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Accessibility of the consent form in Brazilian clinical research

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Abstract

The informed consent form informs clinical research patients about the nature of the research and their rights, formalizing their decision to participate; however, studies show that this document is written in a complex manner, compromising patient autonomy. Two consent forms from the same hypothetical research were developed with different writing styles and analyzed by the Coh-Metrix Port tool, which evaluates linguistic metrics and textual accessibility. Results showed that both texts were complex and required high schooling level to be understood. These findings reinforce the perception that consent forms may have their real function compromised and point to the importance of changing its elaboration.

Keywords: Informed consent. Clinical protocols. Ethics, research. Consent forms.

Resumo

Acessibilidade do termo de consentimento na pesquisa clínica no Brasil

O termo de consentimento livre e esclarecido tem a função de informar o participante de pesquisas clínicas sobre a natureza da pesquisa e seus direitos, formalizando sua decisão de participar. Estudos indicam que esse documento é redigido de modo complexo, comprometendo a autonomia do participante. Para este trabalho, foram redigidos dois termos de consentimento da mesma pesquisa hipotética, com estilos de redação diferentes. Ambos os termos foram analisados pela ferramenta Coh-Metrix Port, que avalia métricas linguísticas e acessibilidade textual. A análise indicou que os textos são complexos e exigem alta escolaridade para serem entendidos. Esses achados reforçam a percepção de que, no Brasil, os termos de consentimento podem ter sua real função comprometida e apontam a importância de modificar sua forma de elaboração.

Palavras-chave: Consentimento informado. Protocolos clínicos. Ética em pesquisa. Termos de consentimento.

Resumen

Accesibilidad al formulario de consentimiento en la investigación clínica en Brasil

El formulario de consentimiento informado tiene la finalidad de mostrar la naturaleza de la investigación y sus derechos al participante de la investigación clínica para formalizar su decisión de participar en el estudio. Los estudios indican que la redacción de este documento es compleja, lo que compromete la autonomía del participante. Para este estudio se redactaron dos formularios de consentimiento de una misma investigación hipotética, con diferentes estilos de escritura. Para el análisis de ambos formularios se utilizó la herramienta Coh-Metrix Port, que evalúa las métricas lingüísticas y la accesibilidad textual. Los resultados apuntaron a que los textos son complejos, lo que requiere un alto nivel de educación para su comprensión. Estos hallazgos coinciden que, en Brasil, los formularios de consentimiento pueden tener su finalidad comprometida y señalan la necesidad de modificar su forma de elaboración.

Palabras clave: Consentimiento informado. Protocolos clínicos. Ética en investigación. Formularios de consentimiento.

Research

The authors declare no conflict of interest.

Clinical research is a scientifically accepted tool for testing the efficacy and safety of new prophylactic or curative treatments. As its execution involves, at different levels, the participation of human beings, it was necessary to establish guides, rules or even legislation to avoid that—due to the need to develop new therapies—abuses were committed against study participants. In this context, some bioethical issues began to receive special attention.

With the introduction of the *Nüremberg Code* in 1947 [1], protection of human dignity and autonomy were ensured. The *Declaration of Helsinki*, 1964 [2], and its subsequent versions, and the 1983 *International Ethical Guidelines for Biomedical Research Involving Human Beings* [3], complement and update the ethical care that should support clinical research. More recently, we have the *Universal Declaration on Bioethics and Human Rights*, 2005, adopted by the United Nations Educational, Scientific and Cultural Organization (UNESCO) [4]. Each country developed its own regulations and, in Brazil, the National Health Council (CNS) resolutions [5-8], in addition to the Code of Medical Ethics [9], guide these procedures [10,11].

The main parameter to assess the feasibility of clinical studies, from an ethical point of view, is the analysis of the risk/benefit ratio in the broadest possible context. Regarding the rights of research participants, one of the points that must be considered is obtaining informed consent. This is effectively carried out through a process in which the participants express their decision to participate or not after being clarified about the nature of their participation in the research [12,13].

