Research article

Quality of reporting in abstracts of clinical trials using physical activity interventions: a cross-sectional analysis using the CONSORT for Abstracts

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ABSTRACT | BACKGROUND: The quality of reporting in the abstract section of scientific articles is one of the important aspects of good communication of trials. **OBJECTIVES:** We investigated abstracts of randomized clinical trials (RCTs) in the physical activity field according to adherence to the Consolidated Standards of Reporting Trials (CONSORT) for Abstracts (primary outcome) and checked the recommendations of the selected journals regarding the contents and structure of the abstract. **METHODS:** This study is a descriptive, cross-sectional study of the Strengthening the Evidence in Exercise Sciences (SEES) Initiative. RCTs published in 9 exercise science journals and 2 general medicine journals during 2019 were eligible. Two researchers conducted study selection and, thereafter, assessment of the abstracts using a form comprising 16 items based on CONSORT for Abstracts. Also, extracted, in duplicate and independently, the journals' recommendations for authors. **RESULTS:** 131 abstracts were eligible for evaluation. From items evaluated, those with the highest adherence were objectives or hypothesis (99%), conclusion (98%), and intervention (94%). The lowest reporting was observed in the number of participants analyzed (6%), allocation and randomization (1%), and funding (1%). Ten journals recommended the abstract structure, but only two mentioned the CONSORT for Abstracts. **CONCLUSIONS:** There is variable and suboptimal adherence to the CONSORT for Abstracts in trials in the physical activity field and poor recommendation of this instrument in journals selected. Therefore, we suggest editors, reviewers, and authors a greater adherence to guidelines, and to journal recommendations to improve the quality of reporting of abstracts in the physical activity field.

KEYWORDS: Quality of Reporting. CONSORT for Abstracts. Clinical Trial.

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1. Background

Abstracts are highly important sections of scientific articles. Besides being the only part of the article with immediate access indexed in electronic databases, abstracts provide key study information and are usually the most read section from biomedical publications.[1,2] Thus, information included in the abstract is likely to influence the assessment of the study and the applicability of the findings.[1-3] This way, it is worrisome when abstract data are inconsistent with the body of the article or even lack important details about the study.[1,3] Therefore, specific and clear information is important and should be prioritized in abstracts, principally of randomized clinical trials (RCTs), which are considered a gold standard design for the assessment of therapeutic-preventive interventions.[2,4,5]

Since 2008, a Consolidated Standards of Reporting Trials (CONSORT) extension has provided reporting standards for RCTs abstracts in journals or conferences. This extension describes a minimum list of essential items that should be considered for good-quality of reporting in abstracts, with clear dissemination and communication of study results.[2] However, despite the availability of this checklist, meta-research studies have identified that the quality of reporting of abstracts in health sciences is still suboptimal.[6-10] Inconsistencies and non-adherence to the recommended items are mainly identified in methodological quality domains.[3] Furthermore, there is a low mention of the CONSORT for Abstracts (7%, 11/168) in Instructions for Authors sections from most biomedical journals compared to the full CONSORT guideline[11], which can cause low-quality reporting by the authors of the studies.

In a synthesis that systematically summarized methodological studies that used CONSORT for Abstracts to assess a total of 5,184 abstracts[10], the adherence to the reporting tool was deemed as poor, suboptimal, or inadequate. In trials with physical activity interventions, such analyses have not been addressed. However, such interventions are useful in numerous health conditions[12,13], and incomplete reports of abstracts may affect the understanding and future evidence uptake.

In the face of this context, this study aimed to summarize the quality of reporting in abstracts of RCTs of physical activity, according to adherence to the CONSORT for Abstracts (primary outcome), and to analyze the journals' recommendations to authors regarding the content and structure of the abstract. This analysis was based on the RCTs of physical activity included in the 2019 annual assessment of the Strengthening the Evidence in Exercise Sciences Initiative (SEES Initiative).

2. Methods

2.1 Design

This descriptive cross-sectional study derives from the SEES Initiative, which is an ongoing collaborative nonprofit project for the surveillance of published research in the exercise sciences (RCTs and systematic reviews with meta-analysis) (www.sees-initiative.org). SEES Initiative's methodological design relates to a meta-research prospective approach, mostly regarding post-publication analyses, and, therefore, submission to ethics committees was not applicable to this study. The project was launched in January 2019, with a protocol available in the Open Science Framework repository (OSF) (https://osf.io/2cu8g/). The present study does not present a specific protocol.

2.2 Organization and literature search

The SEES Initiative is composed of trained researchers organized in different committees. The pre-evaluation committee conducts the search and selection of articles in the literature. The evaluation committee carries out the evaluation of the eligibility criteria and conducts the data extraction. The post-evaluation committee is responsible for the management and dissemination of data.

