Department of Social Work and Social Administration
The University of Hong Kong
香港大學社會工作及社會行政學系

Tools to Inform Policy
Chinese communities' Action in Response to Dementia
華人社會認知障礙症策略工具

Prescription of Non-Pharmacological Interventions in Memory Clinics: Data from the Clinical Pathway for Alzheimer's Disease in China (CPAD) Study

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Background

Increasing number of person living with dementia (PLwD)

Worldwide

- 50 million PLwD → 152 million in 2050 (Patterson, 2020)

China

- 15 million PLwD → 49 million in 2050 (Jia et al., 2020; Li et al., 2020)
- 39 million people with Mild Cognitive Impairment (MCI)

Burden

- Impairments in cognitive functioning and daily living ability result in great burden for the PLwD, their family, and society.
- In China alone, dementia care costs US$ 114.2 billion. (Xu et al., 2017)

Background

There is no disease-modifying treatment for dementia; but interventions can:

- slow down deterioration
- improve functioning
- relieve symptoms
- delay institutionalization

Few medications has been approved for managing dementia symptoms, with varying evidence on their effectiveness and adverse effects.

Non-pharmacological interventions (NPIs), have been recommended as a first-line response (World Health Organization, 2012).

Background

Type of NPIs

- structured and manualised
  - cognitive stimulation therapy (CST) (Woods et al., 201
  - STrAtegies for RelaTives (START) (Livingston et al., 2
- unstructured suggestions on lifestyle and behav

Outcomes commonly evaluated for NPIs

- cognitive and daily functioning
- quality of life
- self-efficacy
- reducing neuropsychotropic symptoms and behavioral changes (Douglas et al., 2004; Kverno et al., 2009; Takeda et al., 2012)

Table 1. Non-pharmacological intervention to Alzheimer patients

Therapy	Cognitive	ADL	BPSD
Cognitive training	+	+	+
Cognitive rehabilitation	+	+	+
Cognitive stimulation therapy	+	+	+
Snoezelen/multisensory stimulation	+	+	+
Reality orientation	+	+	+
Reminiscence therapy	+	−	+
Validation therapy	+	−	+
Physical activity	+	+	+
Light therapy	+	−	+
Music therapy	+	−	+
Aromatherapy	−	−	+
Animal-assisted therapy	−	−	+

(Takeda et al., 2012)

Background

Despite increasing evidence of their effectiveness and recommended use, ***provision of and access to NPIs remain largely unknown***

Andersen Model (1968, 1995)

- Access is influenced by predisposing characteristics, enabling factors and needs
- Empirical evidence mainly adopted a user perspective at individual level and ***neglected the influence of institutions.***

Research Aim

- To characterize NPIs prescribed to PLwD
- investigate factors associated with NPI prescription considering both user and provider impact
- explore the role of user, carer and provider in the prescribing process

Methods

Data: 2012/2013 Clinical Pathway for Alzheimer's Disease in China (CPAD)

Sample: 889 people diagnosed with Mild Cognitive Impairment or dementia from 28 memory clinics

Outcome measure: prescription of NPIs; reasons of not being prescribed

Independent variables (Andersen, 1968)

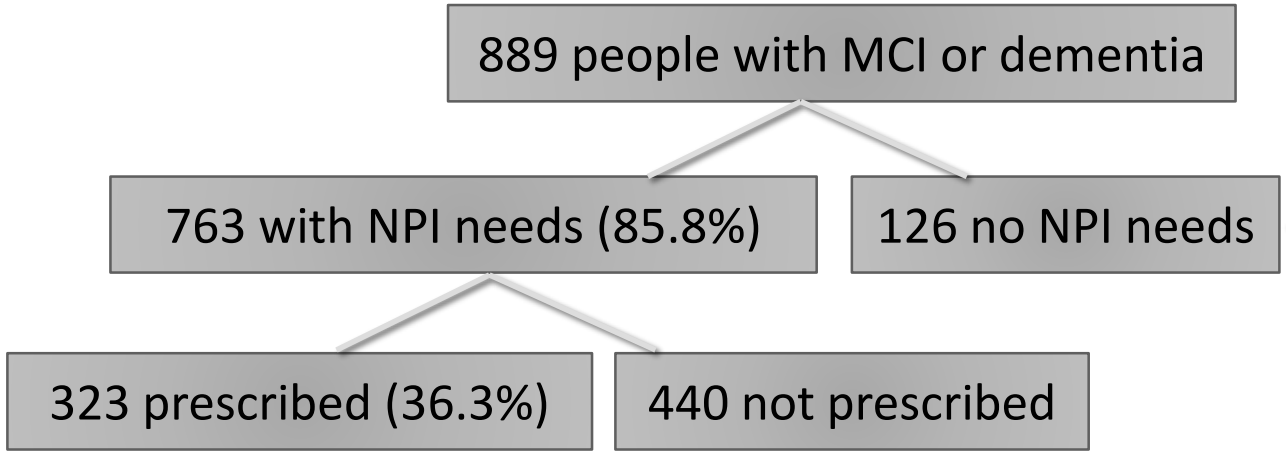
Predisposing Characteristics
Age, Gender, Marital Status, Carer Attitude
Enabling Resources
Education, Household Income, Dementia Family History
Needs
Dementia Subtype, Severity, Carer Burden
Hospital Characteristics
Specialty, Hospital Level

Analysis: descriptive, t-test and χ^2 test, multi-level logistic regression (hospital level)

Results

Sample Characteristics

- mean age 72.3 years;
- 50.1% female
- 25 hospitals in 11 provinces or municipalities



more likely to:

- have lower household income,
- have a surgery history,
- being seen by a neurologist,
- in a comprehensive hospital

(all $p<0.01$).

