

Integration of Traditional Chinese Medicine Food Therapy for Chinese Immigrant Hypertension Control: A Culturally Sensitive Dietary Intervention in Community

P. Zou, RN, PhD (c); M. Parry, NP-Adult, PhD; C-L. Dennis, PhD; R. Lee, RN, PhD
Lawrence S. Bloomberg Faculty of Nursing, University of Toronto

BACKGROUNDS

- ❖ Numbering 1.3 million, the Chinese compose approximately 3.9% of Canada's population and roughly 24% of the country's visible minorities¹.
- ❖ Hypertension prevalence rate of Chinese Canadians is 15.1%², and hypertension accounts for a large proportion of stroke, myocardial infarction and heart failure in the Chinese population³.
- ❖ A 10 mmHg lower systolic blood pressure (SBP) is associated with a 54% (95% CI, 53-56%) lower stroke risk and a 46% (95% CI, 43-49%) lower ischemic heart disease risk in Asians⁴.
- ❖ Chinese Canadians consume high sodium diets and prefer to use Traditional Chinese Medicine (TCM) for their health care⁵; four principles of the TCM food therapy include:
 1. Light eating,
 2. Balance of three food natures,
 3. Harmony of five tastes, and
 4. Diet consistent with different health conditions⁶.
- ❖ The Dietary Approach to Stop Hypertension (DASH) with sodium reduction lowers BP⁷, but DASH has not been investigated in Canada, in the community, or in ethnic minority populations⁸.

OBJECTIVES

- ❖ **Primary:** To determine the feasibility of a culturally sensitive DASHNa-CC intervention delivered in a community setting.
- ❖ **Secondary:** To examine the potential effects of a DASHNa-CC intervention on systolic and diastolic blood pressure, health related quality of life, and health service utilization.

METHODS

- ❖ This study was a pilot randomized controlled trial delivered in a Chinese Canadian community in Toronto.
- ❖ Self-identified Chinese Canadians at least 45 years of age, with grade one hypertension (SBP 140-159 mmHg or DBP 90-99 mmHg), not taking antihypertensive medications, and able to listen/speak Mandarin and write Chinese were eligible.
- ❖ Participants were randomized to either the control or the intervention group. The control group received usual care (Heart and Stroke Foundation of Ontario general hypertension booklet) and the intervention group received usual care plus the DASHNa-CC intervention.
- ❖ Various instruments, including 24-hour food recall and SF-36v2 were used.

The DASHNa-CC Intervention

- ❖ Incorporates DASH, sodium reduction, and the food therapy of TCM (Table 1).
- ❖ Includes an intervention manual written in Chinese, two education sessions delivered in the community centre by a nurse in Mandarin, and a 20-minute booster telephone call.

Table 1. The DASHNa-CC Intervention

Food Group	Number of Serving				Serving size	TCM Recommended foods for blood pressure control
	1600 cal/d	2000 cal/d	2600 cal/d	3100 cal/d		
Grains and grain products	6	6-8	10-11	12-13	1/2 c cooked rice, pasta, noodle 1 slice bread	Buckwheat, corn, oat
Vegetables	3-4	4-5	5-6	6	1/2 c cooked vegetables 1 c raw leafy vegetables 6 oz vegetable juice	Celery, garlic, onion, eggplant, carrots, tomatoes, mushrooms, spinach, black fungus, green onion, potato, winter melon, bitter melon
Fruits	4	4-5	5-6	6	1 medium fruit 6 oz fruit juice 1/4 c dried fruit 1/2 c fresh, frozen or canned fruit	Banana, hawthorn, apple, persimmon, kiwi, watermelon, pear
Low-fat or fat-free dairy foods	2-3	2-3	3	3-4	8 oz milk 1 c yogurt 1.5 oz cheese	Fat-free/low-fat milk and other dairy products, e.g. yogurt, cheese
Meats, poultry and fish	1-2	≤2	2	2-3	75g (2.5 oz) cooked meats, poultry or fish 2 egg	Seaweed, laver, jellyfish
Nuts, seeds, dry beans and peas	3/wk	4-5/wk	1	1	1/2 c nuts 1/2 cooked dry beans and peas 2 tbsp peanut butter	Green bean, peanut, pea, soybean, soy products, e.g. tofu, soy milk, bean-curd sticks
Fats and oils	2	2-3	3	4	1 tsp vegetable oil	
Sweets and others	0	≤5/wk	≤2	≤2	1 tsp sugar 1 tbsp jelly or jam 8 oz sugared lemonade	Honey, vinegar
Herbal teas	Semen Cassia 15 g per day; Fructus Lycii 10 g per day; Flos Chrysanthemi 10 g per day; Broadleaf Holly Leaf 5 g per day; Green tea 5 g per day.					
Sodium	1500 mg per day for adults age less than 51 years; 1300 mg per day for age 51 to 70 years; 1200 mg per day for age more than 70 years.					

