Blinding of statisticians in clinical trials: a qualitative study in UK Clinical Trials Units

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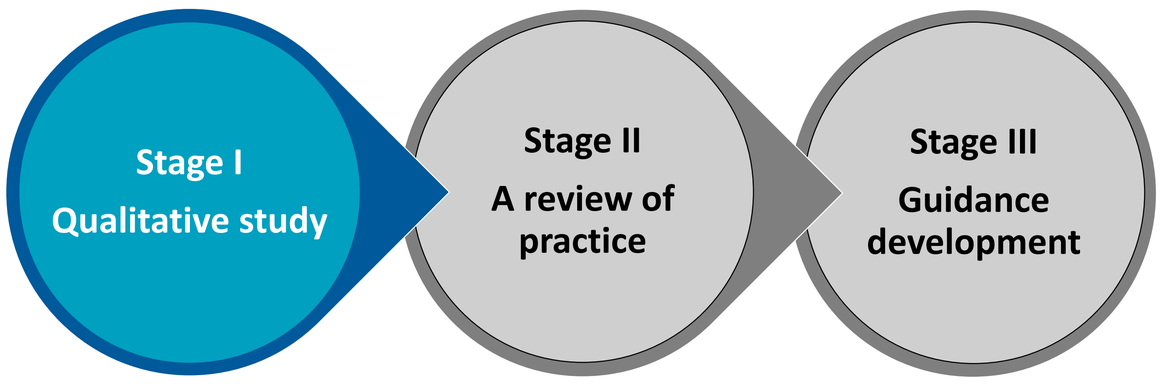
Background

The Blinding of Trial Statisticians (BOTS) study aimed to develop guidance to advise CTUs on a risk-proportionate approach to blinding trial statisticians (TSs) within clinical trials.



The qualitative study aimed to investigate when and how statisticians should be blinded in randomised trials from various stakeholders' perspectives.

Methods

Focus groups (FGs)

- A purposive sample of statisticians, trial managers, data managers, programmers and data coordinators were recruited via UKCRC working groups, NIHR statistics group, MRC-NIHR (TMRP) working groups and UKTMN.

Sample

- Potential participants were approached by an invitation email including a participant information sheet and a consent form.
- The researchers conducted FGs using the Microsoft Teams platform.

Recruitment/ data collection

- The audio-recorded data for the FGs were transcribed.
- An inductive/deductive thematic approach was used to identify participants' perspectives regarding statisticians' blinding in RCTs.

Analysis

Results

- Six FGs were conducted. Thirty-seven participants from 19 (out of 52) CTUs in England, Wales and Scotland, volunteered to participate.

Professional role	FG 1 (n=10)	FG 2 (n=6)	FG 3 (n=5)	FG 4 (n=6)	FG 5 (n=5)	FG 6 (n=5)
	Mixed(NCTU only)	Statisticians		Mixed		
Statistician	3	6	5	4	1	3
Trial Manager	3				2	1
Data Manager	3			1		
Datacoordinator	1				1	
Programmer				1	1	1

Four broad themes emerged from the analysis of the FG transcripts:

1. Statistical models of work

➢ Six models of working were identified. All models shared involved at least two statisticians, one typically more junior TS and one more senior (lead/principal statistician). In some cases, tasks were delegated to another statistician.

Statistical models
Model 1 – Trial statistician can be unblinded to maintain blind of lead statistician
Model 2 – TS remains blinded, lead statistician (LS) can be unblinded
Model 3 – TS and LS remain blinded by having a third unblinded statistician
Model 4 – TS and LS remain 'pseudo-blinded' by using coded groups
Model 5 – Both statisticians can be unblinded during the trial
Model 6 – All statisticians are unblinded

2. Factors affecting the decision to blind/not blind statisticians

➢ A range of factors was highlighted such as *type of data, study design, outcomes, analysis, interventions and external factors such as funder limitations and expectations and personal relationships with Chief Investigators and sponsors.*

3. Benefits of blinding/not blinding TSs

Benefits of blinding

- ❖ Contributing freely to trial management discussions
- ❖ Enhancing credibility and quality of the trial
- ❖ Reducing the perception to introduce bias

Benefits of not blinding

- ❖ Understanding data in context and having open conversations
- ❖ Better understanding of the data which leads to higher quality analysis

4. Practicalities

Maintaining the blind

- ❖ Needs rigorous processes
- ❖ Give the responsibility to data management
- ❖ Allow programmers to write and produce the randomisation system

- ❖ **Staffing and unit capacity**
- ❖ **Level of statisticians' experience and knowledge about blinding**
- ❖ **Risk assessment approach**

Key findings

- ❖ **Key finding: A 'one size fits all' approach is not practical in the process of deciding when/how the TS should be blinded.**
- ❖ Two other significant findings emerged from the study (i) where resources are limited, there is a tension between the twin aims of minimising the risk of bias and maximising the insight of statisticians to improve analysis, reporting and decision-making, (ii) variation in practice is inevitable because of numerous factors affecting each RCT such as resources/staffing and study design.
- ❖ Findings were used to develop evidence-based & risk-proportionate guidance and a risk assessment tool to guide CTUs regarding blinding statisticians in RCTs.
- ❖ **Reference:** *Iflaifel M, Partlett C, Bell J, Cook A, Gamble C, Julious S, et al. Blinding of study statisticians in clinical trials: a qualitative study in UK clinical trials units. Trials. 2022;23(1):535.*

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