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The management of multimorbidity in primary care: what works?

Professor Samuel YS Wong
JC School of Public Health and Primary Care
Chinese University of Hong Kong

Content of Presentation

1. Epidemiology of multimorbidity globally and locally
2. Challenges of multimorbidity in primary care
3. Interventions for multimorbidity in primary care

Background: Epidemiology of Multimorbidity

Multimorbidity

- No universally agreed definition
- Usually describes the presence of multiple (2 or more), co-existing conditions[1]
- Term “multimoribidity” most commonly used but variation exists[1]
- Co-existence of several conditions where none are considered an index condition that is the specific focus of attention

Multimorbidity with respect to age groups in Scotland[2]

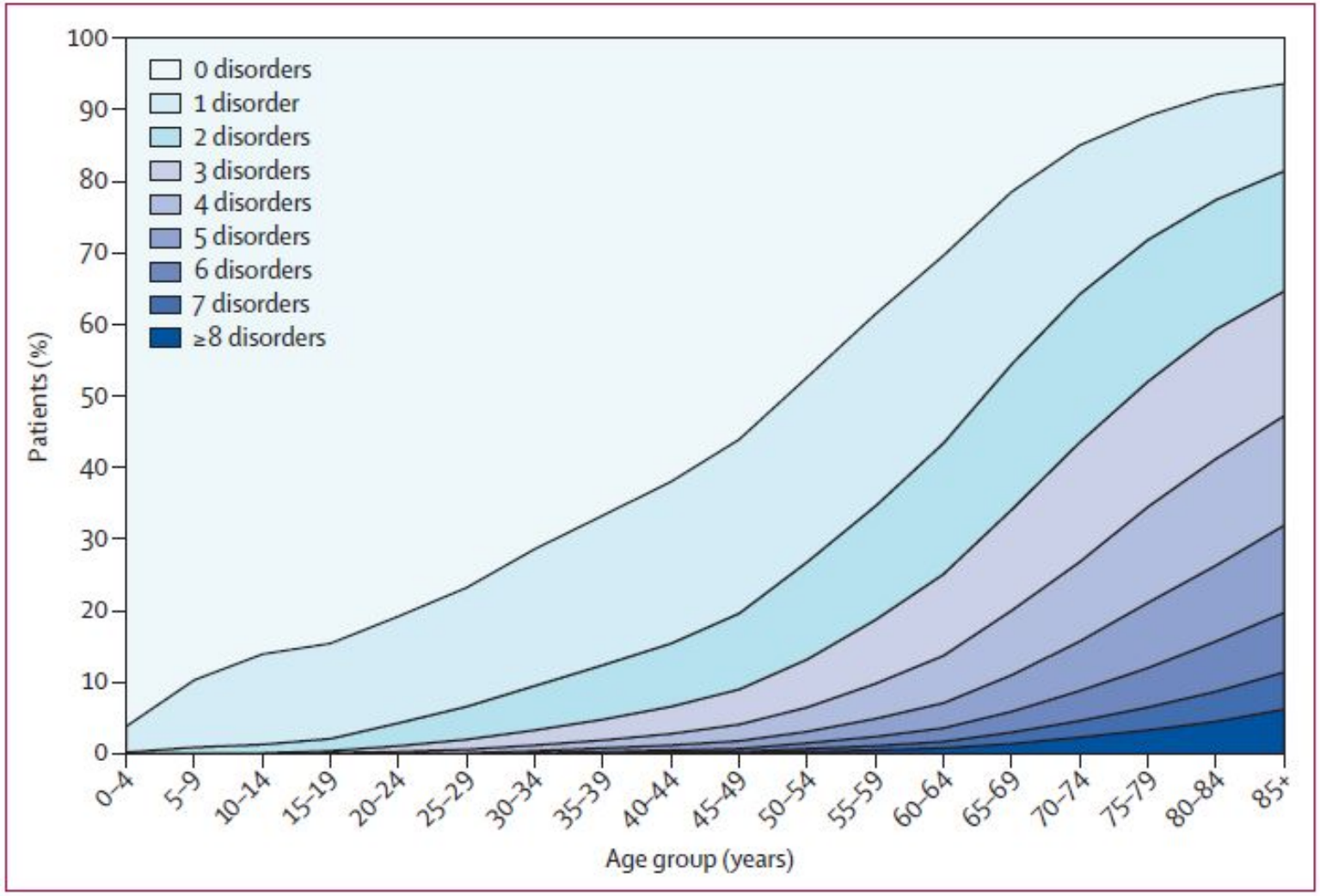
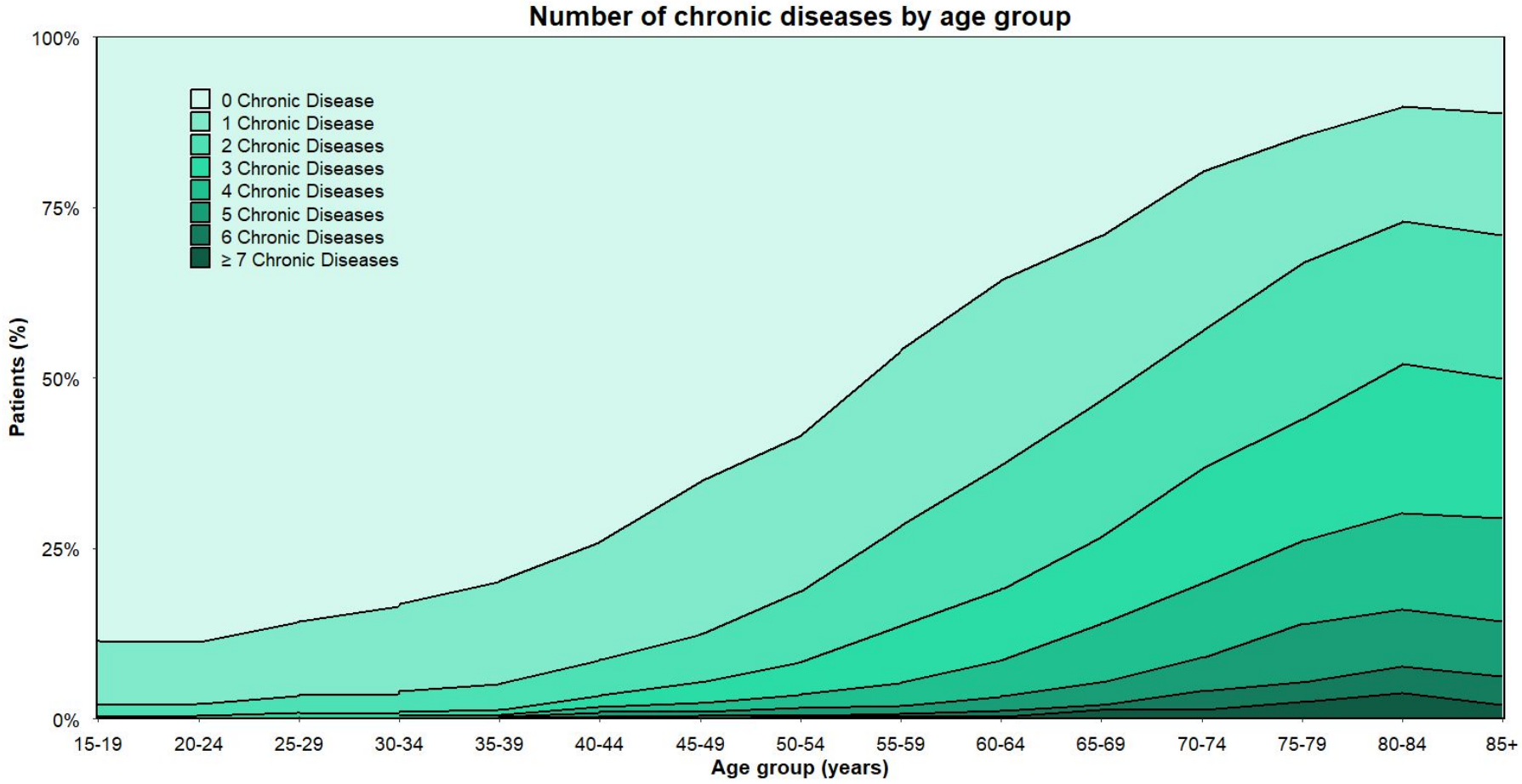


