

# Home care programme for post-discharge older adults: abridged secondary publication

ELY Wong \*, MC Lau, CM Wu, F Fong, R Wong, HM Ma, CK Chim, V Tam, BHK Yip

## KEY MESSAGES

1. A home care programme was established to enhance self-care continuity, chronic disease management, emotional well-being, and quality of life for post-discharge older adults in Hong Kong.
2. The WINTER Health Ambassador Toolkit were developed by health, social, and academic experts. Training workshops were provided to volunteers.
3. Both health ambassadors and care recipients gained a better understanding of healthy lifestyles, especially during cold seasons.
4. The programme has potential for reducing the numbers of emergency room visits and hospitalised days of care recipients.

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<sup>1</sup> ELY Wong, <sup>2</sup> MC Lau, <sup>3</sup> CM Wu, <sup>3</sup> F Fong, <sup>4</sup> R Wong, <sup>5</sup> HM Ma, <sup>6</sup> CK Chim, <sup>7</sup> V Tam, <sup>1</sup> BHK Yip

<sup>1</sup> Centre for Health Systems and Policy Research, JC School of Public Health and Primary Care, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

<sup>2</sup> Shatin Hospital, Hong Kong SAR, China

<sup>3</sup> Health Resource Centre, Prince of Wales Hospital, Hong Kong SAR, China

<sup>4</sup> Yale Global Health Leadership Institute, Yale University, United States

<sup>5</sup> Department of Medicine and Therapeutics, Prince of Wales Hospital, Hong Kong SAR, China

<sup>6</sup> Department of Community Outreach Service Team, Prince of Wales Hospital, Hong Kong SAR, China

<sup>7</sup> Medical Social Work Department, Alice Ho Miu Ling Nethersole Hospital, Hong Kong SAR, China

\* Principal applicant and corresponding author: lywong@cuhk.edu.hk

## Introduction

We developed the WINTER Health Ambassador Toolkit care and recruited volunteers to attend structured training workshops. The volunteers delivered healthcare intervention that empowers care recipients to promote their health and quality of life. The applicability and effectiveness of the home care model was evaluated.

## Methods

The WINTER Health Ambassador Toolkit was developed by health, social, and academic experts. Volunteers aged  $\geq 18$  years were recruited in collaboration with health resource centres. Potential volunteers were interviewed to assess their motivation, relationship-building skills, and communication skills. Eligible volunteers were required to attend a training workshop and register in the Hospital Authority before implementation of the home care service.

Training workshop materials were developed with reference to existing volunteer home visit programmes. The workshop aimed to empower health ambassadors to become competent in (1) delivering home care assessment and educational services, (2) facilitating access to community resources, and (3) connecting older adults (in person and through information sharing) to community nurse services and/or social care. Ongoing support was provided to the health ambassadors.

The WINTER health home visit programme comprised four monthly visits (December 2018 to March 2019); it was expanded to six monthly visits (November 2019 to April 2020). Home care service recipients were older adults aged  $\geq 65$  years who had been discharged from hospital and required community nursing support. The first home visit mainly focused on greeting and relationship building. Care recipients were assessed to determine functional and risk profiles. In subsequent visits, educational materials and advice for self-care management in cold weather were provided. Health ambassadors contacted the care recipients by telephone approximately 2 weeks after each visit to follow up. After each visit, the health status of care recipients was reviewed and feedback from the health ambassadors was collected.

The competence (knowledge, attitude, and confidence) of health ambassadors in providing home care services was assessed before and after the training workshop using self-administered questionnaires, as were their experiences, satisfaction, and feedback. The effects of the home visit programme on care recipients' health status, health-related quality of life, and self-management skills were also evaluated. Health ambassadors assessed the care recipients' self-reported health outcomes, functional and risk profiles, and self-care behaviours.

Care recipients were compared with non-care recipients (data extracted from inpatient records)

in terms of healthcare utilisation outcomes (ie, the numbers of emergency room visits and hospitalised days within the follow-up period). Associations between home care visits and healthcare utilisation outcomes were determined using Poisson regression analysis.

## Results

The WINTER Health Ambassador Toolkit comprised (1) home visit workflow, (2) health screening instruments, and (3) educational materials and advice for older adults (Table 1).

Of the 317 health ambassadors enrolled and trained, 34.4% were from the existing hospital volunteer team, including retired nurses and hospital staff; 22.7% were members of the Hong Kong Jockey Club Volunteer Team; and the remaining were from

educational institutes. Eventually, 261 (82.3%) health ambassadors provided home care services.

In total, 278 older adults received 752 home visits and 1668 phone calls. Of 147 home visits that revealed either clinical or social problems, 73 showed inadequate treatment compliance and resulted in health education and reinforcement of treatment compliance from health ambassadors; 29 showed symptom exacerbation and resulted in referrals to community nurses for timely management; and 45 required financial aid or self-care supports and resulted in referrals to medical social workers at health resource centres.

