Archives of Psychiatric Nursing xxx (xxxx) xxx–xxx

Contents lists available at ScienceDirect

Archives of Psychiatric Nursing

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

Exploring predictors of medication adherence among inpatients with schizophrenia in Singapore's mental health settings: A non-experimental study

Xiang Cong Tham[a,*], Huiting Xie[a], Cecilia Mui Lee Chng[c], Xin Yi Seah[d], Violeta Lopez[b], Piyanee Klainin-Yobas[b]

[a] Institute of Mental Health, Singapore
[b] Alice Lee Centre for Nursing Studies, Yong Loo Lin School of Medicine, National University of Singapore, Singapore
[c] National University Hospital, Singapore
[d] Singapore General Hospital, Singapore

ARTICLE INFO

Keywords:
Schizophrenia
Adherence
Factors
Predictors

ABSTRACT

Schizophrenia is a mental disorder, which is marked by frequent relapses. The main reason for relapse is non-adherence to antipsychotics. A cross-sectional, correlational research study was conducted with a convenience sample of 92 participants. The primary aim of this study was to explore the predictors of medication adherence among inpatients with schizophrenia hospitalised at tertiary hospitals in Singapore. Post-hoc analysis revealed that insight, religion, side effects, types of antipsychotics, social support from significant others, nurse-client relationship, were significant predictive factors. Results from this study added knowledge to the nursing literature about medication adherence of schizophrenia patients and in Singapore setting.

Introduction

Background

Schizophrenia is a psychotic disorder (American Psychiatric Association, 2013). Persons with schizophrenia may experience hallucinations, delusions, disorganized behaviours, negative symptoms and disturbance in social functioning (American Psychiatric Association, 2013). Schizophrenia consists of a range of features. Patients may display improper affect and delusions and as a result, fear and worry may follow (American Psychiatric Association, 2013). Cognitive impairments may occur in individuals and are usually seen through behaviours such as inability to remember and communicate (American Psychiatric Association, 2013). Lack of insight is also common among individuals, but it is known as a symptom rather than a coping mechanism, and this symptom is one of the predictors of medication non-adherence (American Psychiatric Association, 2013). Individuals may sometimes be aggressive such that it will lead to violence; however, this feature is presented only in the minority (American Psychiatric Association, 2013).

Schizophrenia has a prevalence rate of 0.5%–0.7% globally (American Psychiatric Association, 2013), while the prevalence rate in Singapore is 0.7% (Ministry of Health, 2009). In Singapore, schizophrenia is the 10th leading cause of disability, comprising of 2.7% of disability-adjusted life years (Ministry of Health, 2014), indicating that it is a crippling disorder.

Schizophrenia requires long-term treatment, which is unique to individuals and usually comprised of antipsychotics and psychosocial interventions (Ministry of Health, 2011). Antipsychotics comprise of two classes: typical and atypical (Meltzer, 2013). Typical antipsychotics are first-generation antipsychotics such as haloperidol and fluphenazine, while atypical antipsychotics are second-generation antipsychotics such as risperidone and olanzapine. Psychosocial interventions for schizophrenia patients are cognitive-behavioural therapy, compliance therapy, and psychoeducation (Velligan et al., 2009). Despite the available treatment, schizophrenia is also marked by frequent relapses and remissions (American Psychiatric Association, 2013).

The main reason for relapse is nonadherence of antipsychotics (American Psychiatric Association, 2013) which is estimated to be about 50% (Lacro, Dunn, Dolder, Leckband, & Jeste, 2002).

World Health Organisation (2003) definition of adherence as “the extent to which a person's behaviour taking medication, following a diet, and/or executing lifestyle changes, corresponds with agreed recommendations from a healthcare provider” (p. 3). Therefore, in this

* Corresponding author at: Nursing Training Department, Institute of Mental Health, 10 Buangkok View, Buangkok Green Medical Park, 539747, Singapore.
E-mail address: tham.xiangcong@gmail.com (X.C. Tham).

https://doi.org/10.1016/j.apnu.2018.02.004
Received 24 January 2017; Received in revised form 18 January 2018; Accepted 11 February 2018

study, medication adherence is determined as behaviour to follow medication prescriptions (antipsychotics) as ordered by physicians.

Empirical evidence suggested that medication adherence is associated with various factors and these factors can be classified into four categories: patient-related, medication-related, illness-related, and external/environment factors (Abdel-Baki, Ouellet-Plamondon, & Malla, 2012). Firstly, patient-related factors are elements or behaviours knowingly or unknowingly caused by the patients themselves. Examples of these factors are age (Sweileh et al., 2012), education status (Linden, Scheel, & Eich, 2006), and insight (Moritz et al., 2013). Secondly, medication-related factors are factors caused by or linked to psychiatric or nonpsychiatric medications such as number of medications (Mullins, Obeidat, Cuffel, Naradzay, & Loebel, 2008), and side effects of medications (McCann, Boardman, Clark, & Lu, 2008). Thirdly, illness-related factors are any disabilities, disorders or clinical features which are explainable by science such as psychotic symptoms (Yang et al., 2012) and chronic medical illnesses (Sweileh et al., 2012). Fourthly, external/environmental factors are extrinsic forces which may affect an individual well-being. Examples of these factors are social support (Yang et al., 2012), access to psychiatrists (McCann, Clark, & Lu, 2009), living area (McCann, Deans, Clark, & Lu, 2008), and healthcare plan (Farley, Hansen, Kristina, & Maciejewski, 2012).

