Lottery incentives did not improve response rate to a mailed survey: a randomized controlled trial

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Abstract

Objectives: Our study aimed to examine the effect of an instant lottery ticket incentive on the response rate to a mailed questionnaire in a population of trauma patients.

Study Design and Setting: A randomized controlled trial at a major trauma center with 728 patients randomized into 2 groups prior to mailing of a questionnaire. One group of patients (Group A) had a sentence inserted into the cover letter stating that they would receive a $4 instant lottery ticket upon receipt of a completed questionnaire; Group B did not have an incentive. The response rate for both groups was measured after the initial mailing and at the end of the study. The results were analyzed using the X² test to compare 2 proportions and a P value of .05 was considered significant.

Results: The early response rate in Group A was lower than in Group B, and the response rates for both groups were similar at final follow-up. The differences at both time periods were not statistically significant.

Conclusion: The use of an instant lottery ticket incentive did not improve the response rate to a mailed questionnaire.

Keywords: Lottery incentive; Response rate; Questionnaire; Survey; Mail; Trauma

1. Introduction

Postal questionnaires are a commonly used research tool and are a relatively simple and inexpensive method of data collection. However, the validity of questionnaire-based studies is limited by the response rate, which can lead to selection bias. The identification of methods to increase the response rate to questionnaires is therefore worthwhile.

Methods to optimize response rates to mailed questionnaires have been previously studied. A Cochrane systematic review by Edwards et al. [1] identified several factors associated with increased response rates including a monetary incentive, unconditional incentives, short questionnaires, personalized questionnaires, the use of colored ink, postage by recorded delivery and first class post, provision of a stamped return envelope, contacting participants before sending questionnaires, follow-up contact, and providing a second questionnaire. The Cochrane review by Edwards et al. identified 372 randomized controlled trials, which tested 98 different strategies for increasing the response rate to postal questionnaires and one such strategy was the provision of an incentive [1]. Incentives can be monetary or nonmonetary. Monetary incentives have been shown to improve the response rate in postal questionnaires [2]. However, the Cochrane review by Edwards et al. demonstrated conflicting evidence of a benefit from lottery incentives, which are considered nonmonetary. The review identified nine trials that used lottery incentives and found that one study demonstrated a significant benefit, five showed a trend to an improved response, two suggested a detrimental effect, and one showed no effect [1]. Insufficient evidence exists to make firm conclusions regarding the effectiveness of lottery incentives in health studies.

Our study aims to examine the effect of an instant lottery ticket incentive on the response rate to a mailed questionnaire in a population of trauma patients and to our knowledge, our study is the first randomized controlled trial to examine the effect of a lottery incentive on response rate to a postal questionnaire on a group of trauma patients.

2. Methods

Approval for the study was granted by the hospital and university ethics committees. This research was conducted within a larger study measuring outcomes after major trauma...
in consecutive adults presenting to a single major trauma center. The study population consisted of consecutive patients presenting to a metropolitan trauma center with major trauma, defined as an injury severity score of 16 or greater [3]. Nonaccidental injuries (assault or acts of self-harm) were excluded. All subjects were aged 18 years or older. The survey consisted of a seven-page questionnaire containing 34 questions pertaining to general health (and possible demographic and socioeconomic predictors of health) and took approximately 20 minutes to complete.

A total of 1,156 major trauma patients were admitted between May 1999 and April 2004, inclusive. After excluding nonaccidental injuries and deaths, and 3 patients for whom there were no contact details, 728 patients remained. These 728 patients were randomized into two groups using random number tables in blocks of 20, before mailing the questionnaire in May 2005. One group of patients (Group A) had a sentence inserted into the cover letter stating that they would receive a four Australian dollar (US$3) instant lottery ticket on receipt of a completed questionnaire. The major prize was AU$50,000 per year, for 20 years. The remaining patients (Group B) received the same letter, but without reference to an incentive.

The response rate for both groups was measured at 4 weeks and at 6 months after the initial mailing. Between these two time points, two reminder letters and a phone call were made if no response was received. For Group A, each reminder letter included the sentence regarding the lottery incentive.

The results were analyzed using the chi-square test to compare two proportions, and a $P$-value of 0.05 (two-sided) was considered significant.

3. Results

Fifty-six patients were unable to complete the questionnaire, due to death, dementia, language difficulties, or residing overseas. These patients were excluded from the analysis. The number of exclusions in Groups A and B was 25 and 31, respectively.

The responding and nonresponding subjects were compared; age and time since injury were the only variables that were significantly different between these groups. Responding subjects were significantly older (mean 47.8 years compared to 44.5 years, $P = 0.02$) and less time had elapsed since their injury compared to nonresponding subjects (mean 41.0 months compared to 45.2 months, $P = 0.001$).

At 4 weeks after the initial mailing, the response rate in Group A was 26.2% (90/343), and the response rate in Group B was 30.1% (99/329). This difference was not statistically significant (chi square = 1.23, 1 df, $P = 0.3$). The odds ratio of responding for those with an incentive was 1.01 (95% CI = 0.74–1.36).

At 6 months, the total response rate was 53.1% (182/343) in Group A and 52.9% (174/329) in Group B. This difference was not statistically significant (chi square = 0.002, 1 df, $P = 0.96$). The odds ratio of responding for those with an incentive was 1.01 (95% CI = 0.74–1.36).

4. Discussion

Our study expands on the current medical knowledge regarding the use of incentives on response rates to mailed questionnaires by studying the use of a lottery incentive in a group of trauma patients. We found that the addition of an instant lottery ticket incentive in a mailed questionnaire to trauma patients did not significantly increase the early or late response rate. A study by Spry et al. showed a significant increase in the response to the first mailing of a questionnaire but showed no difference in the overall response rate when a lottery incentive was used [4]. Most evidence regarding the use of incentives in research has come from marketing surveys, not health surveys, and from professional groups, not patient samples, therefore the generalizability of these studies to patient populations is difficult to know.

The failure of the lottery incentive to improve the response rate in this study may be due to the low value of the ticket, relative to the inconvenience of completing and returning the questionnaire. Also, instant lottery tickets have the disadvantage of providing an immediate result, in most cases rendering the ticket worthless before the subject has considered whether to complete the questionnaire.

The Cochrane review by Edwards et al. identified shorter questionnaires as having a significantly higher response rate and our incentive may have been viewed as inadequate by some nonresponders [1]. Our seven-page questionnaire consisted of 34 questions regarding general health, and we instructed patients that approximately 20 minutes were required to complete it.

This study used trauma patients presenting to a public hospital in a low socioeconomic, urban area. The results may not be generalizable to other study populations.

From our results, studies using mailed questionnaires involving trauma patients should not include an instant lottery ticket incentive as early and late response rate is not increased. Future research may address the length of a mailed questionnaire for which a lottery ticket would be considered adequate incentive, relative to the value of the incentive.

References


