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# Discrepancies of Abstracts Presented in Coloproctology Congresses and Later Publish as Full Manuscripts. A Brazilian Perspective

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#### **Abstract**

**Introduction** The purpose of this retrospective bibliometric study was to assess the discrepancies between coloproctology surgery meeting abstracts and subsequent fulllength manuscript publications.

Methods Abstracts presented at the Brazilian Congress of Coloproctology Surgery from 2015 to 2019 were compared with matching manuscript publications. Discrepancies between the abstract and therefore the subsequent manuscript were categorized as major (changes within the purpose, methods, study design, sample size, statistical analysis, results, and conclusions) and minor (changes within the title, authorship, and number of female authors) variations.

Results The conversion rate of abstracts in published manuscripts was 6,9% (121 abstracts). There were inconsistencies between the study title (66,1%), authorship (69,5%), study design (3,3%), sample size (39,2%), statistical analysis (24,8%), results (25,6%), and conclusions (12,4%) of manuscripts compared with their corresponding meeting abstracts.

Conclusion As changes occur before manuscript publication of coloproctology surgery meeting abstracts, caution should be exercised in referencing abstracts or altering surgical practices based on abstracts content.

# **Keywords**

- discrepancies
- manuscripts
- meeting abstracts
- publications
- colorectal surgery

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## Introduction

The presentation of abstracts of scientific papers in Medical and Academic Congresses is an integral and essential component not only in medical research, but also in the training and updating of specialists.<sup>1–3</sup> These events function as an opportunity for communication and learning about the medical specialty of peers, as well as stimulating debate.

However, there could be inconsistencies in complete manuscripts in journals, which results in a limiting factor of the applicability of new discoveries and knowledge shared with the academic world and also with professionals who could not attend the congress.<sup>3,4</sup>

Thus, the objective of this descriptive study was, based on the compilation of bibliometric data from the Brazilian Congress of Coloproctology from 2015 to 2019, to evaluate discrepancies between the work presented at the congress and its subsequent scientific publication. No similar study regarding differences in abstracts presented at coloproctology conferences and subsequently published as full manuscripts were found in the literature.

# **Methods**

Abstracts presented at the Brazilian Congress of Coloproctology, headed by the Brazilian Society of Coloproctology (SBCP) over a period of five years (between 2015 and 2019) were analyzed, using the annals available on the website of the Brazilian Society of Coloproctology and published in the format of supplements of the Journal of Coloproctology, also from the same institution. Only oral presentations/free themes and posters were included, therefore, presentations in free-video format were not included. As an exclusion factor, abstracts that were not complete, title did not match the text content and absence of authors were not included in the sample.

Two separate examiners used a standard form for data collection through the Microsoft Excel 2019 program. To ensure the uniformity of the analyses, 15 (fifteen) abstracts of each year were used as a test and evaluated in a calibration meeting between the reviewers. No reliability interval was used between the different investigators, because all discrepancies and/or conflicts were separated and subsequently discussed in regular meetings until a consensus was found. To evaluate the consistency of the sample, the main author of the study performed blind/random searches validating fragments collected from the database.

Regarding publications in peer-reviewed journals, they were identified through a standardized search in MEDLINE (PubMed), SciELO and Google Scholar databases from March to November 2021. Whenever a peer-reviewed manuscript was retrieved, the information contained in the abstract and in the manuscript were compared to determine the correspondence between them according to the strict criteria previously applied.

The changes observed comparing the abstract presented at the coloproctology congress with its respective publication were added according to the following analysis: changes in relation to the title; findings; conclusions; study design; level of evidence; number of total authors and women, including changes in position at work or exchange of authors; number of patients and statistical analysis. The potential discrepancies were categorized into major and minor. The major inconsistencies that potentially limited the validity of the abstracts included changes in the study objective and/or hypothesis, results, conclusions, sample size or number of patients involved, and presence of statistical analysis. The smallest included differences in the title of the study, number of authors, number of female authors.

# **Statistical Analysis**

In order to ensure the consistency and uniformity of the data, the same form by the Microsoft Excel 2019 program was used; all data collected were carefully checked, aiming at eliminating inconsistencies (e.g., repeated records, misunderstandings in the categorization of articles). For descriptive analysis, the mean was used for metric variables and percentages for categorical variables. Intra-period and interperiod correlations were performed. Analysis of Variance, Equality of Two Proportions, paired T-student test, Chi-Square, and Confidence Interval for Mean were applied in statistical comparisons. All analyses were performed with the Statistical Package for Social Science program (SPSS version 20.0 for Windows, Chicago, IL, USA). The values were considered significant for a 95% confidence interval (p < 0.05).

