Title Page

Consensus on Exercise Reporting Template (CERT): a modified Delphi study

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Abstract

Background: Exercise interventions are often incompletely described in clinical trials. This hampers exploration of conflicting trial results, and implementation of effective interventions into practice.

Objectives: To develop a standardized method for reporting exercise programs in clinical trials, the Consensus on Exercise Reporting Template (CERT).

Design and Methods: We followed the methodological framework suggested by the EQUATOR Network and invited 137 exercise experts to participate in a Delphi consensus study. A draft list of 41 items was identified from a meta-epidemiologic study of 73 systematic reviews of exercise trials for chronic conditions. For each item, participants were asked to indicate their level of agreement on an 11-point rating. Consensus for item inclusion was defined *a priori* as greater than 70% agreement of respondents rating an item as 7 or above. We used three sequential rounds of anonymous online questionnaires and a Delphi workshop.

Results: There were 57 (response rate 42%), 54 and 49 respondents to Rounds 1-3 respectively from 14 countries and a range of disciplines. In Round one, 24 items reached consensus for inclusion and two items were excluded. Eight of these 24 items were accepted in their original format while the remaining16 were revised in response to participant comments and suggestions. Fourteen items were included in Round two and 11 reached consensus for inclusion and three were excluded. Four items were accepted in original format and seven were reworded. Sixteen items were included in Round three and all items reached greater than 70% consensus for inclusion.

Conclusions: The CERT is a 16-item checklist developed by an international panel of exercise experts and designed to improve the reporting of exercise programs in clinical trials. The CERT will encourage transparency, improve our ability to interpret trial findings and facilitate the implementation of effective exercise interventions into clinical practice. Reporting of these items

as a minimum should enhance interpretation of trial results and accurate replication of the programs in other settings.

Word count 319

Keywords: exercise prescription, chronic health conditions, Delphi study, guideline and implementation research

BACKGROUND

Non-communicable chronic diseases are an emerging global issue that contribute to disability and health care costs. The burden of these conditions is increasing with the ageing population and there is an urgent need to identify effective management strategies to reduce disability and associated health care costs (1, 2). Supported by multiple systematic reviews (5-7), clinical practice guidelines (8-13), and position statements (14-16), exercise programs are recommended as part of the management for many chronic conditions including, but not limited to, back and neck pain, osteoarthritis, osteoporosis, type 2 diabetes, cardiovascular and respiratory disease and depression.

However, exercise has many dimensions and varies in type, intensity, duration and frequency. Without explicit descriptions of exercise programs, it is not possible to explore why different trials report conflicting results or accurately replicate them in other studies. It is also difficult to implement them into practice if they have been proven effective. A 2012 meta-epidemiologic study that included 73 systematic reviews of exercise trials for chronic health conditions found that exercise programs were often incompletely reported (17). In particular, it found that important domains such as type of exercise, dosage, intensity, progression rules, supervision or if the exercise program was individual or group were not consistently reported. This is in keeping with the generally poor quality of descriptions of complex interventions in the peer-reviewed literature more generally (18). Interpretation of clinical trials and uptake of effective exercise programs into routine care would be greatly facilitated if exercise programs were reported in a standardised and comprehensive manner.

The authors of the TIDieR Checklist (template for intervention description and replication), an extension of the CONSORT Statement (Consolidated Standards of Reporting Trials), have made

general recommendations for the explicit reporting of complex interventions in clinical trials (20). However, additional details, such as exercise type, dosage, intensity, frequency, supervision and individualisation, may be needed to fully appreciate exercise-specific interventions (17). Herein, we describe the development of the Consensus on Exercise Reporting Template (CERT), which is intended to be used as a further extension of the CONSORT Statement and TIDierR checklist for the explicit reporting of exercise programs across all evaluative study designs for exercise research.

MATERIALS AND METHODS

Design

We followed the methodological framework for developing reporting guidelines suggested by the EQUATOR (Enhancing the QUAlity and Transparency Of health Research) Network (www.equator-network.org) (21), and CERT was registered on the Equator Network as a reporting guideline under development (http://www.equator-network.org/library/reporting-guidelines-under-development/).

The study protocol has been published (22). In brief, we used a modified Delphi method; a survey-based approach to consensus building that is based on fundamental principles of purposive sampling of experts in the field of interest, panellist anonymity, iterative questionnaire presentation, and feedback of statistical analysis (23, 24). The study was designed, implemented and coordinated by an international steering committee (SS, CD, MU, RB) that determined *a priori* criteria for item consensus and survey termination, questionnaire development, and data analysis (22).

Steering committee

The international steering committee (SS, CD, MU, RB) comprised expertise across a range of disciplines (epidemiology, general practice, physical therapy and rheumatology), geographical areas (Australia, UK and Canada) and research expertise (qualitative, quantitative and Delphi methods).

Participants – selection and recruitment

An international panel of exercise experts was identified from exercise systematic review authorship, established national and international profiles in exercise research and practice, and peer recommendations. 'Experts' were operationalized as individuals involved in the conception, design, conduct, teaching, and/or analysis of exercise interventions. In identifying panel members, attention was given to obtaining wide geographical and professional coverage. Participants were provided with an explanatory statement that informed them of the study objectives, how much input would be expected of them, and how their contribution would be used.