Consent is formalized after reading and signing the informed consent form (ICF), a document that appears in regulations and resolutions as a source of clarification about the research and participant rights and as a formal instrument for them to express their free and autonomous decision. The ICF formalizes the conditions under which are played the roles of researchers, sponsors, institutions and, mainly, participants of the study, in addition to serving the purpose of enlightening participants by providing all information pertinent to the research [14-16].

It is essential, then, to consider that free and informed consent is a decision-making process that, although it should be addressed to the participant, obviously requires the commitment of the researcher. The researcher must ensure that the process is focused on the preferences, needs and values of the participant, in addition to complying with and submitting everything in accordance with regulation [17].

Although free and informed consent is understood as a process that is not restricted to a written document, the importance of the ICF as part of this process cannot be denied. In the execution of clinical studies, it is not uncommon to have situations in which this form is the only instrument to enlighten participants.

In some cases, and for different reasons, the ICF content tends to be very extensive, overloaded with information, leading to the risk of compromising or even impairing its function of enlightening research participants. One of the main reasons for such is that its content has intrinsically positioned elements whose main objective is to protect the researcher from possible legal proceedings [18].

For these and other reasons, it is not uncommon to find extremely long ICFs containing technical or legal terminology. These elements end up transforming the consent form into a contract, more than a document that aims to ensure that the research participant has been adequately informed [19,20].

This situation is especially relevant in developing countries, where research participants tend to have low education level and poor health literacy, often living in a situation of social vulnerability. In this context, it is possible that consent is formalized without due clarification, directly impairing the full exercise of participant autonomy [18].

Bioethics

The *Belmont Report* [21], published in 1979, proposed principles to guide medical practice: respect for persons, beneficence and justice. That same year, Beauchamp and Childress [22] added another principle, non-maleficence, and renamed

the principle of "respect for persons" as "respect for autonomy."

Applied to the conditions of execution of a clinical study, the principle of autonomy is respected when the participant, after being informed and being aware of the nature of their participation and possible risks and benefits, decides to participate or not in the research. Beneficence and non-maleficence are reflected in the research through the possible risks that a new treatment can imply, in an attempt to mitigate them and not expose the participant to something that can be avoided, considering and adapting to their health conditions. Finally, justice is seen as ensuring equal care and protection for all participants throughout the research process [23].

In conjunction with bioethical principles, the deliberative method of Diego Gracia [23] corroborates the manner of thinking and acting in health decision-making. The proposal of this method consists in finding the most reasonable decisions for ethical problems, contextualizing in a systematic and objective manner.

The deliberative method aims to weigh the values and duties involved in an ethical problem in order to reach at the so-called "reasonable and prudent solution," which would positively meet all the values involved. When applying such method to the process of free and informed consent, the most reasonable and prudent solution—according to the deliberative method—would be one that respected all values in the best possible way [22].

Habermas [24], in his discursive ethics, argues that the deliberative process must occur through the exchange of information between the parties, valuing freedom (autonomy) and suppressing any type of coercion, that is, considering all aspects mentioned for decision-making. In considering this thought, the process should be conducted with a dialogue that addresses the participant considering their personal values, education, the relationship between physician and participant, and possible vulnerabilities involved.

Habermas' deliberative process model [24] proposes four conditions: 1) deliberation without internal or external deformations; 2) free expression of arguments; 3) acceptance of discordant arguments; and 4) search for reasonable and prudent solutions. Thus, the entire clarification process should be guided by dialogue, making the participant fully autonomous to decide after understanding the research.

The process of obtaining free and informed consent lacks tools—or use—for effective assessment, which ultimately influences the few studies focused on this aspect of clinical research. This issue is also due to such tools being complex and to this document not being tested and improved during development before use in the field for research. Tools such as Coh-Metrix Port [25] assist in assessing readability, comprehensibility, and intelligibility, in addition to MacCAT-CR [26], which assesses whether the participant understood what was explained, duly evaluated the content and, finally, had the competence to decide on participation.

