that confirms or not achievements based on the main objective of the study. This often includes preparatory sentences (emphasis added), explicit lexemes (e.g, *em geral* – *in general*), and the use of the past tense. In the Brazilian Portuguese corpus this move occurred in 80% of the RAs, and it can be considered as obligatory.

77 - O presente estudo demonstrou RPL mais baixa entre os indivíduos hiperglicêmicos e não encontrou diferença quanto à RNL, quando comparados os grupos de indivíduos hiperglicêmicos e aqueles normoglicêmicos. [E4]

78 - Em geral, e como já descrito, os patógenos isolados de cada sítio foram predominantemente BGN entéricas e não fermentativas em infecções respiratórias, e BGN entéricas e enterococos em infecções intra-abdominais.^(REFERENCE) [E7]

4.5.4.2 Move 10 (Explaining Specific Research Outcomes) in Brazilian Portuguese RAs

In Brazilian Portuguese, move 10 (Explaining Specific Research Outcomes) and its associated 5 submoves (10.1 Stating a specific outcome, 10.2 Interpreting the outcome, 10.3 Indicating significance of the outcome, 10.4 Contrasting present and previous outcomes, and 10.5 Indicating limitations of outcomes) occurred in all articles. From all submoves, only submove 10.3 (Indicating significance of the outcome) presented low frequency, as it occurred in only 60% of RAs. Move 10 and its associated submoves appears to be obligatory in Brazilian Portuguese RAs. Examples of each submove are provided to show how they are realized in the corpus.

Submove 10.1: Stating a specific outcome - often uses the past tense and demonstrative pronouns (emphasis added) to report specific outcomes.

79 - *Do mesmo modo, **este estudo revelou** retenção 55% superior **no** teste pós-curso em relação ao teste pré-curso, com queda de 22% após 90 dias. [E5]*

80 - *Porém, deve-se considerar que, **neste estudo**, o consumo do alimento **foi registrado** quando **houve** sua referência por pelo menos 3 dias, em um período de 60 dias.^(REFERENCE) [E8]*

Submove 10.2: Interpreting the outcome - in general, adopts preparatory expressions and lexical items (emphasis added) to contrast possible expected and unexpected findings.

81 - ***No entanto, ao invés do expectável, não se detectaram** diferenças na força muscular isocinética entre os grupos. [E9]*

82 - ***Em contrapartida**, a infecção urinária **mostrou-se** fator redutor, **o que pode ser justificado** pela conduta terapêutica aplicada nesses casos em que é utilizado um número menor de medicamentos relacionados à IMP graves. [E10]*

Submove 10.3: Indicating significance of the outcome - in general, employs specific lexical items to show the significance of the results (emphasis added), hedging device (emphasis added), and the use of the present tense.

83 - *A mortalidade de 40% observada neste estudo **é preocupante e reforça a necessidade de** identificar os fatores associados a essas disparidades, **que podem ser** consequência de atraso na hospitalização ou no diagnóstico, além de conduta terapêutica inadequada, entre outros. [E7]*

84 - ***É por isso que** o efeito de redução da cascata inflamatória, proporcionado pela terapia com estatinas, **pode ser responsável** pela ação nefroprotetora dessa classe de fármacos. [E3]*

Submove 10.4: Contrasting present and previous outcomes - adopts citation and specific lexical items (emphasis added) to contrast present studies with previous research.

85 - **Reforçando tal achado**, Taylor et al.,^(REFERENCE) encontraram que o ambiente social (pais, irmãos e amigos) pode afetar fortemente a chance do adolescente utilizar álcool. [E1]

86 - O trabalho multidisciplinar e/ou interdisciplinar contribui para a redução do número de medicamentos com atividade anticolinérgica. **Em estudo realizado** com pacientes psiquiátricos, as intervenções realizadas em conjunto por médicos e farmacêuticos contribuíram para a redução da carga anticolinérgica, o que **resultou em** melhora significativa da memória e da qualidade de vida dos pacientes.^(REFERENCE) [E2]

Submove 10.5: Indicating limitations of outcomes - in general, employs preparatory expressions (e.g., *o presente estudo apresenta algumas limitações* – *the present study has some limitations*) and uses verb forms and lexical items (emphasis added) to indicate limitations of previous studies.

87 - A curta duração do curso é outra **limitação digna de nota**. **Cabe também considerar que** o fato de os estudantes **não** terem recebido nenhum treinamento ultrassonográfico nos anos pré-clínicos **pode ter influenciado no desempenho** nas avaliações propostas de **forma negativa**, dada à **falta de** bagagem clínica. [E5]

88 - **O presente estudo apresenta algumas limitações**. A amostra estudada, além de transversal, foi composta por grupos com dimensão amostral **relativamente baixa** e **somente com** sujeitos adultos e do sexo masculino. **Isto reduz** a extrapolação dos presentes resultados para outras amostragens. [E9]

4.5.4.3 Move 11 (Stating Research Conclusions) in Brazilian Portuguese RAs

In Brazilian Portuguese, move 11 (Stating Research Conclusions) and its 2 associated submoves (11.1. Indicating research implications, and 11.2. Promoting further research) occurred in 90% and 80% of the RAs, respectively. For this reason, these submoves can be considered obligatory. Examples of each submove are provided to show how they are realized in the corpus.

Submove 11.1: Indicating research implications - adopts explicit lexemes to highlight the implications of the outcomes of the study (emphasis added).

89 - *Uma vez que as técnicas de US não foram associadas a um alto grau de dificuldade, pode-se supor que as imagens adquiridas tenham sido altamente precisas. [E6]*

90 - *Importante enfatizar que a identificação, a descrição e a monitorização de potenciais interações são importantes para garantir a segurança da gestante sob terapia intensiva. [E10]*

Submove 11.2: Promoting further research - in general, employs explicit lexemes or sentences (emphasis added) to promote and justify the need of future studies.

91 - *Outras investigações podem identificar possíveis dimensões do constructo. [E6]*

92 - *Estudos clínicos prospectivos de grande escala ainda são necessários para aprofundar nosso conhecimento neste campo. Além disso, ainda não estão claros o alcance e o tipo de efeitos colaterais que as estatinas podem ter em pacientes críticos. [E3]*

4.5.4.4 Move 9 (Indicating Consistent Observations) in American English RAs

Move 9 often includes information that confirms or not achievements based on the main objective of a study. This move often includes preparatory sentences (emphasis added) and explicit lexemes (e.g, *we report*), and the use of past tense. In the American English corpus this move occurred in 90% of the RAs, and it can be considered as obligatory.