Figure 1: Number of chronic disorders by age-group

Prevalence of multi-morbidity by age in Hong Kong[3]



Multimorbidity with respect to age and socioeconomic status in Scotland[2]

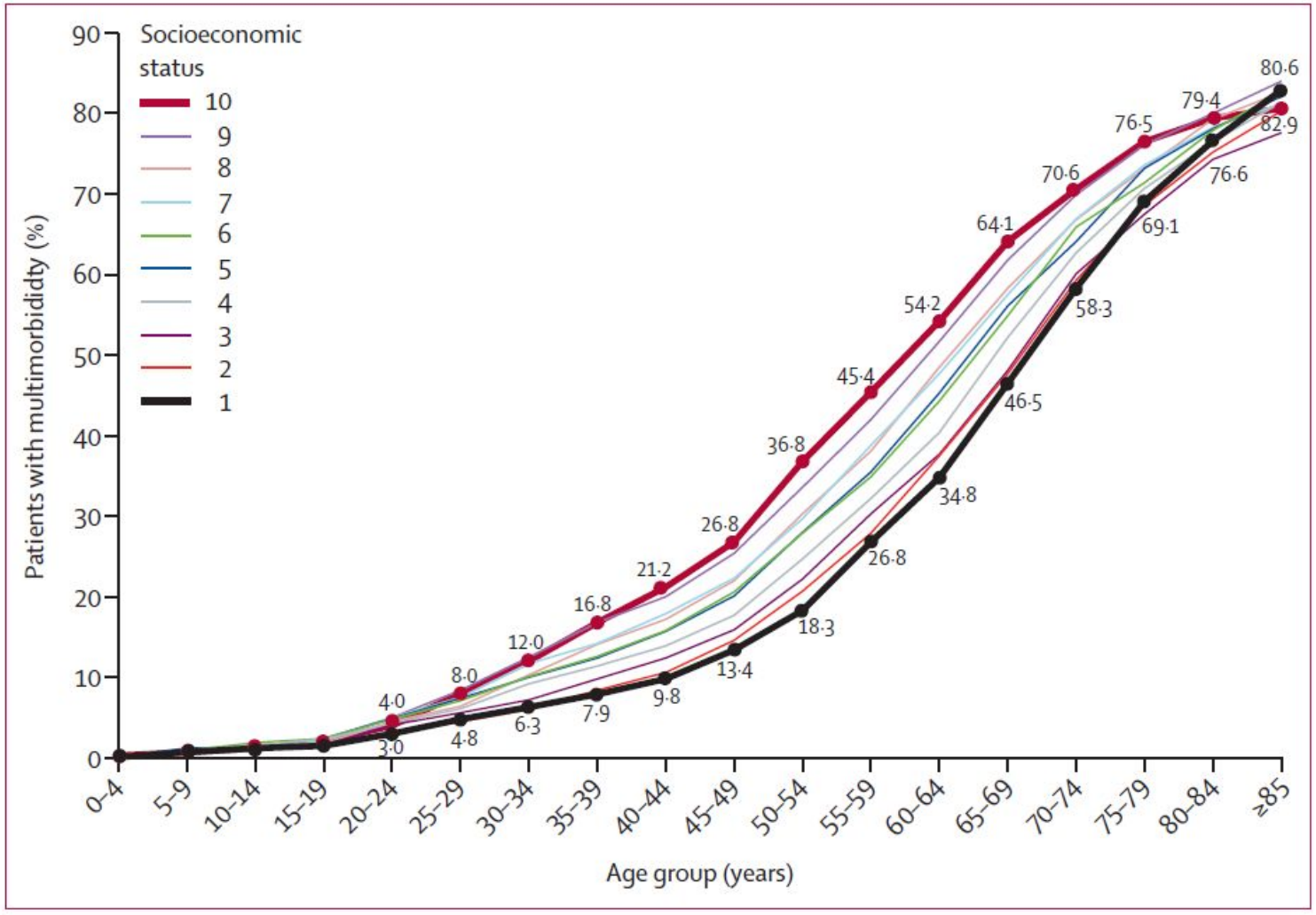
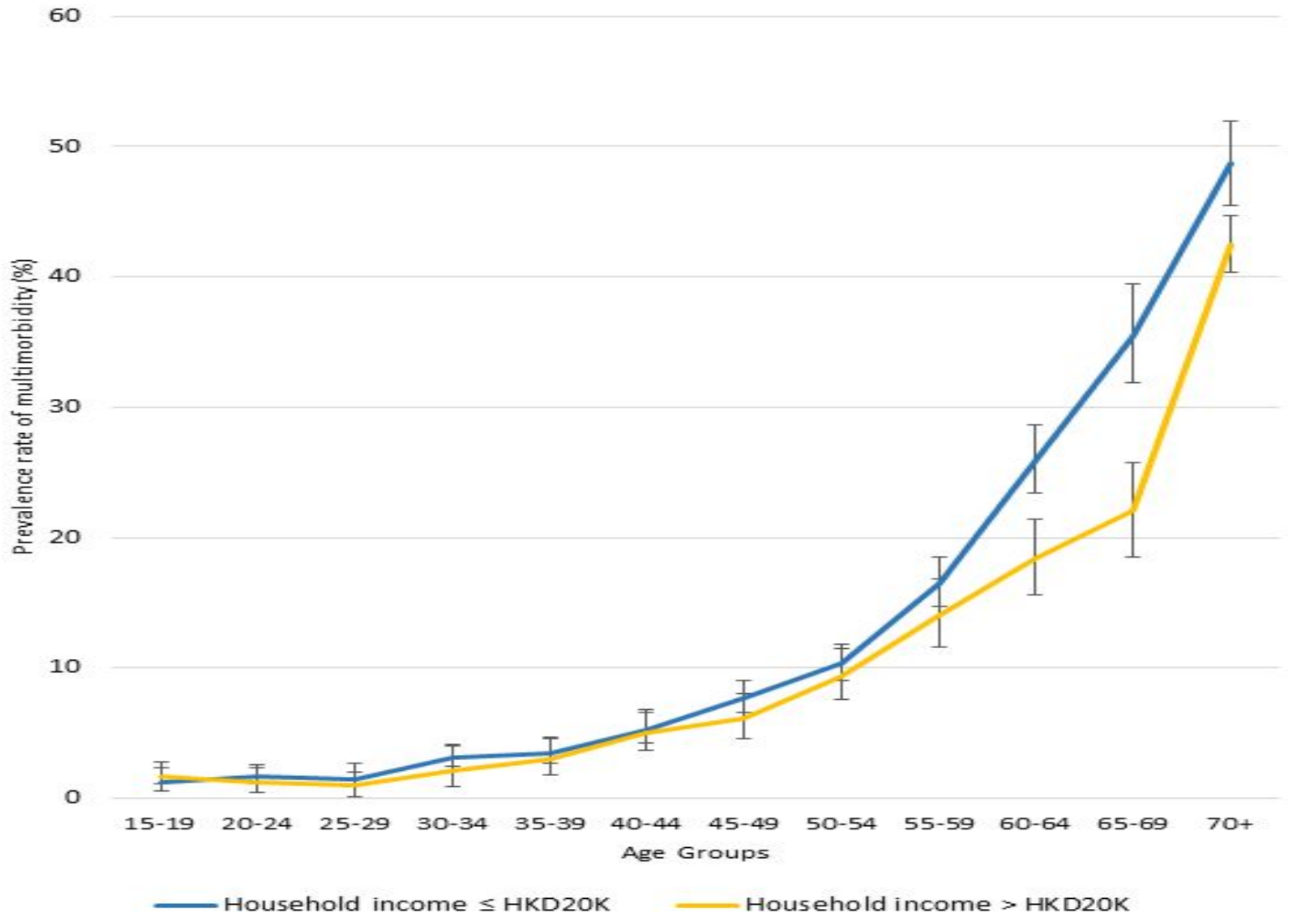


Figure 2: **Prevalence of multimorbidity by age and socioeconomic status**
On socioeconomic status scale, 1=most affluent and 10=most deprived.