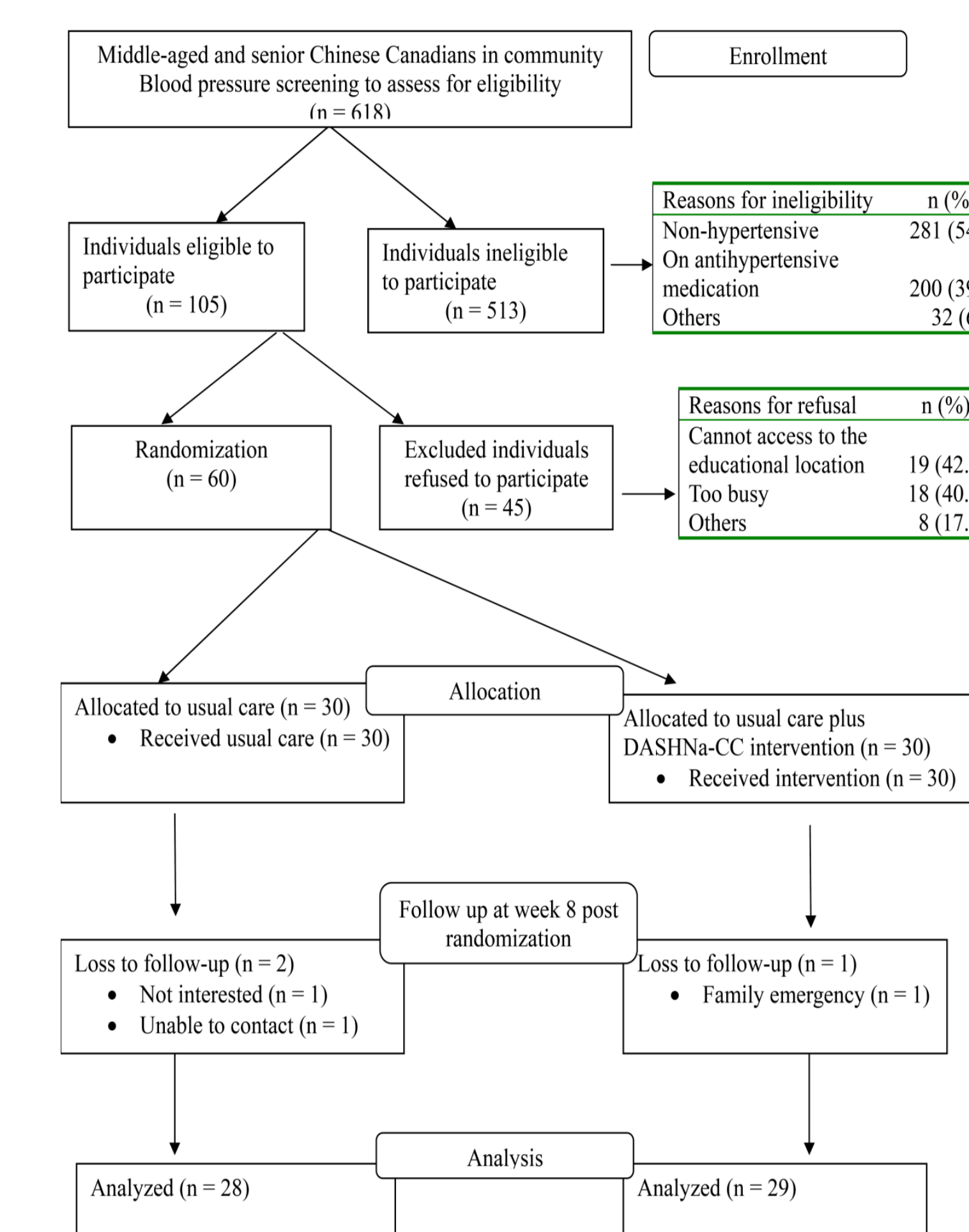
Data Analysis

- ❖ Descriptive statistics were used to analyze primary and secondary outcomes and Independent two-sample *t*-tests were used to examine the differences in mean change scores between the control and intervention groups.

RESULTS

- ❖ 618 Chinese Canadians participated in blood pressure screening and 105 (17%) met eligibility criteria.
- ❖ Of 105 eligible individuals, 60 (57.1%) consented; 30 were randomly allocated to the control group and 30 to the intervention group (Figure 1).
- ❖ The most common reason for refusal was difficulty travelling to the community centre for the intervention (n = 19, 42.2%) and being too busy (n = 18, 40.0%).
- ❖ 29 (96.7%) participants in the intervention group attended the two classroom sessions and 100% participants received the week 5 telephone booster call.

Figure 1. Schematic of the Study



- ❖ Participants were highly satisfied with DASHNa-CC and the integration of TCM into their BP management.
- ❖ At week 8 post randomization, the control group decreased SBP by 7 mmHg and diastolic blood pressure (DBP) by 3 mmHg, and the intervention group decreased SBP by 11 mmHg and DBP by 5.5 mmHg [*t* (55) = -1.58, *p* = 0.12].
- ❖ The intervention group had a significant improvement from baseline to week eight post randomization in the physical component score of the SF-36v2 [*t* (55) = 2.13, *p* = 0.04].
- ❖ There were no group differences in health service utilization.

CONCLUSIONS

It is feasible to conduct the DASHNa-CC study in a Chinese Canadian community. The DASHNa-CC intervention has potential to decrease both SBP and DBP and improve health-related quality of life for Chinese Canadians. The findings can be used to develop a significantly powered trial to evaluate the effectiveness of the DASH-CC intervention in multiple community settings in Canada.

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