



Evaluating integrative medicine acute stroke inpatient care in South Korea



Minjung Park^{a,1}, Jennifer Hunter^{b,c}, Soonman Kwon^{a,*}

^a Graduate School of Public Health, Seoul National University, 1 Kwanak-ro, Kwanak-gu, Seoul, 08826, Republic of Korea

^b NICM, School of Science and Health, Campbelltown Campus, Western Sydney University, Locked Bag 1797, Penrith, NSW, 2751, Australia

^c Menzies Centre for Health Policy, D17 Charles Perkins Centre, University of Sydney, NSW, 2006, Australia

ARTICLE INFO

Article history:

Received 10 April 2017

Received in revised form 29 July 2017

Accepted 10 February 2018

Keywords:

Korean traditional medicine

Integrative medicine

Stroke

Quality of care

Health care utilization

ABSTRACT

High demand for traditional Korean medicine led to a policy change in 2010 allowing hospitals to provide Integrative medicine care that combines Western medicine and Korean medicine. This study evaluated the effects of Integrative medicine compared to Western medicine-only for managing acute stroke in South Korean hospitals.

A retrospective matched case-control observational study was conducted for acute stroke patients admitted nationwide in 2012 and 2013. Propensity score matching was used to adjust for the likelihood of selecting Integrative medicine. Hierarchical generalized linear models were used to control for patient characteristics at the episode of care (level 1) and cluster effects from the hospitals (level 2).

A total of 1182 patients and 65 hospitals were matched and analyzed. Receiving Integrative medicine significantly increased the average length of stay (OR 1.27; 95% CI 1.13–1.42), total cost of inpatient care (OR 1.93; 95% CI 1.62–2.31), and per-day cost (OR 1.34; 95% CI 1.21–1.47). Receiving Integrative medicine did not affect all-cause 3-month emergency readmissions (OR 1.36; 95% CI 0.92–2.02). However, Integrative medicine was associated with a reduced risk of all-cause mortality at 3 months (OR 0.36; 90% CI 0.13–0.99) and 12 months (OR 0.34; 95% CI 0.15–0.75) after admission.

Receiving Integrative medicine was associated with improved 3-month and 12-month survival, greater healthcare utilization and higher costs. Further economic evaluations are needed to guide policy for efficient integration of Korean medicine and Western medicine.

© 2018 Elsevier B.V. All rights reserved.

1. Introduction

Traditional and Complementary medicine (T&CM) is used in almost every country in the world and demand is not abating. The potential benefits of T&CM are often underestimated by health service policy makers. In response, the World Health Organization (WHO) has called on Member States to engage in strategies for the appropriate regulation and integration of T&CM [1].

The Republic of Korea (South Korea) has kept the heritage of traditional Korean medicine (KM) through establishing a parallel health system that coexists alongside Western medicine (WM).

Each has their own six-year undergraduate education and subsequent licensing examination. Initially, hospitals either provided KM only or WM only, but they were not combined. The 2010 revision of the Medical Service Act allowed hospitals to formally integrate KM with WM services. Since then, an increasing number of hospitals are providing integrative medicine (IM) healthcare. As a new delivery healthcare model, the effects of IM on the health service utilization patterns, economic burdens and health outcomes warrant evaluation.

Cerebrovascular disease (stroke) is one of the diseases that is most frequently treated by IM [2] and is the second most common cause of death in South Korea incurring a huge financial burden [3]. The clinical pathways and prognosis of stroke are well described in the literature, including methodologies for evaluating the outcomes of in-patient care that are used to compare management programmes and hospital performance [4–6]. Those conditions enable reliable stroke outcomes research on IM using observational data. Structurally each stroke in-patient episode is clustered across

* Corresponding author.

E-mail addresses: mjimage@hanmail.net (M. Park),

jennifer.hunter@westernsydney.edu.au (J. Hunter), kwons@snu.ac.kr (S. Kwon).

¹ Present address: Guideline Center for Korean Medicine, National Development Institute of Korean Medicine, Namsan Square 12F 173 Toegye-ro, Jung-gu, Seoul, 04554, Republic of Korea.

