SWAT 180: The effectiveness and cost effectiveness of financial incentives for increasing participant retention rates in randomised trials

Objective of this SWAT
1) To evaluate one or more of:
a) the effectiveness of a £5 gift voucher incentive versus a £5 cash incentive, for increasing participant retention rates in randomised trials
b) the effectiveness of a £5 gift voucher incentive versus no financial incentive for increasing participant retention rates in randomised trials
c) the effectiveness of a £5 cash incentive versus no cash incentive for increasing participant retention rates in randomised trials

2) To evaluate the cost effectiveness of these financial incentive strategies.

Study area: Retention, Follow-up
Sample type: Participants
Estimated funding level needed: Medium

Background
Poor participant retention rates can have adverse consequences on the validity of randomised trials. Financial incentives, consisting of either shopping/gift vouchers or cash are a common strategy used by trial teams to encourage participants to complete follow-up questionnaires, attend follow-up assessment appointments or both. The Cochrane methodology review of strategies to improve retention in trials found financial incentives may improve retention rates compared with no incentive; but the certainty of the evidence was low [1]. The review identified two SWATs that offered voucher incentives, and one SWAT that offered cash; but it is unclear whether offering a cash or a voucher incentive leads to the higher response rates. The Cochrane review and the James Lind Alliance retention priority setting exercise [2] both highlighted financial incentives as a priority for evaluation and patient and public involvement (PPI) work suggests that some patient populations (such as men) may be more likely to prefer cash than a shopping voucher, and may respond differently to cash and voucher incentives. Assessments of the effectiveness and cost effectiveness of financial incentives (cash or voucher) versus no incentive on retention rates would help trial teams to make evidence-informed decisions about whether to use financial incentives, and if so, whether to offer cash or vouchers.

Interventions and comparators
Intervention 1: £5 shopping voucher incentive, given unconditionally before the follow-up.
Intervention 2: £5 cash incentive, given unconditionally before the follow-up.
Intervention 3: No financial incentive.

Index Type: Incentive

Method for allocating to intervention or comparator
Randomisation

Outcome measures
Primary: Retention rate, defined as the proportion of participants for whom outcome data are obtained.
Secondary: 1) Cost-effectiveness (cost per participant retained for electronic reminder compared to no reminder); 2) Time to collection of outcome data (days from scheduled date); 3) Number of reminders sent to participants before completion of follow-up assessment; 4) Impacts of the retention strategy on all subsequent follow-up time-points; 5) Other outcomes, such as questionnaire completeness (e.g. primary outcome measure obtained) when data collection is via self-report questionnaire, to be defined as appropriate to the host trial.
Where possible, the effects of the strategies in different patient populations will be explored, including sex, age and ethnic subgroups.

Analysis plans

Demographic characteristics, including age, sex, and ethnic group (if available), will be presented descriptively as mean (standard deviation) or number (%), as appropriate. An 'intention-to-treat' analysis will be performed including all randomised participants analysed in the SWAT group to which they were allocated. Any randomised participant who does not provide outcome data for any reason (including participants who were deceased or withdrawn from the host trial) will be categorised as 'No' for the primary outcome.

Primary outcome analysis:
Comparison of the questionnaire response rate between the SWAT groups will use logistic regression. The regression model will include the randomised group factor and any SWAT stratification or minimisation factors (e.g., host trial treatment group). The between-groups difference will be presented as number (%) and as both adjusted absolute (i.e., risk difference) and relative (i.e., odds ratio or relative risk) effect estimates, with 95% confidence intervals from the logistic regression model.
Secondary outcome analysis:
The between-groups difference in time taken to collection of outcome data will be analysed using techniques suitable for time to response (event) data such as Kaplan-Meier curves, log-rank test or Cox regression (adjusted for SWAT stratification/minimisation factors). Time zero will be set as 'day before expected completion date' (equivalent to adding 1 to the time variable to avoid exclusion from the analysis set).

For self-report questionnaires, the analysis of questionnaire completeness will be as for the primary outcome.

The incremental cost per participant retained will be calculated for the comparisons under evaluation as the difference in costs between the SWAT groups, divided by the difference between groups in completion rates. Direct costs of the retention strategies, and indirect costs associated with administering the strategies and the comparators will be included.
The following sensitivity analyses will be performed for the primary analysis:
• Excluding participants who did/could not receive allocation as randomised.
• Excluding participants who were retrospectively found to have died or withdrawn from host trial before the expected completion date.
Subgroup analysis may also be performed for key demographic subgroups (e.g. age, gender, ethnicity) by adding interaction terms to the logistic regression or Cox regression model, where sample sizes are deemed sufficiently large.

Meta-analyses will include data from existing SWATs and will estimate differences in retention rates between the intervention and comparator groups. Within the meta-analysis, remote self-completion of questionnaires by trial participants and face-to-face data collection should be evaluated in subgroups and a combined treatment effect should be presented only if it is deemed that the effects are homogeneous between subgroups.

Possible problems in implementing this SWAT
The need for ethical approval before using the incentives and logistical difficulties in administering the cash incentive.

References
1. Gillies K, et al. Strategies to improve retention in randomised trials. Cochrane Database of Systematic Reviews 2021;(3):MR000032.
2. Brunsdon D, et al. What are the most important unanswered research questions in trial retention? A James Lind Alliance Priority Setting Partnership: the PRioRiTy II (Prioritising Retention in Randomised Trials) study. Trials 2019;20:593.

Publications or presentations of this SWAT design

Examples of the implementation of this SWAT

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