Since January 2020 Elsevier has created a COVID-19 resource centre with free information in English and Mandarin on the novel coronavirus COVID-19. The COVID-19 resource centre is hosted on Elsevier Connect, the company's public news and information website.

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Evaluation of reporting quality of abstracts of randomized controlled trials regarding patients with COVID-19 using the CONSORT statement for abstracts

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ABSTRACT

Objective: To evaluate the reporting quality of randomized controlled trial (RCT) abstracts regarding patients with coronavirus disease 2019 (COVID-19) and to analyze the factors influencing the quality.
Methods: The PubMed, Embase, Web of Science, and Cochrane Library databases were searched to collect RCTs on patients with COVID-19. The retrieval time was from inception to December 1, 2020. The CONSORT statement for abstracts was used to evaluate the reporting quality of RCT abstracts.
Results: A total of 53 RCT abstracts were included. The CONSORT statement for abstracts showed that the average reporting rate of all items was 50.2%. The items with a lower reporting quality were mainly the trial design and the details of randomization and blinding (<10%). The mean overall adherence score across all studies was 8.68 ± 2.69 (range 4–13.5). Multivariate linear regression analysis showed that the higher reporting scores were associated with higher journal impact factor ($P < 0.01$), international collaboration ($P = 0.04$), and structured abstract format ($P < 0.01$).
Conclusions: Although many RCTs on patients with COVID-19 have been published in different journals, the overall quality of reporting in the included RCT abstracts was suboptimal, thus diminishing their potential usefulness, and this may mislead clinical decision-making. In order to improve the reporting quality, it is necessary to promote and actively apply the CONSORT statement for abstracts.

1. Introduction

With the development of evidence-based medicine, randomized controlled trials (RCTs) have become the gold standard to compare the effectiveness of different interventions and provide direct evidence for clinical decision-making (Sackett et al., 1996). It can avoid possible bias in clinical trial design, balance confounding factors, and improve the effectiveness of statistical tests (Chalmers, 1998). Therefore, the accurate and complete reporting of RCT results is essential for the effective utilization of high-quality evidence (Cook et al., 1996). This has led to the development of reporting guidelines for RCTs. The Consolidated Standards of Reporting Trials (CONSORT) statement was established in 1996 (Begg et al., 1996), revised in 2001 (Moher et al., 2001), and last updated in 2010 (Schulz et al., 2010).

As the full text of many papers is not available and working time is limited, most readers will evaluate the results of trials based only on the information provided in the abstracts and decide on the need for further reading of the full text (Schnelle et al., 1992). Moreover, researchers rely heavily on abstracts when deciding whether to include an article in a meta-analysis or systematic review (Smith et al., 2007). In addition, the results of a study by Marcelo et al. showed that more than a third of doctors routinely used abstracts to answer clinical questions (Marcelo et al., 2013). These factors indicate that abstracts are an integral part of the initial assessment of the value of a trial, and inadequate reporting in abstracts may affect the correct application of study results in

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everyday clinical practice (Begg et al., 1996; Pitkin et al., 1999; Ioannidis and Lau, 2001). Thus, the reporting quality of abstracts is critical.

The CONSORT statement for abstracts (CONSORT-A) was published in 2008 to improve the reporting quality of RCT abstracts (Hopewell et al., 2008). This is a reporting guideline extension and provides guidance on the reporting of RCT abstracts. CONSORT-A for abstract reporting has been endorsed by the World Association of Medical Editors, the International Committee of Medical Journal Editors, and the Council of Science Editors (Hopewell et al., 2008). CONSORT-A provides the basic information to correctly assess the validity of trials and the applicability of results of RCTs (Hopewell et al., 2008).

Coronavirus disease 2019 (COVID-19) emerged in December 2019 and quickly spread to countries around the world. As of September 3, 2021, there had been 218 946 836 confirmed cases of COVID-19, including 4 539 723 deaths worldwide (WHO, 2021). The treatment and prevention of this new and serious infectious disease threatening human health is of vital importance. Although the CONSORT statement for abstract reporting has been issued, the reporting quality of RCT abstracts has been a subject of concern. Previous studies have shown that the reporting quality of RCT abstracts has remained suboptimal in other fields (Chen et al., 2018; Fang et al., 2020; Hua et al., 2019; Chow et al., 2018). As poor reporting quality of RCT abstracts is a barrier to evidence-based practice, poor quality abstracts of RCTs on patients with COVID-19 will affect clinical decision-making and the effectiveness of evidence-based practices (Begg et al., 1996), with consequent detrimental effects on the treatment of patients and disease control and possibly even causing harm.