93 - *In this study, we report association between an antepartum diagnosis of HDP and a subsequent readmission with diagnosis of heart failure in 2013 to 2014 NRD. [M5]*

94 - *The main finding of our study is that with a prolonged follow-up period of over 2 decades, randomization to bezafibrate treatment is significantly associated with reduced cancer incidence. [M7]*

4.5.4.5 Move 10 (Explaining Specific Research Outcomes) in American English RAs

In American English, move 10 (Explaining Specific Research Outcomes) and its associated 5 submoves (10.1 Stating a specific outcome, 10.2 Interpreting the outcome, 10.3 Indicating significance of the outcome, 10.4 Contrasting present and previous outcomes, and 10.5 Indicating limitations of outcomes) occurred in all RAs. Among the submoves, only the submove 10.3 (Indicating significance of the outcome) presented low frequency, given that it occurred in 70% of RAs. Move 10 and its associated submoves can be considered as obligatory due to the frequency of occurrence observed. Examples of each submove are provided to show how they are realized in the corpus.

Submove 10.1: Stating a specific outcome - often uses the past tense to report specific outcomes and hedging devices (emphasis added).

95 - **Compared with** women with BED, men **were significantly less likely to** ever seek help **and reported significantly** older age at first seeking treatment **despite significantly** earlier BED onset and longer duration with episode. [M9]

96 - **None of the** foreign-born patients **were** immunosuppressed. **One of the** foreign-born patients (Table, patient 5 [Figure 2]) **was diagnosed** in Micronesia before immigrating to the United States. [M4]

Submove 10.2: Interpreting the outcome - in general, adopts prepositions (emphasis added) and preparatory expression to contrast possible expected and unexpected results (emphasis added).

97 - **However**, because more than 50% of the entire population responded, a 5% reduction **may indeed be** a nonrandom improvement. **Nevertheless, we theorize that it may** take longer than a 2-week practice efficiency intervention to **substantially improve** clinician burnout.. [M2]

98 - **Therefore, it is possible that** the observed long-term association of bezafibrate with cancer prevention **is attributable to** its fibrinogen lowering activity, **particularly through** mechanisms that include interleukin 1b inhibition. [M7]

Submove 10.3: Indicating significance of the outcome - often employs specific lexical items to show the significance of the results (emphasis added). The use of both the present and past tenses was observed.

99 - ***Our study has several strengths. The study population is a large sample of well-characterized participants with several years of follow-up.*** [M1]

100 - ***This finding suggests that cognitively frail individuals, characterized as prefrail/frail individuals (i.e., >1 FRAIL criteria) with MCI (MMSE score \leq 25), were the most vulnerable to risk of mortality, which provides strong support for the prognostic validity of cognitive frailty.*** [M7]

Submove 10.4: Contrasting present and previous outcomes - adopts citations and specific lexical items (emphasis added) to contrast and present with previous studies.

101 - ***However, limited available data suggest that HD is safe with an LVAD. One analysis of 281 outpatient HD sessions in 10 LVAD recipients showed a low interruption rate of HD of approximately 5%, very low incidence of low-flow alarms, and no serious adverse events or deaths.***^(REFERENCE) [M6]

102 - ***Our study results are consistent with previous findings in that cognitively frail individuals were at the highest risk of mortality (around 70%) over a period of 14 years.*** [M8]

Submove 10.5: Indicating limitations of outcomes - in general, uses preparatory expressions (e.g., *limitations of our study include*) and uses verb forms and lexical items (emphasis added) to indicate limitations of previous studies.

103 - ***Limitations of our study include its retrospective nature, the small number of patients, and the long study period (1994-2017) during which standards of evaluation and treatment evolved. Thus, clinical and laboratory evaluations were not identical for all 9 patients, and PCR to determine the leprosy species was not performed in every case.*** [M4]

104 - ***This intervention does have several limitations. Lacking a standardized instrument to assess the EHR user experience, we chose to use NPS methodology and a short survey to assess clinician satisfaction with Sprint and with the EHR.*** [M2]

4.5.4.6 Move 11 (Stating Research Conclusions) in American English RAs

In American English, move 11 (Stating Research Conclusions) and its 2 associated submoves (11.1. Indicating research implications, and 11.2. Promoting further research) occurred in 100% and 90% of RAS, respectively. For this reason, move 11 and its associated submoves can be considered as obligatory in American English RAs. Examples of each submove are provided to show how they are realized in the corpus.

Submove 11.1: Indicating research implications - adopts explicit lexemes (emphasis added) and interpretations (emphasis added) to provide emphasis on possible impacts of the outcomes of the study.

*105 - **In contemporary practice**, perceived risks of stroke and bleeding **are markedly overestimated** in most patients with AF. [M3]*

*106 - **Our efforts to** diagnose new-onset heart failure only at readmission **may have excluded** a substantial proportion of women who present with PPCM during pregnancy, ^(REFERENCE) **which may in part explain why** previous studies, including a recent meta-analysis, have found a stronger association between preeclampsia and PPCM.^(REFERENCE) [M5]*

Submove 11.2: Promoting further research - adopts explicit lexemes or sentences (emphasis added) to suggest and justify the need of future studies.

*107 - However, **further longitudinal and experimental studies are needed to shed light on the importance of** physical activity to decrease mortality in cognitively frail individuals. [M8]*

*108 - **This finding, which still needs to be validated by future independent studies**, would not supplant or replace the essential role of MRI in the diagnostic process of every patient with MS. [M10]*

4.5.4.7 Comparing Moves 9, 10 and 11 in Brazilian Portuguese RAs and American English RAs

The overall results showed that all moves and its associated submoves of discussion and conclusion sections were frequent in RAs of both languages. The primary

similarity observed was the occurrence of submove 10.1 (Stating a specific outcome) in all RAs written in American English and Brazilian Portuguese. This seems to be a common characteristic in terms of structure that was observed by other studies on rhetoric organization which studied the discussion/conclusion section. These studies reported that this section often starts from a specific to a more general view (RUIYING; ALISSON, 2003); in other words, as the reverse of the introduction section (PEACOCK, 2002).

A recent study that investigated the use of promotional strategies among Spanish and English authors in social sciences (MORENO, 2021) observed that Spanish authors sell less their RAs less than English authors. This attitude seems to be also adopted by Brazilian Portuguese authors who used less submove 10.3 (Indicating significance of the outcome) less than American English authors. One possible reason for this attitude might be due to cultural reasons, and the lower tendency of Brazilian writers to be clearly persuasive when highlighting the contribution of their research.

This lower usage of promotional strategies can be clarified by the following examples, in which Brazilians Portuguese authors often prefer to use a neutral approach (emphasis added) to delineate some of the contributions of their studies:

“...nossos resultados podem contribuir/our results may contribute...” [E6]

*“...o presente estudo demonstrou ser esta uma proposta...para estimular/ the present study showed that **this was a proposal...to stimulate...**”[E9]*

However, in American English, authors generally use more explicit promotional segments words (emphasis added) to emphasize the contributions of their studies.

*“...the clinical burden was **critically important to improving...**” [M2]*

*“in-hospital intermittent hemodialysis **is safe and feasible** in adequately trained centers... [M6].*

The reason for being less or more promotional can be attributed to a consumer-oriented culture, and the competition among modern researchers who attempt to publish, particularly, in English-only journals, as suggested in the study including Spanish and English authors by Moreno (2021). Nevertheless, this issue of promotion in the discussion and conclusion section are only suggestive findings and a closer inspection of statements used in both languages would be necessary to confirm this difference. Still, in the light of few examples found in both corpora, this difference seems to exist.

