Jockey Club Community eHealth Care Project

Medico-social Integration in Community Care of Older People – How the eHealth Project Has Furthered Development

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賽馬會「e健樂」電子健康管理計劃
Jockey Club Community eHealth Care Project

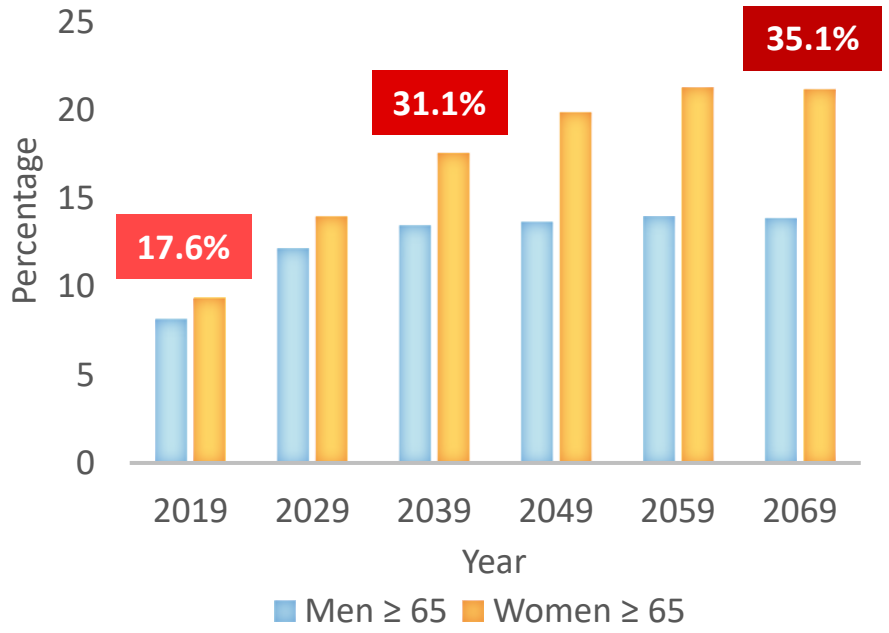
香港賽馬會慈善信託基金
The Hong Kong Jockey Club Charities Trust
同心 同步同進 RIDING HIGH TOGETHER

香港中文大學
The Chinese University of Hong Kong

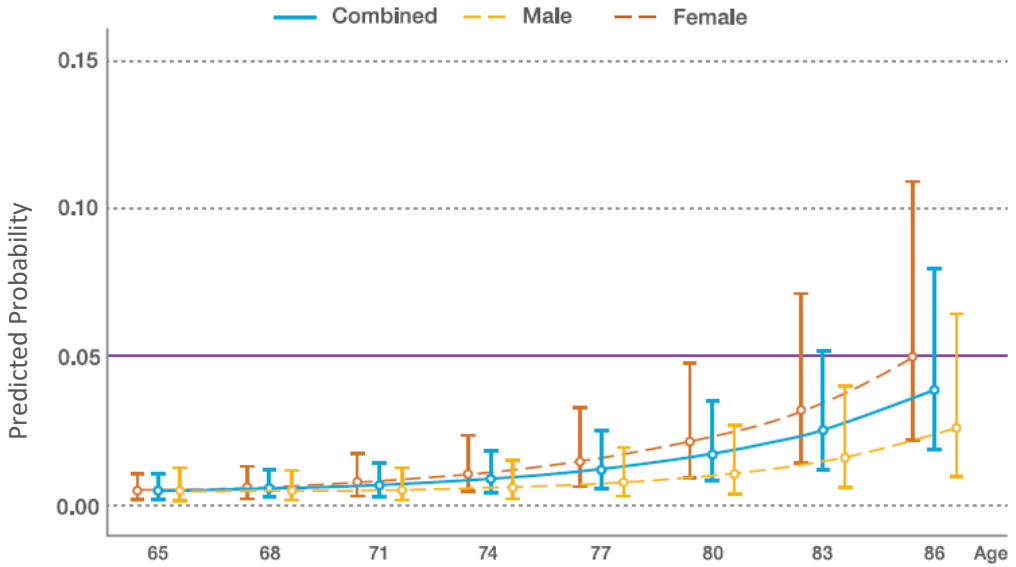
香港中文大學
賽馬會老年學研究所
CUHK Jockey Club Institute of Ageing

The ageing population: The increasing effects on health care

Proportion of population aged 65 and older in Hong Kong

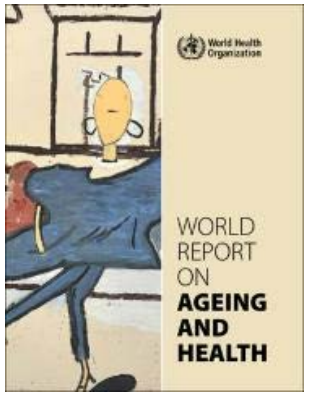


Trends of functional disability in Hong Kong



Source:
Census and Statistics Department. Hong Kong Population Projections 2020-2069.
https://www.censtatd.gov.hk/en/data/stat_report/product/B1120015/att/B1120015082020XXXXB0100.pdf.
Yu, Ruby, et al. Trends in activities of daily living disability in a large sample of community-dwelling Chinese older adults in Hong Kong: an age-period-cohort analysis. BMJ open 6.12 (2016): e013259.