Literature review

A literature search for published studies was performed to identify the knowledge gaps and methodological limitations in the literature before the research study was conducted. Results from the literature review revealed six factors of medication adherence such as greater awareness of illness (insight), previous history of medication adherence, positive attitude towards medication, types of atypical antipsychotics, less severe psychotic symptoms, and social support (Tham et al., 2016). Knowledge gaps identified were lack of research studies conducted in inpatient settings; no studies used theoretical frameworks which are essential in guiding the progress of the studies, and relating the findings to the available nursing knowledge and real life applications (Burns & Grove, 2009); no studies explored the therapeutic relationship of nurses and their clients affecting medication adherence; unclear conclusion about the extent of social support affecting medication adherence; not enough studies conducted in Asian countries especially in Singapore. Moreover, the methodological limitations in the literature were that no studies used power analysis to determine sample size; few studies used normality tests; most studies used one categorical factor instead of four categories. Therefore, this research study was designed to address the aforementioned knowledge gaps and methodological limitations in the literature.

Study's aims

The primary aim of this study was to explore the predictors of medication adherence among inpatients with schizophrenia at tertiary hospitals in Singapore. The secondary aim was to examine the relationship between nurse-client relationships and patients' insight.

Hypotheses

The researcher hypothesized:

a) Patient-related factors had significant predictive effects on medication adherence among inpatients with schizophrenia in Singapore.
b) Medication-related factors had significant predictive effects on medication adherence in Singapore.
c) Illness-related factors had significant predictive effects on medication adherence in Singapore.
d) External/environmental-related factors had significant predictive effects on medication adherence in Singapore.
e) Nurse-client relationship had a significant relationship with patients' insight among inpatients with schizophrenia in Singapore.

Two tertiary hospitals in Singapore were selected as research settings in this study.

Data was collected from 5 November 2014 to 11 March 2015 from these hospitals. Post-hoc analysis was conducted on 5 December 2016.

Theoretical Framework

The Socio-ecological Model (SEM) (McLeroy, Bibeau, Steckler, & Glanz, 1988) was used to guide this study. The SEM is a theoretical framework that focuses on health behaviours as outcomes of interests. The SEM consists of five constructs including intrapersonal factors (IRPs), interpersonal processes and primary groups (IPs), institutional factors (IFs), community factors (CFs) and public policies (PPs) (McLeroy et al., 1988), which health interventions can focus on. IRPs are personal characteristics of the individual found within self and involve physiological processes. Both patient-related and illness-related factors coincide with intrapersonal factors. CFs refer to geographical boundaries and the only factor identified is the living areas in which the patients live in. IFs are organisations or institutions in which individuals reside; these factors concur with “access to psychiatrists” and medication-related factors. IPs emphasize on relationships between individuals and coincide with social support and nurse-client relationship. Lastly, PPs are policies that are implemented within the country and are related to healthcare plan and co-payment policies. CFs, IFs, IPs and PPs correspond with external/environmental factors. Each of these five constructs has the ability to effect a change in health behaviour. When changes are made in the five constructs together as whole, the change in health behaviour is much more significant compared to changes to one of the five constructs individuals (McLeroy et al., 1988). Fig. 1 has been constructed for better illustration.

The secondary aim of this study is to examine the relationship between nurse-client relationships (an external/environmental factor) and patients' insight (a patient-related factor). This aim coincides with Hypothesis (e). Based on the SEM, the researcher postulates that IRPs and IPs will also have a relationship with each other. There are no factors belonging to CFs, IFs, and PPs, explored in this study. As such their relations with external/environmental factors are in long dash dot lines instead of solid lines. Fig. 2, which incorporates Hypothesis (e), has been constructed for better illustration.

Methodology

Research design

This study adopted a cross-sectional and correlational research design. Convenience sampling was used to recruit potential participants. Data in this study was collected using self-reported questionnaires.

Participants were recruited from two Singapore tertiary hospitals (Hospital A and Hospital B). Hospital A is a 2000-bed public mental health institution which has 50 wards. Data in this study were collected from nine acute general psychiatric wards (Hospital A) which manage patients with schizophrenia, and other psychiatric disorders such as depression, bi-polar disorders, behavioural disorders and nonorganic psychosis. Five of them were male wards while the rest were female. Hospital B is a public general hospital, which only has one 23-bed psychiatric ward admitting patients with schizophrenia, mood disorders, and anxiety disorders and among others.

Study samples

Potential participants were invited to the study if they were: a) adult inpatients (aged between 21 and 60) who had been diagnosed with schizophrenia for this hospitalisation by their attending psychiatrists, b)