Ethics

The Cabrini Institute Ethics Committee approved the project (HREC 02-07-04-14). Potential participants were informed that by responding to the questionnaire, they were deemed to have consented to participate in the study and to have their de-identified responses included in any analyses. All named participants also provided consent to be acknowledged in this paper.

Survey tool

We used the results of the 2012 meta-epidemiologic study that identified 43 key exercise descriptors, and items recommended in the American College of Sports Medicine (ACSM) models for exercise prescription, as the initial draft item set (16, 17). After removal of irrelevant or duplicate items, and pilot testing, 41 items were included in the first survey (Appendix 1). For

each item, participants were asked to indicate their level of agreement on an 11-point numerical rating scale (ranging from 0 = strongly disagree to 10 = strongly agree, 5 = (neither agree nor disagree)), that the item is essential to include in a checklist of reporting requirements for exercise programs in clinical trials. We also had a free text field for each item to encourage feedback and suggestions and a final question asking for any additional comments or suggestions.

Survey process and a priori decisions

Survey Monkey (http://www.surveymonkey.com) software was used to develop the survey. Identified experts were invited to participate in June-July 2014, via an email that included an explanatory statement and offer of co-authorship for participants completing all Delphi rounds. Survey rounds were conducted until consensus was achieved.

There were three sequential rounds of anonymous online surveys. Each Delphi round was conducted over a 14-day period with approximately eight weeks between each round to allow for analysis, item refinement and pilot testing. Each Delphi survey took 20–40 minutes to complete, could be completed over several computer sessions, and allowed participants to review their answers before submitting. Reminders were emailed to non-responders approximately 10 days after the initial mail-out in each round, with additional reminders at two-week intervals after the requested submission date. Only participants who completed a survey round were included in the subsequent round. The results for each item in each round were displayed graphically together with a narrative summary and a thematic analysis of qualitative data (free text responses). These data were emailed to participants just prior to Rounds two and three.

Consensus for inclusion of an item into the CERT was defined *a priori* as greater than 70% of respondents rating an item as 7 or above unless suggestions or comments for modifications of

concept or wording were received (e.g. ambiguous wording, similarity to another item, etc.). Items were excluded if greater than 70% of respondents rated an item as 3 or below. We assumed that items were unclear if they were rated 4, 5 or 6 by greater than 10% of respondents and generated more than 10 comments or suggestions. Using data from the qualitative analysis, the steering committee reworded and/or combined items that were deemed unclear for subsequent rounds.

Round one was conducted in June/July 2014 and Round two was conducted in September/October 2014. The results of Rounds one and two were presented at a workshop at the XIII International Low Back Forum in October 2014, attended by 30 researchers/clinicians with expertise in low back pain (http://www.lbpforum.com.br). We invited comments about the process of development of the CERT, the proposed items for Round three and whether it had broad applicability to low back pain exercise trials. The workshop was audio-recorded with informed consent, transcribed and analysed qualitatively and the findings were used to inform the third Delphi round.

Round three was conducted in December 2014/January 2015. For this round we included all items that had reached consensus for inclusion in Rounds one and two in their original format, as well as items that reached consensus for inclusion in Round two but required further clarification, and any remaining items for which no consensus had been reached. Feedback from both comments received in Round 2 and the Low Back Pain Forum workshop informed the rewording of all items in this round. We also rearranged and categorized the items to be consistent with the CONSORT Statement and TIDieR (18, 19).

RESULTS

Participants

Of 137 invited experts, 57 participants (response rate 42%) completed Round one, 54 completed Round two (response rate 95%), and 49 completed Round three (response rate 90%). The respondents came from 14 countries (Australia, Brazil, Canada, Denmark, France, Germany, Netherlands, New Zealand, Norway, UK, and USA) and represented the following disciplines: biostatistics, chiropractic, epidemiology, exercise physiology, general and specialist medical practice, occupational therapy, physical therapy, psychology, sports science and surgery.

Results of Delphi process

Figure 1 summarises the results of individual rounds of the study and the flow of items through the study. In Round one not all participants indicated their level of agreement for all items and level of agreement was 54/57 participants (95%) for 7 items, 55 (96%) for 18 items, 56 (98%) for 7 items and 57 (100%) for 9 items. Of the 41 items included in Round one, 24 items reached consensus for inclusion, two reached consensus for exclusion and for 15 no consensus was reached (Figures 1 and 2, Appendix 1: Round one). The two excluded items were the context of the qualifications of the exercise instructor and the participants' pre-existing fitness levels. Items with the greatest consensus for inclusion were: what type of exercise equipment was used (94.6% scored it 7 or above and 60.7% scored it a 10); whether there were measures of exercise adherence (89% scored it 7 or above and 61.8% scored it a 10); whether the exercises were supervised or unsupervised (94.6% scored it 7 or above and 70.9% scored it a 10); specification of the number of exercise sessions per week (82% scored it 7 or above and 72.2% scored it a 10); and the duration of the exercise program (96.5% scored it 7 or above and 72.2% scored it a 10). Comments were provided for all items with 512 comments overall. Based upon this feedback, 16/24 items were accepted items that required revision. We reformulated these items as well as the 15 that failed to reach consensus into 14 items for Round two (Figure 1, Appendix 1: Round two).

