Alzheimer's
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Dementia

Featured Article

Diagnosis and treatment of dementia in neurology outpatient departments of general hospitals in China

Jianping Jia[a,*], Xiumei Zuo[a], Xiang-Fei Jia[b], Changbiao Chu[a], Liyong Wu[a], Aihong Zhou[a], Cuibai Wei[a], Yi Tang[a], Dan Li[a], Wei Qin[a], Haiqing Song[a], Qingfeng Ma[a], Junjie Li[a], Yongxin Sun[a], Baoquan Min[a], Sufang Xue[a], Erhe Xu[a], Quan Yuan[a], Min Wang[a], Xiaoqin Huang[a], Chunqiu Fan[a], Jianghong Liu[a], Yi Ren[a], Qian Jia[a], Qi Wang[a], Lidong Jiao[a], Yi Xing[a], Xiaoguang Wu[c], and for the China Cognition and Aging Study (China COAST) Group

[a]*Department of Neurology, Xuan Wu Hospital, Capital Medical University, Center of Alzheimer's Disease of Beijing Institute for Brain Disorders, Beijing Key Laboratory of Geriatric Cognitive Disorders, Beijing, People's Republic of China*
[b]*Department of Computer Science, University of Otago, Dunedin, New Zealand*
[c]*Center for Evidence-Based Medicine, Xuan Wu Hospital, Capital Medical University, Beijing, People's Republic of China*

Abstract

Background: The status of dementia diagnosis and treatment of neurology outpatients in general hospitals in China remains unclear.

Methods: From neurology outpatients at 36 randomly selected hospitals, we first collected baseline data concerning the number of dementia doctors, memory clinics, and patients diagnosed with dementia. In stage 2, we intervened based on drawbacks discovered in stage 1, implementing a dementia initiative program. In stage 3, we reinvestigated the outpatients to determine the effects of intervention.

Results: After intervention, all 36 hospitals had established memory clinics (205 dementia doctors) compared with only 6 (47 dementia doctors) before intervention. The percentage of patients diagnosed with dementia significantly increased from 0.10% (536 dementia patients of 553,986 outpatients) in stage 1 to 0.41% (2482 dementia patients of 599,214 outpatients) in stage 3.

Conclusions: Proper diagnosis and treatment are unavailable to many dementia patients because of a lack of dementia doctors and memory clinics in China.

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Keywords: Dementia; Diagnosis and treatment; Hospital; Intervention; Memory clinic

1. Introduction

Presently, China has an elderly population, aged 65 years or older, of 130 million, accounting for 9.4% of the total 1.35 billion Chinese population [1,2]. With a prevalence of dementia of 5.14% [3], we estimate that China has more than 8 million dementia patients, who place a great burden on their families and society.

However, it remains unclear how this tremendous dementia population is managed in a hospital setting. In China, the neurology departments at general hospitals would be the main choice for potential dementia patients. The shortage of dementia doctors and memory clinics in these hospitals has resulted in the speculation that many patients with dementia may have no access to prompt diagnosis and treatment. Accordingly, our team evaluated dementia diagnoses and treatments in the neurology outpatient departments of 36 randomly selected tier 3 hospitals throughout China, and interventions were initiated to remedy the problems identified.

*Corresponding author. Tel.: +86-10-83198730; Fax: +86-10-83171070.

E-mail address: jjp@ccmu.edu.cn

2. Methods

2.1. Hospital selection

The inclusion criteria for hospitals were (1) tier 3 general hospitals with neurology departments and relevant diagnostic equipment (e.g., magnetic resonance imaging [MRI] facilities), (2) average daily outpatient visits of 150 or more, and (3) consent to participate.

This investigation covered seven major economic zones, including 995 tier 3 general hospitals, across China. The local population determined the number of hospitals selected (one hospital for every 30 million people); 36 hospitals in different economic zones were randomly selected by an independent statistician.

2.2. Investigation and intervention

In total, 26 dementia specialists (each responsible for one or two hospitals) were organized by the leading hospital to form survey teams. All of them had ≥5 years of experience in the standard practices of dementia diagnosis and treatment and were selected based on scores from a consistency examination after 1 week of training. Regional and national quality control committees were also established for the survey. The ethics committee at each participating hospital approved this study protocol. Written informed consent was obtained from each patient with dementia, either directly or from his/her guardian, before data collection. This study was conducted from June 2009 to January 2010 (7 months) and included three stages (Fig. 1).

