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Computer tablet or telephone? A randomised controlled trial exploring two methods of collecting data from drug and alcohol outpatients

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HIGHLIGHTS

- The optimal method of data collection in drug and alcohol clinics is unknown.
- The feasibility of computer tablet versus telephone data collection is examined.
- The computer tablet yielded higher consent and completion rates at baseline.
- There were no differences between the two conditions at the 3-month follow-up.
- The computer tablet cost was $67.52 greater per completed survey than telephone.

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ABSTRACT

Objective: Both computerised and telephone surveys have potential advantages for research data collection. The current study aimed to determine the: (i) feasibility, (ii) acceptability, and (iii) cost per completed survey of computer tablet versus telephone data collection for clients attending an outpatient drug and alcohol treatment clinic.
Design: Two-arm randomised controlled trial.
Method: Clients attending a drug and alcohol outpatient clinic in New South Wales, Australia, were randomised to complete a baseline survey via computer tablet in the clinic or via telephone interview within two weeks of their appointment. All participants completed a three-month follow-up survey via telephone.
Results: Consent and completion rates for the baseline survey were significantly higher in the computer tablet condition. The time taken to complete the computer tablet survey was lower (11 min) than the telephone condition (17 min). There were no differences in the proportion of consenters or completed follow-up surveys between the two conditions at the 3-month follow-up. Acceptability was high across both modes of data collection. The cost of the computer tablet condition was $67.52 greater per completed survey than the telephone condition.
Conclusion: There is a trade-off between computer tablet and telephone data collection. While both data collection methods were acceptable to participants, the computer tablet condition resulted in higher consent and completion rates at baseline, therefore yielding greater external validity, and was quicker for participants to complete. Telephone data collection was however, more cost-effective. Researchers should carefully consider the mode of data collection that suits individual study needs.

1. Introduction

AOD facilities provide researchers with the opportunity to conduct research during various stages of the treatment process to improve outcomes. However, the rigour of such research relies upon high participant recruitment and retainment rates to ensure a representative sample while minimising bias (Patel, Doku, & Tennakoon, 2003). It is therefore important to consider the population under investigation and the impact of different methods for engaging and retaining participants when designing studies. Pen-and-paper surveys are commonly used for collecting data in behavioural research, but the limitations of this method may influence the representativeness of the data collected,

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including: low response rates, data inaccuracy, and lower acceptability compared to other modes of data collection (Lane, Heddle, Arnold, & Walker, 2006; Greenlaw & Brown-Welty, 2009). Exploring alternative methods for data collection can assist researchers in overcoming such limitations.

Computerised data collection offers an alternate to pen-and-paper surveys within clinical settings (Bryant et al., 2015; Aiello, Taplin, Reid, et al., 2006; Yoong, Carey, Sanson-Fisher, et al., 2012; Holzner, Giesinger, Pinggera, et al., 2012). Compared to pen-and-paper surveys regarding AOD use, computerised data collection has shown: less data distortion (Richman, Kiesler, Weisband, & Drasgow, 1999), greater proportions of usable data for AOD questions (Reichmann, Losina, III, et al., 2010) and greater reporting of alcohol consuming days (Sarrazin, Hall, Richards, & Carswell, 2002). Despite potential advantages, the consent rates, acceptability and cost of computerised data collection among an AOD clinical setting is currently unknown. Telephone interviews are another method of data collection which have demonstrated: greater data completeness than pen and paper surveys (McHorney, Kosinski, & Ware, 1994); convenient scheduling time for participants; and minimal literacy requirements (Musselwhite, Cuff, McGregor, & King, 2007). Deane et al. (2014) examined the feasibility of telephone data collection among addiction recovery services and found the three-month follow-up rate was 51% and each completed survey cost US$82. However, in this study telephone data collection was used for follow-up data only, with baseline data collected via clinical interview. Morrison et al. (1999) examined three methods of collecting daily reports of alcohol consumption among a sample of college students and found telephone calls initiated by researchers had a greater number of incomplete reports but daily reports via pen-and-paper had a greater number of missing items for each report.