In Round two, level of agreement was indicated by 53/54 participants (99%) for four items and all participants for the remaining 10 items. Eight items reached consensus for inclusion, three reached consensus for exclusion and for three no consensus was reached (Figures 1 and 3, Appendix 1: Round 2). The three excluded items were the number of years of instructor experience, whether there were warm-up and/or cool-down activities and whether the speed of the exercises was described. Items with the greatest consensus for inclusion were: whether there were measures of exercise adherence (98.4 % scored it 7 or above and 57.4% scored it a 10); whether exercises were tailored to the individual or "one size fits all" (96.1% scored it 7 or above and 64.2% scored it a 10); and whether the exercise dosage (e.g. number of exercise repetitions, sets and sessions) was described (88.9% scored it 7 or above and 64.8% scored it a 10);. Comments were provided for all items with 180 comments overall. Based upon this feedback we reformulated all accepted items (eight from round one and eight from round 2) together with the three that failed to reach consensus into 16 items for Round three (Figure 1, Appendix 1: Round three).

All of the items included in Round three reached consensus for inclusion (Figure 4) and no new issues were raised in the 133 comments that were received. In Round three, level of agreement was indicated by 47/49 participants (96%) for one item, 48 (98%) for two items and all participants for the remaining 13 items. Items with the greatest consensus for inclusion were: whether the exercises were performed individually or in a group (83.7 % scored it 7 or above and 53.1% scored it a 10); whether non-exercise components were included (91.5% scored it 7 or above and 55.3% scored it a 10); specification of the explicit details of the program dosage such as the number of exercise repetitions and sets (89.6% scored it 7 or above and 58.3% scored it a 10); whether there were measures of exercise adherence (95.9 % scored it 7 or above and 59.2%

scored it a 10); and whether adverse events that occurred during exercise were described (87.7 % scored it 7 or above and 59.2% scored it a 10).

The final 16-item CERT checklist is shown in abbreviated form in Table 1 and consists of the following seven categories: (1) **What – materials**: item 1 (the equipment that is used for the exercise intervention); (2) **Who – provider**: item 2 (the characteristics and expertise of the exercise instructor); (3) **How – delivery**: items 3-11 (the way in which the exercises are delivered to the participant); (4) **Where – location**: item 12 (the setting in which the exercises are performed); (5) **When, how much – dosage**: item 13 (a detailed description of how the exercises are performed); (6) **Tailoring – what, how**: items 14, 15 (the way in which the exercises are prescribed); and (7) **How well – planned or actual**: item 16 (whether the exercises are delivered and performed as intended).

DISCUSSION

International exercise experts reached a high level of consensus on a set of key items that are necessary for reporting replicable exercise programs. The statement, summarized in Table 1, will encourage transparency, improve our ability to interpret trial findings and facilitate the implementation of effective exercise interventions into clinical practice.

We followed the 18-step checklist, recommended by Moher et al (2010) for developing a health research reporting guideline (21) and harmonized the CERT with the CONSORT Statement and the TIDieR Checklist for consistency**.** The need for an exercise-specific reporting guideline became evident from the results of a meta-epidemiological study (17).

The CERT is complementary to other more generalist tools and is designed specifically for the reporting of exercise interventions in clinical trials. While some items, such as study setting, provider, adverse events and adherence, are already included in the CONSORT and/or TIDier, the study participants indicated that further clarification in the exercise-specific domain was needed. The CERT should be generalizable across all types of exercise interventions for any conditions, although this requires confirmation. It also provides a structure to inform the development and operationalisation of exercise interventions and production of implementation manuals.

The final checklist of 16 items was the minimum dataset that was considered necessary to report in clinical trials of exercise interventions. It received a high degree of consensus among a wide range of international exercise experts from different disciplines. This does not preclude provision of additional information where considered appropriate. Authors may wish to provide additional information/descriptors where they consider it necessary for the replication of an intervention.

STRENGTHS AND LIMITATIONS

Our study is aligned with the recommended quality indicators for a Delphi study: reproducible participant criteria, stated number of rounds, clear criteria for excluding/dropping items and other stopping criteria (23, 24). Conducting the study online facilitated participants' responses (e.g. anonymity, accessibility) and the dissemination of information from previous rounds. Anonymity may also be seen as strength of the Delphi process: participants are free to say what they wish without fear of judgment by colleagues.

We included international exercise experts from 14 countries, many of whom are multilingual, therefore maximizing the possibilities for cross-cultural translation. It is, however, currently a limitation that the items are only published in English. It will also be important to develop and publish standard translations.

The views of Delphi panelists may differ from those experts who decline participation, and may not fully represent experts in the field of interest. To minimise this limitation, a comprehensive recruitment process involving a systematic search to identify experts and snowballing technique was used, to ensure a representative range of international researchers and clinicians which was reflected in the final respondent sample.

There is debate over who constitutes an expert in the Delphi process. We support a suggestion by Fink et al. (2003) that 'An expert should be a representative of their professional group with sufficient expertise not to be disputed or the power required to instigate the findings.' In our Delphi study all participants fulfilled this definition (24).