This study uses for the first time the Coh-Metrix tool to analyze the ICF texts used in Brazil.

Method

This work employed documentary analysis of two ICF models from a fictitious study, seeking tools that evaluated textual and linguistic metrics, and applied this tool to the two forms prepared. Thus, the aim was to evaluate the textual and linguistic accessibility of ICFs used in clinical research in Brazil.

The two ICFs were written with different textual approaches, but simulating what occurs in an actual clinical research. The first ICF, here called "representative form," was written in the format of items, containing all information concerning the nature of the study. The second form, called "modified form," was written keeping the information of the representative form, but in the format of questions and answers. Both forms were submitted to the appreciation of five evaluators with experience in clinical research ethics and considered suitable to be used in real situations.

The two texts were analyzed using the Coh-Metrix tool [27] adapted for use in Portuguese:

Coh-Metrix Port [25]. The adapted version used in this work is also being used and validated in other contexts: automatic *corpus* intelligibility analysis (AIC) [28], Coh-Metrix-Dementia [29] and psycholinguistic metrics [30].

Coh-Metrix Port [25] was developed so that linguistic issues could be simplified, thus facilitating broader access to information, for social, school, medical and developmental reasons. The tool has 180 metrics, and this work analyzed 83 metrics that have conclusive studies on their influence on the complexity of a text. The metrics assess the presence and absence of linguistic elements, comprising nouns, verbs, adverbs, extension of clauses/sentences, negative sentences, and relation of linguistic elements. Each metric provides a score, which, depending on its presence or absence in a text, influences its complexity. Hence, we found high scores, which are good, and low scores.

The analysis was conducted in two different manners. First, the texts were analyzed in full; then, the texts were separated into four blocks of information (Chart 1), aligned with CNS Resolution 466/2012 [8]. Blocks were separated to check whether there would be a more complex class of information. Comparison of the raw data of both analyses, without classification or parameter content, was considered an improvement or worsening.

Chart 1. Description of information blocks and corresponding items, as per CNS Resolution 466/2012 [8].

Information block	Corresponding items, as per CNS Resolution 466/2012
Basic information for the participant	a. Justification b. Objectives
Procedures that will be used in the research	c. Methods
Information about risks and benefits	d. Risks e. Benefits
Rights of the participant	f. Right to assistance g. Freedom to choose whether or not to participate in the research h. Confidentiality and privacy during all phases of the research i. Guarantee that the participant will receive a copy of the ICF j. Reimbursement guarantee if there are expenses related to the research k. Indemnity in case of damages arising from the research

We evaluated basic metrics, such as sentence size, number of sentences, average sentences per paragraph, number of clauses in sentences, word classes, pronouns, nouns, adjectives, adverbs and verbal tense, also checking whether the text indicates dialogue with the reader and words that precede verbs. It was also possible to measure the parameter related to the age of acquisition of word classes by the individual, the age at which the imageability (ability to abstract) of words is developed, and the familiarity with words according to age. The indicated ages are separated as follows: 1 (from 0 to 2 years); 2 (from 3 to 4 years); 3 (from 5 to 6 years); 4 (from 7 to 8 years); 5 (from 9 to 10 years); 6 (from 11 to 12 years); and 7 (13 years or more).

Coh-Metrix [27] uses recognized and substantiated tests to complement its analysis, such as: Flesch [31], Brunet index [32], adapted Dale Chall formula [33], Frazier syntactic complexity formula [34], Gunning Fox index [35], Horoné statistics [36], and Yngve syntactic complexity formula [37].

Each Coh-Metrix Port [25] score has a specific analysis, as the presence or absence of a given textual element can increase or decrease the accessibility of a text. Therefore, the mere numerical evaluation of the scores is not adequate to interpret them.