The literature search was conducted in PubMed/MEDLINE between the 3rd and 7th day of each month of 2019. The search strategy for the retrieval of clinical trials followed an established filter of high sensitivity by Robinson and Dickersin[14] (Supplemental Data S1). In addition, a date filter was added restricting searches from the previous two months, meaning that each month was queried twice. For example, February was included in the survey conducted in both March and April. The choice for this procedure resulted from the variability of reference indexing time, thus reducing the loss of some references.

2.3 Eligibility criteria and screening

We included the RCTs assessed by the SEES Initiative from January to December 2019, published in 11 journals categorized by Web of Science, 9 journals of exercise science/sports medicine (American Journal of Sports Medicine, British Journal of Sports Medicine, European Journal of Preventive Cardiology, International Journal of Behavioral Nutrition and Physical Activity, Journal of Physiotherapy, Journal of Science and Medicine in Sport, Medicine and Science in Sports and Exercise, Scandinavian Journal of Medicine and Science in Sports, and Sports Medicine) and 2 journals of general medicine (British Medical Journal, Journal of the American Medical Association). We selected exercise science journals based on their potential audience reach, as indicated by their impact factors. Additionally, we considered whether a journal was affiliated with a professional or scientific society, as this can suggest greater financial and editorial stability over time. We focused on journals that had published a significant number of trials or systematic reviews in recent years. For general medicine journals, we prioritized those with a broad readership and a track record of generating media attention for articles related to physical activity interventions or exposures.

The included studies had to have at least one intervention arm based on physical activity counseling, defined as any bodily movement produced by skeletal muscles that results in energy expenditure, or an exercise intervention program, defined as a subset of physical activity that is planned, structured, and repetitive.[15] Studies with multifaceted interventions (e.g., comprehensive lifestyle intervention or health education program) were also included. Two trained researchers (ATD, physiotherapist and LMG, physical educator), members of the evaluation committee for RCTs of SEES Initiative, selected the studies to evaluate the abstracts. Articles that did not include an electronic abstract were excluded.

2.4 Data extraction

We prepared two forms to collect (1) the recommendations of the journals on the contents and structure of the abstract, and (2) the adherence of the articles to the items recommended by the CONSORT for Abstracts. The form for the journals recommendations was created based on the available journals' instructions to authors. The second form included 16 recommended CONSORT items for Abstracts in journals (Supplemental Data S2). The checklist item named "authors", which corresponds to the corresponding author's contact details, was not counted in this assessment as it is considered a specific item for conference abstracts.[2]

Following examples displayed in the CONSORT for Abstracts, the assessment of the "recruitment" item was based on the presence/absence of information covering the trial follow-up period. The description of the "conclusion" item in CONSORT for Abstracts mentions the benefits and harms of interventions and clinical application; however, we did not use this content in our evaluation. Instead, we chose a more parsimonious approach, following the abstract examples provided in the guidelines of CONSORT for Abstract, which considered as "yes" the abstracts that presented the overall results. Likewise, in the trial registration item, adherence is recommended when there is a registration number and name of the trial register; however, we scored as adherent when at least one of these pieces of information was made available. This item was assessed based on the information displayed on the first page of the article, that is, on the abstract page.

The classification of items and the extraction of information were completed independently by two researchers (ATD and LMG). Discrepancies between authors were resolved by consulting the published explanation of the CONSORT for Abstracts and by examples provided[2], and when necessary, by a third and fourth researcher (DU and NLO).

2.5 Analyses

Descriptive analyses of the data were performed using the PASW Statistics for Windows software (Version 18.0 Chicago: SPSS Inc). Data are presented in absolute frequencies (n) and percentages according to adherence to the recommended reporting items.

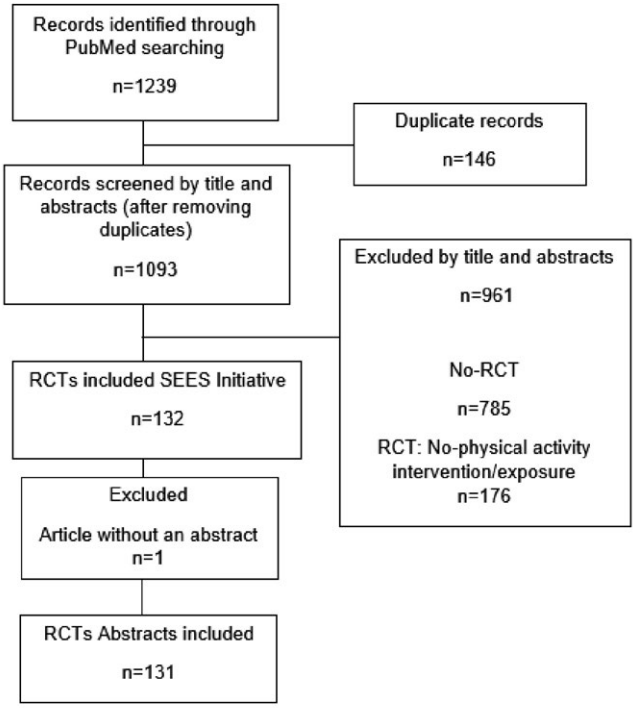
The items in most forms have a binary response option (yes/no), in which "yes" indicates adherence to the recommended practice. On the CONSORT for Abstracts form, we added as assessment options "partially yes" for the items "participants" and "randomization" and "unclear" for the item "results of the primary outcome". The decision to create a third response option was based on the justification

that some abstracts reported the eligibility criteria but did not report the place where the data were collected or reported the type of randomization but not the allocation method implemented. For the results about the primary outcome, the "unclear" option was added because many abstracts did not declare the primary outcome, precluding the assessment of related information (estimated effect size for each group and its precision).