CONCLUSIONS

In summary, the CERT checklist evolved through several iterations and followed the EQUATOR Network recommendations. The process began with a preliminary checklist of 41 items derived from a meta-epidemiologic study of systematic reviews of exercise trials for chronic health conditions. The checklist was refined by international exercise experts in three iterative Delphi consensus survey rounds and a Delphi workshop, and the panelists agreed on the final 16 core items.

The CERT can be used by authors to structure reports of their interventions, by reviewers and editors to assess completeness of descriptions, and by researchers and clinicians who want to use the published information. To overcome journal word limits for manuscript publication we recommend that the completed CERT items be included as online appendices. The CERT wording mirrors applicable items from CONSORT 2010, TIDieR and SPIRIT (Standard Protocol Items

Recommendations for Interventional Trials) Statements and consistent wording and structure for items common to the /checklists will facilitate complete reporting for exercise interventions. An associated Explanation and Elaboration Statement, under development, will provide the rationale and supporting evidence for each checklist item, along with guidance and model examples from actual exercise interventions.

Abbreviations

ACSM: American College of Sports Medicine; CERT: Consensus on Exercise Reporting Template; CONSORT: Consolidated Standards of Reporting Trials; EQUATOR Network: Enhancing the QUAlity and Transparency Of health Research; SPIRIT: Standard Protocol Items Recommendations for Interventional Trials; TIDieR: Template for Intervention Description and Replication;

Competing interests

The authors declare there are no competing or conflicting interests.

Authors' contribution

SS, CD, MU and RB were responsible for the design of the study. SS, with input from CD, MU and RB, designed the survey tool, was responsible for implementing the survey and analysed the data. SS, CD, MU and RB drafted the manuscript with input from all other authors. All authors have read and approved the final manuscript.

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Figure 1: Flowchart of CERT items through the Delphi study

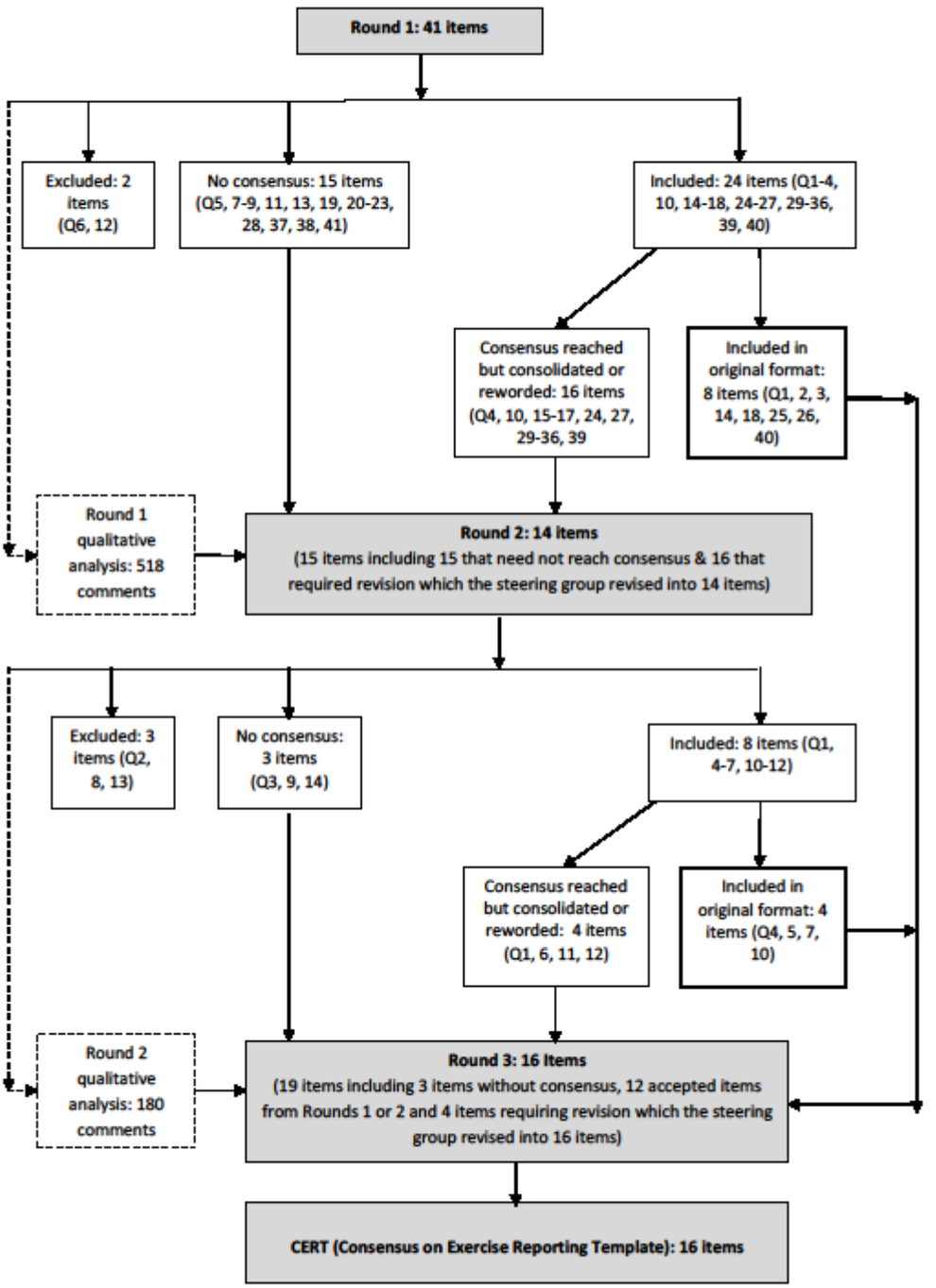


Figure 2: Round one items presented in order of greatest consensus (percent of respondents who scored an item 7 or more) (N=57)*