#### Results

A total of 1,756 abstracts presented at the Brazilian Congress of Coloproctology were analyzed over 5 years, from 2015 to 2019. Being 1169 (66.6%) in the poster category, and 587 (33.4%) in the oral category. From the total abstracts analyzed, 121 abstracts published as complete articles were found, representing a conversion rate of 6.9% for complete manuscripts when we analyzed the 5 years grouped.

The authorship of the papers, when we analyze only data from the published works, is similar to the results of the abstracts, with an average of total authors and women, respectively,  $6.67 \pm 0.48$  and  $2.04 \pm 0.34$ . However, there was a drop in the presence of women from 91.6% to 75.2% when the publication occurs.

When comparing the number of authors of the abstracts presented at the congress with the publication of the original article, it was seen that there was a change in more than half of them, with a 33.1% increase and a 36.4% decrease in the number of authors. Another change was in relation to the order/position of the authors, who previously occupied first or last place, which occurred in 85.1% of the cases. For women, there was a change in the order of those who held an important position (first or last author) in 39.2%.

Another interesting fact is in relation to the presence of statistical analysis of the published papers which was 74.3%, while for all abstracts in general it was 33.6%. Nevertheless, there was a change to the presence of statistical analysis in

24.8% when comparing the abstracts and later their published manuscript.

Other changes that occurred when the abstract was published were title 66.1%, number of patients 38%, results 25.6%, conclusions 12.4%, as described in **►Table 1**. However, when analyzed year by year these numbers vary and do not follow any increasing or decreasing trend.

The study design and level of evidence showed insignificant changes when comparing the abstracts presented that respectively, as described in ►Table 2.

When analyzing the distribution of Published for the factors of Change, reported as major and minor criteria, from the previously described method, it was observed, through the Two Proportion Equality test, statistical significance in the distribution of all factors, as in "Change in Outcome" where we had 74.4% (p-value = < 0.001). Another relevant example is the distribution of "Change in Article Title" where the vast majority statistically significant had a change in 66.1% (p-value < 0.001).

#### Discussion

Scientific meetings, conferences and congresses aim to exchange experiences among physicians, researchers, sharing results, diagnostic methods, treatments, as well as discussion

of clinical cases.<sup>5</sup> In this context, knowing the importance of Medical Congresses in the dissemination of scientific knowledge, it is expected that the final destination of the presentations made in these events will result in publications in peer-reviewed journals.<sup>1</sup>

Considering that these abstract presentations are the first step towards dissemination of knowledge acquired throughout research, a continuous analysis of the conversion rate is an interesting data for medical and scientific societies to evaluate the scientific level of their events.<sup>5–8</sup> This is essential to note that only 6.9% of the total of 1,756 abstracts presented at the Brazilian Congress of Coloproctology from 2015 to 2019 were published.

Many of these scientific meetings are the basis for the creation of guidelines for the diagnosis and treatment of various diseases. Previous studies suggest that 53% to 63% of the chapter content of a medical treatise include summaries presented at international meetings of that specialty. <sup>9,10</sup> The presentations of papers in congresses and scientific events, whether oral or in poster format, ideally represent the vanguard of scientific knowledge, because this is where the discussion of original research themes that have not yet been published takes place.<sup>11</sup> Nevertheless, it is not recommended to use abstracts as bibliographic references.<sup>12</sup> It has already been demonstrated that the abstracts

**Table 1** Changes in published ones. Using the two-proportion equality test

Published		N	%	P-value
Change in the title of the article	No	41	33,9%	<0,001
	Yes	80	66,1%	
Author changes	Increased	40	33,1%	0,589
	Decreased	44	36,4%	Ref.
	Manteined	37	30,6%	0,34
Changes of authors (change of order)	No	18	14,9%	<0,001
	Yes	103	85,1%	
Changes of female authors	Increased	27	25,7%	<0,001
	Decreased	24	22,9%	
	Manteined	54	51,4%	
Change of female authors (changed order)	No	65	61,9%	<0,001
	Yes	40	38,1%	
Change in outcome	No	90	74,4%	<0,001
	Yes	31	25,6%	
Change in conclusions	No	106	87,6%	<0,001
	Yes	15	12,4%	
Change in Study Design	No	117	96,7%	<0,001
	Yes	4	3,3%	
Change in Number of Patient	Increased	21	18,3%	<0,001
	Decreased	24	20,9%	<0,001
	Manteined	68	59,1%	Ref.
	Not Meseaured	2	1,7%	<0,001