3. Results

Out of 1,093 records screened for eligibility, 132 RCTs were included in the SEES assessment in 2019, and 131 abstracts were included in this study (Figure 1). Five studies were published in general medicine journals, and 126 were published in exercise sciences journals.

Figure 1. Flow-diagram of RCTs abstracts selection process



Source: the authors (2023).

3.1 Recommendation from journals

Overall, all assessed journals but one (91%) provided recommendations on the abstract structure and the maximum number of words in the abstract (median 275, range 150 to 450 words). Regarding the presence of endorsements for the CONSORT resources, 9/11 (82%) journals mentioned the use of the CONSORT 2010 Statement. However, only two (18%) mentioned the CONSORT for Abstracts extension as a resource for abstract reporting (Table 1). The adherence to the word limit recommended in journal instructions for abstracts was verified in 44% of articles (55/124), whereas the remaining presented abstracts with more words than allowed in author instructions (69/124). This analysis did not include the Journal of Physiotherapy (n=7) because this journal did not limit the number of words in abstracts. Detailed information about the recommendations from each journal, the median of words in the abstracts of assessed articles, as well as the adherence to this recommendation are described in Supplemental Table S3. The distribution of the included abstracts among the selected journals is presented in Table 2.

Table 1. Recommendations from journals on the structure and content of abstracts

	Journals Instructions (n=11)	
Descriptions	Yes	No
Number of words recommended for the abstract	10	1
Recommendation for a structured abstract	8	3
Description of items for the abstract	8	3
Instruction to report the abstract items	4	7
Mention or endorsement of CONSORT for Abstracts	2	9
Mention or recommendation of the CONSORT 2010 Statement	9	2

Source: the authors (2023).
Description: values are expressed in absolute frequency (n).

3.2 Adherence to the recommended items of CONSORT for Abstracts

From the 131 abstracts evaluated, 70 (54%) mentioned "randomized study" in the title, and only 34 (26%) reported the trial design (parallel, crossover, superiority, cluster, non-inferiority, or factorial) throughout the abstract. Regarding the description of the methods domain, 34 (26%) abstracts described completely the participants' item, which includes information about eligibility criteria and the settings of data collected. Within this domain, the items with the highest level of adherence were related to the interventions (123/131, 94%) and objectives or hypotheses (130/131, 99%). Only 2 abstracts described how participants were allocated to interventions and the type of randomization, whereas 6 (5%) reported only one piece of information, therefore, “partially yes” adhering to this recommended item.

In the results domain, the recruitment period/status trial was described in 12 abstracts (9%), and 8 (6%) described the number of participants analyzed in each group. The estimated effect size and its precision measure for primary outcome was identified in 33 (25%) abstracts; in 87 (66%), this item was assessed as “unclear” due to reporting uncertainty about what was the primary outcome.

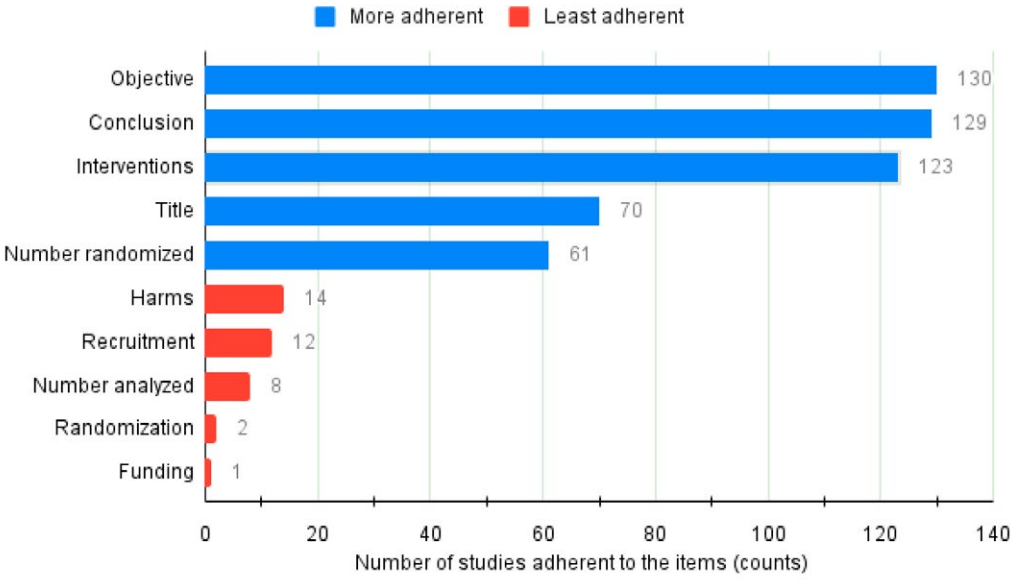
Overall, 129 (98%) abstracts presented their conclusions consistently with related results, and the mention of the trial registration number or the trial registration name was observed in 42 (32%) RCTs. The level of adherence to the 16 items of CONSORT for Abstracts is shown in Table 3, and the five items with the highest and lowest adherence are shown in Figure 2. Detailed descriptions of each of the items by journal are specified in Supplemental Table S4.