Healthy ageing and Integrated care for older people (ICOPE) approach



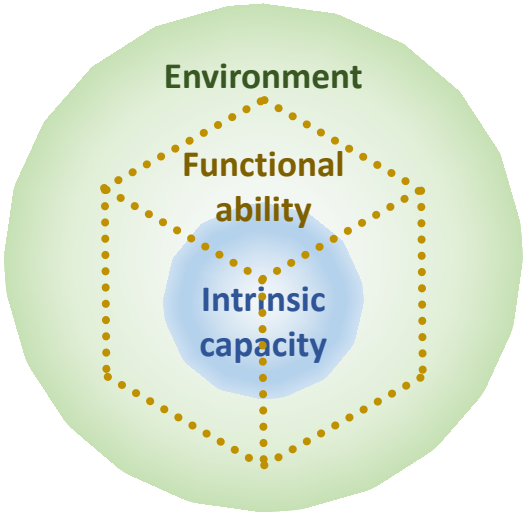
World report on ageing and health 2015

Healthy Ageing

Process of **developing and maintaining** the **functional ability** that enables well-being in older age

Functional ability

Combination and interaction of **intrinsic capacity** with the **environment** a person inhabits



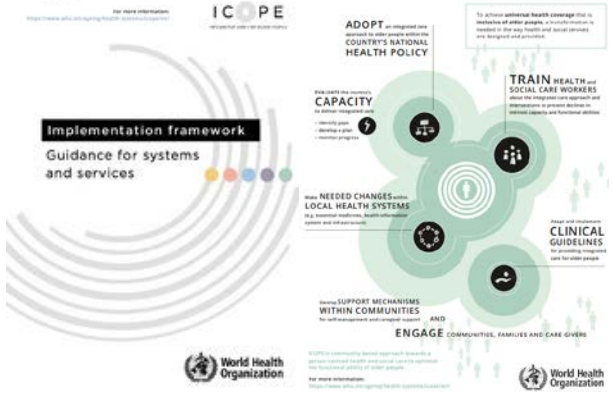
Intrinsic capacity

Combination of all the **physical and mental capacities** of an individual

ICOPE

A **community-based** approach that helps to **reorient health and social services** towards a more **person-centred** and **coordinated model of care** that helps optimize older people's intrinsic capacity and functional ability

ICOPE Guidelines



ICOPE Implementation Framework

Source:
WHO. World report on ageing and health. (2015).
WHO. Integrated care for older people: guidelines on community-level interventions to manage declines in intrinsic capacity. (2017).
WHO. Integrated care for older people (ICOPE) implementation framework: guidance for systems and services. (2019).

The Jockey Club Community eHealth Care Project

賽馬會「e健樂」電子健康管理計劃
Jockey Club Community eHealth Care Project

FUNDER

- The Hong Kong Jockey Club Charities Trust

OBJECTIVES

- To apply digital technologies to empower older people in health management
- To promote integrated care and primary health services that are responsive to the needs of older people in Hong Kong

Partners

- Jockey Club Institute of Ageing, CUHK
- Jockey Club School of Public Health and Primary Care, CUHK
- Big Data Decision Analytics Research Centre, CUHK
- Senior Citizen Home Safety Association
- 23 Non-Governmental Organizations

TIMELINE

- Phase 1: 2016-2020
- Phase 2: 2020-2022

Towards integrated care for older people: The Jockey Club Community eHealth Care Project

Community needs assessment & health promotion

Identify older people in need of care in the community

- Form partnerships with community elderly centres to undertake needs assessments for older people

Promote healthy ageing and mobilize community resources to meet needs of older people

- Form partnerships with community elderly centres to deliver health promotion programmes that target functional ability

Community capacity building

Empower social care providers to deliver integrated care for older people

- Provide capacity building programmes to strengthen the capacity of social care providers to conduct needs assessment and deliver health promotion programmes that target functional ability

Readiness for ICOPE implementation

Facilitate a paradigm shift towards person-centred and integrated care using an integrated medico-social model as a basis

- Evaluate the readiness of social care providers to implement the ICOPE approach

