Journal of Clinical Epidemiology 68 (2015) 693–697

Journal of Clinical Epidemiology

Unconditional and conditional incentives differentially improved general practitioners' participation in an online survey: randomized controlled trial

Jane M. Young[a,*], Anna O'Halloran[a], Claire McAulay[a], Marie Pirotta[b], Kirsty Forsdike[b], Ingrid Stacey[c], David Currow[c]

[a]*Cancer Epidemiology and Services Research (CESR), Sydney School of Public Health, University of Sydney, Level 6 North, Lifehouse (C39Z), NSW 2006, Sydney, Australia*

[b]*Department of General Practice, University of Melbourne, 200 Berkeley St, Carlton, VIC 3053, Australia*

[c]*Cancer Institute NSW, Australian Technology Park, Level 9, 8 Central Avenue, Everleigh, NSW 2015, Australia*

Accepted 12 September 2014; Published online 19 October 2014

Abstract

Objectives: To compare the impact of unconditional and conditional financial incentives on response rates among Australian general practitioners invited by mail to participate in an online survey about cancer care and to investigate possible differential response bias between incentive groups.

Study Design and Setting: Australian general practitioners were randomly allocated to unconditional incentive (book voucher mailed with letter of invitation), conditional incentive (book voucher mailed on completion of the online survey), or control (no incentive). Nonresponders were asked to complete a small subset of questions from the online survey.

Results: Among 3,334 eligible general practitioners, significantly higher response rates were achieved in the unconditional group (167 of 1,101, 15%) compared with the conditional group (118 of 1,111, 11%) ($P = 0.0014$), and both were significantly higher than the control group (74 of 1,122, 7%; both $P < 0.001$). Although more positive opinions about cancer care were expressed by online responders compared with nonresponders, there was no evidence that the magnitude of difference varied by the incentive group. The incremental cost for each additional 1% increase above the control group response rate was substantially higher for the unconditional incentive group compared with the conditional incentive group.

Conclusion: Both unconditional and conditional financial incentives significantly increased response with no evidence of differential response bias. Although unconditional incentives had the largest effect, the conditional approach was more cost-effective.

Keywords: Randomized controlled trial; Surveys; Health professionals; General practice; Response rates; Participation incentives

1. Introduction

Surveys provide the only feasible means to gather information about subjective issues such as participants' knowledge, attitudes, beliefs, preferences, or experiences from large numbers of people. Achieving a high response rate among those invited to participate in a survey reduces the potential for nonresponse bias. Unfortunately, health professionals' participation in surveys has declined in recent years [1], with response rates of less than 30% now common in surveys of general practitioners (GPs) [2,3].

Online surveys have a number of advantages over traditional postal methods, including reduced administration, printing and postage costs, and the ability to use programming to optimize a respondent's pathway through the questionnaire [4]. Recruitment of a representative sample can be even more problematic than for a postal survey as a complete list of e-mail addresses for all potential invitees is often not available, limiting sample selection [4]. Furthermore, response rates in online surveys may be lower than that

Funding: This study was funded by the Cancer Institute NSW and the Cancer Council Victoria. J.M.Y., A.O'H., and C.M. were supported through a Cancer Institute NSW. Academic Leader in Cancer Epidemiology grant awarded to J.M.Y.

Conflicts of interest: D.C. is the Chief Executive of one of the funding institutions but there are no conflicts of interest. The other authors have no conflicts to disclose.

* Corresponding author. Tel.: +61 2 8627 1559; fax: +60 2 9515 3222.
E-mail address: jane.young@sydney.edu.au (J.M. Young).

http://dx.doi.org/10.1016/j.jclinepi.2014.09.013
0895-4356/

What is new?

Key findings

- Both unconditional and conditional financial incentives significantly increased response to an online survey compared with a no-incentive control group.
- Although more positive opinions about cancer care were expressed by online responders compared with nonresponders, there was no evidence that the magnitude of difference varied by the incentive group. Although the unconditional incentive yielded a statistically significantly higher response rate than the conditional incentive, the conditional incentive was the most cost-effective option.

What this adds to what was known?

- Unconditional and conditional incentives can increase health professionals' participation in online surveys.
- These results are similar to findings of improved response rates with unconditional and conditional financial incentives in traditional mailed surveys.

What is the implication and what should change now?

- Although survey response rates improved with the use of financial incentives, the survey response was very low in all groups.
- Further research is needed to identify more effective response-aiding strategies, particularly for online surveys.

obtained when the same questionnaire is administered in postal format [2].

Although effective strategies to improve response rates to postal surveys are well documented [5–10], the applicability of these findings to online surveys remains unclear as there has been relatively little research in this context [5]. Financial incentives can almost double postal survey response rates in some settings, with unconditional incentives (those provided regardless of questionnaire completion) consistently outperforming incentives provided conditionally on survey response [5]. However, a further consideration is whether the use of incentives could perhaps compound the issue of nonresponse bias. Survey respondents who receive no incentive participate for altruistic reasons or because they have a particular interest in the topic of the questionnaire. It is possible that an unconditional incentive prompts participation through provoking a sense of obligation or guilt for nonparticipation, whereas a conditional incentive could engender a sense of reward for the time and effort expended [11]. Thus, it is possible that unconditional and conditional incentives could have a differential effect on subgroups within the sample and could reduce the representativeness of study participants.

This randomized trial was undertaken to compare the differential effectiveness of unconditional and conditional financial incentives, compared with a no-incentive control group, to improve response rates among GPs invited to participate in an online survey. The hypothesis was that the response rates in the unconditional incentive group would be higher than those in the conditional or control group. A second aim was to investigate nonresponse bias in the samples achieved in each incentive group.

2. Methods

This randomized trial was embedded in the Australian component of the International Cancer Benchmarking Partnership Module 3 survey of GPs [12], and the results of which will be reported separately. The study was approved by the Ethics Review Committee of Sydney Local Health District (RPAH zone) and the University of Melbourne.

2.1. Sample selection and randomization

GPs in New South Wales (NSW) and Victoria were randomly selected from a commercial database [13], stratified by state and location (metropolitan or nonmetropolitan), and randomly allocated to one of the three incentive groups using a computer-generated random number list:

1. Unconditional incentive group: a book voucher (face value of A$75 in NSW and A$50 in Victoria) was included with the letter of invitation.
2. Conditional incentive group: GPs in this group were advised that they would receive the book voucher on completion of the questionnaire.
3. No-incentive control group.

2.2. Survey administration

Apart from the incentive, survey administration was identical for all three groups. GPs were mailed an advance letter about the study approximately 1 week before the main letter of invitation. Up to three mailed reminder letters were sent to nonresponders at biweekly intervals. The final reminder letter asked GPs to complete the online survey. If they were unable to do so, GPs were asked to fax back a one-page form comprising a small subset of demographic items and to indicate their level of agreement with the following attitudinal statements: "More timely diagnosis of cancer is important to ensure better outcomes" for each of six common cancers and "I like to wait until I am sure of a diagnosis of cancer before making a referral to a specialist," using five-point