

Systematically analysing behaviour change techniques used in 44 interventions to reduce unprofessional behaviour between healthcare staff

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Background

- Unprofessional behaviours (UBs) like rudeness and bullying are any staff behaviours that cause distress or harm to colleagues. They damage staff wellbeing, undermine teamwork, and threaten patient safety.
 - Our 2024 realist review (BMC Medicine) identified 42 acute care interventions worldwide aiming to reduce UB. However, none systematically applied behavioural or implementation science frameworks.
 - The BCT Ontology (BCTO) is a comprehensive behavioural framework that classifies Behaviour Change Techniques (BCTs) in a standardised way. **BCTs are “coordinated sets of activities designed to change specified behaviour patterns.”**
- Using the BCTO can improve understanding of an intervention’s ‘active ingredients,’ enhance replicability, and increase transparency in reporting.
- This study aligns existing UB interventions with the BCTO using directed content analysis to:
 - Demonstrate the feasibility of applying behavioural science to health services research
 - Encourage uptake of these frameworks
 - Inform how future interventions can be designed for greater effectiveness

Methods

- This research built on an initial realist review, and included updating the systematic search to July 2024.
- Screening was conducted in Rayyan.ai by two independent reviewers. Studies of any design were included, if they reported an intervention in an acute care setting that aimed to address UB between staff.
- This process (Figure 1) resulted in **47 studies** being included in the final analysis.
- To understand BCTs used in interventions, we:
 - extracted intervention descriptions from study reports.
 - two trained researchers, read and independently coded the excerpts of each study line by line against the May 2024 version of the BCT Ontology which contains 284 BCTs.

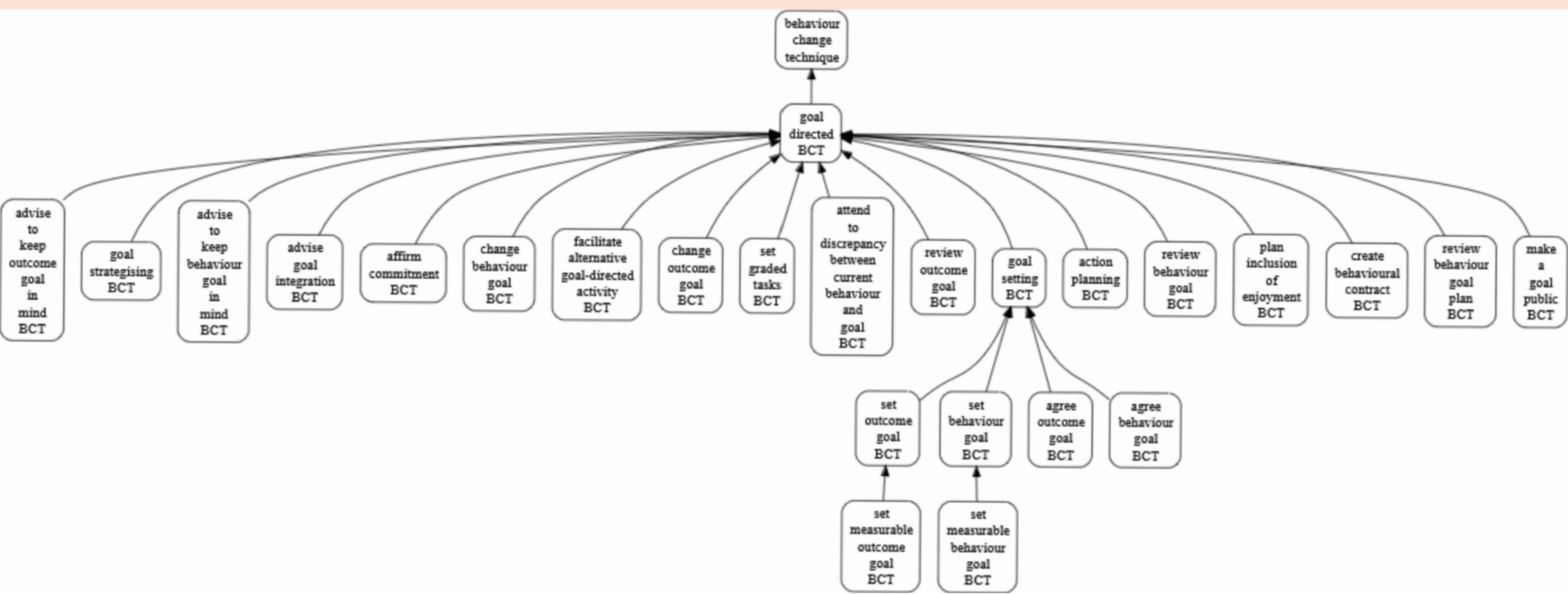


Figure 2. Example portion of the hierarchical nature of the BCT Ontology for the parent class “goal directed BCT”.Depicts 25 total BCTs out of 284. Generated at <https://bciovis.hbcptools.org/>.