Table 3. Adherence to items of the CONSORT for Abstracts

	Yes	No	Partially yes/ Unclear
Title	70 (53)	61 (47)	
Trial design	34 (26)	97 (74)	
Methods			
Participants	34 (26)	2 (1)	95 (73)
Interventions	123 (94)	8 (6)	
Objective	130 (99)	1 (1)	
Outcomes	45 (34)	86 (66)	
Randomization	2 (1)	123 (94)	6 (5)
Blinding (masking)	28 (21)	103 (79)	
Results			
Number randomized	61(47)	70 (53)	
Recruitment	12 (9)	119 (91)	
Number analyzed	8 (6)	123 (94)	
Outcomes	33 (25)	11 (8)	87 (67)
Harms	14 (11)	117 (89)	
Conclusions	129 (98)	2 (2)	
Trial registration	42 (32)	89 (68)	
Funding	1 (1)	130 (99)	

Source: the authors (2023).
Description: values are expressed as n (%).

Figure 2. Items of the CONSORT for Abstracts with highest and lowest adherence (n=131)



Source: the authors (2023).

4. Discussion

We identified heterogeneous adherence at the level of the 16 items recommended by CONSORT for Abstracts in the analysis of RCTs of physical activity interventions. Items related to study objectives or hypotheses, intervention descriptions, and conclusions had high adherence. On the other hand, low adherence to the items of allocation concealment and randomization, number of participants analyzed in each group, and sources of funding were observed. Similar findings were described in other biomedical subjects, with incomplete reporting in the methods and results sessions.[3,5,6,16]

The mention of CONSORT for Abstracts in "Instructions for authors'' was observed in two evaluated journals; however, this did not guarantee adherence to the list of essential items recommended for abstracts (Table S4). In addition, studies comparing abstracts of RCTs before and after the publication of CONSORT for Abstracts show improvement in the quality of reporting in only some items, such as title and trial design.[8-10,17] This shows us that, although the instruction for the use of the guideline aims to improve the quality of reporting of the abstract, encouraging greater transparency and standardizing of the information, this does not necessarily guarantee the quality of reporting of the content presented in this session, which is the result of an authorial choice and of a careful editorial analysis of the journal taken together with a continuing implementation strategy.[18]

It is also worth noting that the limited number of words in the abstract can be a factor that impairs the quality of the report and the transparency of the suggested information. However, according to the CONSORT for Abstracts, the authors consider 250 to 300 words as sufficient to cover all suggested items in the checklist.[2] Although the 250-word minimum was allowed in all evaluated journals in the study, we observed that the abstract information was still lacking in details about the suggested items.

The low adherence to the RCTs description in the title and study design in the abstract makes it difficult to index in databases (e.g., specific filters), which might compromise the interpretation of the report by the readers.[19] In the same way, the inadequate reporting of randomization and allocation concealment might be misinterpreted by readers as selection bias[20], and influence them in the decision to read the full article due to lack of clarity about methodological aspects.

In the methods sections, the item 'participants' was adequately reported in few studies (26%), mainly because this item also includes the description of the setting where data were collected.[2] Considering any of the parts of this item, a partial adherence was reached by more studies (72.5%). Some previous studies have split the evaluation of this item into sub-items, reporting high adherence only to the eligibility criteria of participants.[3,8-10,16] A clear description of participants and the setting of data collected is necessary to ensure the external validity and applicability of the findings.[2] In addition, the report of the primary outcome is considered of greatest importance[4], allowing a reader to consult whether the results of the trial meet the primary objective. An infrequent report of this information, observed only in one-third of abstracts, results in lack of clarity of results for the primary outcome. Studies in other scientific fields have shown more frequent reporting of the primary outcome[3,21], as well as improved reporting after publication of the CONSORT for Abstracts.[17]

In the results sections, almost half of the abstracts reported the number of participants randomized to each group; however, the number of participants analyzed by each group was rarely reported. Sometimes, the number of randomized and analyzed participants can be exactly the same, but not always; therefore, omitting this information hinders the interpretation of readers who only have access to the study abstract. Likewise, the poor reporting of time periods when the study took place and the presence or absence of adverse events compromises readers' assessment related to the study's adequateness.[2,4]

