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Recruitment process of a Chinese immigrant study in Canada

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ABSTRACT

The objectives of this article were to provide a comprehensive overview of the recruitment experience and participant characteristics in an antihypertensive dietary educational intervention pilot trial among Chinese Canadians. The recruitment was conducted in a community centre. Two recruitment approaches, self-referral and proactive recruitment, were used. Among 618 Chinese Canadians in the blood pressure screening, 105 (17.0%) individuals were eligible to participate in this trial. Of the 105 eligible individuals, 45 (42.9%) declined enrollment and 60 (57.1%) consented to participate in the trial and were recruited. The most common reason for refusal was being unable to access to the education location ($n = 19$, 42.2%) followed by being too busy to participate ($n = 18$, 40.0%). All participants were Chinese immigrants and the mean number of years living in Canada was 9.2. Most participants had low English proficiency, accepted Chinese culture more than Western culture, and had strong traditional health beliefs. It is concluded that both self-referral and proactive recruitment approaches were effective. Home-based interventions using Internet and telephone should be used as alternative delivery approaches to improve recruitment rate and facilitate participation.

1. Introduction

In Canada, 1.3 million Chinese comprise approximately 4.0% of Canada's population and 21.1% of the country's visible minorities (Statistics Canada, 2013). In addition, most Chinese in Canada are immigrants. Hypertension is the most prominent risk factor for cardiovascular diseases, and accounts for a large proportion of stroke and heart failure in the Chinese population (Yong et al., 2013). With a 15.1% hypertension prevalence rate, Chinese Canadians are at increased risk of cardiovascular disease and associated morbidity and mortality (Chiu, Austin, Manuel, & Tu, 2010). There are a lack of culturally sensitive dietary interventions targeting Chinese Canadians despite unhealthy diet being identified as the most important modifiable risk factor for hypertension in the Chinese population (Wang & Li, 2012). In response to the high prevalence of hypertension, the Dietary Approach to Stop Hypertension with Sodium (Na) Reduction for Chinese Canadian (DASHNa-CC) intervention, integrated Traditional Chinese Medicine (TCM) food therapy into the current DASH and sodium reduction diet to provide a standardized, culturally sensitive, dietary education to reduce blood pressure for Chinese Canadians in the community (Zou, Dennis, Lee, & Parry, 2016). Since this was the first immigrant-focused trial in the Chinese Canadian community, feasibility of participant recruitment was uncertain. Thus, a pilot trial was necessary. The recruitment questions were: (a) What are the appropriate recruitment strategies? (b) How many Chinese Canadians are screened for blood pressure? (c) What is the eligibility rate? (d) What is the recruitment rate? (e) Why do potential participants refuse to enrol in this pilot trial? (f) What are the demographic and socioeconomic characteristics of the participants?

There is global interest in enhancing recruitment of ethnic minority individuals in clinical trials, particularly in disease areas with substantial ethnic inequalities (Ford et al., 2008; Sheikh et al., 2009). However, participant recruitment is among the most challenging factors of conducting a randomized controlled trial, as well as ethnic minorities being underrepresented in clinical research (Hussain-Gambles et al., 2004). A literature review of recruitment of immigrant and ethnic minorities in primary prevention trials of cardiovascular disease indicated that randomized controlled trials of cardiovascular disease prevention strategies either rarely recruit or rarely report on the ethnic and immigrant status of their participants (Homji, Lakhoo, & Ray, 2011). There were barriers specific to the recruitment of minorities in clinical trials including social and economic difficulties, fear and mistrust, English language proficiency, cultural stigma associated with illness, and religion (Rooney et al., 2011).

Despite the documented literature about difficulties in participant recruitment in minority communities, the DASHNa-CC pilot trial demonstrated a successful recruitment process. Thus, presenting the

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recruitment process of this pilot trial is meaningful not only for the future DASHNa-CC full trial, but also for other clinical studies in immigrant minority communities worldwide. This article provides a comprehensive overview of the recruitment experience and participant characteristics in the DASHNa-CC pilot trial.

2. Methods

2.1. Setting and sample

In order to access the most representative Chinese Canadian sample, a community centre in Toronto, Ontario, Canada, where Chinese Canadians occupy a high percentage of the total population, was used for participant recruitment. This trial included all self-reported Chinese Canadians, who: (a) were at least 45 years old; (b) had a systolic blood pressure of 140 to 159 mm Hg, or a diastolic blood pressure of 90 to 99 mm Hg, based on pre-intervention baseline assessment; (c) were able to understand (listen) and speak in Mandarin, read and write in Chinese; and (d) had access to a telephone. The rationale for the blood pressure ranges was to recruit individuals with grade one hypertension, who are candidates for a non-pharmacological intervention to reduce blood pressure. Individuals were excluded if they were candidates for aggressive antihypertensive pharmacological therapy, for whom the interventions would have been inappropriate or unsafe, or if they had health problems requiring immediate attention rather than a dietary intervention (Table 1).