Community needs assessment

Objective

- To identify older people in need of care in the community

Strategy

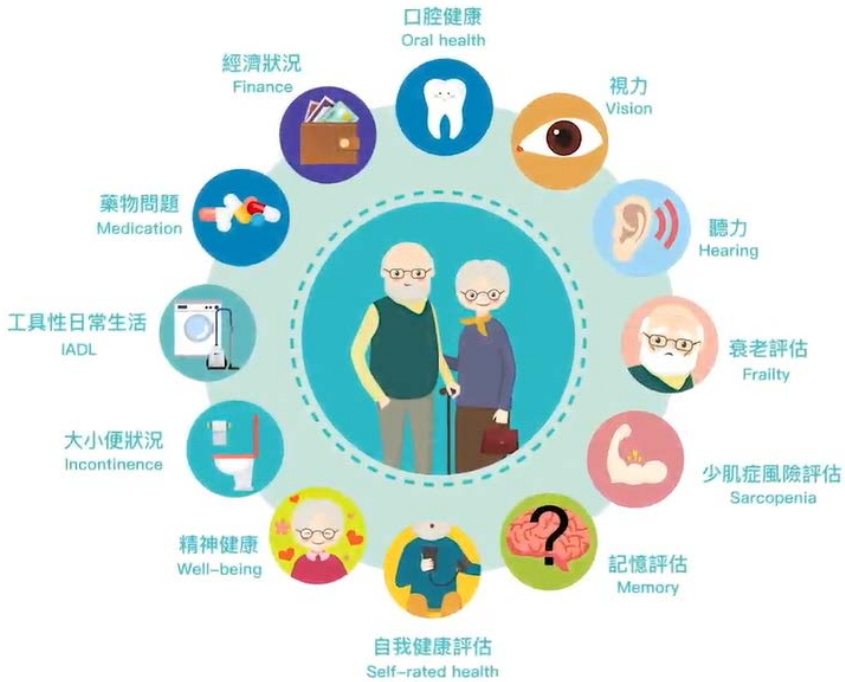
- Form partnerships with community elderly centres to undertake needs assessments for older people

Design

- A territory-wide longitudinal survey
- Community-dwelling people aged 60 years and older were interviewed at baseline and follow-up annually

Data collection

- Data were collected through annual survey using a custom needs assessment form
- The form consists of various domains of health and social needs, covering medical history, oral health, vision, hearing, frailty, sarcopenia, cognitive function, self-rated health, psychological well-being, incontinence, IADL difficulty, medications, and finance



Preliminary findings: Sociodemographic characteristics of participants

As of Apr 30, 2022, over **17,500** older people were interviewed using the needs assessment form

Average age
74.4yr
(Range: 60-100yr)

