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Lottery ticket was more effective than a prize draw in increasing questionnaire response among cancer survivors

Frances J. Drummond*, Eamonn O'Leary, Linda Sharp

National Cancer Registry Ireland, Building 6800, Airport Business Park, Airport Rd, Cork, Ireland

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Abstract

Objectives: Compare the effect of financial incentives on response to a cancer survivors' postal questionnaire.

Study Design and Setting: Prostate cancer survivors in Ireland, 1.5–18 years after diagnosis, were randomized to the (1) "lottery" arm [a €1 lottery scratch card sent with the questionnaire (n = 2,413)] or (2) "prize" arm [entry into a draw on return of a completed questionnaire (n = 2,407)]. Impact of interventions on response overall and by survival period ("short term": <5 years after diagnosis; "long term": ≥5 years after diagnosis) was compared as was cost-effectiveness.

Results: Adjusted response rate was 54.4%. Response was higher among younger men ($P < 0.001$) and those with earlier stage disease ($P = 0.002$). A modest 2.6% higher response rate was observed in the lottery compared with the prize arm [multivariate relative risk (RR) = 1.06; 95% confidence interval (CI): 1.00, 1.11]. When stratified by survival period, higher response in the lottery arm was only observed among long-term survivors (multivariate RR = 1.10; 95% CI: 1.02, 1.19; short-term survivors: RR = 1.01; 95% CI: 0.94, 1.09). Costs per completed questionnaire were €4.54 and €3.57 for the lottery and prize arms, respectively. Compared with the prize arm, cost per additional questionnaire returned in the lottery arm was €25.65.

Conclusion: Although more expensive, to optimize response to postal questionnaires among cancer survivors, researchers might consider inclusion of a lottery scratch card.

Keywords: Cancer survivor; Monetary incentive; Response; Postal questionnaire; Prostate cancer; Lottery

1. Introduction

The number of cancer survivors is growing globally. In 2012, there were an estimated 13.7 million cancer survivors in the United States and this is predicted to increase to 18 million by 2022 [1]. Of the male survivors, 43% were diagnosed with prostate cancer [1]. There is extensive interest internationally in investigating the experiences and patient-reported outcomes of those living with and after cancer [2]. Postal surveys have been used to collect data on many patient-reported outcomes, including the immediate and late effects of treatment, quality of life, and the unmet supportive care needs of cancer survivors. Cancer registries have proven to be valuable, population-based sampling frames for these studies [2,3]. However, as in every survey, nonresponse in studies of patient-reported outcomes among cancer patients and survivors can pose many problems including reducing the statistical power of the study, introducing bias and limiting the generalizability of findings [4].

The Tailored Design Method (TDM) by Dilman [5,6] describes strategies to maximize questionnaire response, which includes the addition of a token financial incentive. Among noncancer populations, monetary incentives have been shown to improve speed of response, data quality, and the response rate [7–9]. The effect of monetary incentives among noncancer populations varies by sociodemographic factors including age, gender, and salary [8,10–12] and for patient groups, by time since the illness or event [12]. However, little research has been done on the effect of monetary and nonmonetary incentives on response to surveys among cancer patients or survivors. A recent review of this literature concluded that monetary incentives do not improve questionnaire response rates from cancer patients [13]. Moreover, with the exception of one study among survivors of

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* Corresponding author. Tel.: +353-21-4548824; fax: +353-21-4548899.

E-mail address: f.drummond@ncri.ie (F.J. Drummond).

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What is new?

Key findings

- Including a €1 lottery scratch card with a postal questionnaire resulted in a statistically significant but modest increase in response (by 2.6%) among prostate cancer survivors compared with the conditional incentive of entry into a prize draw on questionnaire completion ($P = 0.049$).
- The effect of the lottery scratch card was restricted to long-term cancer survivors (≥5 years after diagnosis); among these men, a 5.4% higher response rate was observed in the lottery compared with the prize arm.
- The lottery incentive cost more per completed questionnaire than the prize incentive, so should be considered on a case-by-case basis.

What this study adds to what was known?

- Few trials have investigated the effect of monetary and nonmonetary incentives on response rates from questionnaires to cancer patients or survivors; the majority have shown that these incentives do not significantly improve questionnaire response among cancer patients. This suggests that current evidence on best practices to improve questionnaire response from noncancer patients may not be generalizable to cancer patients.
- To our knowledge, this is the first trial comparing the effect of a lottery scratch card and a prize draw on response rates of cancer survivors to a postal survey.

What is the implication and what should change now?

- To help maximum response from cancer patient/survivor postal surveys, especially those involving long-term survivors, inclusion of a lottery scratch card with the questionnaire may be considered.

childhood cancers [14], prepaid and conditional incentives were also generally ineffective at increasing response among these populations [15–20].

Given the growing interest in survivorship issues [2] and the limited research aimed at improving response among these populations [13–20], it is crucial to identify successful, cost-effective strategies to maximize the response of cancer patients and survivors to questionnaires. Our objectives were to compare the effect of two modest monetary incentives on response to a postal questionnaire among prostate cancer survivors and to assess the relative cost-effectiveness.

2. Methods

2.1. Design

This trial was conducted within the PiCTure Study (Prostate Cancer Treatment, your experience), a national postal survey investigating the health-related quality of life of, and costs incurred by, prostate cancer survivors in Ireland. Survivors were eligible to be invited to complete the survey and hence be randomized to one of the incentive arms, if they were 1.5 to 18 years after diagnosis [3]. These limits were set to permit maximum registration of men with prostate cancer and to ensure they had completed their primary treatment(s).

The questionnaire was designed for the study and distributed during 2012. Two versions of the questionnaire were developed. Version one (V1) was distributed to short-term survivors, defined as men who were less than 5 years after diagnosis [21]. This version contained 152 questions over 26 A4 pages, including detailed questions on the patient's time, travel, and out-of-pocket costs for prostate investigations, treatment, and follow-up. Version 2 (V2) was distributed to long-term survivors, defined as men 5 years or more after diagnosis and contained 143 questions over 20 A4 pages. Because of the time elapsed since diagnosis, V2 included fewer detailed time, travel, and out-of-pocket costs questions. The remainder of the questionnaire was identical and covered health-related quality of life, psychological well-being, and adverse effects of prostate cancer and/or its treatment.

2.2. Participants

In November 2011, all prostate cancer survivors were identified from the National Cancer Registry Ireland (NCRI). The NCRI has registered all cancers in Ireland since 1994 and is estimated to have 96% completeness for prostate cancer [22]. A random sample of 8,000 men diagnosed with prostate cancer were selected, 4,000 in each of two time frames after diagnosis (<5 and ≥5 years). Survivors were screened for eligibility through their general practitioners (GPs). GPs received a cover letter containing details of the study and a form for each relevant survivor. They were invited to indicate for each man whether he was (1) alive, (2) aware of his prostate cancer diagnosis, (3) well enough to receive and complete a questionnaire (especially, had no cognitive impairment), (4) resident in Ireland, and (5) could understand English. After this process, 4,820 men were deemed eligible to be sent the questionnaire: 2,702 men <5 years after diagnosis and 2,118 men ≥5 years after diagnosis.

Separately, within each strata (i.e., <5 and ≥5 years after diagnosis), men were randomized to one of two incentive arms: (1) the "lottery" arm or (2) the "prize" arm. All men received a questionnaire and a cover letter inviting