The primary objective of this study was to assess the reporting quality of RCT abstracts regarding patients with COVID-19 and to analyze possible related causes, so as to provide reliable evidence for subsequent related studies and meta-analyses. A further aim was to provide suggestions for RCT abstracts of higher reporting quality.

2. Methods

2.1. Study design

This research was a cross-sectional study that analyzed data from published RCT abstracts regarding patients with COVID-19.

2.2. Search strategy

The PubMed, Embase, Web of Science, and the Cochrane Library databases were searched to collect RCTs on patients with COVID-19. The retrieval time was from inception to December 1, 2020. The search was conducted by two investigators; the detailed strategy is provided in **Supplementary Appendix S1**.

2.3. Study selection

Studies meeting the following criteria were included in the study: (1) randomized controlled trials; (2) patients with confirmed or suspected COVID-19 according to the diagnostic criteria of 'the latest clinical guidelines for novel coronavirus' issued by the World Health Organization (WHO); (3) interventions related to patients or suspected patients.

Exclusion criteria included (1) animal experiments, reviews, systematic reviews, case reports, and conference papers; (2) duplicate publications; (3) abstract or full text not available.

The titles of the retrieved articles were imported into Endnote X9 and screened by two reviewers independently. First, the title and abstract of each article were reviewed and assessed regarding appropriateness for inclusion. In the case of doubt, the full texts were downloaded to judge whether the article was indeed an RCT. Any disagreement was resolved by consensus.

2.4. Data extraction

Two authors independently extracted the general characteristics and reporting data of the 53 identified studies into Excel. The general characteristics included continent of the first author, number of authors, sample size, participants, interventions, journal impact factor, international collaboration, word count, structured abstract format.

2.5. Assessment of reporting quality

Two authors independently assessed the reporting quality of the included abstracts according to the original CONSORT-A guidelines and relevant explanations (Hopewell et al., 2008). Any discrepancy was resolved through discussion. The original CONSORT-A checklist includes 17 items. However, as conference abstracts were not included in the present study, the single item (authors) designed specifically for conference abstracts was excluded from the assessment; hence 16 items were assessed. Each checklist item was evaluated to analyze whether it was adequately reported, not reported, or unclear in an RCT abstract. Each item was assigned one of the following scores to indicate whether it was reported: 'yes' 1 point, 'unclear' 0.5 point, or 'no' 0 points (Hua et al., 2015). A score of 1 was given if items 1, 2, 4, 5, 6, 9, 10, 13, 15, and 16 were adequately reported, a score of 0 was given if the item was not reported. Item 3 contains three sub-items (a, b, and c), items 8, 11, and 14 each contain two sub-items (a and b), and items 7 and 12 each contain four sub-items (a, b, c, and d). For these items, a score of 1 was given if sub-item 'a' was reported, a score of 0.5 was given if sub-item 'b', 'c', or 'd' was reported, and a score of 0 was given if these items were not reported, and sub-items 'a', 'b', 'c', and 'd' are independent of each other. Then for each abstract, an overall CONSORT-A score (score range 0 to 16) was calculated by totaling the scores of all 16 quality items.

2.6. Statistical analysis

The statistical analyses were undertaken using IBM SPSS Statistics version 21.0 software (IBM Corp., Armonk, NY, USA). Variables were summarized using descriptive statistics, namely absolute (n) and relative (%) frequencies for categorical variables and the mean and standard deviation (SD) for numerical variables. The kappa coefficient was used to determine the degree of agreement between reviewers. An independent samples t-test and one-way analysis of variance (ANOVA) were used to compare inter-group differences in CONSORT-A scores for general characteristics, as the data met all of the relevant assumptions including normality and homogeneity of variance. A multiple linear regression analysis was performed to determine the association between potential predictors and abstract reporting quality. All significant predictors in the univariate analysis were entered individually into a multivariable analysis. Potential predictors were coded as follows: sample size: $<100 = 1$, $\geq 100 = 2$; interventions: psychology = 1, pharmacology = 2; international collaboration: no = 1, yes = 2; journal impact factor: $<10 = 1$, $\geq 10 = 2$; international collaboration: no = 1, yes = 2; word count: $\leq 250 = 1$, $>250 = 2$; structured abstract format: no = 1, yes = 2. The dependent variable was the CONSORT-A score. No significant violation of normality was found in assessments of the residuals. For all analyses, the statistical significance level was set at $P < 0.05$.