It is important to note is that, in terms of section headings in the discussion section, both the Brazilian and the American journals often employ two sections headings,

“discussion” and “conclusion” . This is an important feature to highlight especially due to the diversity of macro-structure found in other areas, such as applied linguistics, which sometimes merges some sections headings, such as “results and discussion” (YANG; ALLISON, 2003).

The remaining moves and their associated submoves in the discussion/conclusion section of RAs of both languages were quite similar. This suggests that Brazilian and English rhetorical strategies in this section are reasonably similar. However, Brazilian Portuguese RAs often included less moves and submoves than American English RAs. The only exception was to the submove 10.4 (Contrasting present and previous outcomes), since 100% of the Brazilian Portuguese RAs included this move compared with 90% in American English. This result is different from the one reported by a study including authors from social sciences, which did not find differences between Spanish and English when authors contrasted their findings with other studies (MORENO, 2021). However, it is valid to highlight that submove (10.4 Contrasting present and previous outcomes) was obligatory in both corpora. The high frequency of submove 10.4 corroborates with what was established in terms of rhetorical moves and steps both in American English and Brazilian Portuguese (SWALES, 1990; MOTTA-ROTH; HENDGES, 2010). Moreover, this also agrees with results reported by previous studies including RAs from different fields (PEACOCK, 2002; OTARAN, 2018).

A closer look at corpora in terms of linguistic features showed that the most commonly used verb tense was the past tense, in both languages. Furthermore, in this section, American English authors often adopt hedging devices to state specific outcomes, and Brazilian Portuguese authors often use hedging to state the contribution of their studies. Other features observed were the employment of specific lexical items and sentences (e.g. *One analysis of; Further longitudinal and experimental studies are needed to shed light on the importance of*) and preparatory lexemes (*Limitations of our study include ; Our study results are consistent with previous findings*).

Differences and similarities observed in this section agree with the finding reported by Peacock (2002). Nevertheless, they should not be extrapolated to other fields given that moves, submoves, and their cycles may vary considerably in different areas of knowledge (HOLMES, 1997; PEACOCK, 2002; OTARAN, 2018) because of the diversity of rhetorical strategies adopted by different research communities (SWALES, 1990; 2004).

In terms of cyclicity of the moves and submoves in the section, it was possible to observe a variation in both corpora, but most of them normally started with Move 9 (Indicating Consistent Observations). Nevertheless, a few RAs authors chose to open with submoves 10.1 (Stating a specific outcome), 10.2 (Interpreting the outcome) or even 10.4 (Contrasting present and previous outcomes) in both corpora. The variety of moves/submoves cyclicity was higher in Brazilian Portuguese, which often presented a broader difference compared with American English. These results agree with some previous studies (HOLMES, 1997; SWALES; FEAKE, 2009) that reported that authors often open discussion sections by reporting results (observations). However, these findings disagree with previous studies that reported that authors often started with “background information” (ALAMRI, 2017) and/or started the discussion section with “Evaluation (Interpreting) of results” (OTARAN, 2018). This variability in cyclicity of discussion/conclusion section is common and field-related (HOLMES, 1997; YANG; ALLISON, 2003; ALAMRI, 2020).

As for closing the discussion/conclusion section, most of Brazilian (90%) and American (100%) writers stated the implication of the study (submove 11.1) and promoted further research (submove 11.2) and the latter was less common in Brazilian Portuguese RAs (80%) compared with American English RAs (90%). A likely reason why Brazilian authors promote further research less frequently is the fact that EAL writers often perceive publishing within their international discourse community more competitive than, for example, American writers (HOLMES, 1997; MORENO, 2021). For this reason, they may avoid providing gaps and giving ideas to their competitors.

In conclusion, move 9 and submoves 10.1, 10.2, 10.3, 10.4, 10.5, 11.1, and 11.2 were regularly present in the included Brazilian Portuguese RAs, and move 9 and submoves 10.1, 10.2, 10.3, 10.4, 10.5, 11.1, and 11.2 were regularly present in the American English RAs.

5 CONCLUSION

The purpose of this study was to identify and compare rhetorical moves of research article sections (Introduction, Methods, Results, Discussion, Conclusion - IMRDC) in Brazilian Portuguese and American English. Data were collected from two medical journals, one from each language, with the RAs being selected randomly from issues published in 2019. The analysis of data with an interrater reliability approach including experts from the field of medicine, and the comparison of similar genres by considering sample representativeness, such as genre, source, and field of knowledge, allowed this study to be situated in the intercultural rhetoric perspective (CONNOR, 2004ab, 2011). This study adds to the literature in IR studies by investigating the similarities and differences in genre structure and linguistic features in all sections of RAs in Brazilian Portuguese and American English.

The results showed that Brazilian Portuguese RAs included less moves and submoves of Nwogu's model (1997) than American English RAs. The main finding tended to support previous studies that compared English and other languages. For example, the lower use of submove 2.1 (Reference to Previous Studies) by authors to establish the study gap in Brazilian Portuguese than in American English. This lower gap establishment has been explained by the avoidance of authors from languages other than English, such as Brazilian Portuguese, to contrast less their study with previous research (HIRANO, 2009; MOTTA-ROTH; LOVATO, 2010). Another observation is the difference in the employment of move 3 (Presenting New Research) and its associated submoves, which were also less common in Brazilian Portuguese. However, this specific difference in Brazilian Portuguese may be justified by the fact that further details were provided in the method section, particularly by using submove 3.2 (reference to Main Research Procedure). This submove (3.2), in Brazilian Portuguese RAs, was located in the Methods section, which was the opposite of American English RAs. This might be a characteristic of the medical field or the Brazilian journal included in the study, given that editors and gatekeepers often make suggestions indicating the placement of description of procedures in RAs (CURRY; LILLIS, 2019). Nevertheless, this statement requires further analysis by comparing different fields and languages for a better understanding. The introduction section in both languages often adopted the present tense and used adjectives to state importance. Perhaps, the use of the present is likely to provide the

sense that the study is connected with reality and the present time (LEECH, 2004), therefore, approximating the reader to the text.

Regarding the methods section, both moves 4 (Describing Data-Collection Procedure) and 5 (Describing Experimental Procedures) seemed to be widely used both in Brazilian Portuguese and American English RAs. However, because of the different cultural expectations in both languages, one must make sure that the use of each move will be well received by specific research communities. In addition, another important aspect in the method section was the absence of Ngowu's model of ethics-related move or submove. Currently, ethics issues are of extreme relevance due to the growing concern worldwide related to scientific integrity (SØRENSEN, et al. 2021) and its related topics, such as plagiarism (FERREIRA; FREITAS, 2021). The rhetorical strategies in the method section were different in both languages; however, some similarities in terms of linguistic features, such as the use of verbs in the simple past and the use of highly specific terms, were seen. These supported the observation described by previous studies that analyzed this section in different languages (PEACOCK, 2011; ALAMRI, 2017; COTOS, HUFFMAN, LINK; 2017; BERNARDINO, ABREU, 2018).