<b>Table 2</b> Publication associated	d with qualitative	factors. Analysis pe	rformed using th Chi-square test

		Unpublished		Published		Total		P-value
		N	%	N	%	N	%	
Category	Oral	512	31,3%	75	62,0%	587	33,4%	<0,001
	Poster	1.123	68,7%	46	38,0%	1.169	66,6%	
Multicentric	No	1.504	92,0%	103	85,8%	1.607	91,6%	0,019
	Yes	131	8,0%	17	14,2%	148	8,4%	
Awarded	No	890	98,9%	84	93,3%	974	98,4%	<0,001
	Yes	10	1,1%	6	6,7%	16	1,6%	
Presence statistical analysis	No	538	68,3%	52	50,9%	590	66,3%	<0,001
	Yes	249	31,7%	50	49,1%	299	33,7%	1
Presence of women	No	91	7,4%	21	20,0%	112	8,4%	<0,001
	Yes	1.140	92,6%	84	80,0%	1.224	91,6%	1
Classes de n° autoras	Zero	91	7,4%	21	20,0%	112	8,4%	<0,001
	One	216	17,5%	21	20,0%	237	17,7%	
	2-3	591	48,0%	51	48,6%	642	48,1%	
	4-5	290	23,6%	9	8,6%	299	22,4%	
	≥6	43	3,5%	3	2,9%	46	3,4%	
Study design	Randomized clincal trial	4	0,2%	0	0,0%	4	0,2%	<0,001
	Experimental Studies	40	2,4%	11	9,1%	51	2,9%	
	other	23	1,4%	1	0,8%	24	1,4%	
	Prospective	188	11,5%	39	32,2%	227	12,9%	
	Case report	848	51,9%	19	15,7%	867	49,4%	
	Retrospective	482	29,5%	44	36,4%	526	30,0%	
	Literature review without systematic review	4	0,2%	0	0,0%	4	0,2%	
	Systematic review	7	0,4%	1	0,8%	8	0,5%	
	Case series	39	2,4%	6	5,0%	45	2,6%	

presented at the congresses may have incomplete or unsatisfactory data and when published as a complete article, their results and conclusions may undergo substantial changes.<sup>13</sup>

A comparison of the abstracts that were presented in the event with the same research in the version that was published, some changes were observed. The major inconsistencies, which potentially limited the validity of the abstracts, included changes in the study objective and/or hypothesis, results, conclusions, sample size or number of patients involved, and presence of statistical analysis. Other less important differences included differences in the title of the study, number of authors and number of female authors.

Inconsistencies classified as minor (54.6-92%) were more prevalent in the literature,<sup>2</sup> although small discrepancies, such as alterations in authorship and title, do not represent critical factors<sup>2,3,14</sup>; large inconsistencies can alter the interpretation of scientific data and should be avoided.<sup>8,14–17</sup> Among the most important discrepancies, the one that occurred the most was a change in sample size (39.2%),

followed by changes in results (25.6%), change in conclusions (12.4%) and change in study design (3.3%).

In similar researches, the change in sample size of the study was reported between 25-43.7%. 3,14,18 Changes in the sample size may occur for several reasons, such as continued allocation of individuals to the study after sending the abstract, censoring data by exclusion/inclusion criteria, and also the peer review process can lead to the exclusion of some segment of the sample.<sup>8,14,19</sup> According to Dagi AF,<sup>17</sup> changes in the number of the sample studied were associated with risks of discrepancies (OR 10.38, 95% CI 5.16-20.86, P < 0.001). A decrease in the sample greater than 10% increases the discrepancy in the article published by 25 times (OR 24.92, 95% CI 8.66-71.68, P < 0.001), while an increase in the sample greater than 10% increases the discrepancy by 8 times (OR 8.36, CI 3.69-19.00, P < 0.001).<sup>20</sup> In the case of Coloproctology, the sample of patients in the articles that were published increased in 18.3% of the cases, while in 20.9% it decreased. Because changes in sample size correlate strongly with changes in

statistics, results and clinical outcomes, it is recommended that the abstracts indicate whether the sample size is final at the time of presentation and whether the sample sizes have changed since previous publication or presentation.

