VALUE IN HEALTH REGIONAL ISSUES 2 (2013) 107–117

Available online at www.sciencedirect.com

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

Health-Related Quality of Life among Nonprescription Medicine Customers in Malaysia

Asrul Akmal Shafie, PhD, Mohamed Azmi Hassali, PhD, Abdul Haniff Mohamad Yahaya, MPharm (Clinical Pharmacy)*

Discipline of Social and Administrative Pharmacy, Universiti Sains Malaysia, Penang, Malaysia

ABSTRACT

Objective: To describe the health-related quality of life (HRQOL) among nonprescription medicine customers in Malaysia and the factors that affect it. **Methods:** A nationwide cross-sectional survey was conducted among pharmacy customers in 59 randomly selected community pharmacies in Malaysia. The self-administered questionnaire included the EuroQoL five-dimensional (EQ-5D) questionnaire, the EuroQol visual analogue scale (EQ-VAS), nonprescription medicines purchase, and demographic questions. Data were analyzed by using the multivariate analysis of variance and multiple logistic regressions. **Results:** A total of 2729 customers enrolled in this study, with a mean EQ-5D questionnaire score of 0.92 ± 0.15 and a mean EQ-VAS score of 69.92 ± 24.80. Compared with the Malaysian adult population, nonprescription medicine customers have a lower mean EQ-5D questionnaire score ($t = -4.49$, $P < 0.01$) and EQ-VAS score ($t = -25.87$, $P < 0.01$). We found that pain/discomfort (25.6%) and anxiety/depression (13.7%) were the major HRQOL problems. Locality, age, ethnicity, household income per month, type of occupation, and type of nonprescription medicine purchased were associated with health status of nonprescription medicine customers ($F_{22,5286} = 2.555$; Wilks' lambda = 0.979; $P < 0.01$). **Conclusions:** The HRQOL of nonprescription medicine customers is lower than that of the general Malaysian population. Lower health status was independently associated with older age, living in rural areas, having low income and education level, and purchasing blood and blood-forming medicines from community pharmacy.

Keywords: EQ-5D, health-related quality of life, Malaysia, nonprescription medicine.

Introduction

Population health status is an important measure in public health and is widely used by policymakers in making population health and equity decisions [1]. Traditional health status measurements such as life expectancy were widely criticized as being too focused on quantity and being detached from the health concept defined as "a state of complete physical, mental and social well-being" by the World Health Organization [2]. Therefore, the health-related quality of life (HRQOL), a multidimensional construct of individuals' perception of the impact of disease and treatment on their physical, psychological, and social well-being, is fast becoming an important health status measurement [3]. It could be influenced by the social, economic, and physical environments, personal health practices, individual capacity and coping skills, human biology, early childhood development, and health service [4]. The HRQOL measurement is now used not only as an epidemiology indicator of a population but also as a distributional basis for health services and products [5]. A number of instruments for measuring the HRQOL were developed to include the theoretical constructs from psychology, medicine, and economics, and the instruments may be broadly categorized into specific and generic instruments, depending on the specificity of the instrument.

In the current public health framework, the importance of medication as a determinant of citizens' health has emerged as a factor warranting special attention. Furthermore, the consumption of drugs without medical prescriptions has risen to a significant level, a development that may, in turn, have serious consequences on the individual and collective health of the population [6]. In Malaysia, the unavailability of dispensing right has blurred the distinction between prescription and nonprescription medicine market, because general prescribers can both prescribe and dispense, which has—in the past—made market estimation difficult to made. Pharmacists, however, remain the source of nonprescription medicine, having accounted for 38% of the total pharmaceutical sales in 2004. It was estimated that the value of nonprescription medicines reached Ringgit Malaysia (RM 1.17 billion (US $332 million) in 2009 (27.2% of the total pharmaceutical market) and is forecast to expand to RM 1.94 billion (US $557 million) in 2014 (30.8% of the total market) [7]. The growth of the nonprescription medicines market in this country was driven by greater willingness to self-medicate and increased knowledge about disease and medical treatments. Urbanization,

Conflict of Interest: The authors have indicated that they have no conflicts of interest with regard to the content of this article.

* *Address correspondence to:* Asrul Akmal Shafie, Discipline of Social and Administrative Pharmacy, School of Pharmaceutical Sciences, Universiti Sains Malaysia, 11800 Minden, Penang, Malaysia.

E-mail: aakmal@usm.my.

2212-1099/$36.00 – see front matter

http://dx.doi.org/10.1016/j.vhri.2013.02.005

lifestyle changes, and increased number of middle-to-upper income group in the population were among the factors that led to a strong demand for nonprescription medicines [8].

There were few studies that studied the HRQOL among the general population. The study using the short-form 36 health survey found that the general health of Malaysians was lower compared with the people of developed countries such as the United States, Canada, and Australia. The dissimilarities of methodology might reflect the differences [9]. A study using the EuroQol five-dimensional (EQ-5D) questionnaire among adult population found that those suffering from medical problems tend to have poorer health and more problems in EQ-5D questionnaire dimensions and lower EuroQol visual analogue scale (EQ-VAS) and EQ-5D questionnaire scores [10]. The results of both studies showed that there is need for more knowledge about the relationship between HRQOL and medicines used in Malaysia. Because the nonprescription medicine customers reflect the self-medication practices, the measurement of the HRQOL in this population is an important public health endeavor that could be used to inform health policymaking. In fact, an individual's well-being may be an important predictor of nonprescription medication use [11]. Previous studies on this topic may not be generalizable to a developing country such as Malaysia, which has different medical consumption patterns, income levels, and cultural settings [11,12]. Thus, this study was conducted to compare the quality of life of community pharmacy customers in Malaysia with that of the general population.