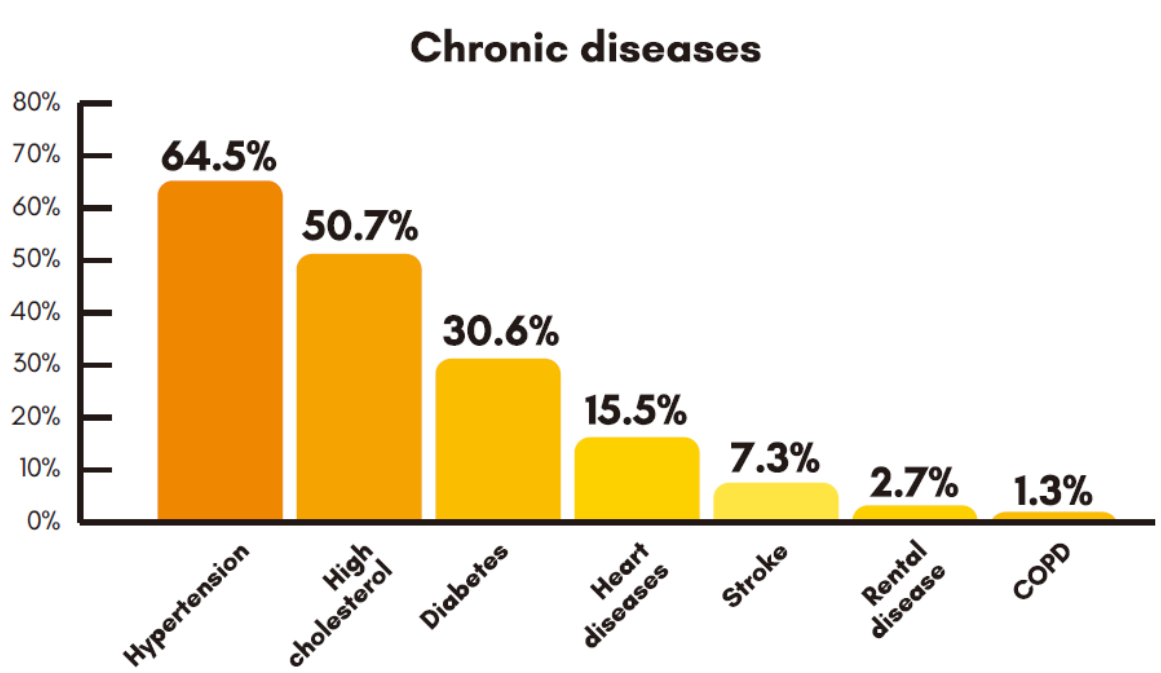
Women
79.4%

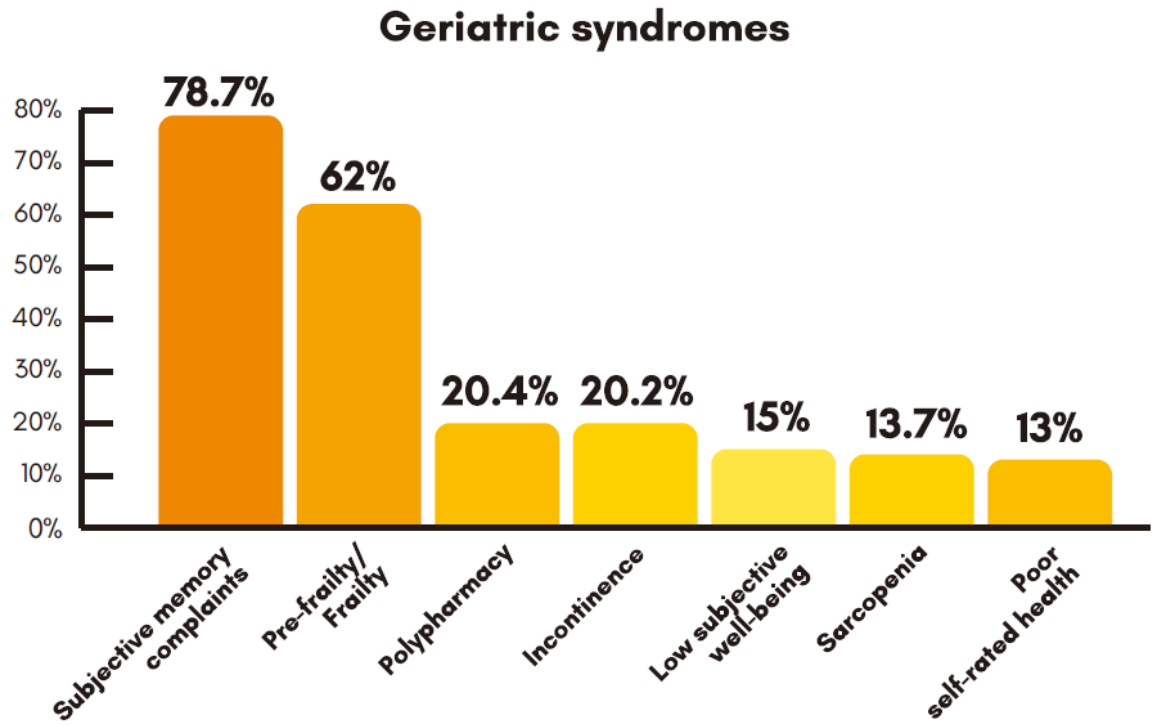
Secondary and higher education
40.2%

Married
50.7%

Living alone
31.6%

Preliminary findings: Health status of participants





While hypertension, high cholesterol, and diabetes are common chronic conditions, subjective memory complaints and frailty are also highly prevalent among community-dwelling older people

Preliminary findings: Intrinsic capacity of participants

Calculation of the intrinsic capacity score

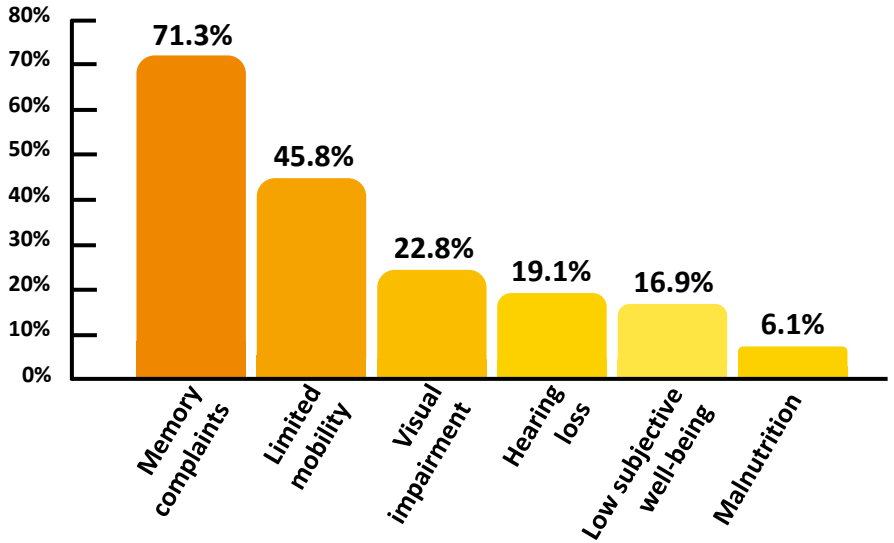
- The intrinsic capacity (IC) score is a composite score based on six conditions associated with declines across domains of IC (memory complaints, limited mobility, malnutrition, visual impairment, hearing loss, and low subjective well-being)