Multimorbidity with respect to age and household income in Hong Kong [3]



Who are more likely to have multimorbidity in Hong Kong?[4,5]

- Being older
- Being female
- Having household income < $15,000
- Lower education (primary school or below)
- Past smokers
- Being retired or unemployed

RESEARCH ARTICLE

PLOS ONE

Socioeconomic Determinants of Multimorbidity: A Population-Based Household Survey of Hong Kong Chinese

Roger Y. Chung[1], Stewart Mercer[2], Francisco T. T. Lai[1], Benjamin H. K. Yip[1], Martin C. S. Wong[1], Samuel Y. S. Wong[1]*

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10(10): e0140040. doi:10.1371/journal.(2015)

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BMC Public Health

BMC Public Health 2008, 8:119 doi:10.1186/1471-2458-8-119

The influence of multi-morbidity and self-reported socio-economic standing on the prevalence of depression in an elderly Hong Kong population

Samuel YS Wong[1], Stewart W Mercer*[4], Jean Woo[2] and Jason Leung[3]

People with multimorbidity

- Older
- Poorer socio-economic status
- More frail

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Association between multimorbidity and patient self-care

Patients with multimorbidity: Challenges

- Impose **multiple clinical challenges** in primary care[12]
- Associated with a **reduced quality of life**, **impaired functional status**, as well as a **decline in physical and mental health** [4]
- **Tend to have poorer self-care practices**[13]
  - any necessary human regulatory function under individual control, deliberate and self-initiated
  - the care and cultivation of self in a comprehensive sense
  - a partial solution to the global rise in healthcare costs

Reste, et al, 2013; Chung, et al, 2015; Rijken, 2017

Poorer self-care practices[14]

- lower compliance rate with screening tests
- poorer adherence with chronic medications prescribed by family physicians
- Lower likelihood of care continuity for disease prevention and treatment
- impairment of self-efficacy
- poorer understanding and self-management skills of their chronic conditions
- Unhealthy lifestyle habits

Poorer adherence with chronic medications prescribed by family physicians

International Journal of Cardiology 177 (2014) 477–482

Contents lists available at ScienceDirect

International Journal of Cardiology

journal homepage: www.elsevier.com/locate/ijcard

The association between multimorbidity and poor adherence with cardiovascular medications☆,☆☆

Martin C.S. Wong [a,1], Jing Liu [b,1], Shenglai Zhou [c], Shiwei Li [d], Xuefen Su [a], Harry H.X. Wang [a], Roger Y.N. Chung [a], Benjamin H.K. Yip [a], Samuel Y.S. Wong [a], Joseph T.F. Lau [a,*]

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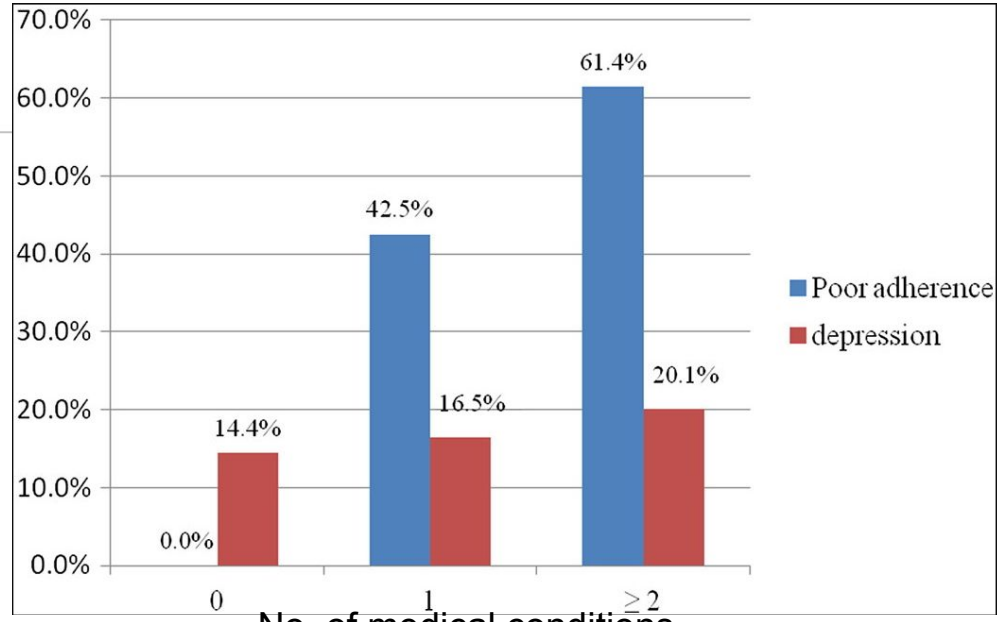
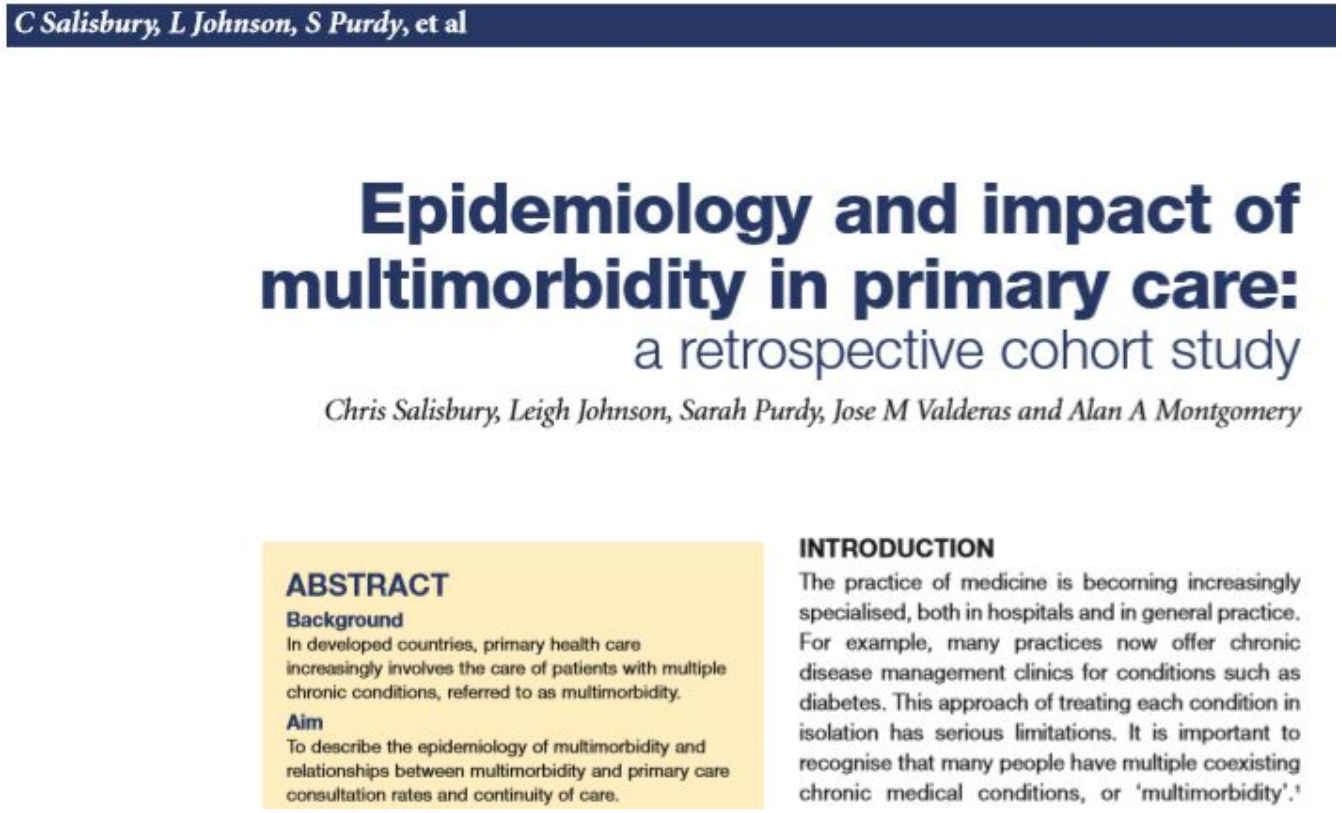
[c] Beijing Anzhen Hospital, Beijing, China
[d] Health Bureau of Weidong District, Pingdingshan, Henan Province, China