The results sections showed few differences in both languages. The most remarkable difference was the lower frequency of submove 7.3 (Accounting for observations made) and 8 (Indicating Non-Consistent Observations), especially in Brazilian Portuguese. These results are consistent with previous studies (BRETT, 1994; RUIYING; ALISSON, 2003), which indicated the overlapping of the rhetorical strategy "accounting for observation made" with the submove/step related to "communicating the result". The absence of move 8, "indicating non-consistent observation", was also uncommon even in previous studies that analyzed the writing of medical RAs (NWOGU, 1997; WILLIAMS, 1999). A closer look on lexical features in the result section revealed that the past tense was the preferred verb tense used by authors in both languages. Another common characteristic was the use of hedging strategies to comment on results as well as the use of negative lexemes.

The discussion/conclusion section often used separate section in both journals, i.e., a discussion section and a conclusion section. Overall, this part showed few differences across-languages and journals, given that most moves and their associated submoves were observed in both corpora. The authors of RAs in both languages typically employed the same rhetorical moves in this section. This supports the finding observed by Alamri (2020) of the similarity in rhetorical strategies in Saudi Arabian and English RAs

in social sciences and applied linguistics. It is important to note that Brazilian Portuguese authors generally use less promotional strategies than American English “to sell” their finding. This was a similar result to the one reported by Moreno (2021), who compared Spanish and English RAs discussion section in social sciences. However, this promoting issue needs further investigation, particularly, by comparing Brazilian Portuguese and American English, given that few examples in this regard were analyzed in the present study.

Another difference in the discussion section was the lower promotion of future studies by Brazilian authors. This finding is possibly explained by the fact that EAL authors often perceive publishing activity as more competitive than English-speaking authors (MORENO, 2021). Therefore, they tend to not state possible gaps that may be addressed by competitors. In terms of lexical features in the discussion section, the past tense was highly used in both corpora. Moreover, English authors generally use hedging to report specific outcomes and Brazilian authors use hedging to report contribution; in other words, they are less assertive to sell contributions. Other features were the use of specific and preparatory lexemes, as well as specific sentences to discuss findings and state conclusions.

5.1 Implications for Academic Writing and Publication

This study’s findings of rhetorical movements and linguistic features of RAs in Brazilian Portuguese and American English may have some implications for academic writing and publication. For instance, to help writers, particularly those who are attempting to publish in these languages in the field of general medicine. Intercultural studies comparing languages may help writers to be more aware of differences and similarities in their working languages (CONNOR; MAURANEN, 1999; CONNOR, 2004ab; 2011; ALAMRI, 2020), therefore, helping them to succeed in their writing production. In addition, a better comprehension of their audiences’ expectation may help writers to improve their grasp on what to transfer and what not to transfer from L1 to L2, and vice-versa. In addition, the provision of examples highlighting commonalities and variation in published texts in a variety of fields, such as medicine, may help authors to improve and develop their stylistic style (BELCHER; YANG, 2020). Ultimately, the evidence and research-based knowledge about rhetorical strategies and linguistic features, rather than imposed norms, such as the Anglo-American ones, could help writers to understand the reason to accommodate

their writing for different audiences (MORENO, 2021), as well as cultures, and languages.

5.2 Pedagogical implications of the study

Genre analysis is one of the most influential approaches for the teaching of academic writing. This approach may enable the understanding by multilingual writers and even teachers on how to write texts. This approach may also facilitate individuals to enter and comprehend the conventions of specific discourse communities (HYLAND, 2004b). For this reason, learners of academic writing in any language should be aware of the conventions of their areas, be familiar with norms expected by their research communities, and know how to establish importance to their research and demonstrate that their writing contributions are worthy of attention.

The cross-linguistic and cross-cultural analysis of RAs may benefit the teaching of writing skills by using different approaches such as genre analysis (SWALES, 1990) aligned with other perspectives, such as tools for corpus linguistics (BIBER; ULLA; THOMAS, 2007; BELCHER; NELSON, 2017) to investigate grammar and other linguistic features within different genres and across languages. It is important to note that corpus linguistics tools “will become increasingly part of [the] tool kit” (GENTIL, 2016, p. 122) of researchers in EAP and EAL, particularly, those dealing with intercultural education. The original appeal of corpus linguistics tools is to accelerate the corpus-assisted discourse analysis, including lexico-grammatical features (GENTIL, 2016). This may help students and writers to develop cross-cultural rhetorical awareness. In addition, understanding the norms that govern the use of frequently occurring textual features such verb tense, negative sentence, hedging, article usage, and other characteristics is crucial for those aiming to publish and write different genres or part-genres (SWALES, 1990, 2004; SAMRAJ, 2016; OLIVEIRA NETO, 2021).

Given the importance and pressure of publishing in English-language journal, the understanding on culture issues such as the higher tendency of English author than other languages, for example, to contrast their studies with previous research, and to confront more the other authors, may help teachers to improve their students’ awareness of rhetorical difference and culture expectations when writing in L2.

Although the use of Contrastive/Intercultural Rhetoric is currently not recognized and applied as a teaching method (CONNOR; TRAVERSA, 2010), its use in the writing

classroom was suggested by Casanave (2007). She believes that IR can help teachers to help students to understand that different conventions for academic writing exist in different languages and cultures, to be aware that discourse-level and text production differ in different languages, as well as that expectations and responsibilities may be different depending on the culture and language of readers and/or writers. Casanave (2007) also advocates that IR may help teachers to improve their students' cross-cultural knowledge in terms of organization of different genres, and social function of writing in different discourse communities. To her, the use of IR can ultimately help students to improve their knowledge about their audience and adopt an investigative role by comparing texts in L1 and L2 as an attempt to look for paragraph lengths, formulaic sentences, and formality of languages across languages and genres.

The researcher of the present study believes that these are useful pedagogical applications to be adopted; however, not only researchers but also teachers, as well as students, should conduct further exploration of diverse ways to improve their understanding of the best rhetorical and linguistic choices to use when writing.

5.3 Limitations of the study

This study has limitations, given that only 20 RAs were studied, 10 from each language. There was also the need to provide further explanation on how socialized behavior and rhetorical transference from L1 to L2 occurred in terms of academic writing conventions as an attempt to help authors to get published in international journals.

In addition, the study adopted a single model (NWOGU, 1997) of moves/submoves for the analysis of whole RAs, although other rhetorical organization models exist for specific sections of RAs, such as result section (BRETT, 1997) and discussion (DUDLEY-EVANS, 1994).

Finally, this study did not suggest a revised move model for Brazilian Portuguese and American English for the general medicine field given that it was not the goal of this study. However, moves and submoves regularly appearing in each section of RAs in both languages were described.