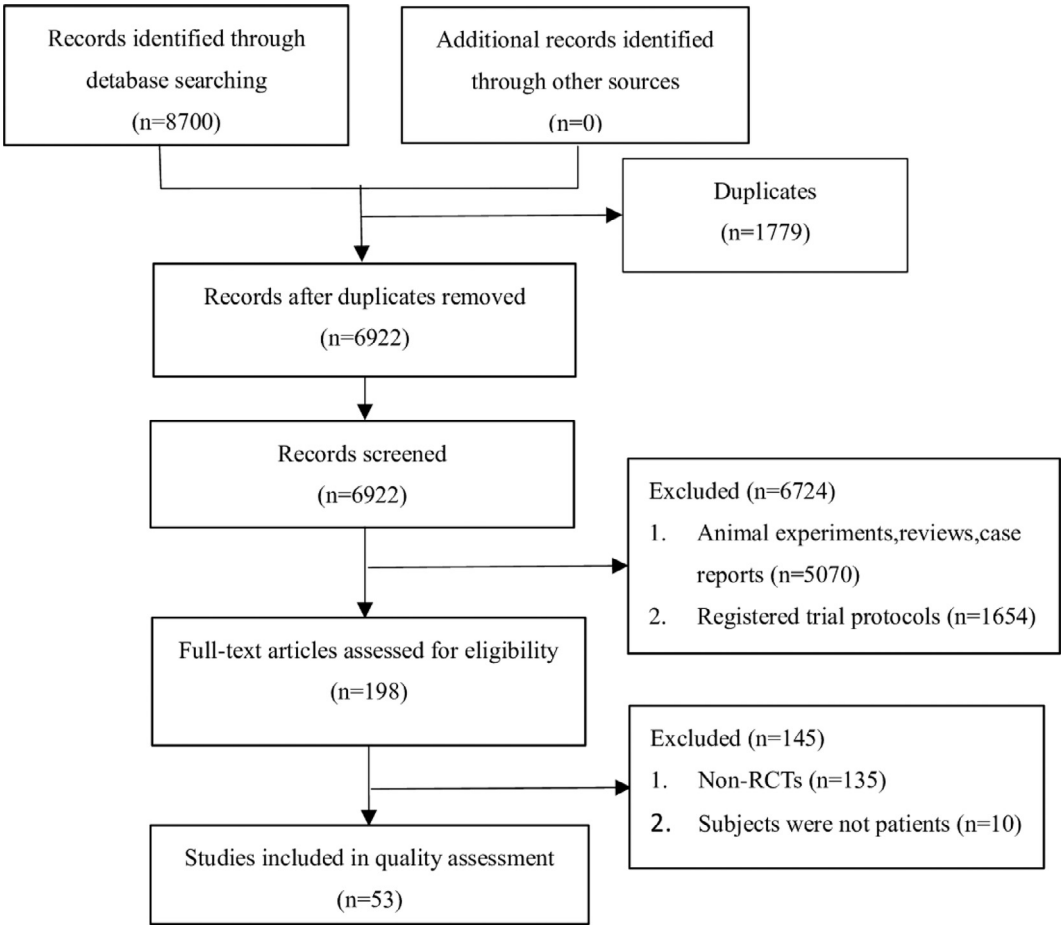

Figure 1. Literature screening process and results.

2.7. Ethical review

Ethical approval was not necessary for this study, as the study did not involve patients, and the included RCT abstracts can be obtained from databases.

3. Results

3.1. Search results

Initially, 8700 RCTs were obtained. Following the exclusion of duplicates, 6922 studies remained. After screening the titles and abstracts, 198 potentially eligible articles were identified. Subsequently the full text of each article was retrieved, and a total of 53 RCTs were confirmed to be eligible for further assessment. Figure 1 outlines the search details in a PRISMA flow diagram.

3.2. Agreement of reviewers

In the pilot study, inter-observer concordance for article selection had a kappa score of 0.82, which was 0.90 after resolving all disputed items through a discussion with a third reviewer (ZJX), suggesting that inter-observer reliability was almost perfect.