- **Poor medication adherence** were significantly associated with **multimorbidity** (adjusted odds ratio: 1.35, 95% C.I. 1.02–1.78, p = 0.037)[16]



Lower likelihood of continuity of care for disease prevention and treatment



C Salisbury, L Johnson, S Purdy, et al

Epidemiology and impact of multimorbidity in primary care:
a retrospective cohort study

Chris Salisbury, Leigh Johnson, Sarah Purdy, Jose M Valderas and Alan A Montgomery

ABSTRACT

Background

In developed countries, primary health care increasingly involves the care of patients with multiple chronic conditions, referred to as multimorbidity.

Aim

To describe the epidemiology of multimorbidity and relationships between multimorbidity and primary care consultation rates and continuity of care.

INTRODUCTION

The practice of medicine is becoming increasingly specialised, both in hospitals and in general practice. For example, many practices now offer chronic disease management clinics for conditions such as diabetes. This approach of treating each condition in isolation has serious limitations. It is important to recognise that many people have multiple coexisting chronic medical conditions, or 'multimorbidity'.[1]

MM was inversely associated with the **usual provider continuity index** (coefficient −0.08 [95% CI = −0.09 to −0.08] (after adjusting for age, sex, and deprivation)[17]

inverse relationship between MM and **longitudinal continuity** (coefficient = −0.008 [95% CI = −0.011 to −0.004]) [17]

Poorer self-efficacy

- Self-efficacy: a personal judgment of "how well one can execute courses of action required to deal with prospective situations"[18]

- **Patients with MM** or higher Disease Burden Impact Scale (DBIS) tend to have **poorer self-efficacy** for managing chronic disease scale [19]

Peters *et al. Health and Quality of Life Outcomes* (2019) 17:37
https://doi.org/10.1186/s12955-019-1103-3

Health and Quality of Life Outcomes

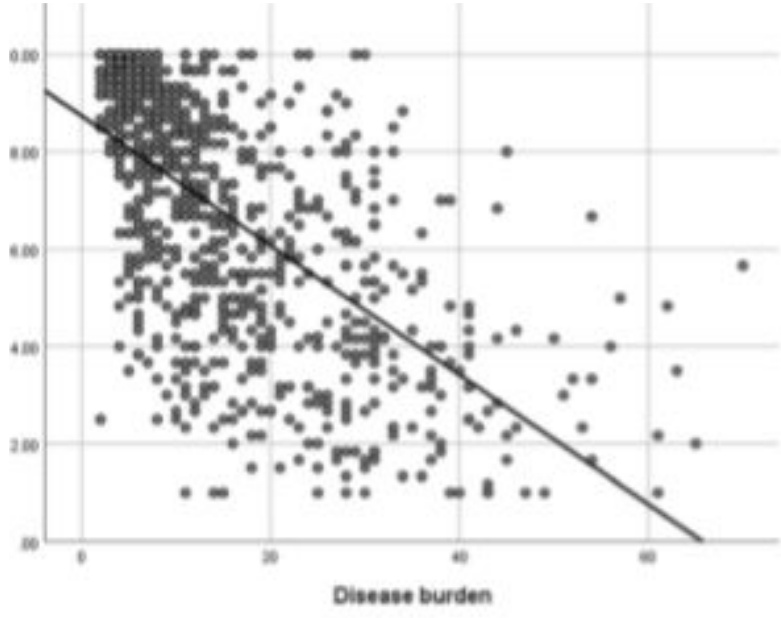
RESEARCH Open Access

Self-efficacy and health-related quality of life: a cross-sectional study of primary care patients with multi-morbidity

Michele Peters*, Caroline M. Potter, Laura Kelly and Ray Fitzpatrick

Abstract

Background: Multi-morbidity in chronic long-term conditions is a major concern for health services. Self-management in concert with clinical care forms part of the effective management of multi-morbidity. Self-efficacy is a mechanism through which self-management can be achieved. Quality of life is adversely impacted by multi-



Poorer understanding and self-management skills of chronic conditions[20]

HealthCareMinds

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Is Self-management of Chronic Diseases & Multimorbidity effective?

Is Self-management of Chronic Diseases & Multimorbidity effective?

Self-management education teaches problem-solving skills and results in enhanced self-efficacy as well as facilitating optimum quality of life (QOL) for patients with chronic diseases. For the majority, self-management, in which patients make day-to-day decisions about managing their own illnesses, shows significant benefits when there is increased support from healthcare professionals. However it is important that these healthcare professionals receive specific education to equip them to effectively educate patients on self-management.

Looking back to our last blog we looked at the crucial role Primary Care has in managing Multimorbidity, Practice Nurses are an important part of the primary care team and studies have shown that Practice Nurses are effective at providing self-management support .

Evidence suggests that:

- clinical outcomes are improved when chronic disease management programs teaching self-management skills are

Recent Posts

- Introducing Lisa Nolan of Aslan VA and Coaching L
- Practice Nursing as a Career Workshops
- Have you ever wondered about becoming a Practic Nurse?
- Nurses Week
- Is Self-management of Chronic Diseases & Multimorbidity effective?