5.4 Suggestions for further research

The present study provides valuable information about rhetorical movements and linguistic features of medical RAs published in Brazilian Portuguese and American English. Several suggestions emerged during the conduction of the present study that should be considered in future investigations.

First, further studies are needed to compare RAs published in different fields both in Brazilian Portuguese and American English. Therefore, not comparing rhetorical organization only across languages, but also across areas.

Second, future studies should analyze rhetorical moves and their associated submoves along with specific linguistic features, such as lexical bundles, metadiscourse, hedging, and other lexicogramatical features with the help of corpus linguistics.

Finally, future analyses based on the intercultural rhetorical perspective should consider the use of ethnographic approaches and corpus linguistics in order to be aligned with recent intercultural rhetoric tradition (CONNOR, 2011; BELCHER; YANG, 2020).

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Appendix 1. Examples of coded moves and submoves in each section of the research articles

Examples of complete coded files can be found online at <https://bit.ly/3fM7LGn>

Brazilian Portuguese

AOeinst17(1)_2019_2

Influência do tabagismo parental no consumo de álcool e drogas ilícitas entre adolescentes

Influence of parental smoking on the use of alcohol and illicit drugs among adolescents

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INTRODUÇÃO

A adolescência é um período de desenvolvimento caracterizado por várias mudanças biológicas, psicológicas e sociais, que podem predispor os jovens ao envolvimento com comportamentos de risco, como tabagismo, álcool e uso de drogas ilícitas.(1,2) Um dos fatores relacionados ao uso do cigarro na adolescência é o consumo de cigarro pelos pais.(3,4) Outra preocupação é que os adolescentes fumantes são mais propensos a consumirem drogas ilícitas, álcool(5,6) ou ambos.(7)

Apesar da relação bem estabelecida entre o consumo de tabaco dos pais e o uso de tabaco pelos filhos,(3,4) até agora não se sabe se o consumo de tabaco dos pais estaria associado com o uso de álcool e drogas ilícitas por seus filhos. Nem se tal relação também se aplicaria aos adolescentes não fumantes, visto que o uso de cigarro pelos jovens está associado com o uso de drogas ilícitas(6,8) e álcool,(5,6) sendo tais comportamentos considerados fatores de confusão e variáveis importantes a serem controladas.

Um ponto importante é que o uso de cigarros, álcool e drogas ilícitas pode começar na infância,(9,10) sendo crucial o monitoramento de fatores que possam aumentar os riscos de tal iniciação e, consequentemente, o desenvolvimento de doenças relacionadas a tais comportamentos, visto que estão diretamente associados com uma maior morbidade e mortalidade entre os adolescentes.(11)

OBJETIVO

Analisar a associação entre tabagismo parental e uso de álcool e drogas ilícitas dos filhos adolescentes.

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AO 17(2)_2019_4

Desenvolvimento de uma escala brasileira de medicamentos com atividade anticolinérgica

Development of a Brazilian anticholinergic activity drug scale

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DOI: 10.31744/einstein_journal/2019AO4435

INTRODUÇÃO

Medicamentos com atividade anticolinérgica constam na farmacoterapia de grande parte dos idosos, de pacientes psiquiátricos e com Parkinson, além de serem empregados para tratamento de várias condições crônicas e agudas de saúde.(1-3) Esses medicamentos possuem atividade anticolinérgica intrínseca, diretamente relacionada à sua natureza química, ou apresentam atividade anticolinérgica não relacionada à indicação terapêutica principal.(2,3) Os medicamentos com atividade anticolinérgica podem resultar em efeitos adversos centrais (tonturas, nervosismo, delirium e alucinações) e periféricos (xerostomia, constipação, visão turva e retenção urinária).(4)

A carga anticolinérgica refere-se ao efeito cumulativo de um ou mais medicamentos com atividade anticolinérgica.(2) Evidências sugerem que alta carga anticolinérgica está associada a maiores riscos de morbidade e mortalidade, tempo de permanência hospitalar, institucionalização, declínio funcional e cognitivo.(2) Assim, a prescrição desses medicamentos em idosos deve ser realizada de forma criteriosa, devido à maior vulnerabilidade aos efeitos anticolinérgicos, em função do uso de múltiplos medicamentos, da maior permeabilidade da membrana hematoencefálica e de alterações farmacocinéticas relativas ao envelhecimento.(3)

Para propiciar a mensuração da carga anticolinérgica dos medicamentos e, conseqüentemente, o potencial para produzir efeitos adversos, foram desenvolvidas escalas para uso na prática clínica.(1) Carnahan et al.,(5) foram uns dos primeiros autores a proporem uma escala para classificar os medicamentos com base no potencial anticolinérgico. As escalas foram desenvolvidas empregando informações obtidas por consenso de especialistas, dados de atividade anticolinérgica ou combinação das duas informações. A mensuração objetiva da carga anticolinérgica pode ser realizada por determinação da atividade anticolinérgica do medicamento no soro (SAA - serum anticholinergic activity), ou por meio de testes de afinidade do medicamento com o receptor muscarínico.(1)

As estratégias para reduzir a carga anticolinérgica podem trazer benefícios significativos para a saúde.(6) As escalas de risco anticolinérgi-

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AOeinst17(3)_2019_2

Perfil lipídico e uso de estatina em terapia intensiva: implicações no desfecho renal

Lipid profile and statin use in critical care setting: implications for kidney outcome

Isabelle Malbouisson^{1,2}, Beata Marie Quinto¹, Marcelino de Souza Durão Junior^{1,2}, Júlio Cesar Martins Monte^{1,2}, Oscar Fernando Pavão dos Santos^{1,2}, Roberto Camargo Narciso², Maria Aparecida Dalboni¹, Marcelo Costa Batista^{1,2}

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INTRODUÇÃO

Durante os processos inflamatórios agudos e crônicos, semelhantemente à aterosclerose, ocorrem alterações importantes no perfil lipídico e no metabolismo. As concentrações de lipoproteína de alta densidade (HDL) diminuem, e as partículas de lipoproteína de baixa densidade (LDL) tornam-se mais suscetíveis à oxidação, o que facilita sua infiltração nas paredes dos vasos. Durante a inflamação sistêmica, observa-se o aumento da resistência à insulina. Todas essas alterações são frequentemente vistas em pacientes críticos e reconhecidas como síndrome metabólica do paciente crítico.(1-5)

Em quadros crônicos, Ridker et al., demonstraram que a redução da proteína C-reativa (PCR) relacionada à terapia com estatinas levou a um menor risco de mortalidade cardiovascular, mesmo em pacientes com perfil lipídico normal. Esses achados foram atribuídos a efeitos hipolipemiantes independentes dos inibidores da 3-hidroxi-metilglutaril coenzima A (HMG-CoA) redutase. Na verdade, os estudos clínicos sugerem que muitos dos benefícios observados com as estatinas são relacionados a propriedades pleiotrópicas, incluindo os efeitos anti-inflamatórios, a ação antitrombótica, a regulação da atividade endotelial, os efeitos antioxidantes e o aumento da 25-hidroxi-vitamina D – mas não os efeitos hipolipemiantes.(6-12)

Estudos observacionais destacaram o potencial das estatinas na prevenção de lesão renal aguda induzida por contraste (LRAIC), sugerindo que os efeitos pleiotrópicos desses fármacos podem exercer também ação nefroprotetora.(13) Esses achados foram corroborados pelo estudo prospectivo randomizado PRATO-ACS, em que Leoncini et al., demonstraram que a terapia de alta dose com rosuvastatina, administrada no momento da admissão do paciente, no cenário agudo, foi associada a menores taxas de eventos renais, como LRAIC, após angiografia coronariana. No entanto, poucos estudos encontraram relação direta entre o uso de estatinas, a mortalidade e a necessidade de terapia renal substitutiva (TRS),(14-18) no que consiste o principal objetivo deste estudo.