To understand the complexity of the words used in the text (nouns, verbs, adjectives and adverbs), we used calculations of age of acquisition of words, imageability and familiarity, which are established and measured by Coh-Metrix Port [25].

Age of acquisition is a psycholinguistic characteristic of the words of content and represents the age interval in which the word was acquired. Familiarity refers to how much speakers of a language know a word and use it in their daily lives. Imageability means how much a word can be abstracted into images by speakers of a language, also interpreted based on the number of meanings of a given word.

The values of these metrics considered in the tool range from 1 to 7—considering the age groups, according to the classification presented above—and the lower the value, the simpler the text.

Results

The analysis showed no noteworthy changes regarding the improvement or worsening of the results when comparing the performance of the two texts. There was a worsening only in the "Basic information for the participant" block (Table 1).

Table 1. Summary of results found with the use of Coh-Metrix Port.

Part of the text analyzed	Number of metrics in which the modified form showed improvement in relation to the representative form	Number of metrics in which both forms showed no difference	Number of metrics in which the modified form became worse in relation to the representative form
Full text	43	3	37
Basic information for the participant	27	7	49
Procedures that will be used in the research	47	4	32
Information about risks and benefits	41	3	39
Rights of the participant	37	5	41

The results shown in Table 2 indicate that the improvement of the modified form in relation to the representative form was not constant, with improvement in some parameters and worsening in others, when the respective texts were evaluated based on the information blocks.

Also, when considering the Flesch index, which is part of the evaluation sub-instruments contained in Coh-Metrix Port [25] and indicates how many years of education a person needs to have in order to understand a text, the representative form was classified as "very difficult" (score 28.99 – graduate level), while the modified form was considered "difficult" (score 39.93 – university level). Both require a high level of education to be properly understood.

Table 2. Interpretation of the comparative results between the texts of the different information blocks of both ICF models, using criteria of imageability, familiarity and age of acquisition of words.

Parameter	Basic information for the participant	Procedures that will be used in the research	Information about risks and benefits	Rights of the participant	Full text
Proportion of content words with familiarity values between 1 and 2.5 (from 0 to 4 years of age)					
Proportion of content words with familiarity values between 2.5 and 4 (from 5 to 7 years of age)					
Proportion of words with familiarity values between 4 and 5.5 (from 8 to 10 years of age)					
Proportion of words with familiarity values between 5.5 and 7 (from 11 years of age)					
Average familiarity values of text content words (the lower the overall average, the simpler the words)					
Proportion of text content words with acquisition age between 1 and 2.5 (from 0 to 4 years of age)					
Proportion of text content words with acquisition age values between 2.5 and 4 (from 5 to 7 years of age)					
Proportion of words with acquisition age values between 4 and 5.5 (from 8 to 10 years of age)					
Proportion of words with acquisition age values between 5.5 and 7 (from 11 years of age)					
Average acquisition age values of text content words (the lower the overall average, the simpler the words)					
Proportion of text content words with imageability between 1 and 2.5 (from 0 to 4 years of age)					
Proportion of text content words with imageability between 2.5 and 4 (from 5 to 7 years of age)					
Proportion of words with imageability values between 4 and 5.5 (from 8 to 10 years of age)					
Proportion of words with high imageability value, from 5.5 to 7 (from 11 years of age)					
Average imageability values of text content words (the lower the overall average, the simpler the words)					
Number of times each form had a higher result or they obtained the same result	RF=8 MF=5 Equals=2	RF=10 MF=4 Equals=1	RF=10 MF=4 Equals=1	RF=8 MF=6 Equals=1	RF=10 MF=4 Equals=1

ICF: informed consent form; RF: representative form; MF: modified form; blank cells: equal results; green cells: RF higher than MF; yellow cells: MF higher than RF

Discussion

This study used, in an unprecedented manner, the Coh-Metrix Port tool [25] to evaluate, at multiple levels of analysis, the characteristics of the ICF texts. The two ICFs were written so as to represent what happens in the context of clinical research in Brazil. The types of writing are different, but both styles have been used. In the research ethics community in Brazil, there is a feeling that writing an ICF in the format of questions and answers favors its accessibility.