NPI Prescription Characteristics

- **375 prescriptions**

Categories	**Examples**	N(%)
1 Cognitive activities	memory activities, news/words reading and recitation, playing chess	**129 (34·4%)**
2 Physical exercise	endurance exercise, relaxation exercise, Tai Chi, walking	39 (10·4%)
3 Psychological intervention	psychological counselling, cognitive behavioral therapy	**57 (15·2%)**
4 Social activities	chatting with others, social activities, community activities	11 (2·9%)
5 Daily activities training	training of activities of daily living	38 (10·1%)
6 Informational education	patient education, daily living guidance, disease knowledge education	24 (6·4%)
7 Caregiver training & support	family counselling, family carer training, carer group activities,	**72 (19·2%)**
8 Others	nutrition adjustment, acupuncture, listening to music	5 (1·3%)

NPI Prescription Characteristics

Combinations	**n (%)**
Single intervention prescription	**255 (78·9%)**
Combination of two types of intervention	68 (21·1%)
Psychological intervention + daily activity training	32 (9·9%)
Psychological intervention + any type	49 (15·2%)
Daily activity training + any type	35 (10·8%)
Cognitive activities + any type	23 (7·1%)
Physical exercise + any type	18 (5·6%)
Combination of three types of intervention	3 (0·9%)
Total	**323**

Multi-level Logistic Regression

Individual Characteristics	OR (95% CI)
Dementia family history	2.07 (1.18-3.63)*
Caregiving gains	1.06 (1.02-1.09)**
Dyad relationship	0.83 (0.70-0.98)*
Caregiving burden	0.97 (0.94-0.99)*

Random effects	
Intraclass correlation coefficient	0.734
Observations	763

	OR (95% CI)
Individual characteristics	
Predisposing factors	
Age	1.00 (0.98-1.03)
Female	0.69 (0.44-1.11)
Married	1.37 (0.76-2.52)
Enabling resources	
Education	1.12 (0.92-1.37)
Household income	1.02 (0.80-1.31)
Dementia family history	2.07 (1.18-3.63)*
Caregiving gains	1.06 (1.02-1.09)**
Dyad relationship	0.83 (0.70-0.98)*
Caregiving burden	0.97 (0.94-0.99)*
Needs	
Subtype of dementia (ref = MCI)	
Alzheimer's disease	1.44 (0.59-3.50)
Vascular dementia	1.27 (0.48-3.32)
Other types	1.09 (0.40-2.99)
Severity of dementia	0.93 (0.66-1.32)
Surgical history	1.49 (0.97-2.31)
Institutional characteristics	
Specialty (Ref=Neurology)	
Psychiatric	0.40 (0.07-2.15)
Geriatric	1.58 (0.06-45.12)
Hospital Level (Ref=Comprehensive)	
Grade III Specialized	1.14 (0.05-27.59)
Random effects	
Between-hospital variance (s.e)	9.07 (3.83)
Intraclass correlation coefficient	0.734
-2 Log likelihood	635.569
AIC	673.569
BIC	761.677
Prob > chi2	< 0.01
Observations	763

** p<0.01, *p<0.05

Reasons for Declining Prescription

Reasons for not prescribing (n=440)		n (%)
Provider		
	Physician thought negatively about the effectiveness of NPI	79 (18.0%)
	Institution cannot provide relevant facilities or resources	41 (9.3%)
User		
	The person/carer thought negatively about NPI effectiveness	**163 (37.1%)**
	Carer unable or do not have the resources to collaborate	**114 (25.9%)**
	Financial constraint of the family	34 (7.7%)
Others		9 (2.1%)

Discussion

To our knowledge, this is the first study describing the prescription patterns of NPIs in memory clinics in a larger sample from a middle-income country.

Among memory clinics in top-ranking hospitals, NPI prescriptions were not yet the mainstay of management, with 36.3% of people with MCI or dementia receiving a prescription.

Institutional-level factors are the key determinants for whether people with a need receive an NPI prescription.

- Lack of clinical guidelines and protocols
- Different focuses in management and outcomes across specialities
- Variation on service policies, goals, staff knowledge and resources at institutional or system level.

Discussion

Neither predisposing factors such as age, nor needs factors such as types and severity of dementia, predicted prescription, pointing to potential mismatch of service needs and use.

Family history of dementia, more positive gains in caregiving, less burden and worse carer relationship are user factors linked to prescribing.

- Carers who are able to acknowledge and report worse dyad relationship (more resentment and anger) may be more ready to receive support services.
- Carers may decline service in view of unwillingness of the person with MCI or dementia, to avoid harming their relationship.

Over 70% of the decisions on not prescribing needed NPI were made by users (the person and their carers).

Discussion

- What we need:
  - Prescription guidelines & human resources development across specialities and sites.
  - Carer support and education among the general public & during the consultation process: psychoeducation about effective NPIs and guide to access available resources and instrumental support.
  - Policies to address potential inequalities: financial support, incorporating NPIs into medical insurance catalogue.
- Future research: representative, longitudinal data, standardization in recording and categorizing NPIs.

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Thank you!

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