Approximately one-third (32%) of the studies mentioned trial registration, and only one study reported funding in the abstract. Beyond being a practice to promote transparency and reduce research waste[22], study registration enables readers to get more detailed information about the trial. Similarly, reporting on the existence or absence of funding sources allows the reader to take a more critical look at the study due to the influence that can have on the design, data collection, and analysis of data.[2,4]

To our knowledge, this study is a pioneer in assessing the quality of reports in abstracts of trials with physical activity interventions. However, some limitations must be considered. Our sample of RCTs represents only the year 2019 and only pre-selected scientific journals. Thus, the results observed in our assessment may not represent the literature well, as half of the analyzed abstracts are from two specific journals. Furthermore, the creation of a subcategory for the three-item analysis of CONSORT for Abstracts may partially limit the comparability of our findings with future studies; however, this category was created due to the incompatibility of some information in the reference materials made available by CONSORT for Abstracts.

5. Conclusions

The quality of reporting in abstracts of RCTs with physical activity interventions is suboptimal according to the items recommended by CONSORT for Abstracts. Furthermore, there is a poor endorsement of this guideline by the journals selected by the SEES Initiative. Such data are worrisome, as the abstract is the main section for accessing the article and is generally the part most read by readers, thus, the lack of important information about the study in this section can compromise the evaluation of scientific evidence and the interest in reading of the full text.

Based on this study, we suggest greater adherence to reporting quality and standardization of abstract information, in accordance with CONSORT for Abstracts and the journals' recommendations to authors, respectively. Thus, editors, reviewers, and study authors have important roles in promoting transparency, integrity, and quality when dealing with the communication of clinical trials in the physical activity field.

Availability of data and materials

The datasets generated and/or analyzed during the current study are available in the Open Science Framework (OSF) repository: https://osf.io/ntw7d/.

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Authors' contributions

Umpierre D created the SEES Initiative. De Nardi AT and Umpierre D conceived the initial idea of this manuscript. All authors contributed to the development of the methodology of the study. De Nardi AT and Galliano LM performed the eligibility and screening of RCTs assessed and extraction of data. De Nardi AT analyzed the data and wrote the manuscript with strong feedback from all authors. All authors read and approved the final version of the manuscript.

Conflicts of interest

No financial, legal, or political conflicts involving third parties (government, private companies, and foundations, etc.) were declared for any aspect of the submitted work (including but not limited to grants and funding, advisory board participation, study design, manuscript preparation, statistical analysis, etc.).

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Supplementary data

Supplemental Data S1.

MEDLINE/PubMed query for clinical trials

Search strategies for journals of exercise sciences:

"Br J Sports Med"[Journal] OR "Am J Sports Med"[Journal] OR "Med Sci Sports Exerc"[Journal] OR "Eur J Prev Cardiol"[Journal] OR "Sports Med"[Journal] OR "Int J Behav Nutr Phys Act"[Journal] OR "J Physiother"[Journal] OR "J Sci Med Sport"[Journal] OR "Scand J Med Sci Sports"[Journal]

AND (randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized controlled trials[mh] OR random allocation[mh] OR double-blind method[mh] OR single-blind method[mh] OR clinical trial[pt] OR clinical trials[mh] OR ("clinical trial"[tw]) OR ((singl*[tw] OR doubl*[tw] OR trebl*[tw] OR tripl*[tw])

AND (mask*[tw] OR blind*[tw])) OR ("latin square"[tw]) OR placebos[mh] OR placebo*[tw] OR random*[tw] OR research design[mh:noexp] OR follow-up studies[mh] OR prospective studies[mh] OR cross-over studies[mh] OR control*[tw] OR prospectiv*[tw] OR volunteer*[tw])

NOT (animal[mh] NOT human[mh])

NOT (review[ti] OR "meta-analysis"[ti])

Search strategies for journals in general medicine:

"BMJ"[Journal] OR "JAMA"[Journal]

AND (randomized controlled trial[pt] OR controlled clinical trial[pt] OR randomized controlled trials[mh] OR random allocation[mh] OR double-blind method[mh] OR single-blind method[mh] OR clinical trial[pt] OR clinical trials[mh] OR ("clinical trial"[tw]) OR ((singl*[tw] OR doubl*[tw] OR SEES Initiative - Rationale and Methods trebl*[tw] OR tripl*[tw])

AND (mask*[tw] OR blind*[tw])) OR ("latin square"[tw]) OR placebos[mh] OR placebo*[tw] OR random*[tw] OR research design[mh:noexp] OR follow-up studies[mh] OR prospective studies[mh] OR cross-over studies[mh] OR control*[tw] OR prospectiv*[tw] OR volunteer*[tw])

AND (exercise[tiab] OR "physical activity"[tiab] OR training[tiab] OR rehabilitation[tiab])

NOT (animal[mh] NOT human[mh]) **NOT** (review[ti] OR "meta-analysis"[ti])

Forms used to extract recommendations from journals about the abstracts section and to evaluate CONSORT for Abstracts

Form 1 - Journal's Instructions for abstract	
Questions	**Options**
Is there a description of the number of words recommended for the abstract?	YES/NO
What is the recommended number?	
Is there a recommendation for a structured summary?	YES/NO
Is there a description of items for the abstract?	YES/NO
Is there an instruction to report the summary items?	YES/NO
Is there a mention or endorsement regarding the CONSORT Abstract Extension as a resource to be used for abstracts reporting?	YES/NO
Is there a mention or recommendation regarding the CONSORT 2010 Statement?	YES/NO

Source: the authors (2023).