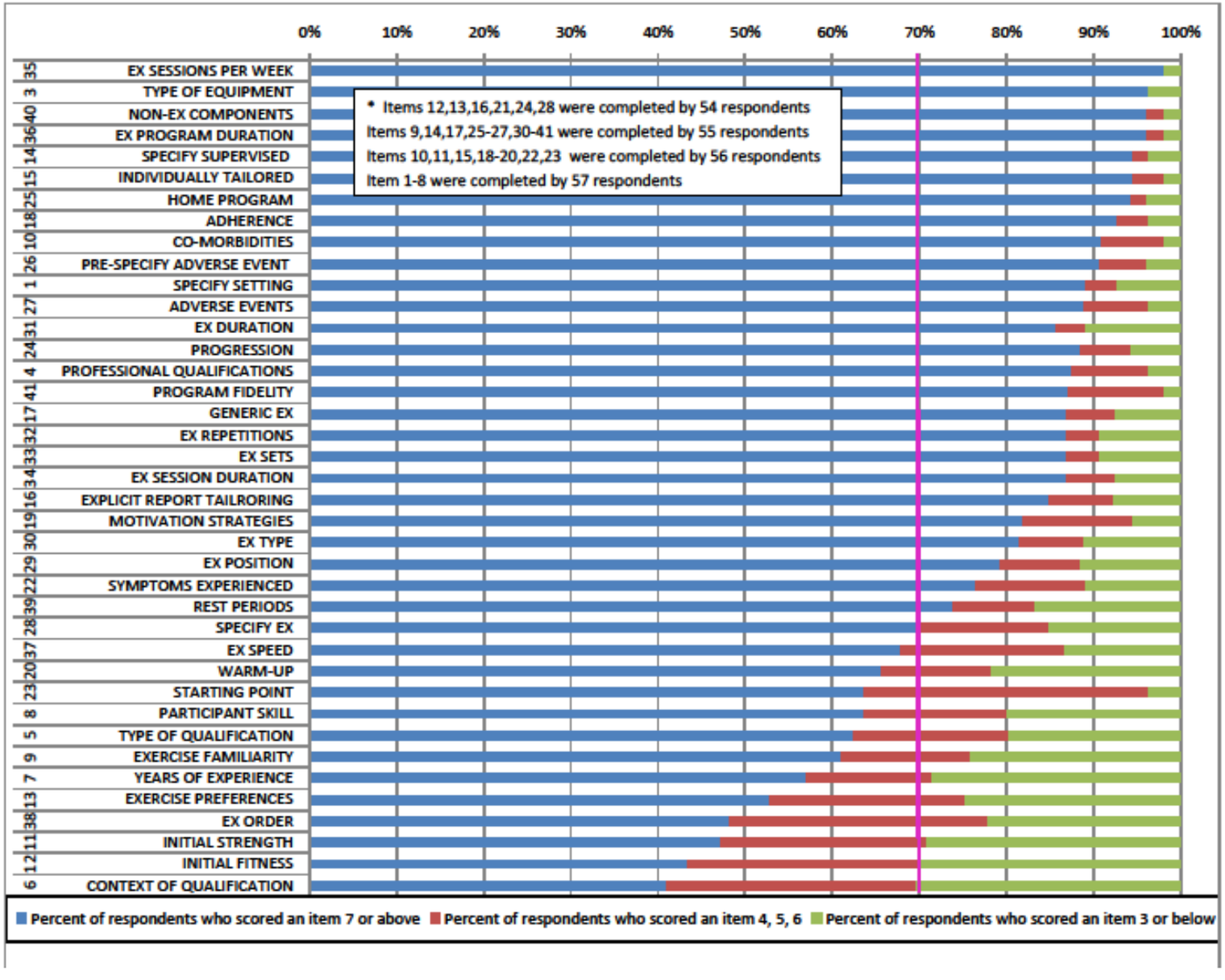
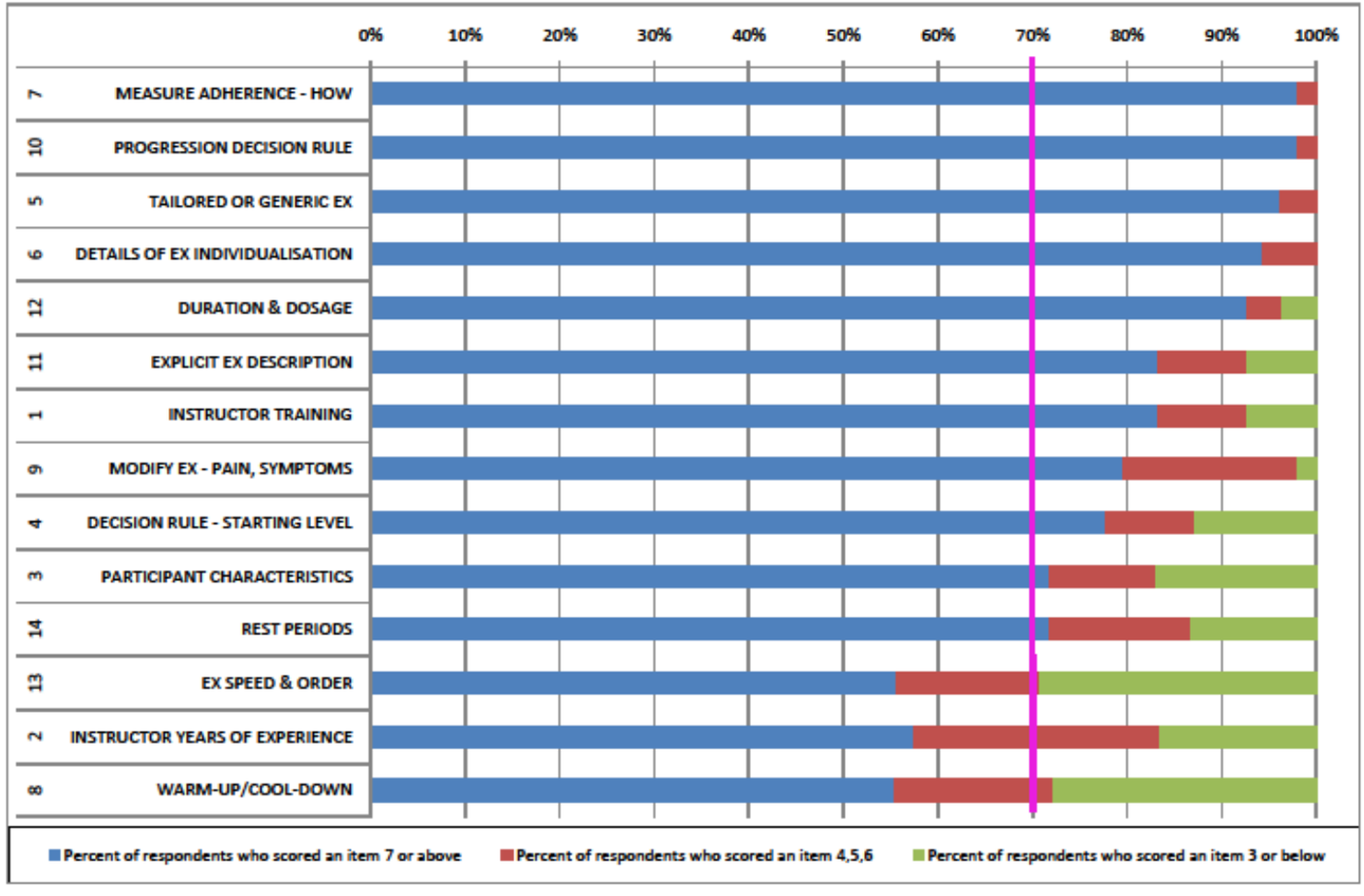