Categories

https://healthcareminds.ie/self-management-chronic-diseases-multimorbidity-effective/

Unhealthy lifestyle

- N=1,196, Canadian, aged ≥ 45 [21]
- Recruited by telephone, questionnaire that consist self-reported chronic diseases, lifestyle factors and SES [21]
- MM was associated with most factors e.g. **smoking habit in men**, **lower F&V intake** in women, and **abnormal BMI** in both genders [21]

Fortin *et al. BMC Public Health* 2014, **14**:686
http://www.biomedcentral.com/1471-2458/14/686

BMC Public Health

RESEARCH ARTICLE Open Access

Lifestyle factors and multimorbidity: a cross sectional study

Martin Fortin[1,2*], Jeannie Haggerty[3], José Almirall[1,2], Tarek Bouhali[1,2], Maxime Sasseville[2] and Martin Lemieux[1,2]

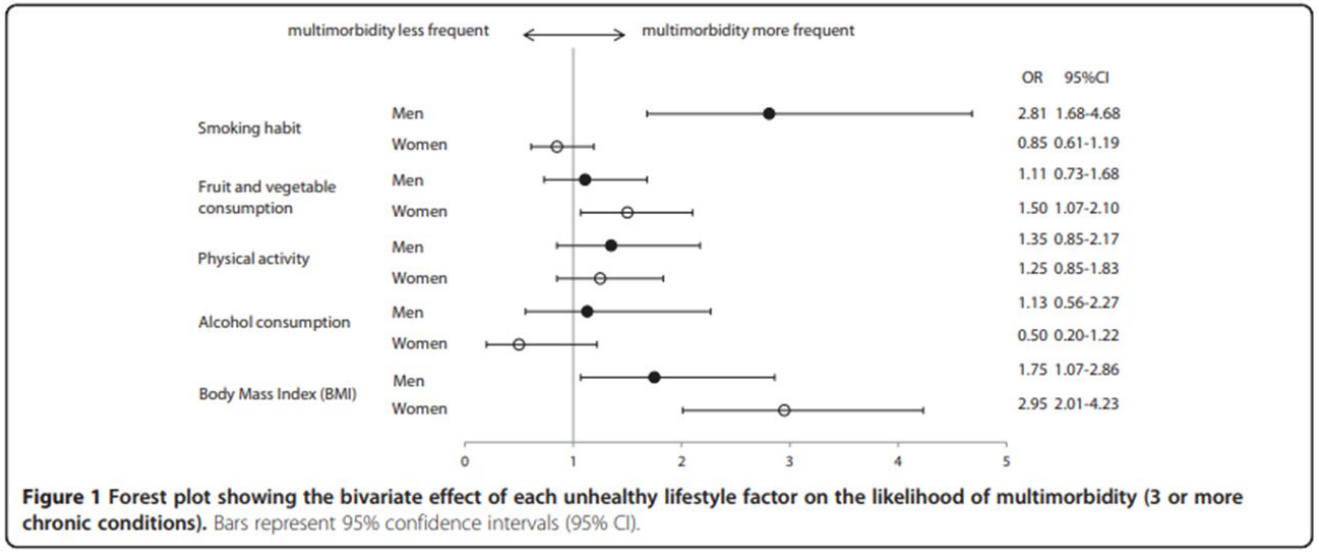


Figure 1 Forest plot showing the bivariate effect of each unhealthy lifestyle factor on the likelihood of multimorbidity (3 or more chronic conditions). Bars represent 95% confidence intervals (95% CI).

Underlying factors

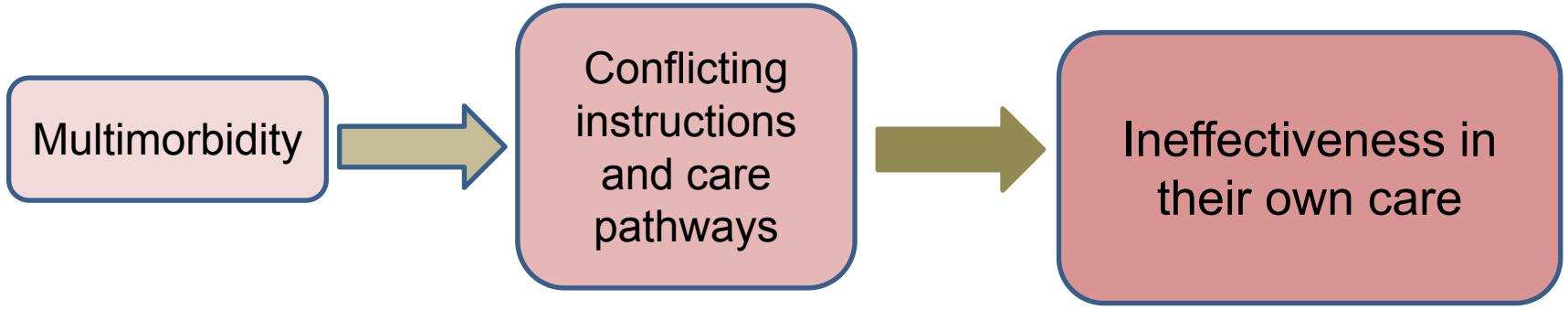
The **possible underlying factors** include [4, 22] :

- patients with multimorbidity, older age
- poorer health literacy
- more common use of polypharmacy
- higher need to attend more frequent clinical appointments, greater proportion experiencing frailty
- increased fragmentation and poor coordination of healthcare

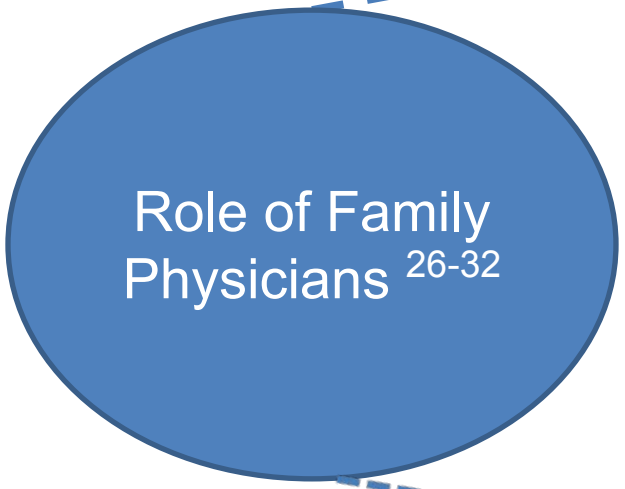
Chung, et al, 2015; Hopman, et al, 2015

Underlying factors: Conflicting Medication Advice

- **Conflicting instructions and care** pathways [23, 24, 25]
  - Different health professionals give various advice on medication
  - May be inconsistent
  - Advice difficult to follow
  - >> preventing patients from participating effectively in their own care



Addressing issues of poor self-care in MM



- **Multiple drug interactions** (drug review)
- **Conflicts between diseases** (integrated approach)
- **Patients' quality of life** (health literacy)
- **Patients' beliefs and expectations** (counselling)
- **Caregivers and family support** (resources in the community)

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A Cohort of 1000 Chinese Older Adults with Multimorbidity in Hong Kong

Chinese elderly with multimorbidity in primary care in Hong Kong: Health Profile [39]

Daisy Dexing Zhang,[1] Regina Wing Shan Sit,[1] Carmen Wong,[1] Dan Zou,[1] Stewart W. Mercer,[2] Marjorie Johnston,[3] Samuel Yeung Shan Wong[1]

1. *JC School of Public Health and Primary Care, CUHK, Hong Kong*
2. *University of Edinburgh, UK*
3. *University of Aberdeen, UK*

Open access Cohort profile

BMJ Open

Cohort profile: The prospective study on Chinese elderly with multimorbidity in primary care in Hong Kong

Dexing Zhang ,[1] Regina Wing Shan Sit ,[1] Carmen Wong,[1] Dan Zou,[1] Stewart W Mercer,[2] Marjorie C Johnston ,[3] Samuel Yeung Shan Wong[1]