- Figure 3 illustrates the frequency of BCTs used across different intervention types.
- As intervention complexity increases, the frequency of BCTs rises, with advanced interventions utilising more consequence-based and goal-oriented BCTs.
- However, **understanding which BCTs drive effectiveness was not possible** due to few interventions reporting negative outcomes.
- Additionally, poor intervention reporting may have led to BCTs misinterpretation or omission in manuscripts despite being incorporated in interventions.

Implications

- Behavioral science frameworks can enhance health services research by improving the reportability and standardization of interventions.
- Developing evidence-based interventions based on behavioral science principles will help **reduce research waste**.
- A key strength of this research is the choice of BCTO used, which offers widely applicable BCTs and is designed to be a ‘live’ resource with continuous updates. This should ensure our findings remain relevant in future research.

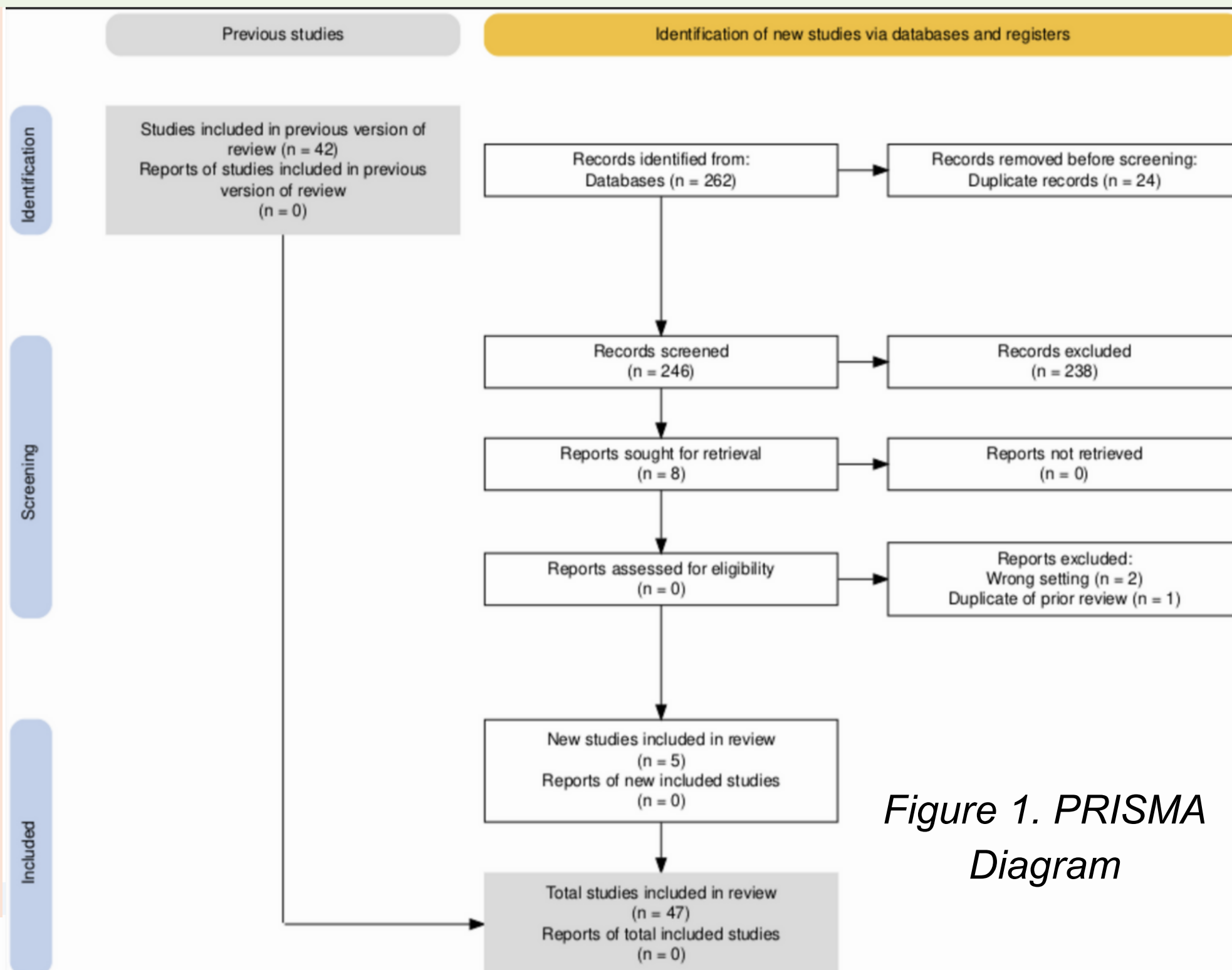


Figure 1. PRISMA Diagram

Results

- Across all studies, **477 individual uses of BCTs were coded**.
- We deduplicated four papers that reported the same Ethos intervention resulting in n=44 unique interventions.
- We have categorised these into the five intervention types from our previous work (see Figure 3).