3.3. Characteristics of the included studies

Most of the articles reporting the 53 RCTs were from Asia, accounting for 62.3%. The number of authors was mainly more than 20. Over 90% of the articles reported drug interventions, and 22 articles (42.5%) were published in a journal with an impact factor of more than 10. Fourteen (26.4%) abstracts were limited to 250 words, and most abstracts (83.0%) were in a structured abstract format. The characteristics of the included abstracts are reported in Table 1.

3.4. Reporting of all items

Table 2 reports the results of the quality assessment using the CONSORT-A guidelines. The CONSORT-A checklist showed that the average reporting rate of all items was 50.2%. In the general items, the reporting rates of the title, trial registration, and funding were all over 70%, however only two (3.8%) studies described the trial design in their abstract.

Regarding the methodological items, the average reporting rate was 40.6%. Poor reporting quality was found for randomization and blinding. Only one (1.9%) study described the methods of generating random sequences and only nine (17.0%) studies mentioned blinding in their abstract, but none of the studies reported the details of blinding.

In the results section, the average reporting rate was 43.4%. More than 50% of abstracts reported the number of participants for randomizing to each group, number of participants analyzed in each group, outcomes, and conclusions. However, recruitment and harms were poorly reported: only 14 (26.4%) studies described trial status and less than half of the studies reported the harms.

3.5. Overall quality scores and associated factors

Figure 2 shows the frequencies of total scores for all studies. No study reported all 16 items (100% adherence) of the CONSORT-

Table 1
Characteristics of included abstracts ($N = 53$).

Category	Items	Number of articles, *n* (%)	CONSORT-A score (mean ± SD)	*F*/*t*	*P*-value
Continent of first-author				0.675[a]	0.501
	Asia	33 (62.3)	7.89 ± 2.49		
	Europe	7 (13.2)	10.86 ± 1.70		
	North America	8 (15.1)	9.31 ± 2.74		
	Others (South America and Africa)	5 (9.4)	9.80 ± 3.33		
Number of authors				0.531[a]	0.589
	1–10	9 (17.0)	7.11 ± 2.12		
	11–20	13 (24.5)	6.54 ± 1.52		
	>20	31 (58.5)	9.03 ± 2.40		
Sample size				−3.862[b]	<0.001
	<100	25 (47.2)	7.34 ± 2.27		
	≥100	28 (52.8)	9.88 ± 2.49		
Participants				0.504[b]	0.616
	Suspected cases	11 (20.8)	9.05 ± 3.06		
	Confirmed cases	42 (79.3)	8.58 ± 2.61		
Interventions				−2.572[b]	0.013
	Psychology	3 (5.7)	5.00 ± 1.00		
	Pharmacology	50 (94.3)	8.90 ± 2.60		
Journal impact factor				−9.513[b]	<0.001
	<10	31 (58.5)	6.89 ± 1.78		
	≥10	22 (41.5)	11.21 ± 1.39		
International collaboration				−4.477[b]	<0.001
	No	39 (73.6)	7.71 ± 2.28		
	Yes	14 (26.4)	10.74 ± 2.33		
Word count				−4.385[b]	<0.001
	≤250	14 (26.4)	6.56 ± 1.38		
	>250	39 (73.6)	9.60 ± 2.60		
Structured abstract format				−9.817[b]	<0.001
	No	9 (17.0)	6.02 ± 1.34		
	Yes	44 (83.0)	10.42 ± 1.74		

CONSORT-A, Consolidated Standards of Reporting for Abstracts; SD, standard deviation.
[a] *F*-value.
[b] *t*-value.