2.2. Procedure

Prior to participant recruitment, ethics approval was obtained from the Health Sciences Research Ethics Board at the University of Toronto. Several Chinese Canadian community centres in Toronto were contacted and invited to participate. The trial advertisements in Chinese were posted in the community centre and on Chinese Canadian websites (www.51.ca; www.rolia.net). Interested Chinese Canadians were screened for grade one hypertension by a research staff. Individuals who had grade one hypertension were further assessed using the inclusion and exclusion criteria. Individuals who met the eligibility criteria were given verbal and written explanations of the trial. Finally, consents were obtained, and demographic and baseline data were obtained.

2.3. Measurement

Demographic characteristics and risk factors for hypertension were collected via the Participant Information Questionnaire after participant recruitment during one to one interviews in the community centre. An electronic body weight scale and a body height tape were used to measure weight and height. English language proficiency was collected via part of the Acculturation Scale for Southeast Asians, which is a reliable and valid linguistic acculturation scale used in previous Chinese population studies (Fu, Ma, Tu, Siu, & Metlay, 2003). In this scale, the possible total score ranged from 4 to 16, with higher scores representing better English proficiency. Acculturation information was collected via the Vancouver Index of Acculturation, a valid and reliable bidimensional acculturation instrument designed to measure the heritage and mainstream dimensions of acculturation. The possible scores of two dimensions range from 10 to 90, with higher scores representing higher levels of identification with the culture represented (Ryder, Alden, & Paulhus, 2000). Traditional health beliefs were measured by the Traditional Health Belief Questionnaire (Kwok, Mann, Wong, & Blum, 2009). Scores could be categorized into three groups in order to assess different degrees of traditional Chinese health beliefs: (a) weak traditional health beliefs (scores 61 or less), (b) moderate traditional health beliefs (scores from 62 to 65), and (c) strong traditional health beliefs (scores from 66 and over) (Kwok et al., 2009).

2.4. Data analysis

Data were analyzed using SPSS 20.0 software (IBM Corporation, USA). Various descriptive statistics (means, standard deviations, proportions, etc.), depending on the level of measurement of the variables, were calculated.

3. Results

3.1. Recruitment process

From August to November 2015, the trial investigator and two research assistants, who were nurses with Chinese ethnic backgrounds and fluent in Mandarin, conducted the participant recruitment. A well-known Chinese community centre with a history of serving immigrants for 46 years, formally agreed to support this pilot trial. Two recruitment approaches, self-referral and proactive recruitment, were used (Table 2). By self-referral, individuals read the advertisement of this pilot trial, called to make an appointment in the main office to do blood pressure screening, and were assessed for eligibility to participate. A total of 63 individuals self-referred to do blood pressure screening, 31 (49.2%) were eligible to participate, and 100% ($n = 31$) of these eligible individuals consented and were recruited. By proactive recruitment, the investigators and the research assistants reached out to different settings to conduct blood pressure screening and recruit participants. The

Table 1
Rationales of exclusion criteria in the DASHNa-CC study.

Exclusion criteria	Rationales
1) Used antihypertensive medications or other medications that raise or lower blood pressure during the previous three months;	Medications or TCM are possible co-interventions that may have a significant impact on blood pressure measurement.
2) Used TCM or professional TCM counseling to decrease blood pressure during the previous three months;	
3) Used insulin or oral hypoglycemic agents during the previous three months;	Canadian Hypertension Education Program guidelines suggest that pharmacological antihypertensive therapy is the most appropriate therapy for individuals with diabetes.
4) Had a history of a cardiovascular event (stroke, myocardial infarction, percutaneous transluminal coronary angioplasty, coronary artery bypass surgery, or other arteriosclerotic cardiovascular disease related therapeutic procedure) during the previous three months	These individuals require specialized health care rather than dietary intervention.
5) Had a history of congestive heart failure;	
6) Had a cancer diagnosis or treatment during the past two years;	
7) Had special dietary requirements;	DASHNa-CC may not meet their dietary requirements and their safety may be at risk.
8) Pregnant, breastfeeding, or planned for pregnancy prior to the anticipated end of study;	No evidence to support the safety of the DASH diet during pregnancy and breastfeeding.
9) Household member of another DASHNa-CC participant;	More than one member in this pilot trial causes intervention contamination.
10) Planned to leave the area prior to the anticipated end of study.	Insufficient time to stay may impact availability for outcome measurement.