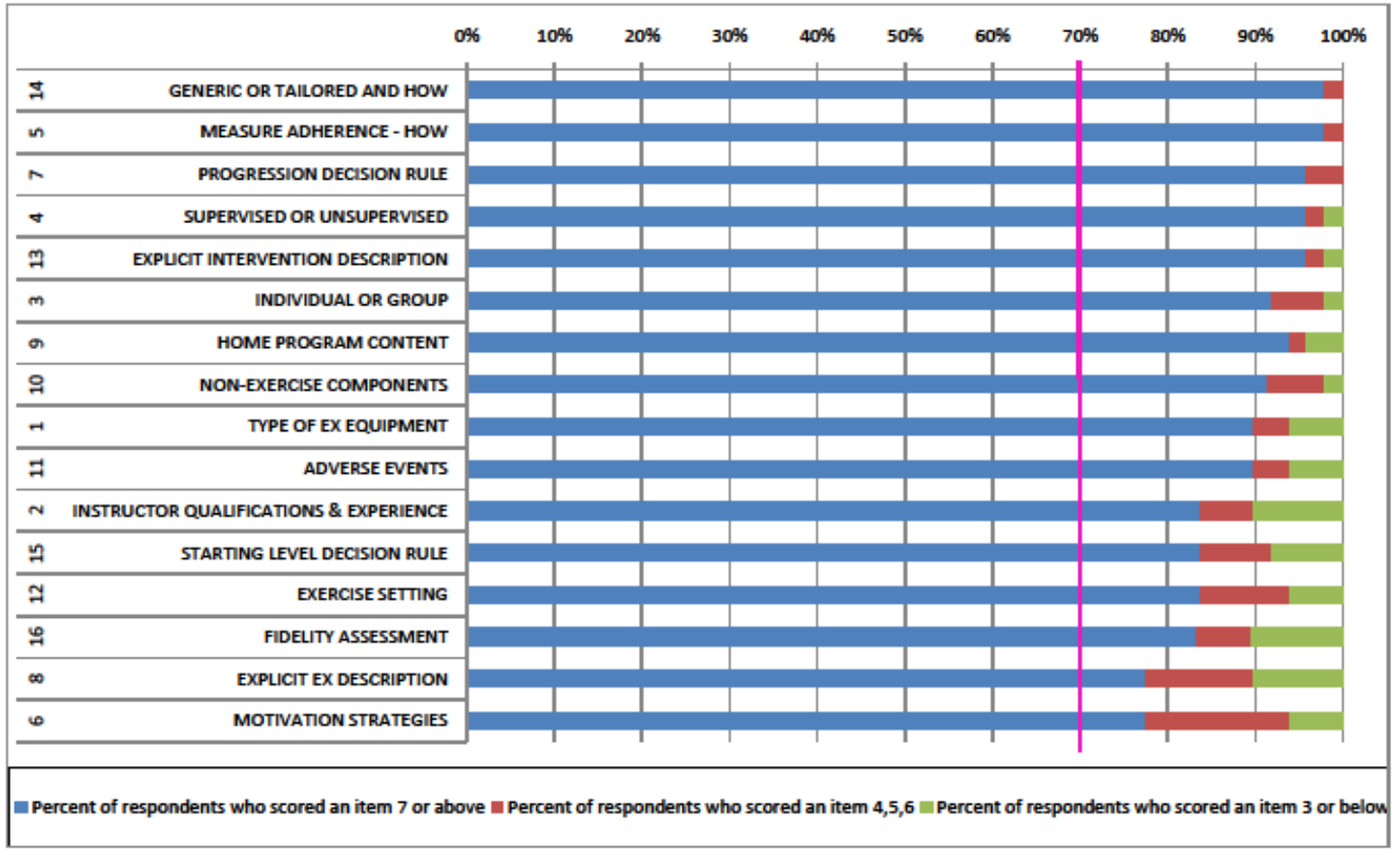