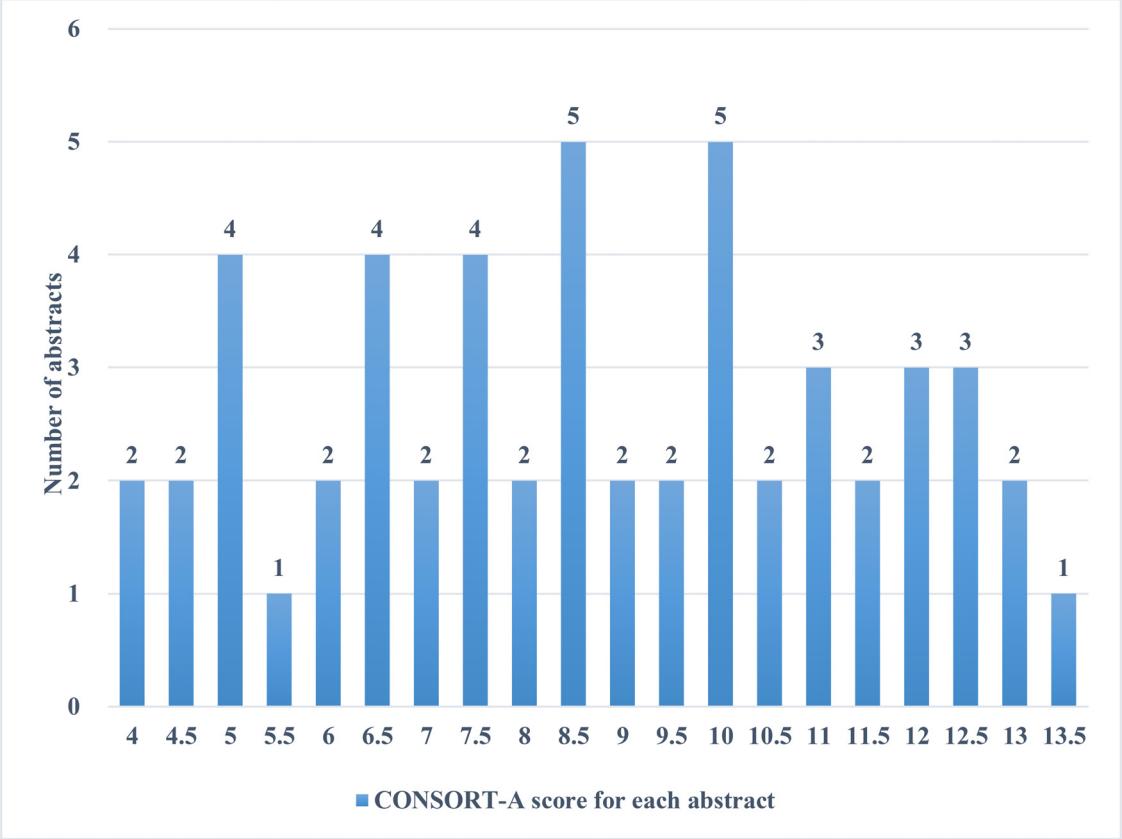

Figure 2. Distribution of the total CONSORT-A scores of the 53 studies.

Table 2
Reporting of each CONSORT checklist item and sub-item in the included 53 RCT abstracts.

Items		Description	CONSORT-A (N = 53), n (%)	95% CI
1.	Title	Identification of the study as randomized	41 (77.4)	(65.7, 89.0)
2.	Trial design	Description of the trial design (e.g., parallel, cluster, non-inferiority)	2 (3.8)	(1.5, 9.1)
Methods				
3.	Participants	a. Eligibility criteria for participants and the settings where the data were collected	12 (22.6)	(11.0, 34.3)
		b. Eligibility criteria for participants	1 (1.9)	(1.9, 5.7)
		c. Settings of data collection	11 (20.8)	(9.5, 32.0)
4.	Interventions	Interventions intended for each group	31 (58.5)	(44.8, 72.2)
5.	Objective	Specific objective or hypothesis	50 (94.3)	(87.9, 100)
6.	Outcome[m]	Clearly defined primary outcome for this report	35 (66.0)	(52.9, 79.2)
7.	Randomization	a. How participants were allocated to interventions	1 (1.9)	(1.9, 5.7)
		b. Random assignment	26 (49.1)	(35.1, 63.0)
		c. Sequence generation	1 (1.9)	(1.9, 5.7)
		d. Allocation concealment	0 (0.0)	(0, 0)
8.	Blinding (masking)	Whether or not participants, caregivers, and those assessing the outcomes were blinded to group assignment	0 (0.0)	(0, 0)
		b. Generic description only (for example, single blind, double blind)	9 (17.0)	(6.5, 27.4)
Results				
9.	Numbers randomized	Number of participants randomized to each group	30 (56.6)	(42.8, 70.4)
10.	Recruitment	Trial status	14 (26.4)	(14.1, 38.7)
11.	Numbers analyzed	a. Number of participants analyzed in each group	28 (52.8)	(38.9, 66.7)
		b. Intention-to-treat analysis or per-protocol analysis	3 (5.7)	(0.8, 12.1)
12.	Outcome[n]	For the primary outcome, a result for each group and the estimated effect size and its precision	20 (37.7)	(24.2, 51.2)
		b. Primary outcome result for each group	5 (11.3)	(1.3, 17.6)
		c. Estimated effect size	13 (24.5)	(12.6, 36.5)
		d. Precision of the estimate (for example, 95% confidence interval)	6 (11.3)	(2.5, 20.1)
13.	Harms	Important adverse events or side effects	23 (43.4)	(29.6, 57.2)
14.	Conclusions	a. General interpretation of the results	52 (98.1)	(94.3, 100)
		b. Benefits and harms balanced	0 (0.0)	(0, 0)
15.	Trial registration	Registration number and name of trial register	40 (75.5)	(63.5, 87.4)
16.	Funding	Source of funding	47 (88.7)	(79.9, 97.5)