Supplemental Data S2. (conclusion)

Form 2 - Information extracted from the abstract	
PMID	
Title	
Journal	
Number of words in the abstract	
Questions	**Options**
Is the study identified as random in the title? (Note: "random allocation" and "randomly assigned" should be considered)	YES/NO
Is there a description of the trial design (e.g., parallel, factorial, cluster, crossover, factorial, superiority, equivalence, or noninferiority)?	YES/NO
Is there a description of the eligibility criteria of the participants included and the settings where the data were collected?	YES/ NO/ PARTIALLY YES
Does the abstract list the study interventions?	YES/NO
Is there a clear description of the specific objective or hypothesis?	YES/NO
Does the abstract inform the primary outcome (variable of interest)?	YES/NO
Is there a description of how participants were allocated to interventions? Type of randomization?	YES/ NO/ PARTIALLY YES
Is there a description of blinding/masking to group assignments?	YES/NO
Is there a description of the number of participants randomized in each group?	YES/NO
Is there a description regarding the dates/periods of recruitment/trial status?	YES/NO
Is there a description of the number of participants analyzed in each group?	YES/NO
For the primary outcome, is there a result for each group and the estimated effect size and its precision?	YES/ NO/ UNCLEAR
Is there a description for harmful outcomes or adverse events?	YES/NO
Is there a general interpretation of the results?	YES/NO
Is there a description of trial registration (number and name)?	YES/NO
Is there a statement regarding the sources of funding (within the summary structure)?	YES/NO

Source: CONSORT for Abstracts adapted by authors (2023).

Supplemental Table S3. (to be continued)

Recommendations and adherence to the number of words for abstracts detailed by journals

S3.1. Recommendations from journals on the structure and content of abstracts

Journal (n=11)	Word limit	Maximum word limit	Structured abstract	Items abstract	Report of items	CONSORT for Abstracts	CONSORT 2010 Statement
Am J Sports Med	Yes	350	Yes	Yes	Yes	No	Yes
Br J Sports Med	Yes	250	Yes	Yes	No	No	No
Eur J Prev Cardiol	Yes	250	Yes	Yes	No	No	Yes
Int J Behav Nutr Phys Act	Yes	350	Yes	Yes	Yes	Yes	Yes
J Physiother	No	-	No	No	No	No	Yes
J Sci Med Sport	Yes	250	Yes	Yes	No	No	Yes
Med Sci Sports Exerc	Yes	275	Yes	Yes	No	No	No
Scand J Med Sci Sports	Yes	250	No	No	No	No	Yes
Sports Med	Yes	300 (150-450)	No	No	No	No	Yes
JAMA	Yes	350	Yes	Yes	Yes	No	Yes
The BMJ	Yes	275 (250-300)	Yes	Yes	Yes	Yes	Yes

Source: the authors (2023).
Description: Values are expressed in absolute frequency (n), median (min and max).

Am J Sports Med, American Journal of Sports Medicine; Br J Sports Med, British Journal of Sports Medicine; Eur J Prev Cardiol, European Journal of Preventive Cardiology; Int J Behav Nutr Phys Act, International Journal of Behavioral Nutrition and Physical Activi; J Physiother, Journal of Physiotherapy; J Sci Med Sport, Journal of Science and Medicine in Sport; Med Sci Sports Exerc, Medicine and Science in Sports and Exercise; Scand J Med Sci Sports, Scandinavian Journal of Medicine & Science in Sports; Sports Med, Sports Medicine; JAMA, Journal of the American Medical Association; The BMJ, The British Medical Journal.

Supplemental Table S3. (conclusion)

S3.2. Number of words in abstracts and adherence to recommendations

Abstracts evaluated by journals (n = 124)	Number of words included	Adhered to the recommendations	Not adhere
Am J Sports Med (n = 3)	279 (267-343)	3	0
Br J Sports Med (n = 15)	249 (232-272)	9	6
Eur J Prev Cardiol (n = 6)	263 (243-313)	1	5
Int J Behav Nutr Phys Act (n = 8)	362 (256-394)	3	5
J Physiother (n = 7)	292 (254-298)	-	-
J Sci Med Sport (n = 15)	244 (224-251)	12	3
Med Sci Sports Exerc (n = 39)	276 (217-349)	15	24
Scand J Med Sci Sports (n = 31)	256 (214-313)	10	21
Sports Med (n = 3)	370 (301-507)	2	1
JAMA (n = 2)	443(442-444)	0	2
The BMJ (n = 2)	343 (316-369)	0	2

Source: the authors (2023).
Description: Values are expressed in absolute frequency (n) and median (minimum and maximum).