Figure 3: Round two items presented in order of greatest consensus (percent of respondents who scored an item 7 or more) (N=54)*



* Items 3, 5, 10 and 14 were completed by 53 respondents; Items 1, 2, 4, 6-9 and 11-13 were completed by 54 respondents

Figure 4: Round three items presented in order of greatest consensus (percent of respondents who scored an item 7 or more) (N=49)*



* Item 10 was completed by 47 respondents; Items 13 and 16 were completed by 48 respondents; Items 1-9, 11, 12, 14 and 15 were completed by 49 respondents

Table 1: final CERT with 16 abbreviated items

Item category	Item no:	Abbreviated item description
WHAT: materials	1	Type of exercise equipment
WHO: provider	2	Qualifications, teaching/supervising expertise, &/or training of the exercise instructor
HOW: delivery	3	Whether exercises are performed individually or in a group
	4	Whether exercises are supervised or unsupervised
	5	Measurement & reporting of adherence to exercise
	6	Details of motivation strategies
	7	Decision rules for progressing the exercise program
	8	Each exercise is described so that it can be replicated e.g. illustrations, photographs
	9	Content of any home program component
	10	Non-exercise components
	11	How adverse events that occur during exercise are documented & managed
WHERE: location	12	Setting in which exercises are performed
WHEN, HOW MUCH: dosage	13	Detailed description of the exercises e.g. sets, repetitions, duration, intensity
TAILORING: what, how	14	Whether exercises are generic (one size fits all) or tailored to the individual
	15	Decision rule that determines the starting level for exercise
HOW WELL: planned, actual	16	Whether the exercise intervention is delivered and performed as planned

Appendix 1: iteration of CERT items

ROUND 1: 41 ITEMS

1. It is essential to specify the setting in which exercise is to be performed (e.g. are the exercises performed in clinic, gym, hospital, at home etc)
2. It is essential to specify whether the exercises are performed individually or in a group
3. It is essential to report the type of exercise equipment that is used for the program (e. g. weights, machines, exercise bicycle, treadmill etc)
4. It is essential to specify the professional qualifications of the exercise instructor (e. g. Physical therapist, other allied health professional, exercise physiologist, gym instructor etc)
5. It is essential to report the type of qualification of the exercise instructor (e.g. certificate, diploma, undergraduate, post-graduate etc)
6. It is essential to report the context of qualification of the exercise instructor (e.g. country)
7. It is essential to report the number of years of experience of the exercise instructor
8. It is essential to identify or know the level of participant exercise skill/ability
9. It is essential to identify or know participant familiarity with exercise
10. It is essential to identify or know important co-morbidities that will require exercise to be modified
11. It is essential to report the initial level of participant muscle strength
12. It is essential to report the initial level of participant fitness
13. It is essential to report participant exercise preferences (e. g. activity, gym, dance, yoga, martial arts, water, home, indoor, outdoor etc)
14. It is essential to specify whether the exercises are supervised or unsupervised
15. It is essential to specify whether exercises are tailored for the individual
16. For tailored or individualised programs it is essential that the assessment and tailoring are described in detail
17. It is essential to specify whether the program is a pre-determined set of generic exercises
18. It is essential to specify how adherence to exercise is to be reported
19. It is essential to specify details of motivation strategies (Motivation strategies increase the effectiveness of exercise but it is unclear whether or how they should be reported for exercise programs)
20. It is essential to specify warm-up activities (e.g. stretching, treadmill etc)
21. It is essential to specify cool-down activities (e. g. stretching)
22. It is essential to report what guidance a participant is given about symptoms experienced during exercises (Exercise may cause generalised pain or an aggravation of symptoms and this may influence a person's willingness or ability to participate in an exercise program. It may be appropriate to give advice regarding what symptoms are acceptable or not and guidelines for when to continue, modify or cease exercise because of pain)
23. It is essential to report a decision rule that assists in determining the starting point of exercise performance (Exercise prescription involves making decisions about commencing a program at a level that is appropriate for the participant)
24. It is essential to report a method or decision rule by which exercises are progressed throughout an exercise program (Progression of workload and complexity are part of an exercise program and this involves making decisions about changing, for example, the speed or weight or number of repetitions of an exercise)
25. It is essential to document the content of any home program component
26. It is essential to pre-specify how adverse events that occur during an exercise intervention or program are to be reported