CONSORT-A, Consolidated Standards of Reporting for Abstracts; 95% CI, 95% confidence interval for the percentage of abstracts reporting the item.
[m] Outcome reported in the 'Methods' section.
[n] Outcome reported in the 'Results' section.

Table 3
Multiple linear regression determinants of reporting quality of RCT abstracts.

Characteristics		Unstandardized coefficient		Standardized coefficient	t	P-value	95% CI	
		B	SE	Beta			Lower	Upper
Sample size	<100	Ref.						
	≥100	−0.32	0.43	−0.06	−0.74	0.46	−1.19	0.55
Interventions	Psychology	Ref.						
	Pharmacology	1.11	0.80	0.10	1.39	0.17	−0.50	2.71
Journal impact factor	<10	Ref.						
	≥10	2.42	0.53	0.45	4.58	<0.01*	1.36	3.48
International collaboration	No	Ref.						
	Yes	0.91	0.43	0.17	2.21	0.04*	0.05	1.78
Word count	≤250	Ref.						
	>250	0.45	0.41	0.08	1.12	0.27	−0.36	1.27
Structured format	No	Ref.						
	Yes	2.13	0.53	0.39	4.03	<0.01*	1.07	3.19

B, unstandardized regression coefficient; SE, standard error; 95% CI, 95% confidence interval for B; Beta, standardized regression coefficient represents the correlation between the predictor and the dependent variable. Adjusted $R^2 = 0.78$, $P = 0.003$; Ref., reference group.
* Statistically significant.

A checklist. The scores ranged from 4 (25%) to 13.5 (84%). The 53 studies had a mean score of 8.68 (54.3% adherence, 95% confidence interval 5.99–11.36) and a median score of 8.5.

Table 3 shows the results of the linear regression modeling. The seven statistically significant predictors in the univariate analysis were entered into a multivariable model. Among these, the journal impact factor ($P < 0.01$), international collaboration ($P = 0.04$), and structured abstract format ($P < 0.01$) persisted as noticeable predictors of the overall CONSORT-A score.

4. Discussion

This study evaluated the reporting quality of RCT abstracts regarding patients with COVID-19 and analyzed the factors influencing the quality. The results will provide important baseline information for the quality of RCT abstract reports regarding COVID-19. This study showed that the overall reporting quality in included RCT abstracts was suboptimal, which is particularly worrying. As the abstract is an important part of the published ar-

ticle, it serves as the foundation for the initial screening in any meta-analysis and systematic review, and incomplete research reports in abstracts may result in the RCT not being included in systematic reviews (Evans, 2003). In addition, the abstract is also an important tool for clinical decision-making, as there may be financial, technical, temporal, and language barriers that impede or reduce access to the full text of the article. In the biomedical field, almost half of all research is available in full text only by subscription (Kurata et al., 2013), but the abstract is usually free, so many medical professionals base their initial evaluation or even clinical decision-making on abstracts alone (Saint et al., 2000; Ioannidis and Lau, 2001; Cullen, 2002). The omission of essential trial details in RCT abstracts could lead to inaccurate interpretation of the study results and inappropriate application of the results in clinical practice (Sriganesh et al., 2017). The above factors show that complete, clear, and accurate abstract reports based on the CONSORT-A guidelines are necessary to help clinicians and the wider readership critically appraise RCT outcomes.

Although CONSORT-A was established to ensure the completeness and accuracy of RCT abstract reports, the reporting quality of the RCT abstracts included in this study was still poor, with an overall average reporting rate of 50.2%, which is similar to the findings in the fields of plastic surgery, endodontics, and prosthodontics (Alharbi and Almutairi, 2020; Fang et al., 2020; Gallo et al., 2020). Even RCT abstracts published in top pain journals were found to have an average reporting rate of less than 40% (Sriganesh et al., 2017), which is quite worrying, and the average reporting rate for the methodological section was also poor. The results of the present study may be due to the large number of patients with COVID-19 emerging in a short period of time: in order to present positive results of various treatment regimens to readers as soon as possible, researchers may have paid more attention to the results of the study than reporting specifications.

