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Defining and identifying concepts of medication literacy: An international perspective

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ABSTRACT

Background: Multiple concepts to define health literacy in the context of medication use exist, such as medication literacy, pharmacotherapy literacy, pharmacy health literacy; however, no studies have looked at consensus among experts internationally.

Method: A Delphi process was used to achieve consensus on the statements about medication literacy. Experts for the Delphi were selected from a review of the literature and suggestions from an international survey conducted with members of the International Pharmaceutical Federation on medication literacy. The preliminary Delphi questionnaire was built using the statements about medication literacy found in the scientific literature. Responses and comments were analyzed using a pre-established method and communicated to the experts after each round of Delphi. Statements with an agreement of at least 80% were accepted and used to develop a definition of medication literacy.

Results: The Delphi process started with 21 experts and included 4 rounds. Overall, 30 statements regarding medication literacy were accepted and divided into 4 clusters representing: (1) type of information necessary for optimal and safe use of medication, (2) skills and abilities, (3) format of information, and (4) outcomes. These statements were used to propose 2 different definitions of medication literacy. One of the definitions was preferred by 75% of the expert panel, which provided further comments for improvements. Of the 11 experts who answered the final questionnaire, nine strongly agreed with the refined definition.

Conclusion: Medication literacy is the degree to which individuals can obtain, comprehend, communicate, calculate and process patient-specific information about their medications to make informed medication and health decisions in order to safely and effectively use their medications, regardless of the mode by which the content is delivered (e.g. written, oral and visual). Future studies should focus on how this definition can be operationalized to support the role that pharmacists and other healthcare providers.

1. Introduction

While medications play a primary role in the management of most diseases, they also account for one of the most common types of adverse health-related events.¹ These adverse drug events can cause significant morbidity and mortality and are associated with large economic costs.^{2–7} Preventable adverse drug events after hospital discharge may be caused by inappropriate medication prescribing, discrepancies between prescribed and actual regimens, poor adherence and inadequate patient education.^{8–12} Preventable adverse drug events can be caused by a poor understanding of medication instructions, which in turn, is highly influenced by health literacy.^{1,13–21} The tasks related to the use of medications are complex.^{22–24} In order to properly use their

medications, individuals are required to read their medication labels, read the associated medical information, comprehend the instructions, and sometimes calculate the proper dose to take. Patients are also required to decide what actions are required in the case of a missed dose or side effects.

Framed within the public health context, health literacy is defined as “the degree to which individuals can obtain, process, understand, and communicate about health-related information needed to make informed health decisions”.²⁵ In the United States, it is reported that 90 million adults have difficulty understanding health-related information and lack the necessary skills to manage their health adequately.¹⁸ In Canada, it is estimated to be 11.5 million adults and a recent survey of European countries suggests that nearly half of all adults have

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Table 1
Terms used to discuss health literacy in the context of medication use.

| Terms | Authors (year) | Definition |
|--------------------------|---|--|
| Medication literacy | Raynor (2009) ¹³ | A person's ability to make decisions about medicines that are right for them, allowing the medicines' safe and effective use. |
| | Sauceda et al. (2012) ²³ | Ability of individuals to safely and appropriately access, understand and act on basic medication information. |
| Pharmacy health literacy | Agency for Healthcare Research and Quality-AHRQ Pharmacy Health Literacy Center ³³ | The degree to which individuals are able to obtain, process, and understand basic health and medication information and pharmacy services needed to make appropriate health decisions. |
| Pharmacotherapy literacy | King, McCaffrey, Bouldin (2011) ²⁴ | An individual's ability to obtain, evaluate, calculate, comprehend basic information about pharmacotherapy and pharmacy related services to make appropriate medication-related decisions, regardless of the mode of content delivery (e.g. written, oral, visual images and symbols). |

inadequate health literacy skills.^{26,27} The average literacy rate for Africa was 63% in 2015 and one third of the population cannot read and write; data on health literacy is scarce.²⁸ A recent study examining the health literacy levels in 14 sub-Saharan countries suggests that health literacy levels in adults aged 15–49 years old vary from 8.5% to 63.9%.²⁹