While both computerised and telephone data collection have been compared to pen-and-paper methods (Reichmann et al., 2010; Sarrazin et al., 2002; Morrison et al., 1999), the feasibility, acceptability and cost of computerised versus telephone data collection in an AOD setting have not yet been examined. Parks, Pardi, and Bradizza (2006) compared these two methods for examining alcohol use among a sample of college women, and found completion to be higher and cost to be lower using a web-based survey. Whether this finding translates to an AOD treatment setting is unknown. In addition, the advancement of computer tablet technologies allows researchers a convenient method of conducting point of care data collection which has shown higher response rates compared to emailed surveys in primary care (Slater & Kiran, 2016). Point of care data collection is a benefit that cannot be replicated for interviews conducted via telephone. Previous research in primary care, however, reported that computer tablets require assistance to complete and are associated with incomplete survey data, which may be overcome through telephone data collection (Slater & Kiran, 2016). Examining the differences between these two methods and understanding which method yields the largest sample will have implications for conducting methodologically rigorous research in these settings. This study therefore aimed to determine the: (i) feasibility, through consent and completion rates; (ii) acceptability; and (iii) cost of an in-clinic computer tablet survey vs post-clinic telephone survey for gathering data from clients attending an outpatient AOD treatment clinic.

2. Method

2.1. Ethics approval

The Hunter New England Human Research Ethics Committee (15/06/17/4.02) and the University of Newcastle (H-2015-0414) granted full ethical approval for this research.

2.2. Design

Single-site two-arm cluster randomised controlled trial.

2.3. Setting

The study was conducted in one outpatient AOD clinic located within a public hospital located in NSW, Australia. The clinic provided care for 6183 outpatient occasions during 2014–15.

2.4. Participants

Eligible clients were: (i) attending for treatment at the participating AOD clinic; (ii) aged over 18 years; (iii) proficient in English; (iv) presenting for their initial consultation; and (v) had a telephone contact number. Clients were ineligible if clinic staff judged them to be: (i) too ill, (ii) distressed, (iii) under the influence of drugs or alcohol, or (iv) otherwise unable to provide informed consent.

2.5. Randomisation

A computerised random number generator was used to randomise days of the week to the telephone or computer tablet condition using a 1:1 ratio. All study days were included as individual units and therefore allocation for each day of the week varied. This process was chosen over individual randomisation of participants to reduce reception staff burden and the likelihood of contamination.

2.6. Procedure

Clinic staff approached clients presenting for their appointment. A member of the research team (BH) provided staff with a 30–60 min recruitment training session involving information about study documents and demonstrating procedures for each condition. The initial recruitment days were overseen by a member of the research team.

The recruitment process varied depending upon experimental condition, however, the survey content was identical for both groups. Briefly, the survey consisted of demographic questions, questions regarding substances used in the previous 14 and 30 days, the substance treatment was being sought for, whether treatment had previously been sought for alcohol problems, and if so, the number of times. Alcohol consumption was measured using the quick drinking screen (Sobell, Agrawal, Sobell, et al., 2003) and a 14-day timeline follow-back (Sobell, Brown, Leo, & Sobell, 1996). The Patient Health Questionnaire (9-items) (Kroenke, Spitzer, & Williams, 2001) was used to assess depression. Clients completed a baseline survey via computer tablet or telephone and a three-month follow-up survey via telephone. Questions on past treatment and some demographics were removed from the follow-up survey to avoid repetition, all other measures remained the same.

2.6.1. In-clinic computer tablet condition

Clinic staff verbally informed clients of the study and provided them with the information statement and computer tablet during intake. Clients completed the touchscreen computer tablet survey in the waiting room. Staff recorded the age and gender of those who chose not to initiate the computer tablet survey. Age and gender were collected via the survey, and then an overview of the study was presented onscreen. Clients were presented with the question “Do you agree to participate in this survey?” with a ‘Yes’ or ‘No’ response. Those who responded “Yes”, received the survey questions. Participants were given the option of completing the survey after their appointment if they were called in before finishing.