Of the 16 items, only two items (objective and conclusions) were adequately reported in most abstracts (>90%), and none of the abstracts provided complete information as required. The reporting quality of most items was suboptimal, particularly the trial design, randomization, and blinding (>10%). An explanation of the trial design in the abstract can increase the transparency of the study, thereby reducing the possibility of misunderstanding the data (Calvert et al., 2013). Readers may misinterpret the cohort data as sample size if the trial design is not clearly explained (Campbell et al., 2004). However, the present study showed that only two (2.8%) abstracts reported the type of trial design, and previous studies have observed reporting rates of 16.3–26.6% for trial design (Kuriyama et al., 2017; Janackovic and Puljak, 2018; Khan et al., 2019). In addition, the neglect of two of the most important items in the methodological section – randomized methods and details of blinding – is particularly worrisome, as these items are important information to ensure the authenticity of the results (Seehra et al., 2013). Only one study described the details of randomization, and although 26 (49.1%) abstracts mentioned random assignment, they failed to report sequence generation and allocation concealment, items that have not improved since the release of CONSORT-A (Kuriyama et al., 2017; Chen et al., 2018; Hua et al., 2019). Even RCT abstracts published in journals with a high impact factor have had similar flaws. In a reported analysis of 478 RCT abstracts published in the high-impact cardiovascular journals, Khan et al. found that only 3.6% reported the details of randomization (Khan et al., 2019). Furthermore, none of the studies included in the present analysis reported the details of blinding, and it was found that some abstracts only indicated that the study was 'single' or 'double' blind, rather than specifying exactly who was unaware of the treatment identities, which is similar to the results of prosthodontics and emergency medicine journals (Chen et al., 2018; Germini et al., 2019). The low reporting rates of these items may reflect the lack of relevant knowledge of researchers to some extent, because the reporting of sequence generation and allocation concealment requires certain knowledge of clinical research methodology (Chen et al., 2010). There is evidence that trials with inadequate or unclear allocation concealment overestimate the treatment effect by up to 7% (Savović et al., 2012), and a meta-epidemiological study of blinding showed that unblinded RCTs overestimated the outcome effect by 0.56 standard deviations (Hróbjartsson et al., 2014). As the lack of reporting of important methodological items could affect the reliability and validity of RCT abstracts (Berwanger et al., 2009), these items need to be addressed properly.

In addition, according to CONSORT-A, adverse events (harms) are an important piece of information for the reader and should be reported in the abstract. If no important adverse events have occurred, the authors should state this explicitly (Hopewell et al., 2008). Although the present study showed that the reporting of harms was relatively positive compared to the RCT abstracts published in the fields of critical care, prosthodontics, and endodontics (Kuriyama et al., 2017; Chen et al., 2018; Fang et al., 2020), it was still less than 50%. As a new and serious infectious disease, the treatment and prevention of COVID-19 are of great importance. If authors fail to report adverse events or side effects in their abstracts, this will mislead the clinical decision of the physicians and may even cause harm to patients (Song et al., 2010). Reporting harms clearly in abstracts is also important for proper database indexing and information retrieval (Hopewell et al., 2008).

This study showed that better reporting quality was associated with international collaboration. Similar results have been found in the area of periodontal disease (Xie et al., 2020). The exact reasons behind this phenomenon are unknown, but we can find that the focus of COVID-19 may come from the whole community and society, not just individuals. However, it can be assumed that researchers from different countries perceive the importance of abstract reports differently, and higher recognition and dependence on CONSORT-A could improve the quality of abstract reports.

In this study, better reporting quality was also associated with a structured abstract format, which is consistent with the results of studies in the fields of prosthodontics, dentistry, and psychiatry (Chen et al., 2018; Sharma and Harrison, 2006; Song et al., 2017). Structured abstracts can enhance the reader's understanding of the article (Nakayama et al., 2005), assist health professionals find clinically relevant articles more quickly and conduct a more detailed literature search (Fontelo et al., 2013), and also speed up the peer review process before publication. Although originally intended to facilitate computerized searches, structured abstracts have proven to provide more information of the study than unstructured ones (Mbuagbaw et al., 2014; Kiriakou et al., 2014). Unfortunately, it was found that nine (17.0%) studies did not use a structured abstract format; this may have been the result of journal submission requirements.