Among the main inconsistencies, we found that in 25.6% of the cases there was a change in the results, changing 12.4% of the conclusions. Studies also evaluated rates of changes in results very varied in relation to results (14-48.2%) and conclusions (4-38.6%).  $^{3,17,21-23}$  These data alert to the need for caution when referencing and using summary data that have not been published.  $^{6,24}$  Regarding the authorship of the papers, the abstracts published as complete manuscripts present on average a total number of authors  $6.67\pm0.48$  and women  $2.04\pm0.34$ , an average similar to the abstracts only presented at the congress. When comparing the number of authors, there was a change in more than half of the cases, and 33.1% increased and 36.4% decreased the number of authors; In similar studies, the change of authors reported was comparatively lower, between 43–54%.  $^{2,6,17,25}$ 

In Brazil, 32% of coloproctology specialists are female, in contrast to other surgical subspecialties such as thoracic surgery, oncologic surgery, digestive tract and urology (10.4%, 14.6%, 10.8% and 2.3%, respectively) which has the lowest number of women working, according to the last medical demographic census of 2020. However, contradictorily, it is noted that in the analysis of the presence of women there was a drop from 91.6% to 75.2% in the published articles. This may occur due not only to the greater male presence in publications within the specialty and, therefore, greater chances of being present in a published article, but also because of the possible social misogyny behavioral issue.

In addition, in our data, 85.1% of the cases occurred change of order/position of the authors, who previously occupied first or last place. In the literature, this change is justified by the need for credit for authorship for interns, disagreement among potential authors, as well as increased multidisciplinary and complex research and pressure to publish for academic promotion.<sup>25</sup>

The presentation of abstracts in professional congresses offers a forum for the introduction of new research and feedback. This feedback received after presentation or peer review, may correct inadequacies in the design and qualify the study for publication.<sup>26</sup> Once submitted, the peer review process improves data quality and often determines methodological changes in the manuscripts under review.<sup>6,11,21</sup>

In fact, ethical research obligations require the proper to meet submission deadlines.

However, the frequency of discrepancies and the reduced publication rate suggests that the scientific data brought by abstracts presented at coloproctology conferences should be questioned and should not modify patterns in clinical care. Data should be explicitly marked as preliminary until they have reached convincing and clinically relevant statistical significance.

It would be interesting for the published studies to indicate whether the results or outcomes changed, in relation to those reported in abstracts previously.<sup>21</sup>

In addition to the considerations made above, it is essential to emphasize the limitations of our investigation. The reasons for the discrepancies between the abstracts and their corresponding articles were not analyzed; and, therefore, additional research should evaluate the explanatory causes, as understanding them would help readers better interpret the results.

Another limitation was to evaluate in a specific time interval a single niche, which is the specialty of coloproctology, and, therefore, any generalization of the findings should be limited to time and regional comers. <sup>13</sup> It is possible that the analysis of other meetings and variable time intervals showed different discrepancy rates. Consequently, new research should emerge through methodological changes, such as the inclusion of different criteria and evaluation of disparities between abstracts presented and later published. Evaluating the explanatory causes, as understanding them would help readers better interpret the results.

Although we have categorized the discrepancies into minor and major, based on previously adopted criteria<sup>4,13,28,29</sup> we cannot provide substantial comments on the impact of the above differences in scientific inference and/or decision-making for surgical physicians and coloproctologists. Since we could only compare published manuscripts with meeting abstracts presentations, the discrepancy rate is potentially higher when considering the rate of non-publication of coloproctology meeting abstracts.

In addition, data collection lasted a little more than two years after the last congress evaluated (2019), and perhaps little time to capture manuscript publications. It is possible that some abstracts will be later published, with longer follow-up; however, the vast majority (88.4%) of the manuscripts were published within 24 months after presentation, according to data from the literature 6.24.25,30 thus, it is unlikely that we have significantly underestimated the publication rate and, therefore, the discrepancies between presentations and published works.

## **Conclusion**

The main changes between the abstract presented at the congress and its subsequent publication found in this study were related to the sample size, results, conclusion, title, number and order of the authors. The frequency of discrepancies and the rate of non-publication suggest that scientific abstracts presented at coloproctology conferences should not be entrusted blindly or able to modify patterns in clinical care.

Conflict of Interest None declared.

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