In the present study, the quality of life among community pharmacy customers in Malaysia was described by using a generic HRQOL instrument, that is, the EQ-5D questionnaire, which measures health status in five dimensions with three different severity levels, and the VAS, the EQ-VAS [13]. In addition to the descriptive measurement of the HRQOL using both the EQ-5D questionnaire and the EQ-VAS, this study aimed to describe the demographic factors that affected the customers' HRQOL.

Methods

Study Design

A cross-sectional study was conducted to describe the HRQOL among community pharmacy customers from May to June 2008 in different states of Malaysia. A pharmacy "exit survey" was developed and administered to patrons who consented to participate in this study. The community pharmacies were randomly selected from all states in Malaysia. The eligibility criteria for the survey respondents included being 16 years of age or older and having bought nonprescription medicines. Trained data collectors administered the survey to the participants, and all items were collected on the same occasion for each participant.

In Malaysia, legislation requires that all medicines in a pharmaceutical dosage form are to be registered with the Drug Control Authority prior to being manufactured, imported, sold, or supplied. The medicines listed in groups A and B in the Poison Act 1952 could be sold or supplied only with prescription. On the contrary, the nonprescription medicines encompassed pharmaceutical products that contained scheduled poisons as defined in the Poison Act 1952 (group C), unscheduled poisons, and nonpoisons [14]. Group C poisons should be sold or supplied only by a pharmacist (also known as pharmacist-only medicines). The nonpoison items include products containing one or more naturally occurring plant-, animal-, or mineral-based ingredient(s) and all homeopathic remedies. Retail outlets can sell or supply unscheduled poisons and nonpoisons (over-the-counter medicines). For the purpose of this study, the nonprescription medicines were defined as any pharmacist-only medicine and over-the-counter medicine purchased by pharmacy patrons.

In view of collecting the information that could represent the nonprescription medicine customers in Malaysia, it was calculated that the sample size of the respondents needed was 2564 pharmacy patrons based on a 95% confidence interval and a margin of error of 5%, with an estimated 70% response rate and a common design of four [15]. This study used a simplified cluster sampling method that allowed the random selection of 60 community pharmacy patrons in 50 clusters from all states in Malaysia. This method did not randomly select the consumers but instead required the interviewer to follow a particular path through the community, selecting every community pharmacy consumer over the duration of 10 days. Interviewers were instructed to invite pharmacy consumers only after a sale of nonprescription medicine was made. The participants would self-administer the EQ-5D questionnaires, while the interviewers recorded the purchased nonprescription medicines and demographic profiles. The interview sessions were undertaken outside of the pharmacy premises. Because the selection of 3000 participants was dependent on the most readily accessible or willing individuals as participants, it was performed on the basis of convenience and not on random assignment. Although this method had been shown to cause some biases, previous studies had highlighted its validity, and the method has been used in studies of a wide range of health and social issues [16–19].

Instrument

The EQ-5D questionnaire was used in this study because the results are applicable to a wide range of health conditions and treatments, because it provides both a compact descriptive profile and a single index value that can be used in the clinical and economic evaluation of health care, and because it was found to be a valid tool for assessing the HRQOL among Malaysians [10]. The simplicity of the tools, which do not take more than a couple of minutes to complete, is ideally suited for their use in this survey [13,20]. The EQ-5D questionnaire consists of two-part measurements: the five dimensions of health state classification and the VAS. The five dimensions were mobility, self-care, usual activities, pain/discomfort, and anxiety/depression, whereas the "thermometer" generated a self-rating of current HRQOL. Both measures were included in this study. The EQ-VAS was standardized by using the same graphical layout of the EQ-VAS with the height fixed to 20 cm.

The respondents were asked to self-rate their current health state by choosing the most appropriate of three statements about each of five quality-of-life dimensions. Each statement represented an increasing degree of severity. Level 1 represented no problems, level 2 represented some or moderate problems, and level 3 represented disability or extreme problems. The responses from each of the five dimensions defined 1 of 243 theoretically possible health states. The health states were coded as five-digit numbers. For example, 11111 indicated no problems on any of the five dimensions, whereas 11223 indicated no problems with mobility or self-care, some problems with performing usual activities, moderate pain or discomfort, and extreme anxiety or depression. In addition, the respondents were asked to rate their current health states by drawing a line from the box marked "Your health state today" to the appropriate point on the EQ-VAS. The EQ-VAS had end points of 100 at the top and 0 at the bottom. The 100 represented the best imaginable health state, whereas the 0 represented the worst imaginable health state [20].

The results for the health state classification and the EQ-VAS were converted to a score of 0 to 1 so that these results were more comparable among the variables and among the measurement tools. For the EQ-5D questionnaire health state classification,