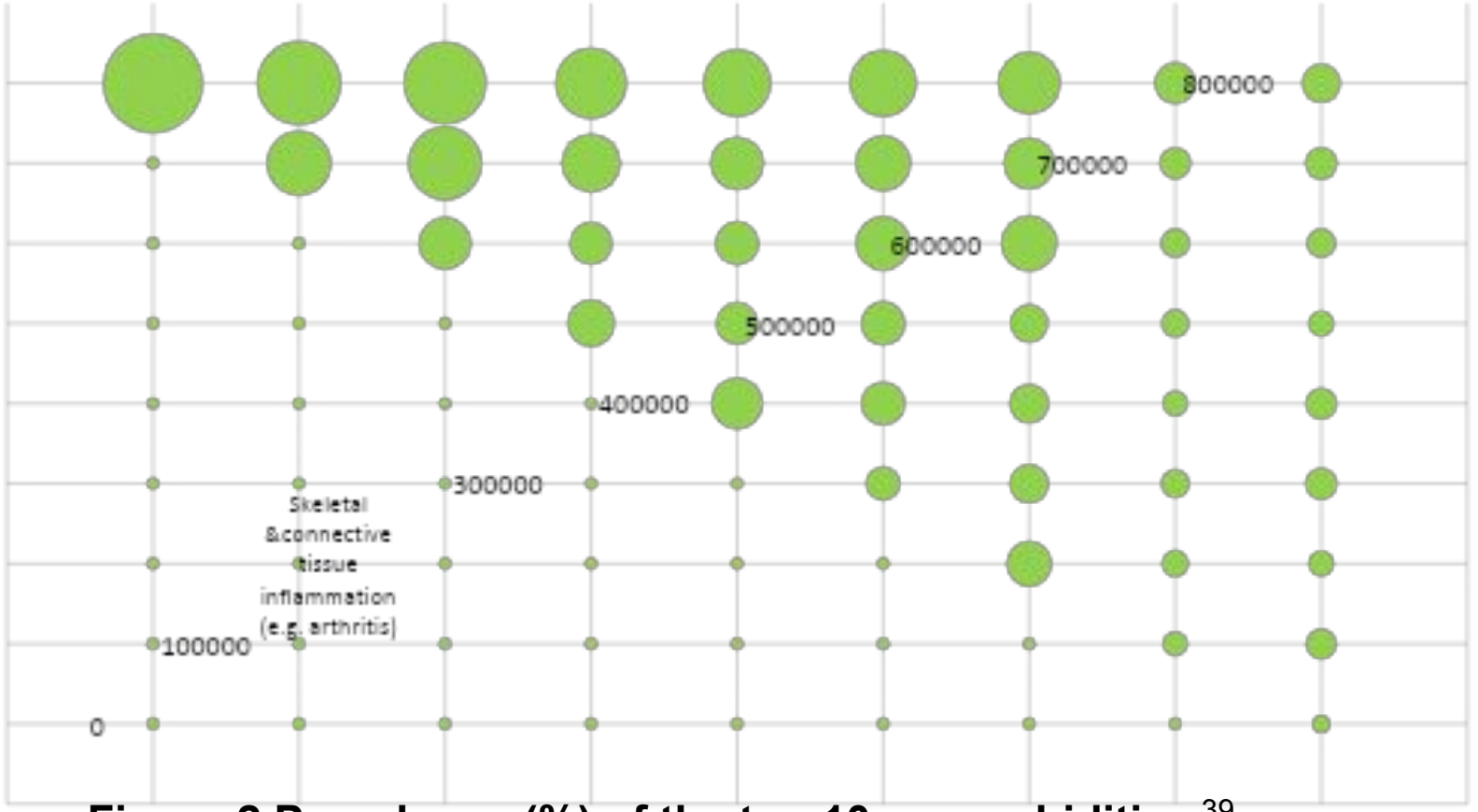

Figure 2 Prevalence (%) of the top 10 co-morbidities [39]

Characteristics of patients – Mental health [39]

Characteristics		N=1077 (%, Mean (SD))
Depression (n = 203, 18.8%)	Mild (PHQ 9: 5-9)	7.4%
	Moderate (PHQ 9: 10-14)	6.6%
	Moderately Severe (PHQ 9: 15-19)	3.3%
	Severe (PHQ 9: 20)	1.2%
Anxiety (n = 182, 16.9%)	Mild (GAD-7: 5-9)	6.2%
	Moderate (GAD-7: 10-14)	7.7%
	Severe (GAD-7: >=15)	2.2%
Insomnia (n=716, 66.5%)	Subthreshold insomnia (ISI 8-14)	30.5%
	Clinical insomnia, moderate severity (ISI 15-21)	19.8%
	Clinical insomnia, severe (ISI 22-28)	1.2%
HK-MoCA (n=785)	Normal (>= 22)	84.1%
	Cognitive impairment (< 22)	15.9%
Perceived meaning (0-7) (n=544)		4.8 (1.2)

Characteristics of patients – Social aspects [39]

Characteristics		N=1077 (%, Mean (SD))
Social media use	Overall	52.6%
	Web	24.7%
	WhatsApp	51.0%
	Facebook	17.3%
	Blog	2.2%
Loneliness	No	72.5%
	Yes	27.5%
	De Jong Gierveld Loneliness Scale (0-6)	
	Emotional score (0-3) (mean, sd)	0.9 (1.0)
	Social score (0-3) (mean, sd)	0.7 (1.2)
	Total score (0-6) (mean, sd)	1.6 (1.8)
Social Support *(can count on someone willing and able to meet your needs)*	Always	62.7%
	Sometimes	30.7 %
	Never	6.7%

Characteristics of patients – health service use [39]

Health care utilization in the past year		N=1077 (%, Mean (SD))
Hopitalisation	0	83.0%
	1-2	15.2%
	2+	1.8%
	Days in hospital	1.2 (6.2)
Specialist Out-patient Clinics (SOPC)		69.5%
General Out-patient Clinics (GOPC)		91.0%
Elderly day care service		9.6%
Out-of-pocket Cost (HKD) (media, IQR) (n=1063)		1000 (0, 3000)

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Multimorbidity:

Impact and Potential Interventions

BMJ

BMJ 2012;345:e5205 doi: 10.1136/bmj.e5205 (Published 3 September 2012)

RESEARCH

Managing patients with multimorbidity: systematic review of interventions in primary care and community settings


OPEN ACCESS

Susan M Smith *associate professor of general practice*[1], Hassan Soubhi *adjunct professor of family medicine*[2], Martin Fortin *professor of family medicine*[2], Catherine Hudon *associate professor of family medicine*[2], Tom O'Dowd *professor of general practice*[3]

[1]Department of General Practice, Royal College of Surgeons, Dublin 2, Ireland; [2]Department of Family Medicine, University of Sherbrooke, Chicoutimi, QC, Canada; [3]Department of Public Health and Primary Care, Trinity College Centre for Health Sciences, Dublin 24, Ireland

- All 10 included studies were RCTs involved complex interventions with multiple components.
- The predominant component of 6 studies was a change to the organisation of care delivery, usually through case management or enhanced multidisciplinary team work.
- A trend towards improved prescribing and drug adherence was found.
- The results indicated that it is difficult to improve outcomes in this population but that **interventions focusing on particular risk factors in comorbid conditions or functional difficulties in multimorbidity may be more effective.**

Breckner et al. BMC Family Practice (2021) 22:238
https://doi.org/10.1186/s12875-021-01584-9

BMC Family Practice

RESEARCH Open Access

Self-management perspectives of elderly patients with multimorbidity and practitioners - status, challenges and further support needed?

Amanda Breckner*, Catharina Roth, Katharina Glassen and Michel Wensing

Self-management perspectives: what support is needed?

