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Attrition in a longitudinal study with hard-to-reach participants was reduced by ongoing contact

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Abstract

Objectives: Minimizing attrition is a key objective in longitudinal research, with possible consequences being additional bias and reduced generalizability. Identifying determinants of attrition is essential in determining attrition prevention strategies. The objective of this study was to investigate a number of these determinants, with an emphasis on contactability.

Study Design and Setting: Data were taken from the Passports project, a randomized controlled trial of an intervention to provide postrelease support to ex-prisoners in Queensland, Australia. Measures of contactability included intervention intensity, baseline collaterals, and follow-up telephone calls, with attrition at follow-up being the outcome event. Multivariable modeling was used to assess the independent effects of these measures on attrition.

Results: Attrition was found to be more likely among those who were not contacted between the release and follow-up (adjusted odds ratio [AOR]: 2.93; 95% confidence interval [CI]: 1.87, 4.60), did not provide collaterals (AOR: 2.58; 95% CI: 1.68, 3.97), and received more than four telephone calls (AOR: 2.42; 95% CI: 1.61, 3.63). Evidence of dose−response relationships between attrition and the measures of collaterals and telephone calls was also seen to exist.

Conclusion: These findings have implications for sample size maintenance, especially those involving hard-to-reach populations. Subject to cost constraints and possible diminishing returns, researchers should endeavor to implement a study protocol that facilitates continued contact during follow-up.

Keywords: Attrition; Hard-to-reach; Longitudinal; Repeated contacts; Sample size; Collateral contacts

1. Introduction

The loss of subjects in longitudinal research has the potential to bias effect estimates and reduce study power and validity [1]. Attrition rates in public health studies have increased significantly over recent decades [2−4], possibly because of the proliferation of epidemiologic research studies [5], a general decrease in volunteerism [6], and survey instruments that have grown increasingly complicated and burdensome by their length and frequency of administration [7].

The use of repeat contacts (e.g., two or more telephone calls) has become a standard practice while tracking participants in longitudinal research [8,9]. Complementing and facilitating these strategies is the collection of contact information from both the participant and the collaterals (e.g., family members, friends). However, the effect of more intense contact efforts on attrition is unclear, with some studies showing a beneficial ''dosage effect'' [10,11] and others reporting the contrary, possibly because of response burden [12,13].

Maximizing retention is particularly challenging with groups who experience poverty, extreme age, homelessness, substance dependence, mental illness, intellectual disability, or involvement in the criminal justice system [14,15]. In a study of subjects living with human immunodeficiency virus, poor mental health was also strongly predictive of attrition [16]. Researching follow-up methods in populations that are difficult to track is likely to provide an insight into the effectiveness of these strategies [17,18]. Ex-prisoners are highly mobile and more likely to report mental health problems, poverty, and substance abuse than the general population [19−21]. A study of the relationship between contact efforts and attrition in this population is likely to shed a light on what preventative measures can

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What is new?

Key findings

- The likelihood of attrition in a trial with ex-prisoners was reduced by the implementation of strategies that fostered contactability and engagement; be it at the baseline, follow-up, or in the intervening period.

What this adds to what was known?

- Although the use of repeat contacts is a standard practice in minimizing attrition in longitudinal research, its usage among studies of ex-prisoners has, to this date, been unexplored in the literature. This is the first study to address this situation.

What is the implication and what should change now?

- In choosing a strategy or combination of strategies to minimize attrition among hard-to-reach populations, strong consideration (subject to financial constraints and diminishing returns) should be given to the mechanisms that promote contactability.

help in minimizing attrition among ex-prisoners and other similar hard-to-reach populations.

The objective of this study was to investigate relevant determinants of attrition in a trial whose participants were all ex-prisoners. We hypothesized that postrelease contact, particular to the trial intervention, would be associated with reduced levels of attrition at follow-up. Reduced attrition was also expected to be associated with more collateral contacts at the baseline and more telephone calls at the follow-up. However, given the potential for ''diminishing returns,'' these latter relationships were examined to determine whether a dose–response relationship existed.

2. Methods

2.1. Participants

Participants for this study come from a randomized controlled trial involving newly released adult prisoners from seven correctional centers in Queensland, Australia. The study is nested within a multicenter randomized controlled trial of a health-based intervention that has been fully described elsewhere [22,23]. Enrollment was stratified by gender with females oversampled. Prisoners needed to be at least 17 years of age, judged safe to approach, capable of providing informed written consent, and have an expected date of release from custody within 6 weeks of the prerelease assessment [22]. Prisoners were excluded from the trial if any of these criteria were breached before their release or their release date was rescheduled for more than 6 weeks from the assessment. Avoidance of reimprisonment at follow-up was an additional criterion for this study so that attrition could be modeled solely in a community setting.

2.2. Procedure

Baseline data were collected via face-to-face administration of a structured questionnaire in confidential interviews conducted in prison by trained interviewers. The questionnaire covered the demographic characteristics and preincarceration living circumstances: general health, mental health, and health-related quality of life; substance use before and during incarceration; social support; health risk behaviors; and expectations regarding release. Recruitment commenced in August 2008 and concluded in July 2010. Ethics approval was provided by the University of Queensland's Behavioural and Social Sciences Ethical Review Committee.

The intervention consisted of two components. At the point of release, participants allocated to the intervention group received a personalized booklet summarizing their health status and providing a personalized list of health and social service providers in the community. During the first 4 weeks after release from the custody, these participants received weekly telephone calls designed to facilitate service engagement.

First follow-up (FU1) interviews were conducted no earlier than 1-month postrelease and were finalized by September 2010. The study actively implemented strategies to minimize attrition, building on the strategies outlined by Scott [24], such as the importance of systematic and thorough collection of locator information, qualified staff for tracking, and adequate resources for locating participants. Additional strategies included the use of regular and nonjudgmental engagements with respondents and the provision of a modest reimbursement for continuing participation in the study.

2.3. Primary dependent and independent measures

The primary dependent measure for this study was attrition, defined as failure to complete the FU1 interview, which had a 2-month window, beginning 1-month postrelease and concluding 1 day before the due date for the second (third month) follow-up interview. Attrition included any form of participant noncompletion, including death or illness, refusal, and noncontactability. Trial participants interviewed in custody at the follow-up were excluded from this analysis. Our primary independent measure was intensity of intervention, with three levels: full, partial, and no intervention. Full intervention was defined as participating in the prerelease intervention component and receiving at least one telephone call in the 4-week period after release;