27. It is essential to report all types of adverse events that occur during an exercise intervention or program (e. g. muscle soreness, significant symptom aggravation, falls, fractures, cardiac or other serious events
28. It is essential to specify or name each of the exercises (e.g. squat, "lat pulldown", push-up, lunge, sit-ups etc)
29. It is essential to describe the position in which each exercise is performed (e.g. lying supine or prone, sitting, standing etc)
30. It is essential to describe the type of each exercise (e.g. concentric, eccentric, isometric, plyometric, aerobic, stretching, strengthening, endurance, power etc)
31. It is essential to report the duration (e.g. number of seconds) of each exercise
32. It is essential to report the number of repetitions of each exercise
33. It is essential to report the number of sets of each exercise
34. It is essential to report the total duration (time in minutes) of each exercise session (all exercises included)
35. It is essential to report the number of exercise sessions per week
36. It is essential to report the duration (total time in weeks) of the entire exercise program
37. It is essential that the speed (fast or slow) of each exercise is reported
38. It is essential that the order in which the exercises are performed is reported (The sequence of exercise may influence the quality of performance or the overall outcome of exercise results)
39. It is essential to report the presence and/or length of a rest period between sets of exercise in a program
40. It is essential to describe the non-exercise components of the intervention. (e. g. education, behavioural etc)
41. It is essential to report how the fidelity of the exercise intervention or program will be assessed or measured. i.e. have the planned program and actual performance concurred

ROUND 2: 14 ITEMS

1. It is essential to report the training that an instructor has in teaching and supervising exercise(e.g. physical therapist, exercise physiologist, other health care professional, gym instructor, personal trainer etc)
2. It is essential to report the number of years of experience (e.g. less than 5 years, more than 5 years) that an instructor has in teaching and supervising exercise
3. It is essential to report participant characteristics (e.g. exercise familiarity and/or ability and/or preferences, co-morbid factors etc)
4. It is essential to report, and describe, a decision rule that uses baseline measures, such as strength or aerobic capacity, to determine the starting level at which participants commence exercise
5. It is essential to specify whether exercises are tailored to the individual (personalised or individualised or adapted) or generic (one size fits all)
6. If the intervention was planned to be personalised or individualised or adapted, it is essential to describe what, why, when, and how
7. It is essential to specify how adherence to exercise is to be measured and reported
8. It is essential to explicitly describe warm-up and/or cool-down activities (e.g. stretching, treadmill etc)
9. It is essential to report what guidance or instructions a participant is given for when to continue, modify or cease exercise because of pain or symptom aggravation
10. It is essential to describe the way in which it is decided to progress through an exercise program (e.g. Borg Exertion Scale, quantified resistance or weight, 1 Repetition Maximum (1RM) etc)

11. It is essential to specify and describe each exercise so that it can be replicated(e.g. photographs, illustrations, online appendices and supplementary data, starting position, action etc)
12. It is essential to describe the intervention participants received over what period of time, the number of sessions, the duration of each session, the number of exercise repetitions and exercise sets
13. It is essential that the speed (fast, slow, continuous, static hold) and order of performance of each exercise is reported
14. It is essential to report the presence and/or length of a rest period between sets of exercises in a program

ROUND 3: 16 ITEMS

1. It is essential to specify the type of exercise equipment e.g. weights, machines, exercise bicycle, treadmill etc
2. It is essential to specify the qualifications, and teaching/supervising expertise, of the exercise instructor
3. It is essential to specify whether the exercises are performed individually or in a group
4. It is essential to specify whether exercises are supervised or unsupervised
5. It is essential to specify how adherence to exercise is to be measured and reported
6. It is essential to specify details of motivation strategies
7. It is essential to describe the way in which it is decided to progress through an exercise program
8. It is essential to specify and describe each exercise so that it can be replicated e.g. photographs, illustrations, online appendices, etc
9. It is essential to specify the content of any home program component
10. It is essential to describe the non-exercise components of the intervention e.g. cognitive behavioural therapy etc
11. It is essential to report adverse events that occur during an exercise intervention
12. It is essential to specify the setting in which exercise is to be performed
13. It is essential to specify and explicitly describe the exercise intervention i.e. number of exercise repetitions, number of exercise sets, number of sessions, duration of each session, duration of intervention or program etc
14. It is essential to specify whether exercises are generic or whether, and how, they are tailored to the individual
15. It is essential to specify, where applicable, a decision rule that determines the starting level at which participants commence exercise i.e. beginner, intermediate or advanced
16. It is essential to report how the adherence or fidelity to the exercise intervention will be assessed or measured