- The IC scores range from 0 to 6, with 0 representing no impairment and 6 representing impairments in all IC domains

Prevalence of intrinsic capacity impairment

- Among 9,951 participants, **85.3%** had an IC **score ≥ 1** (i.e. had potential declines in at least one condition)

- Frequency of conditions associated with IC :

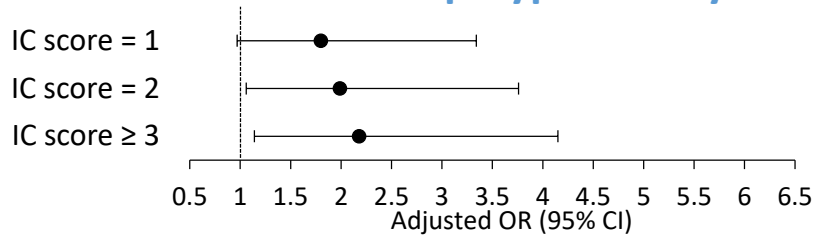


The findings highlight the need for increasing community capacity in providing assessments and early interventions

Source:
Yu, Ruby, et al. Prevalence and Distribution of Intrinsic Capacity and Its Associations with Health Outcomes in Older People: The Jockey Club Community eHealth Care Project in Hong Kong. The Journal of Frailty & Aging (2022): 1-7.

Preliminary findings: Association between intrinsic capacity and health outcomes

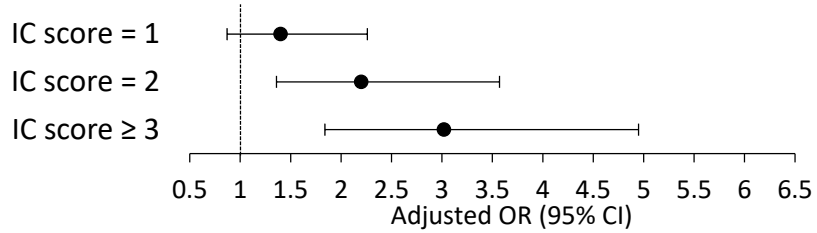
Association between IC score and incident polypharmacy



Adjusted OR (95% CI)	
1.80	(0.97-3.34)
1.99	(1.06-3.76)
2.18	(1.14-4.15)

Compared with participants with IC score = 0, participants with IC score ≥ 3 had **2.2 times** the risk to develop polypharmacy at the 3-year follow-up

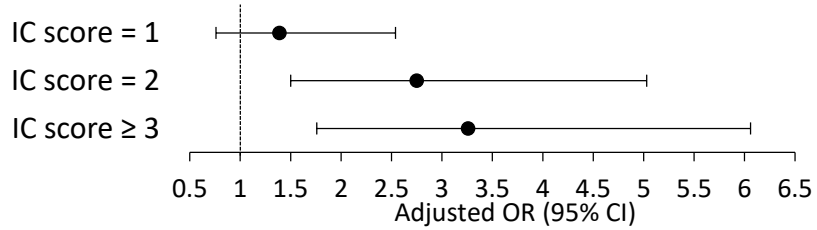
Association between IC score and incident incontinence



Adjusted OR (95% CI)	
1.40	(0.87-2.26)
2.20	(1.36-3.57)
3.02	(1.84-4.95)

Compared with participants with IC score = 0, participants with IC score ≥ 3 had **3.0 times** the risk to develop incontinence at the 3-year follow-up

Association between IC score and incident IADL difficulty



Adjusted OR (95% CI)	
1.39	(0.76-2.54)
2.75	(1.50-5.03)
3.26	(1.76-6.06)

Compared with participants with IC score = 0, participants with IC score ≥ 3 had **3.2 times** the risk to develop IADL difficulty at the 3-year follow-up

Abbreviations: OR = odds ratio; CI = confidence intervals; IADL = instrumental activities of daily living; IC = intrinsic capacity. Reference group: participants with IC score = 0. Adjusted for age, gender, education level, marital status, perceived disposable income, and chronic diseases.

The findings reaffirm that the accumulation of impairments in IC domains can lead to a progressive functional decline

Source:
Yu, Ruby, et al. Prevalence and Distribution of Intrinsic Capacity and Its Associations with Health Outcomes in Older People: The Jockey Club Community eHealth Care Project in Hong Kong. The Journal of Frailty & Aging (2022): 1-7.