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American English

OAmayo94(3)_2019_2

ORIGINAL ARTICLE

Severity of White Matter Hyperintensities and Effects on All-Cause Mortality in the Mayo Clinic Florida Familial Cerebrovascular Diseases Registry

Tasneem F. Hasan, MD, MPH, CPH; Kevin M. Barrett, MD; Thomas G. Brott, MD; Mohammed K. Badi, MD; Elizabeth R. Lesser, MS; David O. Hodge, MS; and James F. Meschia, MD

Among adults aged 60 to 90 years, 90% have white matter hyperintensities (WMH) on brain magnetic resonance imaging (MRI), and the severity of WMH increases with age.¹ In the elderly population, WMH are associated with cognitive impairment, gait disorder, and loss of global independence.² The burden of functional WMH has also been associated with poorer outcomes after stroke,³ and although deep and periventricular WMH may have divergent etiologies, they both have adverse effects on stroke outcomes.⁴ Further, an increased risk of parenchymal hematoma after mechanical (2.1) thrombectomy with first-generation devices has been reported in patients with moderate or severe WMH,⁵ but whether this relationship holds for thrombectomy with modern stent retrievers and aspiration catheters is not known.

White matter hyperintensities are associated with an increase in all-cause mortality in the general adult population. A meta-analysis of 4 population-based studies, including the Rotterdam and Framingham studies, revealed a significant correlation between WMH and mortality, as assessed by brain MRI (hazard ratio, 2.3; 95% CI, 1.9-2.8; $P < .001$).⁶

The purpose of this study was to test whether WMH severity, measured using a standardized clinical scale, was associated with all-cause mortality within a heterogeneous clinical population with cerebrovascular diseases (CVD).

PATIENTS AND METHODS

Study Population and Data Collection

The study cohort was a heterogeneous population enrolled in the Mayo Clinic Florida Familial Cerebrovascular Diseases Registry. Table 1 shows the qualifying diagnoses of participants in this study. The Registry is approved by the Mayo Clinic Institutional Review Board, and every participant provided written informed consent (IRB 08-003878). Between October 26, 2010, and October 5, 2017, the Registry had prospectively enrolled 1011 diverse participants from inpatient and outpatient neurology services along with all available and consenting adult relatives with and without CVD. Individuals aged 18 years and older and those who had either a diagnosis or a history of CVD, a family member with diagnosed CVD, and those unaffected by CVD were eligible to be enrolled into the Registry.

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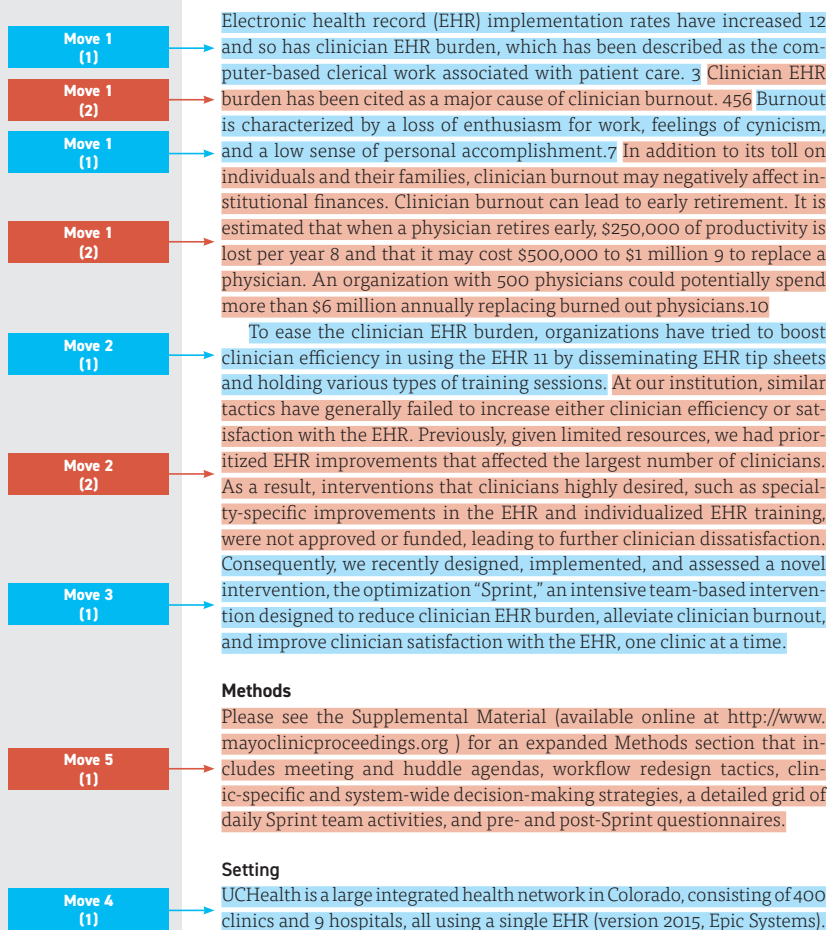
Ethical Issues

Move 4
(3)

OAmayo94(3)_2019_2

Optimization Sprints: Improving Clinician Satisfaction and Teamwork by Rapidly Reducing Electronic Health Record Burden RSS

Amber Sieja MD, Katie Markley MD, Jonathan Pell MD, Christine Gonzalez CSM, Brian Redig MBA, Patrick Kneeland MD e Chen-Tan Lin MD



OAmayo94(6)_2019_6

Perception of the Risk of Stroke and the Risks and Benefits of Oral Anticoagulation for Stroke Prevention in Patients With Atrial Fibrillation: A Cross-Sectional Study

Mohammad Hijazi MD, Sami Aljohani MD, Fahad Alqahtani MD, Zakeih Chaker MD, Muhammad Al Hajji MD, Ahmad Al Hallak MD e Mohamad Alkhoul MD



Appendix 2. Informal agreement in Brazilian Portuguese to give consent to participate in the study

Termo de Consentimento Livre e Esclarecido

Eu, José Belém de Oliveira Neto, aluno de Mestrado do Programa de Pós-Graduação em Estudos Linguísticos e Literários em Inglês da FFLCH -USP, sob orientação da Prof. Dra. Marília Mendes Ferreira, pretendo comparar artigos científicos da área de medicina em língua inglesa e língua portuguesa baseado no conceito de retórica intercultural. Essa comparação será feita através da análise de gênero textual, artigo científico. O procedimento de análise será feito da seguinte forma:

- Treinamento de voluntários sobre movimentos retóricos;
- Prática de análise após treinamento;
- Reunião consensual.
- Gravação dos consensos para uso exclusivo do pesquisador, sendo garantido o anonimato dos participantes.