Coh-Metrix [25] has been validated in publications to evaluate texts for specific purposes. This study did not intend to propose the validation of this tool to analyze the adequacy of the texts of the two ICFs, but rather to be a first approach to the characteristics of words, sentences and to the relation between the ideas that are contained in these documents.

The scores obtained in the analyses contained in this study cannot be interpreted in a broad way, nor should they lead to the creation of textual adequacy parameters for ICFs. The lack of a more specific framework to assess the adequacy of ICFs using this tool impairs interpretation. There is no cutoff point between what is adequate and what is not adequate.

Considering the education level of the Brazilian population participating in clinical research, the results indicate that these two forms are not adequate to be applied in the process of obtaining free and informed consent; however, improvements can be observed, such as reduced document length and both having been "properly evaluated and approved." The forms are considered inadequate because the profile of individuals who usually participate in these studies consists largely of people with elementary education (53.7%). By considering this single parameter, it is possible to corroborate conclusions of studies already published [11,18] and verify that the changes in the modified form were insufficient to make it more suitable to be understood by most of those who participate in clinical research in Brazil.

The results also show that proposing modifications to an ICF to make it more suitable for the participants' understanding is not a simple task. Among other reasons, it can be speculated that this is due not only to the required compliance with the CNS research ethics standards, but also so the legal departments of pharmaceutical companies comply with the current regulation (CNS Resolution 466/2012) [8], which requires that ICFs cover a significant amount of information. Moreover, such information, given its nature, cannot always be expressed more simply in a text.

The task of writing an ICF that is accessible to any person is arduous, and this tends to strengthen the opinion that its relative importance in the process of obtaining free and informed consent should not be as significant as it currently is, because a form with a high degree of accessibility can be considered unethical, since it does not preserve the bioethical principle of research participant autonomy by not providing information adequately. Thus, the process will be compromised as to its ethical aspect, since the form, in addition to legitimizing a decision and an agreement between participants and researchers, has the main function of clarifying the nature of their participation.

Research participants are considered vulnerable for the following reasons: condition that led them to participate in the study, possible education level that may affect the understanding of the conditions of their participation in a study, reading of a text or even possible fear of rupture of their relationship with their physician. Thus, it is necessary to propose changes in the consent process: for example, by emphasizing that not only a more reasonable form can be the solution. A more deliberative process should always be sought, in which the participant's prior knowledge on the subject under study, reading and comprehension skills, and social conditions can be understood and considered.

From a bioethical point of view, the participant should be the center of the consent process, which needs to be structured in a deliberative manner, focusing on the participant and their participation. Researchers must always take care so the involvement of human beings in their studies is always ethical, without deviations—whether intentional or not.

The relations between physician and patient, or between researcher and participant, is often perceived by participants as something involving hierarchical levels, such that what the physician

or researcher says is taken as an unquestionable order. This effect may be even worse, depending on the participant's social and educational conditions. Therefore, in addition to changes in the content and format of ICFs, the process of seeking free and informed consent should be based mainly on dialogue between researcher and participant, that is, a deliberation on the research.

Defensive medicine has its foundations and proposals; however, in the case of clinical research, the physician-researcher and the sponsor, upon obtaining the ICF signed by the participant, believe to be protected from any judicial process due to malpractice, recklessness and/or negligence. Nevertheless, the Brazilian legal system applies the expression *erga omnes* to personality rights, so they are considered non-renounceable and, therefore, guarantee that no research participant can renounce them, not even of their own volition. Hence, making the process more ethical and adequate is fundamental to fully benefit participants and properly protect researchers [37].

The intention is not to use the results of this study to argue about the level of influence that ICFs used in Brazil have on the ethics of clinical research in the country. With the current knowledge, it was found that there are no objective parameters that can separate the adequate from the inadequate. Perhaps the issue to be discussed here is the overestimation of the ICF in the consent process, the search for a way to find a path that leads to the development of a more reasonable and accessible form.