Supplemental Table S4. (to be continued)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Is the study identified as random in the title?			
Am J Sports Med (n=3)	3	0	
Br J Sports Med (n=15)	13	2	
Eur J Prev Cardiol (n=6)	2	4	
Int J Behav Nutr Phys Act (n=8)	7	1	
J Physiother (n=7)	7	0	
J Sci Med Sport (n=15)	8	7	
Med Sci Sports Exerc (n=39)	6	33	
Scand J Med Sci Sports (n=31)	17	14	
Sports Med (n=3)	3	0	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Is there a description of the trial design?			
Am J Sports Med (n=3)	1	2	
Br J Sports Med (n=15)	6	9	
Eur J Prev Cardiol (n=6)	0	6	
Int J Behav Nutr Phys Act (n=8)	2	6	
J Physiother (n=7)	1	6	
J Sci Med Sport (n=15)	9	6	
Med Sci Sports Exerc (n=39)	4	35	
Scand J Med Sci Sports (n=31)	6	25	
Sports Med (n=3)	2	1	
JAMA (n=2)	2	0	
The BMJ (n=2)	1	1	

Supplemental Table S4. (continuation)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Is there a description of the eligibility criteria of the participants included and the settings where the data were collected?			
Am J Sports Med (n=3)	1	0	2
Br J Sports Med (n=15)	5	0	10
Eur J Prev Cardiol (n=6)	1	0	5
Int J Behav Nutr Phys Act (n=8)	4	1	3
J Physiother (n=7)	5	0	2
J Sci Med Sport (n=15)	6	0	9
Med Sci Sports Exerc (n=39)	4	1	34
Scand J Med Sci Sports (n=31)	4	0	27
Sports Med (n=3)	1	0	2
JAMA (n=2)	1	0	1
The BMJ (n=2)	2	0	0
Does the abstract list the study interventions?			
Am J Sports Med (n=3)	3	0	
Br J Sports Med (n=15)	11	4	
Eur J Prev Cardiol (n=6)	6	0	
Int J Behav Nutr Phys Act (n=8)	8	0	
J Physiother (n=7)	7	0	
J Sci Med Sport (n=15)	14	1	
Med Sci Sports Exerc (n=39)	38	1	
Scand J Med Sci Sports (n=31)	29	2	
Sports Med (n=3)	3	0	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Is there a clear description of the specific objective or hypothesis?			
Am J Sports Med (n=3)	3	0	
Br J Sports Med (n=15)	15	0	
Eur J Prev Cardiol (n=6)	6	0	
Int J Behav Nutr Phys Act (n=8)	8	0	
J Physiother (n=7)	7	0	
J Sci Med Sport (n=15)	15	0	
Med Sci Sports Exerc (n=39)	38	1	

Supplemental Table S4. (continuation)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Scand J Med Sci Sports (n=31)	31	0	
Sports Med (n=3)	3	0	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Does the abstract inform the primary outcome (variable of interest)?			
Am J Sports Med (n=3)	1	2	
Br J Sports Med (n=15)	10	5	
Eur J Prev Cardiol (n=6)	2	4	
Int J Behav Nutr Phys Act (n=8)	4	4	
J Physiother (n=7)	5	2	
J Sci Med Sport (n=15)	6	9	
Med Sci Sports Exerc (n=39)	6	33	
Scand J Med Sci Sports (n=31)	6	25	
Sports Med (n=3)	1	2	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Is there a description of how participants were allocated to interventions? Type of randomizatior			
Am J Sports Med (n=3)	0	3	0
Br J Sports Med (n=15)	0	15	0
Eur J Prev Cardiol (n=6)	0	5	1
Int J Behav Nutr Phys Act (n=8)	0	6	2
J Physiother (n=7)	0	7	0
J Sci Med Sport (n=15)	1	14	0
Med Sci Sports Exerc (n=39)	0	39	0
Scand J Med Sci Sports (n=31)	0	30	1
Sports Med (n=3)	1	1	1
JAMA (n=2)	0	2	0
The BMJ (n=2)	0	1	1