2.2.1. Stage 1 (3 months): Baseline investigation

2.2.1.1. Original status of the outpatients

We determined the number and specialties of the doctors (dementia and nondementia) and the number of memory clinics from the neurology department directors. We considered doctors, who had a period of training in a dementia training center in an academic teaching hospital and whose specialty was cognitive disorders, as dementia doctors. We assessed the total number of outpatient visits in the 3 months, how patients were allocated by the registration office, and the number of patients diagnosed with dementia, by reviewing all the neurology outpatient records in the registration office and the daily reports of patients who were diagnosed with dementia in a neurology outpatient department.

2.2.1.2. Diagnostic pattern for dementia

The dementia diagnosis made according to internationally accepted criteria, based not only on a clinical examination but also on a neuropsychological assessment, neuroimaging, and laboratory tests, was regarded as "by standard procedures." Otherwise, diagnosis was recorded as "by personal experience." Patient numbers were determined by reviewing all medical documents of the
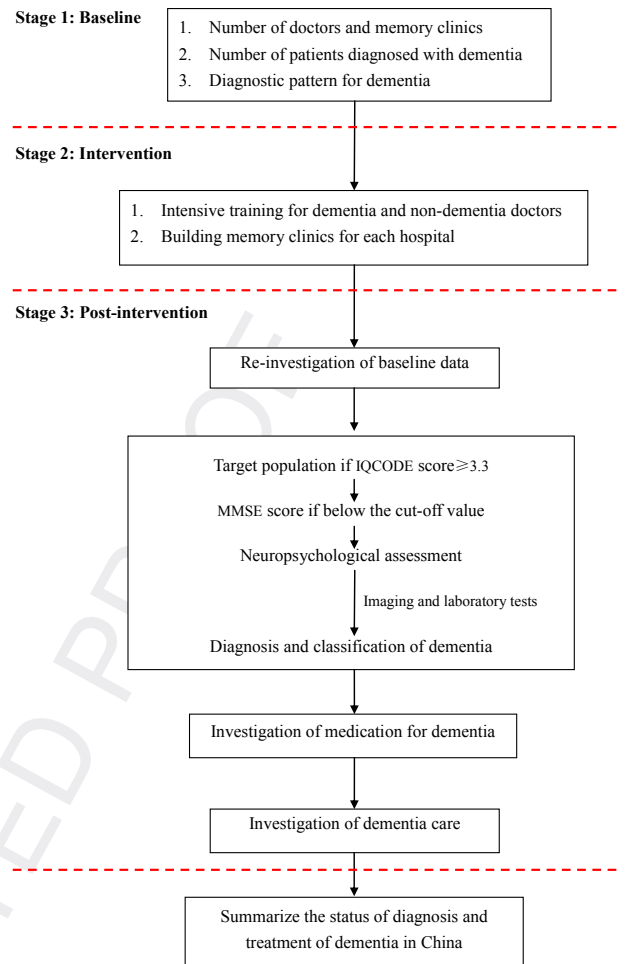

Fig. 1. Flowchart of dementia survey in 36 hospitals across China. Abbreviations: IQCODE, Informant Questionnaire on Cognitive Decline in the Elderly; MMSE, Mini-Mental State Examination.

patients who had been diagnosed with dementia as a first diagnosis.

2.2.2. Stage 2 (1 month): Intervention

2.2.2.1. Training program

A 1-month intensive dementia training program (8 h/d) was initiated in the national centers by 11 dementia experts with advanced experience, including neurologists and neuropsychologists from leading hospital and other dementia training centers. The training included theory and practice and comprised a study process, assessment of scales and internationally accepted diagnostic criteria for dementia and its subtypes, neuroimaging (computed tomography [CT] and MRI), standard diagnostic procedures, and corresponding dementia guidelines. Didactic and hands-on training was conducted through lectures and discussions, watching videos, and examining the skills of patients with cognitive disorders. The purpose was to address the following issues: (1) Doctors selected as candidate dementia doctors in memory clinics must have an advanced ability to