Ao concordar em participar da pesquisa, será solicitado do(a) senhor(a) que participe das atividades descritas acima, em datas e horários a serem combinados com este pesquisador. O tempo a ser dispensado nessas atividades será distribuído, aproximadamente, da seguinte forma:

- Treinamento – aproximadamente 6 horas (total).
- Primeiro consenso: aproximadamente 1 hora.
- Exercício: aproximadamente 1 hora.
- Análise: aproximadamente 40 horas.
- Segundo consenso: aproximadamente 1 hora.

Total aproximado de tempo a ser dispensado pelo (a) participante: 49 horas.

A participação nesta pesquisa é protegida pela portaria do Conselho Nacional de Saúde - CNS/2012, relacionada à Pesquisa com Seres Humanos, assegurando ao(à) senhor(a) o seu direito de:

- Ter a liberdade de participar ou deixar de participar do estudo, sem que isso lhe traga algum prejuízo ou risco;
- Manter seu nome em sigilo absoluto, utilizando nome fictício (apelido) escolhido pelo(a) senhor(a), sendo que o que disser não resultará em qualquer dano à sua imagem e/ou integridade;

- Interromper sua participação na pesquisa a qualquer momento, sem qualquer dano ou consequência;
- Receber respostas e retorno dessa pesquisadora referente a quaisquer dúvidas, antes, durante ou após o período de coleta de dados.

A pesquisa não oferece risco psicológico, é voluntária e sem qualquer tipo de remuneração para a mesma. Os resultados deste estudo poderão ser publicados em textos científicos ou apresentados em eventos científicos, sem que sua identidade seja revelada.

Contatos para eventuais dúvidas ou informações:

- José Belém de Oliveira Neto - jose.bon@usp.br
- Professora Dra. Marília M. Ferreira - mmferreira@usp.br

Declaro que, após ter os termos esclarecidos pelo pesquisador, e ter compreendido o que me foi explicado,

Consinto

Não consinto

em participar do presente projeto de pesquisa. Estou ciente que este documento será emitido em duas (02) vias, sendo que, uma cópia ficará comigo e outra com a pesquisadora.

Nome do(a) participante

Assinatura do(a) participante

Endereço de e-mail do
participante para contato: _____



José Belém de Oliveira Neto
jose.bon@usp.br

Prof. Dra. Marília Mendes Ferreira
FFLCH – USP, Sala 29 - Prédio da Letras
mmferreira@usp.br

São Paulo, 31 de Agosto de 2020.

Appendix 3. English version of Portuguese excerpts from the Brazilian journal

Introduction section

1 - *Adolescence is a period of development characterized by several biological, psychological and social changes...[E1]*

2 - *Similarly to atherosclerosis, during acute and chronic inflammatory processes there are important changes in lipid profile and metabolism. [E3]*

3 - *In recent years, the neutrophil-to-lymphocyte ratio (NLR) and the platelet-to-lymphocyte ratio (PLR), which derive from a calculation of blood count parameters, were introduced as potential markers of inflammation in cardiac diseases, neoplasms and diabetes-associated complications.^(REFERENCE)[E4]*

4- *Non-adherence to drug therapy for DM is among the major problems faced by specialists. It also increases costs for healthcare systems due to the low rate of DM control, which leads to high morbidity and mortality rates from DM. ^(REFERENCE)[E6]*

9 - *The anticholinergic activity scales currently available were developed and validated in the US, Europe and Australia.^(REFERENCE)[E2]*

10 - *Observational studies highlighted the potential of statins in the prevention of contrast-induced acute kidney injury (CI-AKI), suggesting that its pleiotropic effects may also exercise nephroprotective actions.^(REFERENCE)[E3]*

11 - *Despite the well-established relation between tobacco use by parents and by children,^(REFERENCE) no association has been proven so far between parental smoking and the use of alcohol and illicit drugs by their children. Neither if this relation would also be applicable to non-smoking adolescents, considering that tobacco use by youth is associated with the use of illicit drugs^(REFERENCE) and alcohol;^(REFERENCE) therefore, these behaviors are considered confounding factors and variables that must be controlled. [E1]**

12 - *However, few studies have seen a direct relation between statin use, mortality and renal replacement therapy (RRT),(REF.) which is the main objective of this study. [E3]*

17 - *To evaluate the current model employed to teach urgent and emergency ultrasonography to undergraduate medical students. [E5]**

18 - *To compare fat and lean tissue mass, mineral bone content and density, and physical fitness indicators between experienced amateur competitive soccer players and physically active young adults of similar age but not involved in officially recognized sports.” [E9]*

19 - *A retrospective study carried out between 2012 and 2015” [E8]*

20 - *An observational, descriptive, cross-sectional study...” [E10]*

Methods section

24 - *A prospective study conducted at the Hospital Geral do Grajaú , at São Paulo (SP), Brazil, with sixth-year undergraduate medical students at Universidade Santo Amaro , from May to September 2015). [E5]*

25 - *Data were obtained retrospectively from the medical records of the Hospital Information System of the Hospital de Clínicas of Universidade Federal do Paraná (UFPR). [E7]*

26 - *coming up to a total of 1,027 subjects within the established period. [E4]*

27 - *Accordingly, we randomly included 466 ICU admissions, which corresponded to 26% of the total admissions. [E7]*

28 - *All students in the classrooms selected were invited to take part in the study, regardless of their age. The inclusion criterion adopted was adolescents regularly enrolled in public high schools of the state of Pernambuco. The exclusion criteria included inappropriate filling of the questionnaires, adolescents aged under 14 and over*

19, students who were absent on the day the questionnaire was applied, or students and/or guardians refusing to take part in the research study. [E1]

29 - All patients admitted to the ICU during the study period who stayed for more than 24 hours, and had more than two drugs prescribed were considered eligible. Patients previously included in the sample were excluded. [E10]

36 - The instrument was named *Alfabetização em Saúde Relacionada à Adesão Medicamentosa entre Diabéticos (ASAM-D)* (Health Literacy Related to Adherence to Drug Treatment among Diabetic Patients). [E6]

37 - The software *Lexi-Interact* was used to identify PDI in medical prescriptions. It consists of a database with restricted online access, with updated information on more than 8,000 unique drug terms. [E10]

38 - They were allocated to groups of eight or nine students according to medical school rotations, and were submitted to a workload of 5 hours, including theory and practicing sessions. [E5]