This study showed that the journal impact factor was also an important factor for the reporting quality of RCT abstracts. Better reporting quality was associated with a higher journal impact factor, and the results of several previous studies support this finding (Chen et al., 2018; Bigna et al., 2016). This may be due to the fact that journals with a higher impact factor have more stringent controls for the acceptance and publication of papers, and previous studies have shown that a higher impact factor is independently associated with better adherence to the CONSORT-A guidelines (Ghimire et al., 2014; Lee et al., 2013). However, we found that most journals use the CONSORT statement as a tool to assess the reporting quality of the full texts of RCTs, but fail to endorse the CONSORT-A guidelines. Therefore, some authors may not initially be aware of CONSORT-A and may prefer to concentrate on the main text of the article, or they may consider fol-

lowing the abstract guidelines to be an extra 'job' (Cobo et al., 2011).

As the abstract plays an important role in clinical decision-making, we suggest that editors should carefully assess whether their journals' submission requirements are normative. It is essential that journals not only endorse the CONSORT guidelines, but also endorse the CONSORT-A guidelines. More importantly, the journal should require authors to upload the CONSORT-A checklist as key material for the initial screening when submitting their RCTs. Subsequently, there is a need for more aggressive enforcement of CONSORT-A for journals by strengthening or altering the peer review process; for example, peer reviewers should check the completeness and accuracy of the CONSORT-A checklist when reviewing RCTs. Editorial boards should also increase their oversight of the entire process from submission to publication, and articles of lower reporting quality should not be published. However, in addition to problems across the whole process of submission requirements, review, and publication, another potential reason for the poor reporting quality of RCT abstracts may be that journals do not publicize the CONSORT-A guidelines enough, resulting in a lack of awareness of reporting guidelines by researchers (Reveiz et al., 2013). A survey of the authors of 101 studies showed that only 3% of the authors acknowledged the importance of RCT abstract reports and followed the CONSORT-A guidelines when writing papers (Reveiz et al., 2013). This suggests that improving researcher awareness by accelerating the spread of the CONSORT-A guidelines is crucial. Therefore, on the one hand, journals should vigorously promote the CONSORT-A guidelines and add relevant knowledge of abstract reports to their subscription feeds. On the other hand, research institutions should also increase training in these problems to improve the reporting quality of RCT abstracts, thereby providing scientific evidence for clinical decision-making and meta-analysis.

4.1. Limitations

This study has some limitations. First of all, only relevant articles from four databases were included. The results may therefore not be representative of the overall reporting quality of RCT abstracts regarding patients with COVID-19. However, the results may sufficiently reflect the overall trends in the abstract reports of RCTs on COVID-19. Second, the study analyzed the adequacy of reports based on the CONSORT for abstracts checklist, without considering whether the content of the abstract was accurately reflected in the full text. This was beyond the scope of the study. Thus, further studies are needed to assess the accuracy of the full-text reports. Finally, only the abstracts of RCTs on the treatment of patients with COVID-19 were evaluated. Future studies could further assess the reporting quality of more RCTs related to COVID-19.

4.2. Conclusions

The primary objective of this study was to provide readers with a broad overview of the reporting characteristics of RCT abstracts regarding patients with COVID-19. The overall reporting quality of RCT abstracts was suboptimal, thus diminishing their potential usefulness, and such abstracts cannot provide scientific evidence for clinical decision-making and systematic reviews. Better reporting quality was associated with a higher journal impact factor, structured abstract format, and international collaboration. More journals should endorse the CONSORT statement for abstracts and strictly monitor the publication of RCTs. Future RCT abstracts should particularly focus on improvements in the reporting of trial design, randomization, and blinding.

Author contributions

Conception and design of the study: Yuhuan Yin, Jiangxia Gao, Juxia Zhang. Acquisition of data, analysis and interpretation of data: Yuhuan Yin, Yiyin Zhang, Xiaoli Zhang, Jianying Ye, Jiangxia Gao. Drafting of the article: Yuhuan Yin. Revising the article: Yuhuan Yin, Jiangxia Gao, Juxia Zhang. Final approval of the article: Yuhuan Yin, Juxia Zhang, Yiyin Zhang, Xiaoli Zhang, Jianying Ye, Jiangxia Gao.

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Declarations

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Supplementary materials

Supplementary material associated with this article can be found, in the online version, at doi:10.1016/j.ijid.2022.01.002.

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