The use of the health literacy concept in the context of pharmacy and medication use is not new, and the increased interest has led academics and pharmacists to use more narrowed and specific terms to discuss health literacy in the context of medication use. These include “medication literacy”, “pharmacy health literacy” and “pharmacotherapy literacy”, all of which are presented in Table 1.^{22,30–33} The definition provided by King et al. (2011) seems to be the most rigorous definition available to date and was developed using a survey of licensed pharmacists in Mississippi and an expert panel of doctoral-trained academics and practicing pharmacists.³³ The study conducted by King et al. (2011) has paved the way to defining health literacy in the context of medication use by establishing the components and the individual skills required to responsibly use medication. However, the scope of the definition may be limited to the context of the United States in the sense that pharmacy practices and legislations vary considerably around the world. In order to help pharmacists around the world recognize the importance of health literacy in the context of medication use, one of the first steps is to find consensus among international experts on the definition of medication literacy. Furthermore, placing the individual's ability as the focus of medication literacy fails to recognize the important roles and responsibilities that healthcare providers and the pharmaceutical industry play in the delivery of medication information and counselling. Redefining medication literacy and identifying its constituents will provide guidance for pharmacists on what essential information about medication should be communicated to patients with limited health literacy. We hope that an international consensus on a definition of medication literacy will set the stage for the widespread adoption of tools that pharmacists and the pharmacy industry can use to improve the quality of information provided to patients and to advocate for a shared responsibility between patients and healthcare providers for the development of medication information. For this, the definition needs to be actionable and to identify system-level factors to ensure that the population can easily access and make medication-related decisions.

2. Methods

To reach consensus on the statements and a definition of medication literacy, a Delphi consensus approach was used (Fig. 1). Current definitions identified in the literature using Pubmed, EBSCO and Google Scholar (Table 1) were assessed and statements about medication literacy extracted to draft the preliminary Delphi questionnaires. The Delphi method is designed as a group communication process that aims to achieve a convergence of opinions on a specific real-world issue. It is an iterative technique that allows participants to form initial judgments

about a specific issue, and then reassess and reform their judgments based on feedback provided from other participants in previous rounds.³⁴ This Delphi process was divided into three phases: 1) brainstorming, 2) statement narrowing and 3) refinement. The brainstorming phase included an international survey to identify experts and statements about medication literacy. The surveys were administered using REDcap (Research Electronic Data Capture), a secure web-based application for building and managing online surveys.³⁵

2.1. Participants for the international survey

For the international survey about medication literacy, pharmacists and pharmacy technicians were invited to participate because of their expertise in the skills and knowledge required for patients to adequately understand drug-related information. As well, it is believed that pharmacists can play a key role in supporting health literacy in the context of medication use.^{22,23,33,36} A letter of invitation was emailed to members of the International Pharmaceutical Federation (FIP), the global organisation for pharmacists and pharmaceutical scientists, inviting them to complete the International Consultation on Medication Literacy (questionnaire). In addition, the letter of invitation was distributed through FIP social media including, Twitter and Facebook.

2.2. Panel of experts

Potential members for the panel of experts were identified through a review of relevant literature and the responses to the international survey on medication literacy (self-identified or suggested). It is usually recommended to have a group size of 18–20 to conduct a Delphi study.³⁷ Anticipating a decrease in participation with each round of the Delphi process we aimed for 30 participants and thus a letter of invitation was sent to 50 self-declared experts and those identified by a peer as an expert in the field. Experts were identified based on their leadership in publication, education, professional interest and participation in the area of health literacy in the context of medication use. Participants were provided with the project objectives and guidelines on how to complete the Delphi questionnaires.

2.3. Development and administration of questionnaires

During the brainstorming phase, a literature review about medication literacy was conducted and utilized to identify current definitions of medication literacy or other related terms (i.e., pharmacy health literacy, pharmacotherapy literacy). This made it possible to build an international survey about medication literacy that was administered in February 2016. The international survey included 22 statements about medication literacy found in the literature divided into 4 categories: (1) type of information necessary for optimal and safe use of medication (i.e., dose, frequency, side effects, precautions); (2) skills necessary for optimal and safe use of medication (i.e., reading, calculating, searching for more information); (3) format of information and pharmacy services

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