Supplemental Table S4. (continuation)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Is there a description of blinding/masking to group assignments?			
Am J Sports Med (n=3)	1	2	
Br J Sports Med (n=15)	3	12	
Eur J Prev Cardiol (n=6)	0	6	
Int J Behav Nutr Phys Act (n=8)	2	6	
J Physiother (n=7)	7	0	
J Sci Med Sport (n=15)	4	11	
Med Sci Sports Exerc (n=39)	2	37	
Scand J Med Sci Sports (n=31)	5	26	
Sports Med (n=3)	2	1	
JAMA (n=2)	1	1	
The BMJ (n=2)	1	1	
Is there a description of the number of participants randomized to each group?			
Am J Sports Med (n=3)	2	1	
Br J Sports Med (n=15)	7	8	
Eur J Prev Cardiol (n=6)	4	2	
Int J Behav Nutr Phys Act (n=8)	4	4	
J Physiother (n=7)	0	7	
J Sci Med Sport (n=15)	5	10	
Med Sci Sports Exerc (n=39)	16	23	
Scand J Med Sci Sports (n=31)	18	13	
Sports Med (n=3)	2	1	
JAMA (n=2)	2	0	
The BMJ (n=2)	1	1	
Is there a description regarding the dates/periods of recruitment/trial status?			
Am J Sports Med (n=3)	0	3	
Br J Sports Med (n=15)	3	12	
Eur J Prev Cardiol (n=6)	0	6	
Int J Behav Nutr Phys Act (n=8)	1	7	
J Physiother (n=7)	0	7	
J Sci Med Sport (n=15)	2	13	
Med Sci Sports Exerc (n=39)	1	38	

Supplemental Table S4. (continuation)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Scand J Med Sci Sports (n=31)	2	29	
Sports Med (n=3)	0	3	
JAMA (n=2)	2	0	
The BMJ (n=2)	1	1	
Is there a description of the number of participants analyzed in each group?			
Am J Sports Med (n=3)	0	3	
Br J Sports Med (n=15)	0	15	
Eur J Prev Cardiol (n=6)	0	6	
Int J Behav Nutr Phys Act (n=8)	2	6	
J Physiother (n=7)	0	7	
J Sci Med Sport (n=15)	2	13	
Med Sci Sports Exerc (n=39)	1	38	
Scand J Med Sci Sports (n=31)	0	31	
Sports Med (n=3)	1	2	
JAMA (n=2)	2	0	
The BMJ (n=2)	0	2	
For the primary outcome, is there a result for each group and the estimated effect size and its precision?			
Am J Sports Med (n=3)	1	0	2
Br J Sports Med (n=15)	8	2	5
Eur J Prev Cardiol (n=6)	1	1	4
Int J Behav Nutr Phys Act (n=8)	2	1	5
J Physiother (n=7)	4	1	2
J Sci Med Sport (n=15)	3	3	9
Med Sci Sports Exerc (n=39)	4	2	33
Scand J Med Sci Sports (n=31)	5	1	25
Sports Med (n=3)	1	0	2
JAMA (n=2)	2	0	0
The BMJ (n=2)	2	0	0

Supplemental Table S4. (continuation)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Is there a description for harmful outcomes or adverse events?			
Am J Sports Med (n=3)	1	2	
Br J Sports Med (n=15)	0	15	
Eur J Prev Cardiol (n=6)	0	6	
Int J Behav Nutr Phys Act (n=8)	1	7	
J Physiother (n=7)	0	7	
J Sci Med Sport (n=15)	3	12	
Med Sci Sports Exerc (n=39)	1	38	
Scand J Med Sci Sports (n=31)	2	29	
Sports Med (n=3)	2	1	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Is there a general interpretation of the results?			
Am J Sports Med (n=3)	3	0	
Br J Sports Med (n=15)	15	0	
Eur J Prev Cardiol (n=6)	5	1	
Int J Behav Nutr Phys Act (n=8)	8	0	
J Physiother (n=7)	7	0	
J Sci Med Sport (n=15)	15	0	
Med Sci Sports Exerc (n=39)	39	0	
Scand J Med Sci Sports (n=31)	30	1	
Sports Med (n=3)	3	0	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Is there a description of trial registration (number and name)?			
Am J Sports Med (n=3)	1	2	
Br J Sports Med (n=15)	13	2	
Eur J Prev Cardiol (n=6)	1	5	
Int J Behav Nutr Phys Act (n=8)	8	0	
J Physiother (n=7)	7	0	
J Sci Med Sport (n=15)	4	11	
Med Sci Sports Exerc (n=39)	2	37	

Supplemental Table S4. (conclusion)

S4. Adherence of journal abstracts to the CONSORT for Abstracts

RCTs (n=131)	Yes	No	Partially yes/ Unclear
Scand J Med Sci Sports (n=31)	0	31	
Sports Med (n=3)	2	1	
JAMA (n=2)	2	0	
The BMJ (n=2)	2	0	
Is there a statement regarding the sources of funding (within the summary structure)?			
Am J Sports Med (n=3)	1	2	
Br J Sports Med (n=15)	6	9	
Eur J Prev Cardiol (n=6)	0	6	
Int J Behav Nutr Phys Act (n=8)	2	6	
J Physiother (n=7)	1	6	
J Sci Med Sport (n=15)	9	6	
Med Sci Sports Exerc (n=39)	4	35	
Scand J Med Sci Sports (n=31)	6	25	
Sports Med (n=3)	2	1	
JAMA (n=2)	1	1	
The BMJ (n=2)	2	0	

Source: the authors (2023).
Description: Values are expressed in absolute frequency (n).