



ORIGINAL ARTICLE

Enclosing a pen reduced time to response to questionnaire mailings

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Abstract

Objectives: To assess the effectiveness of including a pen in postal questionnaires on response rate, necessity of reminders, time to response, and completeness of response to the primary outcome question (POQ).

Study Design and Setting: A two-arm randomized controlled trial (RCT) embedded within the screening of older women for prevention of fracture trial (SCOOP). Women, aged 70–75 years, were randomized to receive a pen with their questionnaire ($n = 3,826$) or to receive the questionnaire alone ($n = 3,829$). The results were combined with another embedded RCT in a meta-analysis.

Results: A response rate of 92.4% was observed in the pen group compared with 91.3% in the control group (odds ratio [OR] = 1.16; 95% confidence interval [CI]: 0.98, 1.37; $P = 0.08$). There was a difference in reminders required (OR = 0.88; 95% CI: 0.79, 0.98; $P = 0.02$), time to response (hazard ratio = 1.06; 95% CI: 1.01, 1.11; $P = 0.01$) and some difference in the completeness of response to the POQ (OR = 1.18; 95% CI: 1.00, 1.39; $P = 0.05$). The pooled OR from the meta-analysis for response rate was 1.21 (95% CI: 1.05, 1.39; $P = 0.01$).

Conclusion: Inclusion of a pen with postal questionnaires potentially has a positive impact on response rates and the number of reminders required. There may be some reduction in time to response. Studies of different participant groups are needed to test the effectiveness over more diverse populations. © 2016 Elsevier Inc. All rights reserved.

Keywords: Randomized controlled trial; Postal questionnaire; Response rate; Pen; Incentive; Embedded trial

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Conflict of interests: We declare that all authors have no nonfinancial interests that may be relevant to the submitted work.

Transparency declaration: We can confirm that the manuscript presents an honest, accurate, and transparent account of the study being reported; that no important aspects of the study have been omitted; and that any discrepancies from the study as planned (and, if relevant, registered) have been explained.

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1. Introduction

Postal questionnaires are a useful tool in health research and are frequently used as a means of collecting outcome data in randomized trials. They are particularly useful in contexts where interview techniques would result in considerable expense, resource use, or participant burden. Postal questionnaires can also be beneficial in reducing observer bias and social desirability bias where patient responses are anonymized [1,2].

There is an increasing demand from funders for efficient trials. Preparing and distributing a large number of postal questionnaires can be both time consuming and costly. Consequently, a major consideration of improving the

What is new?**Key findings**

- Including a pen with follow-up questionnaires reduces the number of reminders required and the time to response.

What this adds to what was known?

- Meta-analysis with the only other existing trial-within-trial in this field reiterates the potential effectiveness of improving questionnaire response by also sending a pen.

What is the implication and what should change now?

- Enclosing a pen in postal questionnaires is an effective low-cost way to improve response in randomized controlled trials.
- Further studies in different participant groups would be helpful to test the effectiveness over more diverse populations.

efficiency of trials is ensuring response rates are high for the first mailing sent out to participants, thus reducing the time, resources, and costs associated with reminders and follow-up telephone calls. Poor response to postal questionnaires will reduce a study's statistical power and potentially introduce selection bias both in survey research and randomized controlled trials (RCTs) leading to poorer quality results from which reliable conclusions cannot be drawn [3,4]. Although guidelines exist to aid the design of questionnaires, including tailoring surveys based on a priori knowledge of the topic and the intended population of respondents [5,6], this does not always ensure high response rates. It is therefore important to identify other viable methods of increasing response rate and maximizing retention.

Some of the established methods of increasing response rates, such as monetary recompense for participation and sending postal questionnaires via recorded delivery [7–9], are costly. Additionally, there is debate over whether monetary incentives are truly ethical. A cheaper and less controversial method of increasing response rate is to include a nonmonetary incentive with the questionnaire such as a pen; however, there is disagreement in the literature as to whether this is sufficiently effective.

There have been a number of systematic reviews appraising the literature surrounding nonmonetary incentives to increase response rates [3,7,10]. Together, these have identified five trials evaluating the effect of adding a pen or pencil to postal mailouts on response rate [11–14]. Two of these aimed to increase response rates

to stand-alone surveys, one to clinicians [12] and one to smokers [11], one aimed to increase response to a study recruitment invitation [14], and two aimed to increase response to a study follow-up survey [13,14]. Only one of these trials took the same methodological approach as the present work, embedding a trial of including a pen to increase response rate within an ongoing host trial [10]. The study was a $2 \times 2 \times 2$ factorial trial embedded within the TOMBOLA study (trial of management of borderline and other low-grade abnormal smears) of cervical cytology surveillance, evaluating the effect on response rates of: (1) enclosing a TOMBOLA-branded pen with the questionnaire; (2) sending the questionnaires by first class post (as opposed to second class); and (3) enclosing a preaddressed return envelope on which there was a second class postage stamp (rather than a freepost business-reply envelope) [13]. The study population was women due to receive a TOMBOLA psychosocial questionnaire between June and August 2003 for the 12, 18, 24, 30, 34, or 36 months' follow-up. A statistically significant increase in response rate was found when a pen was included with the questionnaire [from 61.5% to 68.5%; $P = 0.002$; odds ratio (OR), 1.36; 95% confidence interval (CI): 1.04, 1.79]. Although the study reported an increase in staff time, due to the necessity to manually frank envelopes containing a pen for postage, given the small price of the pen (14 pence), the method was considered relatively low cost for the level of effectiveness.

Of the four trials that were not embedded within a broader RCT, two reported a significant increase in response [13,14], whereas the remaining two actually reported a decrease in response rate, although not significantly [11,12]. There was considerable heterogeneity between the studies in terms of sample size, target population (study participants, clinicians, general public), and the reason for mailout, that is, invitation to a trial, cross-sectional survey, or follow-up survey.

Given the different efficacy outcomes between trials, the impact of enclosing a pen with postal questionnaires may be different for different populations and in different contexts.

In this article, we describe an RCT we conducted that was embedded in the SCOOP study (screening of older women for prevention of fracture) trial which is a large pragmatic screening trial among older women for the prevention of fractures [15]. Both the wider SCOOP study and the pen substudy gained ethical approval from North West Research Ethics Committee.

2. Methods

The primary aim of this trial was to compare the effect of receiving a trial-branded pen with the 60-month follow-up questionnaire of SCOOP participants with receiving the 60-month follow-up questionnaire alone on response rates. The trial was embedded within the Medical Research

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