Community health promotion

Objective

- To promote healthy ageing and mobilize community resources to meet needs of older people

Strategy

- Form partnerships with community elderly centres to deliver health promotion programmes that target functional ability

Design

- Pragmatic design
- Health promotion programmes were offered by 100 community elderly centers
- Programmes focus on five areas: exercise, healthy eating, cognition, mental health, and social well-being

Data collection

- Routine data on programme participation were collected using a custom digital event management system (EMS)

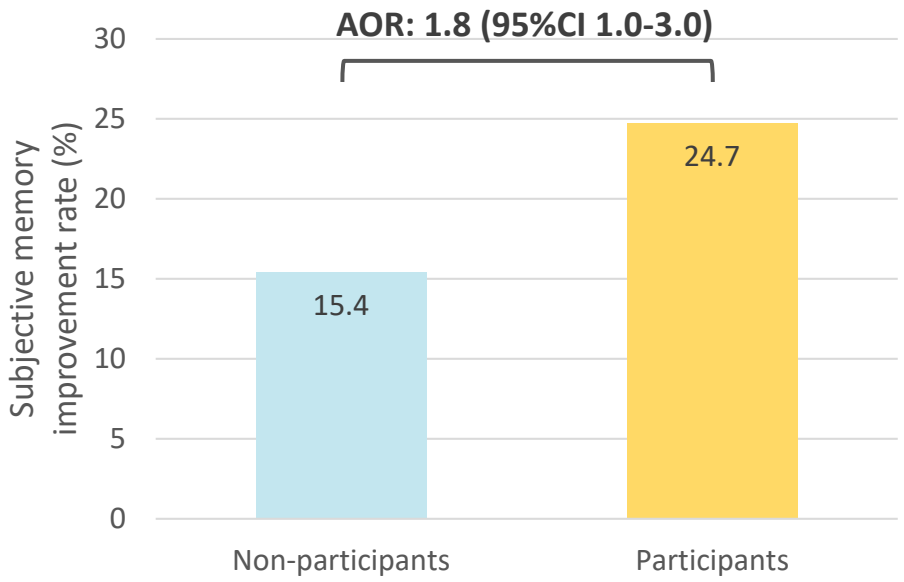
- As of Jan 31, 2022, **over 13,500 health promotion programmes** were organized by 100 community elderly centres with **over 153,200 attendance**

CUHK EMS

Preliminary findings: Effect of health promotion programmes using routine data

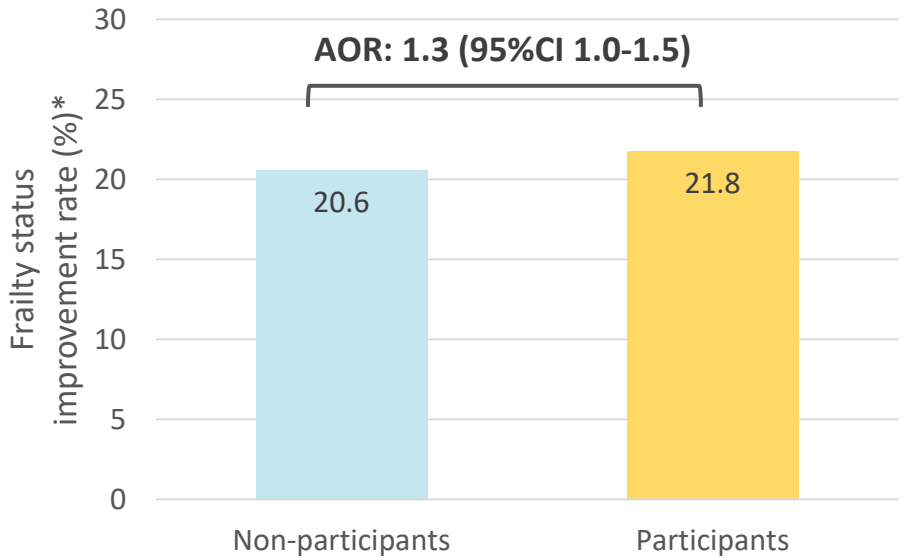
Which programmes are effective in improving cognitive function and frailty status?

Effect of video game training on subjective memory



Compared with non-participants, participants (with cognitive concerns) had **1.8 times** the chance to improve subjective memory at the 1-year follow-up

Effect of aerobic, resistant, balance, and stretching exercises on frailty status*



Compared with non-participants, participants (with frailty) had **1.3 times** the chance to improve frailty status at the 1-year follow-up

Abbreviations: AOR = adjusted odds ratio; CI = confidence intervals. Reference group: non-participants. Adjusted for age, gender, educational level and marital status.
*Improvement: from pre-frail/frail to robust.