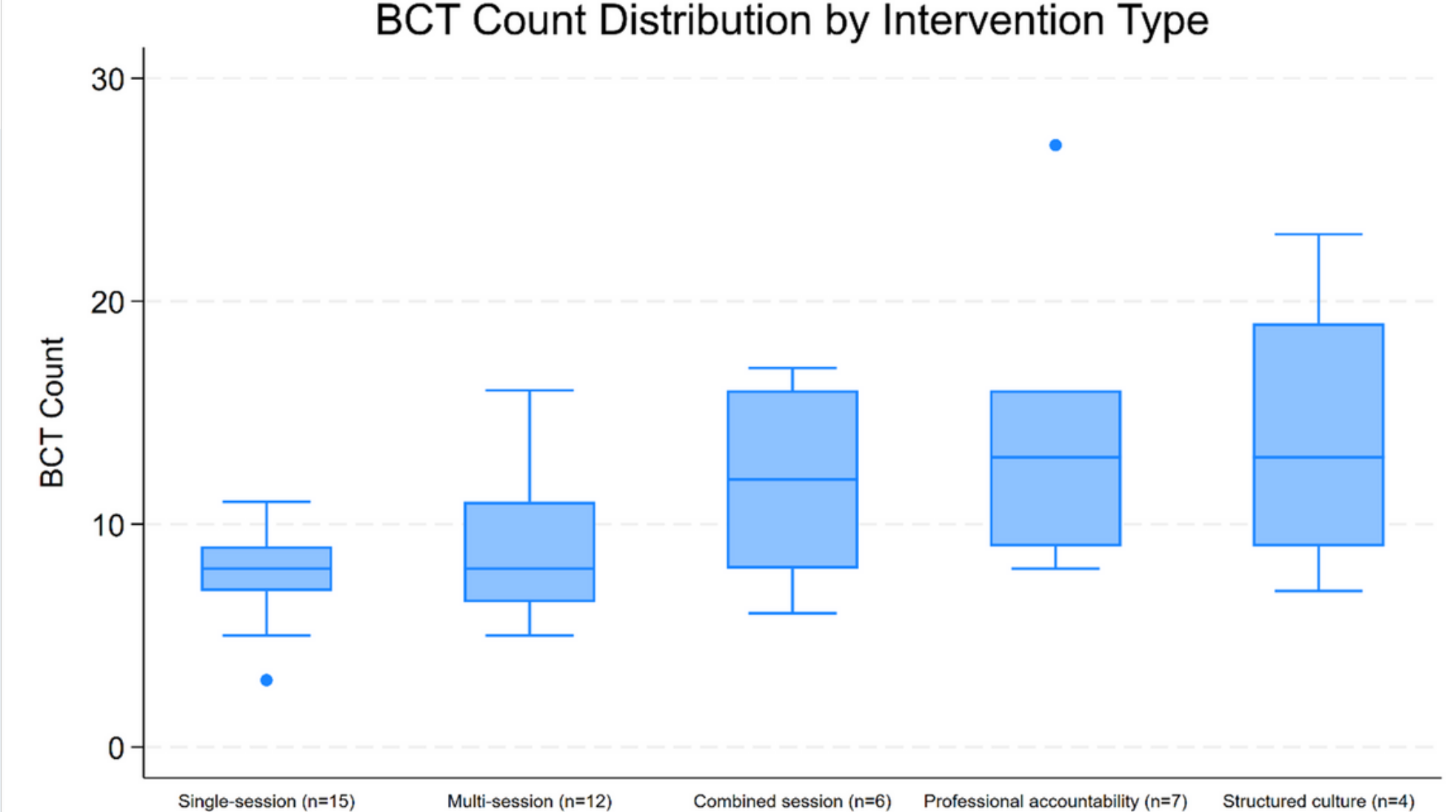


Figure 3. Distribution of BCT Count across different intervention types. The box plot displays the median, interquartile range, and potential outliers for the frequency of BCT use in each study type.

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