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LETTER TO THE EDITOR Open Access

Reporting of interventions used in cardiothoracic surgery trials: analysis using the Template for Intervention Description and Replication (TIDieR) checklist

Craig Beavers[1*], Jessica Sosio[2], Samuel Jellison[1] and Matt Vassar[1]

To the editor,

Randomized controlled trials (RCTs) are the gold standard for evaluating intervention effectiveness [1] and advancing clinical practice in cardiothoracic surgery. Considering the importance of RCTs in cardiothoracic surgery, it is important that RCTs be reported in a thorough, clear, and complete manner. In this study, we evaluated the completeness of intervention reporting of cardiothoracic surgery RCTs using the Template for Intervention Reporting (TIDieR) checklist [2].

Our sample included trials published before the 2011–2013 and after 2016–2018 publication of the TIDieR checklist from the top 20 cardiothoracic surgery journals as ranked by Google Scholar h5-index. Title/abstract screening, evaluation of TIDieR adherence, and data extraction were performed by two investigators independently.

In 170 analyzed trials, the mean number of TIDieR items reported was 7.4 (SD = 1.2) out of 12. Five items were completely reported > 80% of the time and included (1) a brief description of the intervention, (2) the rationale for intervention, (3) a description of activities/processes used in the intervention, (4) a description of the mode of delivery and if it was provided individually or in a group, and (5) the number of times the intervention was delivered and over what period of time. Three items were reported in fewer than 20% of the trials including (1) whether modifications were made to the intervention, (2) fidelity assessment (planned), and (3) fidelity assessment (reality). Table 1 presents the results per TIDieR item for all analyzed trials. No included trials provided sufficient intervention description to fulfill all 12 TIDieR items.

Our findings suggest incomplete reporting of RCTs published in cardiothoracic surgery journals. Complete reporting is important to allow for replication of the intervention in future trials, for physicians to implement the intervention into their clinical practice, and for systematic reviewers to have sufficient intervention information to include them for evidence synthesis [3]. The TIDieR checklist was developed to address incomplete reporting. Our results suggest, however, that the publication of TIDieR had no effect on completeness of intervention reporting among trials in our sample. More comprehensive dissemination strategies may be warranted to increase awareness of its existence. Alternatively, TIDieR could be incorporated into the well-established CONSORT guideline, the gold standard for reporting clinical trials. Given that CONSORT has a clear gap in intervention reporting guidance, the addition of TIDieR would contribute positively to the CONSORT items. Tiruvoipati et al. [4] reported that only 7.8% of cardiothoracic trials adequately reported a detailed description of trial setting and location and 26.6% of included trials provided details of the intervention. Findings from our study, coupled with previous investigations, support the need for improved reporting of cardiothoracic surgery trial interventions.

* Correspondence: craig.beavers@okstate.edu
[1]Oklahoma State University Center for Health Sciences, 1111 W 17th St., Tulsa, OK 74107, USA
Full list of author information is available at the end of the article

Table 1 Characteristics of the included studies ($N = 170$)

Journal	*N* (%)
Annals of Thoracic and Cardiovascular Surgery	6 (3.5)
Asian Cardiovascular and Thoracic Annals	9 (5.3)
Brazilian Journal of Cardiovascular Surgery	8 (4.7)
European Journal of Cardio-thoracic Surgery	28 (16)
Innovations: technology and techniques in cardiothoracic and vascular surgery	2 (1.2)
Interactive CardioVascular and Thoracic Surgery	21 (12.4)
Journal of Cardiac Surgery	1 (0.6)
Journal of Cardiothoracic Surgery	9 (5.3)
Perfusion	15 (8.8)
Scandinavian Cardiovascular Journal	8 (4.7)
Seminars in Thoracic and Cardiovascular Surgery	4 (2.4)
The Annals of Thoracic Surgery	19 (11.2)
The Journal of Thoracic and Cardiovascular Surgery	28 (16.5)
The Thoracic and Cardiovascular Surgeon	12 (7.1)
Authors	
Mean	7.3
Median	7
Range	2–16
Funding	
Public	28 (16)
Industry	21 (12.4)
Private	18 (10.6)
Mixed with industry	7 (4.1)
Mixed without industry	3 (1.8)
Not mentioned	57 (33.5)
None	34 (20)
Other	2 (1.2)
Hypothesis	
Superiority	136 (80)
Equivalence	16 (9.4)
Other	14 (8.2)
Non-inferiority	2 (1.2)
Not sure	2 (1.2)
Study type	
Parallel	161 (94.7)
Factorial	6 (3.5)
Other	2 (1.2)
Crossover	1 (0.6)
Stepped-wedge	0
Cluster	0
Mixed	0
Intervention	
Drug	57 (33.5)
Procedure	52 (30.6)
Device	25 (14.7)
Other	23 (13.5)
Mixed	13 (7.7)
Blinding	
No-blind	106 (62.4)
Double-blind	37 (21.8)
Single-blind	27 (15.9)
Number of participants	
Mean	132.4
Median	68
Range	14–2368
Country	
Outside of USA	148 (87.1)
USA	13 (7.6)
Both	2 (1.2)
Not mentioned	7 (4.1)
No. of conducting centers	
Single-center	147 (86.5)
Multicenter	23 (13.5)
Authors mention CONSORT	
No	137 (80.6)
Yes	33 (19.4)
Authors mention TIDieR	
No	170 (100)
Yes	0
Is the trial registered?	
Not registered	93 (55)
Registered	77 (45)

Abbreviations

CONSORT: Consolidated Standards of Reporting Trials; RCT: Randomized controlled trial; SD: Standard deviation; TIDieR: Template for Intervention Description and Replication

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Authors' contributions

CB and JS collected the data and performed the analysis. SJ conceived and designed the analysis. CB and SJ drafted the manuscript and performed critical revision of the manuscript. MV provided oversight of the study. All authors read and approved the final manuscript.

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Availability of data and materials

The methods, results, and data sets generated and/or analyzed during the current study are available on Open Science Framework, https://osf.io/hpx9g/

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Not applicable

Consent for publication
Not applicable

Competing interests
The authors declare that they have no competing interests.

Author details
[1]Oklahoma State University Center for Health Sciences, 1111 W 17th St., Tulsa, OK 74107, USA. [2]Kansas City University of Medicine and Biosciences, 2901 St. John's Boulevard, Joplin, MO 74804, USA.

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