Still, the importance of the ICF in the ethical context of clinical research execution should not be underestimated. Therefore, it is legitimate, in any case, to care about the way it is written. In teams that design clinical trial protocols, there is rarely anyone who specializes in linguistics who takes charge of this part of the work or who is consulted to check whether the form is adequate. Similarly, the document is not tested before being used, that is, it is written, approved by the responsible bodies and then used.

Moreover, usually instruments are not used to assess the competence of participants to make a decision about their participation in a clinical study. In considering these factors, we again reiterate the concern with the true exercise of autonomy by clinical research participants and the importance of creating an ICF and process model that addresses these situations in order to make the process more accessible and ethical.

Proposing changes in this situation is urgent and, accordingly, suggesting the use of tools such as Coh-Metrix Port [25] to routinely assess the complexity of ICF texts, as well as their adequacy to the profile of most clinical research participants, is something to be considered. Assessing the ethics of the process also implies recommending the use of instruments that assess the participants' competence for autonomous decision-making after adequate clarification. Such tools are available, and one of them is the aforementioned MacCAT-CR [26], which unfortunately has not been validated for use in Brazil.

Final considerations

This study is a first approach to the use of the Coh-Metrix Port tool [25] to analyze free and informed consent forms used in Brazil. Although the results should not lead to more general conclusions as to textual adequacy and parameters for ICFs, it is important to emphasize the urgent need to rethink the format of these documents.

Even changing the format from text to a question-and-answer format did not make the text that much more accessible. It is pointed out, then, the need for change on the part of sponsors, so as not to focus the ICF on the legal aspect; of researchers, so as not to make the ICF a document for their protection; and of the system comprising the Research Ethics Committees (CEP) and the National Research Ethics Commission (CONEP), which must review their position of excessive detailing in the document. Only in this way, by abandoning the legal focus and the overdetailed view, will it be possible to build a simpler ICF that meets the real needs of research participants.

More studies are needed to establish metric parameters. To this end, supporting this tool with others that assess the decision-making competence of research participants after being informed can provide results not only about the texts, but about the participants and their relation with the process.

It can be assumed that the main contribution of this study is to join several others that in different ways have constantly demonstrated that the process of seeking free and informed consent—in many cases and for various reasons—has become a mere formality, a document for the defense of researchers and sponsors, tending to deviate from its true purpose.