39 - Data such as age, ICU setting, the length of hospital stay, presence of sepsis, severity of sepsis (septic shock), infection site, and outcome (death or discharge) were evaluated. In parallel, the positivity rate of blood cultures and the isolated microorganisms were also evaluated. [E7]

40 - Questionnaire responses were rated according to the following Likert scale: 1 for nothing; 2, little; 3, neutral; 4, very much; and 5, extremely. [E5]

41 - After including all suggestions, the instrument was ready to be applied to part of the population to be studied, aiming to determine the instrument's reliability; that is, to guarantee that the results obtained would be the same when the instrument was used at a different time, a different place, and by other people with the same purpose.^(REFERENCE) [E6]

48 - Descriptive statistics (range, mean, standard error of the mean, 95% confidence interval of the mean and standard deviation) were calculated for the overall sample. [E9]

49 - Sepsis was defined as cases of infection with systemic repercussions (meeting at least two of the following criteria: core body temperature $>38^{\circ}\text{C}$ or $<36^{\circ}\text{C}$, heart rate $\geq 90\text{bpm}$, respirations $\geq 20/\text{minute}$, and/or carbon dioxide partial pressure $\text{PaCO}_2 < 32\text{mmHg}$). [E7]

50 - It was considered as AKI any decrease of renal function in the last 48 hours, characterized by an increase in absolute serum creatinine (sCr) of at least $26.5\mu\text{mol/L}$ (0.3mg/dL), an increase in sCr $\geq 50\%$ (1.5-fold baseline value, or a decrease in the urine output (UO) $< 0.5\text{mL/kg/hour}$ for more than 6 hours. [E3]

51 - Data analysis was based on average scores.^(REFERENCE) Students averaging 4 or over were thought to have provided satisfactory answers. [E5]

52 - The following thresholds were used as reference: alpha < 0.30 (very low); alpha between 0.30 and 0.60 (low); alpha between 0.60 and 0.75 (moderate); alpha between 0.75 and 0.90 (high); alpha > 0.90 (very high).⁽²⁷⁾ The instrument's reliability was measured through the calculation of the agreement by estimating Kappa coefficients. The following criteria of Kappa value interpretation were considered: no agreement (< 0); poor agreement (0 to 0.19); reasonable agreement (0.20 to 0.39); moderate agreement (0.40 to 0.59); substantial agreement (0.60 to 0.79); and excellent agreement (0.80 to 1.00).^(REFERENCE) [E6]

53 - Statistical analysis was carried out using Stata release 11 (Stata Corporation, College Station, TX, USA). In the descriptive analysis, the characteristics of the patients were presented as mean and standard deviation, or relative or absolute frequencies, when appropriate. The rate of exposure to drug interactions was calculated by the ratio between the number of days exposed to the event and the total length of hospital stay. [E10]

54 - The final multivariate logistic regression model included only the factors that remained independently, and were significantly associated with outcome during hospital stay, after adjustment for the effects of all other variables. [E7]

Results section

63 - Table 1 summarized descriptive statistics for anthropometry (including air displacement plethysmography), DXA whole body and regional body composition, and parameters extracted from handgrip and isokinetic dynamometry. Several variables violated the assumption of normal distribution reflecting intergroup heterogeneity. [E9]

64 - During the study, 348 patients were assessed (Table 1). The mean age was 26.4 years, with a mean of two pregnancies; 26.2% reported at least one miscarriage. In the sample, there was a predominance of cesarean section (57.8%), but roughly 37% were still pregnant. [E10]

65 - Among other foods, feeding of processed foods tended to decrease significantly in infants aged 6 months at the time of introduction, going from 30.8% in 2012 to 15.6% in 2015 (Table 4). [E8]

66 - Among the patients with sepsis, 57 (39%) died. The sepsis group had a five-fold higher risk of death, and a two-fold longer ICU stay than the non-sepsis group. Furthermore, over half of the patients admitted with a diagnosis of sepsis (52%) developed septic shock, which was related to a higher risk of mortality (OR: 38, 95%CI: 12.3-116.8). [E7]

67 - Pre-admission statin therapy demonstrated a protective role in our cohort of critically ill patients, resulting in an improvement of both kidney and patient outcome combined. [E3]

68 - Most students failed to provide correct answers to questions addressing clinical applications of US, even after course completion. Overall, the number of correct answers decreased between post-course and 90-day tests. [E5]

Discussion/Conclusion section

77 - *The present study showed a lower PLR in hyperglycemic subjects, and found no difference in the NLR, when comparing hyperglycemic and normoglycemic subjects.*

[E4]

78 - *Overall, the pathogens isolated from each site were as previously described, predominantly enteric GNB and non-fermenting in respiratory infections, and enteric GNB and enterococci in intra-abdominal infections.*^(REFERENCE) [E7]

79 - *Likewise, this study revealed a 55% greater retention rate in post-course compared to pre-course tests, and a 22% drop within 90 days.* [E5]

80 - *However, the fact that food consumption in this study was defined as food items consumed for at least 3 days over a 60-day period should be accounted for.*^(REFERENCE)

[E8]

81 - *However, contrary to expectations, isokinetic strength did not differ between groups.*

[E9]

82 - *In contrast, urinary tract infection appeared as a reducing factor, which may be justified by the treatment approach applied in those cases in which a smaller number of drugs related to severe PDI are used.* [E10]

83 - *The mortality rate of 40% observed in this study is worrisome, and highlights the need to identify the factors associated with these disparities, which may be the consequence of a delay in hospitalization or in diagnosis, and inadequate therapeutic management, among others.* [E7]

84 - *That is why the effect of statin therapy on reducing inflammatory cascade can be responsible for nephroprotective action of this class of drug.* [E3]

85 - *In support of this finding, Taylor et al.,*^(REFERENCE) *stated that the social environment (parents, siblings and friends) can strongly affect the chance of adolescents using alcohol.*

[E1]

86 - *Multidisciplinary and/or interdisciplinary work can contribute to decrease the number of drugs with anticholinergic activity. In a study with psychiatric patients, interventions jointly performed by physicians and pharmacists helped decrease the anticholinergic burden, leading to significantly improved memory and quality of life for patients.*^(REFERENCE) [E2]

87 - *Short course duration is yet another limitation. Also, the fact that undergraduates had not received any ultrasound training in preclinical years may have negatively impacted their performance in proposed assessments, as they lacked the necessary clinical background.* [E5]

88 - *This study has some limitations. The use of a cross-sectional data derived from a relatively small sample comprising exclusively male adults limit the result extrapolation to other populations.* [E9]

89 - *Bedside US techniques were not associated with high levels of difficulty; therefore, images acquired were probably highly accurate.* [E6]

90 - *It is important to emphasize that the identification, description, and monitoring of potential interactions are important to ensure safety of pregnant woman under intensive care.* [E10]

91 - *Other investigations can identify possible dimensions of the construct.* [E6]

92 - *Large-scale prospective clinical trials are needed to deepen our knowledge in this field. Moreover, it is still not clearly known the extent and kind of side effects of statins in critically ill patients.* [E3]