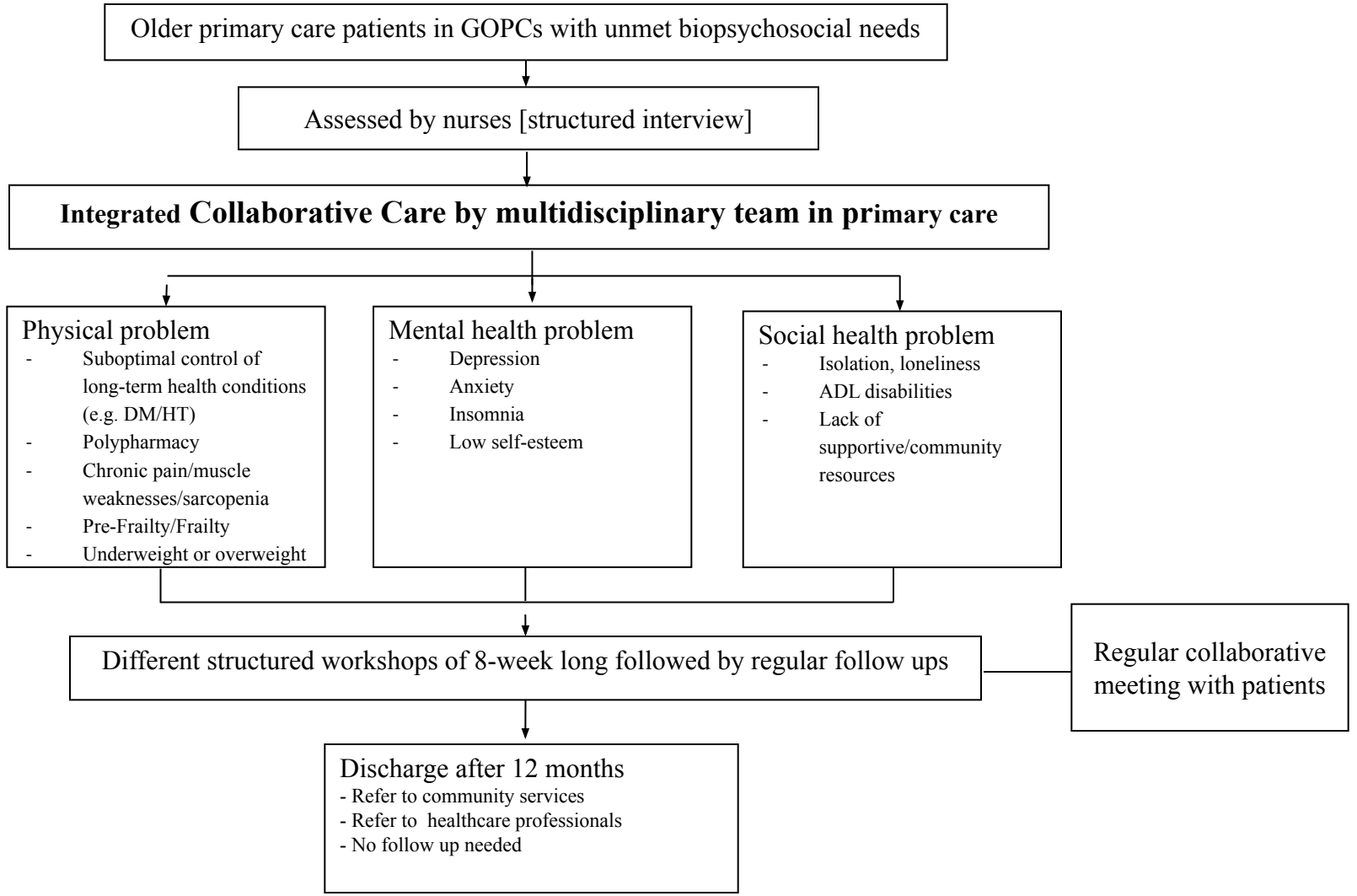
- Importance of social contact
- Support from primary care practitioners to cope with diseases
- Wished for further support in aspects of social participation, public transport and community resources

The CU-JC Primary Care Programme

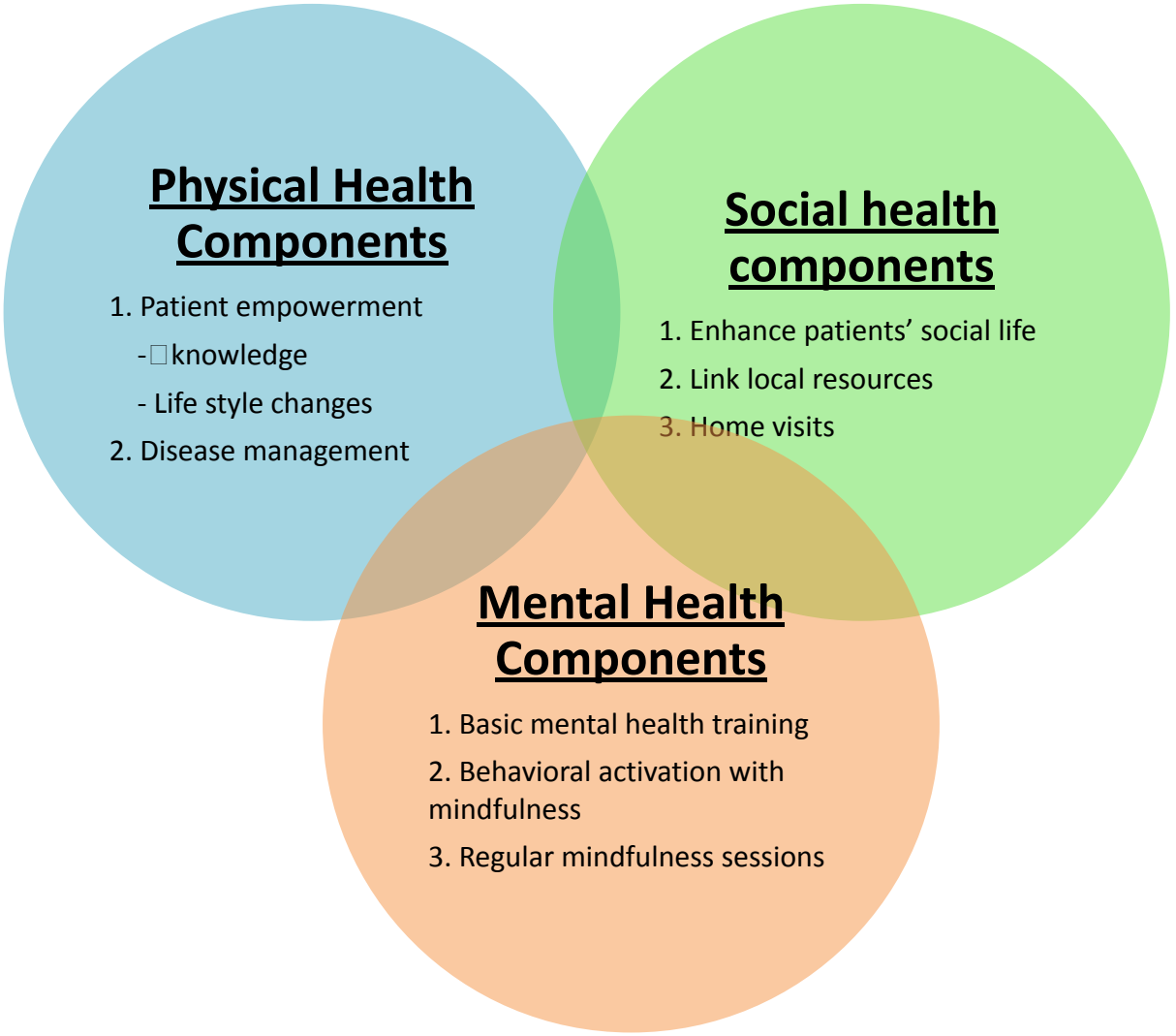
Objective

- To establish and evaluate a primary care structured biopsychosocial programme including collaborative care coordinated by nurse with support from a multidisciplinary team of health professionals
- To work with other health care/social care professionals in the community to address the specific needs of middle-older adults with complex health needs

Integrated Collaborative Care 1000 older adults



Integrated Collaborative Care 1000 older adults



The CU-JC Integrated Primary Care Programme for Older Adults with Comorbid Physical and Psychosocial Conditions in Primary Care in Hong Kong aged 55 or above (n=1440)

Assess unmet needs

Physical condition	**Mental/social condition**
Hypertension	Depression
Diabetes mellitus	Anxiety
Chronic pain	Mild cognitive impairment
Sarcopenia	Loneliness
Frailty	Lack of social support
Drug compliance	Living alone or only living with his/her partner
Underweight	

Needs assessment and follow up over 1 year

Biopsychosocial interventions supported by a multidisciplinary team led by FD

Significant improvement in blood pressure, sarcopenia, depression, anxiety, cognitive function, social support, physical activity level, and experienced threat of illness compared with the baseline level ($p<0.05$).