The findings highlight that centre-based programmes, particularly cognitive training with video games and exercise programmes, offer great opportunities to prevent cognitive decline and frailty

Project findings: Effect of an integrated care model for pre-frail and frail older people

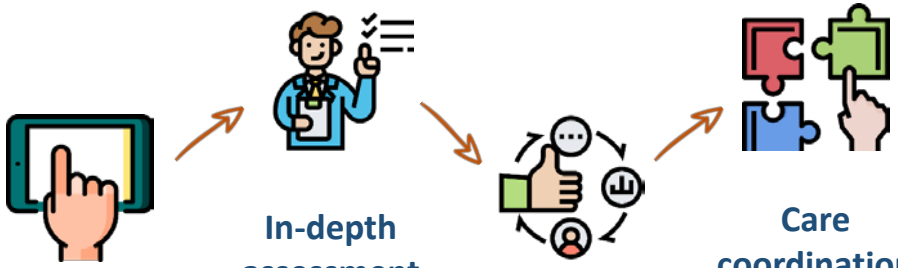
RESEARCH PAPER

Effect of an integrated care model for pre-frail and frail older people living in community

Ruby Yu[1,2], Cecilia Tong[1], Jean Woo[1,2]

[1]Jockey Club Institute of Ageing, The Chinese University of Hong Kong, Hong Kong SAR, China
[2]Department of Medicine and Therapeutics, Faculty of Medicine, The Chinese University of Hong Kong, Hong Kong SAR, China

Care process of the integrated care intervention



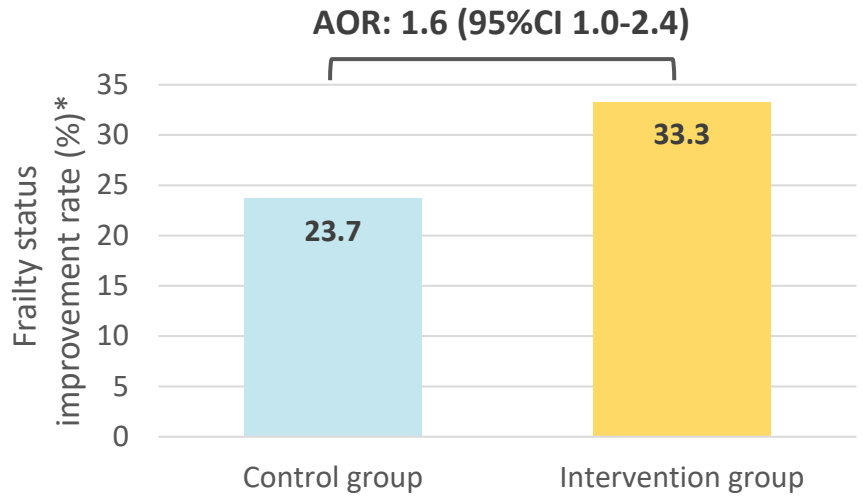
Screening (WBS) conducted by trained interviewers

In-depth assessment (to assess associated conditions) conducted by nurses/health workers

Personalized care plan developed by nurses/health workers

Care coordination (to maintain personalized care plan) supported by elderly centres

Effect of an integrated care programme on frailty status



Compared with control group participants, intervention group participants had **1.6 times** the chance to improve frailty status at the 1-year follow-up

Abbreviations: AOR = adjusted odds ratio; CI = confidence intervals.
Reference group: control group.
Adjusted for age, gender, living arrangement/marital status and hypercholesterolemia.
*Improvement: from frail to pre-frail/robust or from pre-frail to robust.

The findings show that an integrated health and social care model can improve frailty status in a population of pre-frail/frail older people

Source:
Yu, Ruby, et al. Effect of an integrated care model for pre-frail and frail older people living in community. Age and Ageing 49.6 (2020): 1048-1055.

Community capacity building

Objective

- To empower social care providers to deliver integrated care for older people

Strategy

- Provide capacity building programmes to strengthen the capacity of social care providers to conduct needs assessment and deliver health promotion programmes that target functional ability

Design

- **Module 1 Needs assessment for older people**
  - Training content: common geriatric syndromes of old age, screening and assessment skills
- **Module 2 Frailty prevention**
  - Training content: principles for designing frailty prevention programmes
- **Module 3 Healthy diet for healthy ageing**
  - Training content: principles of healthy eating for older people
- **Module 4 Geriatric care**
  - Training content: self-management of medication, incontinence (pelvic floor exercise, use of incontinence products), and fall prevention strategies

Data collection

- Data on trainee knowledge/skills, attitudes, and behaviour were collected before and after the start of the capacity building programme

Module 1

Needs assessment for older people

80% mastered the skills to perform the assessment and discuss the results with older people

Module 2

Frailty prevention

70% were confident in performing fitness assessments

Module 3

Healthy diet for healthy ageing

76% were confident in providing nutrition information about healthy diet

Module 4

Geriatric care

79% were confident in providing information about self-management of medication and incontinence, and fall prevention

Readiness for ICOPE implementation

Objective

- To facilitate a paradigm shift towards person-centred and integrated care using an integrated medico-social model as a basis

Strategy

- Evaluate the readiness of social care providers to implement the ICOPE approach