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References

1. The Nuremberg Code (1947). BMJ [Internet]. 1996 [acesso 24 jan 2022];313(7070):1448. DOI: 10.1136/bmj.313.7070.1448
2. World Medical Association. Declaration of Helsinki: recommendations guiding physicians in biomedical research involving human subjects. JAMA [Internet]. 1997 [acesso 24 jan 2022];277(11):925-6. DOI: 10.1001/jama.1997.03540350075038
3. Council for International Organizations of Medical Sciences. International ethical guidelines for biomedical research involving human subjects [Internet]. Geneva: CIOMS; 2002 [acesso 24 jan 2022]. Disponível: https://bit.ly/41fHMOp
4. Organização das Nações Unidas para a Educação, a Ciência e a Cultura. Declaração universal sobre bioética e direitos humanos [Internet]. Paris: Sessão da Conferência Geral; 2005 [acesso 24 jan 2022]. Disponível: https://bit.ly/3wMwmnb
5. Conselho Nacional de Saúde. Resolução nº 1, de 1988. Aprova as normas de pesquisa em saúde. Diário Oficial da União [Internet]. Brasília, 1988 [acesso 24 jan 2022]. Disponível: https://bit.ly/41dcp7j
6. Conselho Nacional de Saúde. Resolução nº 196, de 10 de outubro de 1996. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos. Diário Oficial da União [Internet]. Brasília, nº 201, p. 21082-21085, 10 out 1996 [acesso 24 jan 2022]. Seção 1. Disponível: https://bit.ly/3zyvPH7
7. Conselho Nacional de Saúde. Resolução nº 466, de 12 de dezembro de 2012. Aprova as diretrizes e normas regulamentadoras de pesquisas envolvendo seres humanos e revoga as Resoluções CNS nos. 196/96, 303/2000 e 404/2008. Diário Oficial da União [Internet]. Brasília, p. 59, 13 jun. 2013 [acesso 24 jan 2022]. Seção 1. Disponível: https://bit.ly/3w4T2yR
8. Conselho Nacional de Saúde. Resolução nº 510, de 7 de abril de 2016. Dispõe sobre as normas aplicáveis a pesquisas em Ciências Humanas e Sociais cujos procedimentos metodológicos envolvam a utilização de dados diretamente obtidos com os participantes ou de informações identificáveis ou que possam acarretar riscos maiores do que os existentes na vida cotidiana. Diário Oficial da União [Internet]. Brasília, p. 44-6, 24 maio 2016 [acesso 24 jan 2022]. Seção 1. Disponível: https://bit.ly/41yYSXq
9. Conselho Federal de Medicina. Código de Ética Médica [Internet]. Brasília: CFM; 2018 [acesso 17 abr 2023]. Disponível: https://bit.ly/3kOv1qD
10. Englev E, Petersen KP. ICH-GCP Guideline: quality assurance of clinical trials: status and perspectives. Ugeskr Laeg [Internet]. 2003 [acesso 24 jan 2022];165(16):1659-62. Disponível: https://bit.ly/40eObbh
11. Guibu IA, Moraes JC, Guerra AA Jr, Costa EA, Acurcio FA, Costa KS *et al*. Main characteristics of patients of primary health care services in Brazil. Rev Saúde Pública [Internet]. 2017 [acesso 24 jan 2022];51(2):1s-13s. DOI: 10.11606/S1518-8787.2017051007070
12. Hochhauser M. Informed consent and patient's rights documents: right, a rite, or a rewrite? Ethics Behav [Internet]. 1999 [acesso 24 jan 2022];9(1):1-20. DOI: 10.1207/s15327019eb0901_1
13. Emanuel EJ. Ethical and regulatory aspects of clinical research: readings and commentary. Baltimore: Johns Hopkins University Press; 2003.

14. Murray B. Informed consent: what must a physician disclose to a patient? Virtual Mentor [Internet]. 2012 [acesso 24 jan 2022];14(7):563-6. DOI: 10.1001/virtualmentor.2012.14.7.hlaw1-1207

15. Krumholz HM. Informed consent to promote patient-centered care. JAMA [Internet]. 2010 [acesso 24 jan 2022];303(12):1190. DOI: 10.1001/jama.2010.309

16. Stacey D, Legaré F, Lewis K, Barry MJ, Bennett CL, Éden KB *et al*. Decision aids for people facing health treatment or screening decisions. Cochrane Database Syst Rev [Internet]. 2017 [acesso 24 jan 2022];4(4):CD001431. DOI: 10.1002/14651858.CD001431.pub5

17. Anandaiah A, Rock L. Twelve tips for teaching the informed consent conversation. Medical Teacher [Internet]. 2018 [acesso 24 jan 2022];41(4):465-70. DOI: 10.1080/0142159X.2018.1426844

18. Amorim KPC, Garrafa V, Melo AD, Costa AVB, Caldas G, Oliveira L *et al*. Perfil e vozes dos participantes de pesquisas clínicas no Brasil. Rev. bioét. (Impr.) [Internet]. 2020 [acesso 24 jan 2022];28(4):664-73. DOI: 10.1590/1983-80422020284430

19. Castilho EA, Kalil J. Ética e pesquisa médica: princípios, diretrizes e regulamentações. Rev Soc Bras Med Trop [Internet]. 2005 [acesso 24 jan 2022];38(4):344-7. DOI 10.1590/S0037-86822005000400013