Among the health ambassadors before and after the training workshop, the mean overall knowledge score improved from  $7.6 \pm 0.8$  to  $7.7 \pm 0.8$  ( $P < 0.05$ ), whereas the mean confidence scores were similar ( $82.3 \pm 12.7$  vs  $82.4 \pm 12.5$ ). Over 90% of health

TABLE 1. Key components of the WINTER Health Assessment Toolkit

Key components
Home visit workflow
Monthly home visits and phone follow-ups over 4 months (round 1) and 6 months (round 2)
Health screening instruments
Past medical history
Physical well-being in terms of vision (Amsler grid), hearing, ambulation, frailty scale, and fall history
Emotional health measured by the 4-item Geriatric Depression Scale
Functional status measured by the Barthel Index for activities of daily living and the Lawton Instrumental Activities of Daily Living Scale
Self-perceived health status and health-related quality of life measured by the EQ-5D-5L Hong Kong version
Lifestyle behaviour in terms of smoking habits, drinking habits, home safety alarm usage, vaccination record (seasonal influenza and pneumococcal vaccines), exercise habits, eating habits, social life
Vital signs in terms of body temperature, blood pressure, pulse, respiratory rate, body weight, self-monitored blood sugar level (if applicable), pain score (if applicable), oxygen saturation level (if applicable), and risk of recurrent congestive heart failure/chronic obstructive pulmonary disease (if applicable)
Educational materials and advice for older adults
Volunteer guidelines (roles and responsibilities of volunteers, rules and regulations for home visits, communication skills tips, contingency plans)
Precautions for cold weather: warm (keep warm), immunisation (influenza vaccination), nutrition (balanced diet), tender (emotional support), exercise (regular exercise and fall prevention), and reducing risk of admission (chronic disease management)
Overview of common chronic illnesses (causes, common symptoms, assessment, advice for patients): chronic obstructive pulmonary disease, congestive heart failure, hypertension, diabetes mellitus, and chronic pain

TABLE 2. Healthcare utilisation among home care recipients and non-home care recipients

Healthcare utilisation	Non-home care recipients (n=620)	Home care recipients (n=155)	Relative risk (95% confidence interval)	P value
No. of emergency room visits	0.94±1.52	0.74±1.43	0.79 (0.65-0.97)	<0.05
Resulting in hospitalisation	0.65±1.10	0.51±1.15	0.78 (0.61-0.99)	<0.05
Not resulting in hospitalisation	0.28±0.77	0.23±0.69	0.82 (0.57-1.18)	>0.05
No. of hospitalised days during the 4 months	5.8±12.4	4.5±10.4	0.78 (0.72-0.84)	<0.001
Admission through emergency room	3.6±8.4	4.0±10.2	1.10 (1.00-1.20)	<0.05

ambassadors were satisfied with training workshop experiences and provided positive feedback in terms of their knowledge and confidence. Moreover, 94% of health ambassadors indicated that they would join similar home care services in the future. Regarding personal growth, the level of subjective social status did not improve significantly ( $5.7 \pm 1.7$  vs  $5.9 \pm 1.7$ ). However, the improvement was greater among those involved in the first round of the programme ( $5.4 \pm 1.8$  vs  $5.8 \pm 1.8$ ,  $P < 0.05$ ) and among male volunteers ( $5.2 \pm 1.6$  vs  $5.7 \pm 1.9$ ,  $P < 0.05$ ).

Among the care recipients, 84% were more aware of their health and 80% felt more capable of self-care management; 99% would receive home care services in the future. Regarding health status before and after the home visit programme, care recipients had no significant improvement in activities of daily living ( $17.6 \pm 3.9$  vs  $17.5 \pm 4.4$ ,  $P = 0.946$ ), instrumental activities of daily living ( $11.7 \pm 5.4$  vs  $12.2 \pm 5.6$ ,  $P = 0.089$ ), or 4-item Geriatric Depression Scale scores ( $0.8 \pm 1.0$  vs  $0.7 \pm 1.2$ ,  $P = 0.530$ ), but their health-related quality of life (measured by the EQ-5D-5L Hong Kong version) significantly improved by 0.056 (95% confidence interval [CI]=0.101-0.010).

Compared with non-care recipients, care recipients had 21% (95% CI=3%-35%) fewer overall emergency room visits, 22% (95% CI=1%-39%) fewer hospitalisations, and 22% (95% CI=16%-28%) fewer overall hospitalised days, but 10% (95% CI=0%-20%) more hospitalised days after admission through emergency rooms (Table 2). There was no significant difference in the number of emergency room visits that did not result in hospitalisation ( $P = 0.287$ ).

## Discussion

Home care services improve the knowledge and social capital of volunteers, the health status of care recipients, and the capacity of the health system. Although care recipients' health-related quality of life significantly improved after home visits, the improvement did not constitute a minimally important difference.<sup>1-3</sup> This may be due to the COVID-19 pandemic; care recipients may have a more negative mental health status than expected. Regarding lifestyle behaviours, significantly more care recipients used home safety alarms, which may reduce health risks by connecting with health professionals.<sup>4</sup> Care recipients reported less loneliness, indicating that they benefited from the home visits and telephone contacts by volunteers, even during the pandemic.<sup>5</sup> Our findings suggest that home care visits can reduce emergency room visits and hospitalisations, while enabling early identification of acute problems, consistent with a study that showed that patient education could reduce emergency room use.<sup>6</sup> Home care service can

expand the capacity of the healthcare workforce and healthcare system.

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## Disclosure

The results of this research have been previously published in:

1. Lai FTT, Wong ELY, Tam ZPY, et al. Association of volunteer-administered home care with reduced emergency room visits and hospitalisation among older adults with chronic conditions: a propensity-score-matched cohort study. *Int J Nurs Stud* 2022;127:104158.

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