Summary: Managing multimorbidity

- Multimorbidity associated with functional aspects are common (e.g. frailty plus memory issues)
- Generalist Approach is needed (and may be most cost-effective) for addressing older adults' overall health needs
- Integrated approach encompasses physical, psychological and **social aspects of health** within a multidisciplinary team

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Roger Chung, *Centre for Health System and Policy, JCSPHPC*
Daisy Zhang, *Family Medicine & Primary Care, JCSPHPC*

CU-JC Community Primary Care Team*: Regina Sit, Carmen Wong, Eric Lee, Jennifer Tiu, Tony Leung, Zujin Xu*

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The Hong Kong Jockey Club Charities Trust
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Supplementary slides

Brief introduction on our project

- **Service Operation**

Client Recruitment (Fulfill criteria)

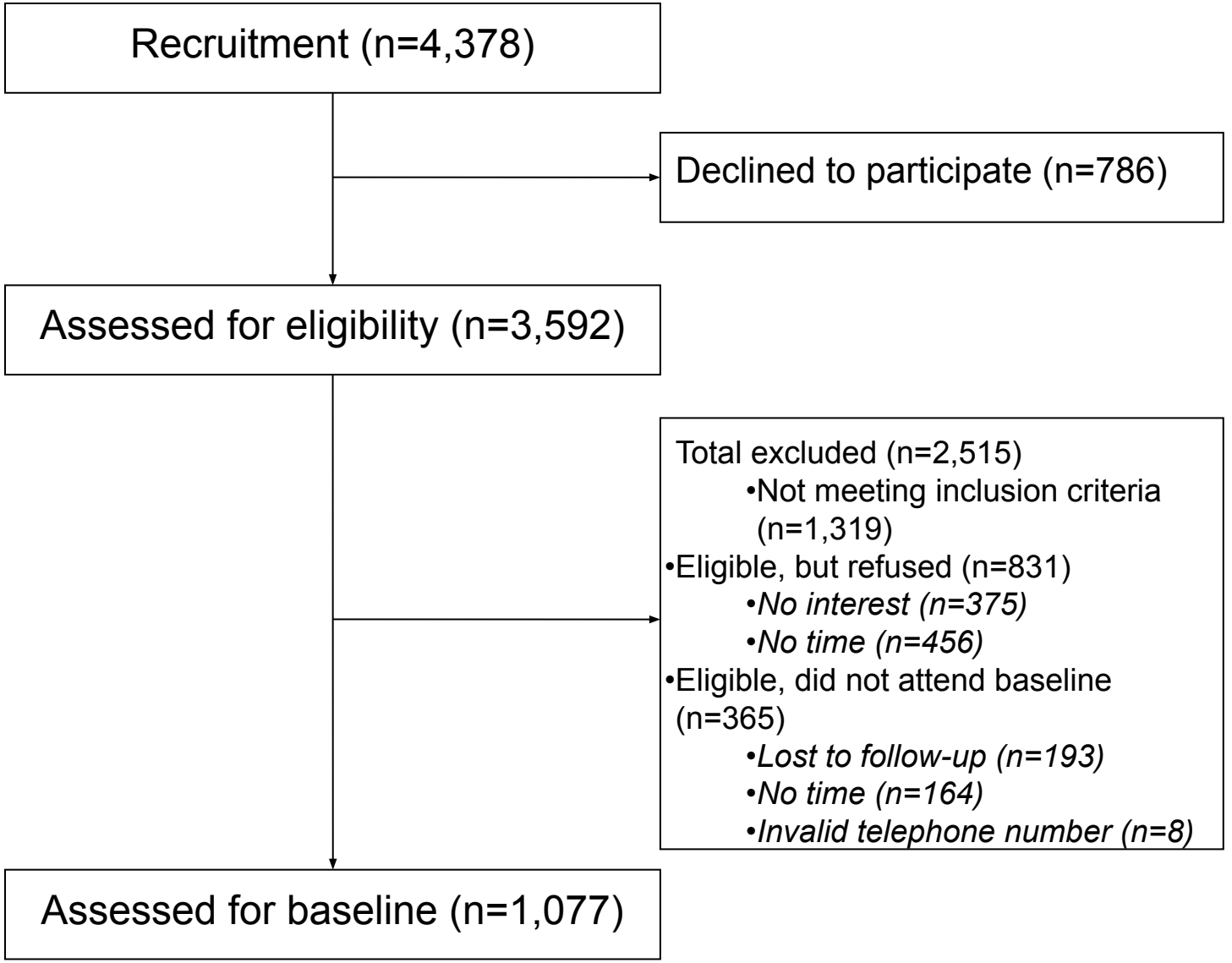
Initial Assessment Session (Identify Needs)

Case Management : Community Nurse Clinic (Identify Needs & prioritize care plan)

+/- Social Worker/ Home Visit/ Workshop (providing service aim at improving health)

+/- referral to NGOs (Providing service to improve health)

Figure 1: Flowchart of Recruitment [39]



Characteristics of JC patients – SES & lifestyle [39]

Characteristics		Total (N=1077)
Age (years)		70.0 (6.8)
Gender	Male	30.1%
	Female	69.9%
Marriage	Married	67.3%
	Single/divorced/separated	9.6%
	Widowed	23.1%
Living alone		14.0%
Employment	Retired/ Housewife	91.9%
	Employed	8.1%
Education (years)		7.7 (4.6)
	Year of education ≥ 6 years	49.3%
Social security	Any	58.6%
	Comprehensive Social Security Assistance (CSSA)	10.1%
	Fruit Voucher	46.4%
	Disability allowance	3.5%
	Other	0.5%
Caregiving to someone else		17.6%
Alcohol use	Used in the last 12 months	12.6%
	AUDIT-C positive (>=3)	4.4%
Smoke	Never smoke	86.1%
	Smoke	2.7%
	Quit smoke	11.2%
Physical Activity Scale for the Elderly (PASE) (n=809)		80.3 (43.4)

Characteristics of JC patients - Physical health

Characteristics		Total (N=1077)
Medical history	DM, HT, Dyslipidemia	83.6%
	Musculoskeletal	60.3%
	Gastrointestinal disorders	26.7%
	Eye	26.3%
	CVD	16.9%
	Mental Disorders	14.8%
Medication	Average number	2.4 (1.9)
	Forget taking medications (n=995)	37.1%
Self-rated health	Excellent/very good/good	28.5%
	Fair	59.2%
	Poor	12.3%
Pain	One pain area	10.9%
	Two + pain areas	64.3%
Sarcopenia (n=769)	Yes	7.9%
Edmonton Frailty scale (n=1006)	Apparently Vulnerable (6-7)	12.2%
	Mild Frailty (8-9)	4.0%
	Moderate Frailty (10-11)	1.0%
	Severe Frailty (12-18)	0.1%
Oral Health Problem (n=992)		23.9%
Incontinence (n=992)	No	79.7%
	Occasionally	18.8%
	Yes	1.5%
Handgrip strength	Below cutoff	36.2%
	Above cutoff	63.8%