

SWAT 31: Electronic prompts to increase response rates to postal questionnaires

Objective of this SWAT

To assess the effects of using electronic prompts (both email and SMS) to improve response rates and reduce time to response in a population of participants in a clinical trial

Study area: Retention, Follow-up

Sample type:

Estimated funding level needed: Unfunded

Background

Postal questionnaires are frequently used in randomised trials to elicit responses from participants [1]. However, when they are not filled in and returned by the participant, this can introduce bias into the study; and it is essential for the internal validity of a randomized trial that a high response rate to questionnaires is received [2]. High attrition and the introduction of bias into a study will also reduce the power of the study, as the effective sample size is reduced [3]. A rapid response rate to postal questionnaires is also desirable to establish treatment effects within a given period. One method to increase response rate (and therefore reduce attrition) and time to response could be the use of electronic prompts in which participants are sent a reminder either as an electronic mail or a short message service (SMS) for a mobile phone. Benefits of these types of electronic prompt are that they are not resource intensive, because they can be automated, and they can be used to reach a large number of participants easily and quickly. In 2014, it was estimated that 93% of adults had access to a mobile phone in the United Kingdom [4], suggesting that they could be a useful means of contacting participants in a research study.

There are few studies in the area of using electronic prompts to reduce attrition in randomized trials, with two published trials, both from the York Trials Unit. One small study found that electronic prompts, although increasing response rates by 3%, did not reduce the time to response and the difference in response rates was not statistically significant [1]. However, this study had fewer than 130 participants and had low statistical power to show a useful difference. Similarly, a slightly larger trial found that electronic prompts, although again showing a small increase in response rates (5%), that was not statistically significant, did show a statistically significant decrease in the time to response [5]. Both of those trials were nested within larger randomized trials. A Cochrane Methodology Review of methods to improve retention in randomized trials found these two studies of using electronic prompts versus no electronic prompts and no others. Consequently, larger studies of electronic prompts are needed to investigate their effects on reducing questionnaire attrition within randomized trials.

This SWAT has been implemented in a randomized trial of a diagnostic pathway among smokers for chronic obstructive pulmonary disease (COPD) [7].

Interventions and comparators

Intervention 1: An additional electronic prompt in the form of an email or SMS text to prompt participants to return their questionnaire. The email said "Thank you for your involvement in the DOC study. We really appreciate your help with this study. We recently sent you a questionnaire along with a freepost envelope in connection with this study, which you should by now have received. Your answers are really important so we would be very grateful if you could return your completed questionnaire as soon as you can. If you have already returned the questionnaire please accept our apologies and ignore this email. Thank you again for your help with this study". The SMS text message sent was: "DOC Study: You should by now have received a questionnaire from us to complete. Your answers are important so please help by returning it as soon as you can. Thank you"

Intervention 2: No additional prompt

Index Type: Method of Follow-up

Method for allocating to intervention or comparator

Randomisation

Outcome measures

Primary: Response rate for the return of the study follow-up questionnaire.

Secondary: Time to return the questionnaire.

Analysis plans

The questionnaire response rates are compared by randomized group using a chi-square test. Unadjusted and adjusted odds ratios (ORs) and 95% confidence intervals (CI) are calculated, using age, gender, and treatment allocation as fixed effects and practice as a random effect in an adjusted analysis. Time to return the questionnaire is plotted using Kaplan-Meier survival curves, using the log-rank test to compare the two randomized groups. Cox regression is used to adjust for age, gender, treatment allocation in the host clinical trial, and general practice. Participants who returned their questionnaire after 56 days and those who did not return their questionnaire were treated as censored, and their response time was recorded as 56 days, which was a useful compromise between allowing sufficient time to respond and data becoming out of date.

Possible problems in implementing this SWAT

References

1. Man MS, Tilbrook HE, Jayakody S, et al. Electronic reminders did not improve postal questionnaire response rates or response times: a randomized controlled trial *Journal of Clinical Epidemiology* 2011; 64: 1001-4.
2. Torgerson D, Torgerson C. *Designing randomised trials*. Basingstoke: Palgrave MacMillan, 2008.
3. Hewitt CE, Kumaravel B, Dumville JC, Torgerson DJ. Assessing the impact of attrition in randomized controlled trials. *Journal of Clinical Epidemiology* 2010; 63: 1264-70.
4. Ofcom UK Communications 2013. Available at <http://media.ofcom.org.uk/facts/> (Accessed 12 February 2015).
5. Ashby R, Turner G, Cross B, Mitchell N, Torgerson D. A randomized trial of electronic reminders showed a reduction in the time to respond to postal questionnaires. *Journal of Clinical Epidemiology* 2011; 64: 208-12.
6. Brueton VC, Tierney J, Stenning S, et al. Strategies to improve retention in randomised trials. *Cochrane Database of Systematic Reviews* 2013; (12): MR000032.
7. Ronaldson S, Adamson J, Dyson L, Torgerson D. Waiting list randomized controlled trial within a case-finding design: methodological considerations *Journal of Evaluation and Clinical Practice* 2014; 20: 601-5.

Publications or presentations of this SWAT design

Examples of the implementation of this SWAT

Clark L, Ronaldson S, Dyson L, Hewitt C, Torgerson D, Adamson J. Electronic prompts significantly increase response rates to postal questionnaires: a randomized trial within a randomized trial and meta-analysis. *Journal of Clinical Epidemiology* 2015; 68: 1446-50.

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