20. Adami ER, Chemin MRC, França BHS. Aspectos éticos e bioéticos da pesquisa clínica no Brasil. Estudos de Biologia [Internet]. 2014 [acesso 24 jan 2022];36(532):SE07. DOI: 10.7213/estud.biol.36.SE.07

21. The National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research. The Belmont report: ethical principles and guidelines for the protection of human subjects of research. HHS.gov [Internet]. 1979 [acesso 24 jan 2022]. Disponível: https://bit.ly/3PYgUwP

22. Beauchamp TL, Childress JF. Principles of biomedical ethics. 7ª ed. New York: Oxford University Press; 2013.

23. Garcia D. Moral deliberation: the role of methodologies in clinical ethics. Med Health Care Philos [Internet]. 2001 [acesso 24 jan 2022];4(2):223-32. DOI: 10.1023/A:1011445128427

24. Habermas J. Teoria dell'agire comunicativo. Bologna: Il Mulino; 2017.

25. Scarton CE, Aluisio SM. Análise da inteligibilidade de textos via ferramentas de processamento de língua natural: adaptando as métricas do Coh-Metrix para o português. Linguamática [Internet]. 2010 [acesso 24 jan 2022];2(1):45-61. Disponível: https://bit.ly/3mH3onK

26. Appelbaum PS, Grisso T. MacArthur competence assessment tool for clinical research (MacCAT-CR). Sarasota: Professional Resource Press; 2001.

27. Graesser AC, Mcnamara DS, Louwerse, Max M, Zhiqiang C. Coh-Metrix: analysis of text on cohesion and language. Behav Res Methods Instrum Comput [Internet]. 2004 [acesso 24 jan 2022];36(2):193-202. DOI: 10.3758/BF03195564

28. Maziero EG, Pardo TAS, Aluísio SM. Ferramenta de análise automática de inteligibilidade de córpus (AIC) [Internet]. São Paulo: Universidade de São Paulo; 2008 [acesso 24 jan 2022]. Disponível: https://bit.ly/3UNUB08

29. Cunha ALV. Coh-Metrix-Dementia: análise automática de distúrbios de linguagem nas demências utilizando processamento de línguas naturais [dissertação] [Internet]. São Carlos: Universidade de São Paulo; 2015 [acesso 24 jan 2022]. Disponível: https://bit.ly/3mH6KqQ

30. Santos LB, Duran MS, Hartmann NS, Cândido A Jr, Paetzold GH, Aluísio SM. A lightweight regression method to infer psycholinguistic properties for Brazilian Portuguese. In: Ekštein K, Matoušek Václav, organizadores. Text, speech, and dialogue [Internet]. Cham: Springer; 2017. p. 281-9.

31. Kincaid JP, Fishburne RP, Rogers RL. Derivation of new readability formulas (automated readability index, fog count and flesch reading ease formula) for navy enlisted personnel. Millington: Institute for Simulation and Training; 1975.

32. Brunet É. Le vocabulaire de Jean Giraudoux, structure et évolution. Genève: Slatkine; 1978.

33. Chall JS, Dale E. Readability revisited: the new Dale-Chall readability formula. Cambridge: Brookline; 1995.

34. Dowty DR. Natural language parsing: psychological, computational and theoretical perspectives. Cambridge: Cambridge University Press; 2005.

35. Seely J. The Oxford guide to effective writing and speaking: how to communicate clearly. Oxford: Oxford University Press; 2013.

36. Honoré A. Some simple measures of richness of vocabulary. Association for Literary and Linguistic Computing Bulletin [Internet]. 1979 [acesso 24 jan 2022];7(2):172-7. Disponível: https://bit.ly/3UOyvKP

37. Yngve VH. A model and an hypothesis for language structure. Proc Am Philos Soc [Internet]. 1960 [acesso 17 abr 2023];104(5):444-66. Disponível: https://bit.ly/40fdY32

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