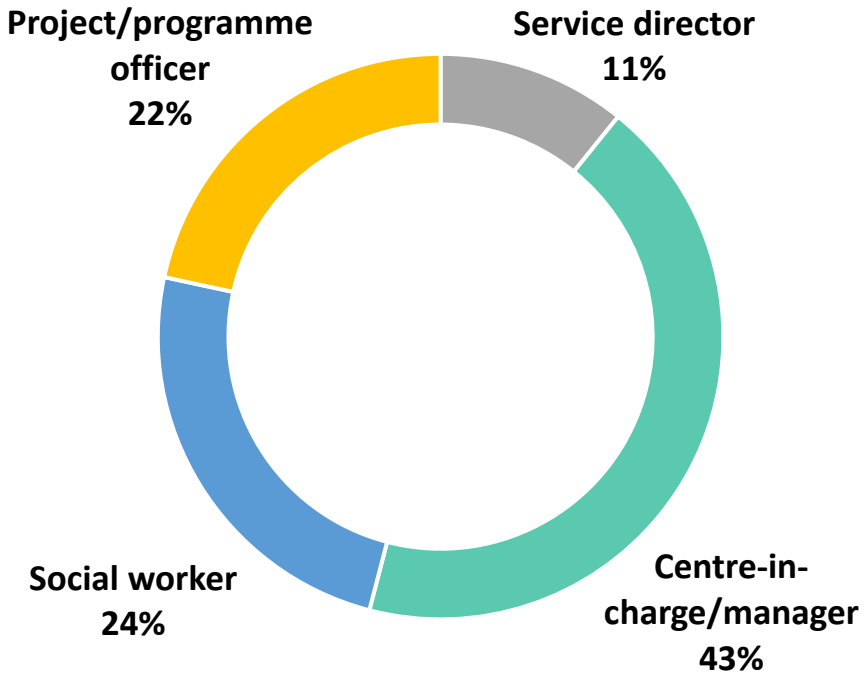
Design

- A focus group study

Data collection

- Qualitative information were collected through focus group interviewers to identify barriers and facilitators to ICOPE implementation

Social service provider disciplines represented by respondents to the focus group



Project findings: Social care providers' perspective towards ICOPE implementation

What are the barriers?

- Human resource and financial constrains
- Limited health promotion competencies
- Limited coordinated services
  - Lack of referral system to health care
  - Limited physical space for health promotion programmes
- COVID-19 and limited eHealth literacy among older people

> *…I can't even refer them to the services provided under the hospital authority. Sometimes we need a health professional to write the referral letter…*

What are the facilitators?

- Community needs assessment
- Training opportunities and mechanisms to gain in-house skills and knowledge
- Coordinated care and partnerships
  - A coordinated referral network for older people with needs
  - Good access to shared resources across partner organizations
- Policies/organization strategies and financing mechanisms to support ICOPE implementation

> *…The annual health survey {arranged by the eHealth project} benefit our centre. It served as an indicator where we can know which areas we should prioritize on and give us direction on what health activities we should arrange…*

Project milestone and way forward

ICOPE implementation readiness evaluation
To facilitate a paradigm shift towards person-centred and integrated care using an integrated medico-social model as a basis

Community needs assessment
To identify older people in need of care in the community

Community health promotion
To promote healthy ageing and mobilize community resources to meet needs of older people, supported by health promotion programmes

Community capacity building
To empower social care providers to conduct needs assessment & deliver health promotion programmes that target functional ability

Process automation
To develop automation tools and link care process to enable more coordinated and continuous services for older people

Community capacity building (ICOPE training)
To empower health and social care providers to adopt and implement ICOPE models in elderly services in Hong Kong

Medical and social care network establishment
To enable timely referral and service provisions for older people with health decline

ICOPE
Integrated Care for Older People

ICOPE implementation
To enable health and social systems effectively respond to the diverse and complex needs of older people

Acknowledgment

Project funder

The Hong Kong Jockey Club Charities Trust

Project partners

The Chinese University of Hong Kong (in alphabetical order):

- Jockey Club Institute of Ageing, CUHK
- Jockey Club School of Public Health and Primary Care, CUHK
- Big Data Decision Analytics (BDDA) Research Centre, CUHK

Senior Citizen Home Safety Association

23 Non-Governmental Organizations (in alphabetical order):

- Aberdeen Kai-fong Welfare Association Social Service Centre
- Caritas Hong Kong Services for the Elderly
- Evangelical Lutheran Church Social Service - Hong Kong
- Haven of Hope Christian Service
- Hong Kong Christian Service
- Hong Kong Family Welfare Society
- Hong Kong Lutheran Social Service, LC-HKS
- Hong Kong PHAB Association
- Hong Kong Sheng Kung Hui Lady Maclehose Centre
- Hong Kong Sheng Kung Hui Welfare Council Limited
- Hong Kong Young Women's Christian Association
- Jockey Club Cadenza Hub
- Pok Oi Hospital
- Sik Sik Yuen
- South Kwai Chung Social Service
- St. James' Settlement
- The Chinese Rhenish Church Hong Kong Synod
- The Hong Kong Society for the Aged
- The Neighbourhood Advice-Action Council
- The Salvation Army
- Tung Wah Group of Hospitals
- Yan Chai Hospital Social Services Department
- Yan Oi Tong

Project participants

Thank you

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