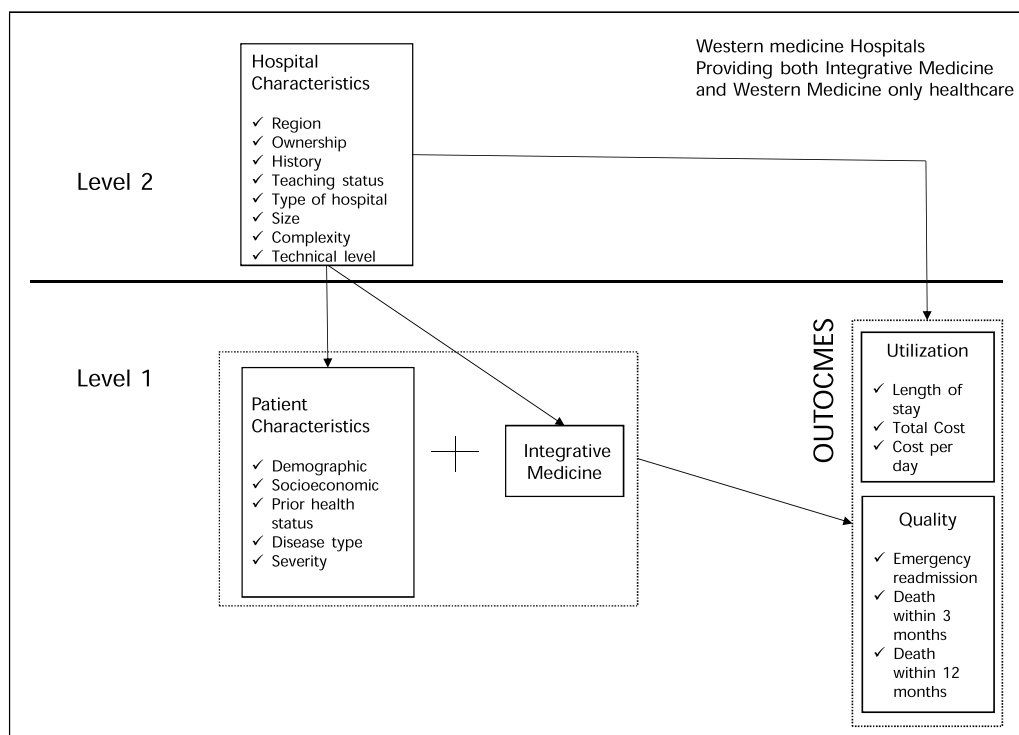


Fig. 1. Conceptual Model for statistical analyses.

hospitals where the patient admitted. Single-level models are inappropriate because episodes of care from the same hospital contexts will likely have correlated errors. A multilevel modeling technique was selected for the present study because of the data structure and assumption that multilevel modeling procedures account for non-independence of observations in the same upper level group. It helps to predict the generalized average effect of IM regardless of hospital context.

Since 1977, South Korea introduced the universal national health insurance (NHI) program and has extended its coverage to all its citizens with an equal and essential benefit package. The electronic claims data of NHI provides database containing descriptions of services that are provided in all medical institutions and reimbursed by the NHI. Using this data, important public health policy could be evaluated on a nation-wide scale through quasi-experimental design. One concern with the stroke outcomes research using claim data is the usual baseline imbalance between groups. Statistically the propensity score adjusts for the systemic differences of observables in receiving treatment and could have the case and control groups more equivalent. As the methodology conditions on observables, the situation is as if the patients were only selected to be a member of each group on the basis of observable characteristics [7].

The purpose of this study was to build on established methodologies to evaluate the effects of IM inpatient care compared to WM-only for managing acute stroke in South Korean WM hospitals that offer both models of healthcare.

2. Materials & methods

2.1. Study design

A nationwide retrospective, matched case-control, observational study was conducted to evaluate healthcare utilization and quality of care in IM acute stroke in-patient care compared to WM-only. The institutional review board of Korean Institute of Oriental

Medicine provided human research ethical approval for the study protocol (1-1407/004-001-001).

2.2. Statistical analysis

Outcomes from stroke will be influenced by individual patient characteristics, type of healthcare received and cluster effects from the hospital where the patient is admitted. Two-level hierarchical linear modeling (HLM) were used to calculate the propensity scores for matching cases with controls and to evaluate the effects of IM hospital care.

Hierarchical or multilevel modeling facilitates the analysis of data where observations may be nested within higher levels of classification. By partitioning the sources of variation between levels, more precise estimates of organization-specific effects can be calculated [8,9]. HLM is therefore the recommended method to adjust for the potential cluster effects that a hospital may have on patient outcomes [10–12].

Fig. 1 outlines the conceptual model used in the statistical analyses. The purpose of this study was to evaluate the effect of IM inpatient care delivered by hospitals. Patients who met the inclusion criteria for an acute stroke could however be admitted to more than one hospital, so an inpatient episode of care rather than an individual patient was used for Level 1 analysis [13]. Statistical analyses were conducted using SAS[®] ver. 9.4.

2.3. Data and variables

2.3.1. Data sources

Patient characteristics data for level 1 was sourced from the Korean National Health Insurance Service (NHIS)'s Eligibility database and Reimbursement Claim database. These datasets cover more than 97% Korean population and contains beneficiaries' health service utilization such as type of services and interventions, diagnostic codes (ICD-10), the number of consultation, and medical expenses, disease severity, as well socio-demographic information.

Download English Version:

<https://daneshyari.com/en/article/8817959>

Download Persian Version:

<https://daneshyari.com/article/8817959>

[Daneshyari.com](https://daneshyari.com)