



Research

An educational strategy to enhance pharmacy students' attitudes toward addressing health literacy of patients

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Abstract

Objectives: Evaluate the impact of an educational intervention based on Theory of Planned Behavior (TPB), on enhancing pharmacy students' attitudes toward health literacy, perceived behavioral control and intentions concerning communicating with patients possessing inadequate health literacy.

Methods: This TPB-based, educational approach consisted of two 50-minute sessions and employed a pretest/posttest control group design. During the first session, experimental students were provided a 50-minute presentation and two out-of-class assignments. The second session included discussion of the assignments, in-class demonstrations, and small group learning activities. The intervention was administered to third year pharmacy students ($n = 40$). Second year pharmacy students ($n = 42$) served as controls. Three scales measured the TPB constructs.

Results: Analyses revealed significant improvements over time within the experimental group for attitudes toward health literacy ($p = 0.033$) and perceived behavioral control concerning communicating with patients possessing inadequate health literacy ($p = 0.033$). Intentions to communicate were high for both groups at pretest and no differences were found to exist for this construct in any analyses.

Conclusions: Given the number and severity of negative health related consequences associated with inadequate health literacy, it is imperative that schools of pharmacy be proactive and in preparing students to address patients' health literacy needs. This TPB-based, educational intervention may assist other pharmacy programs in their efforts of incorporating health literacy into their curriculums. The intervention may also be modified and implemented in advanced pharmacy practice experiences, residency programs and continuing education programs.

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Introduction

Based on the findings of a recent national adult literacy survey, approximately one half of the US adult population may lack the reading or computational skills needed to effectively navigate the complex nature of the US health care system.^{1–3} Health literacy is defined as “the degree to

which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions.”⁴ Results of the 2003 National Assessment of Adult Literacy (NAAL) indicated that 14% of American adults possessed “below basic” health literacy, with an additional 22% possessing only “basic” health literacy skills.⁵ From a pharmacist's perspective, the most important finding of the 2003 NAAL is that more than 90 million Americans find it difficult to comprehend vital health information such as dosage instructions on medication containers.^{5,6}

Evidence exists in the literature supporting the link between limited health literacy, inappropriate medication

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use, and poor health outcomes.^{7–15} However, one challenge associated with poor health literacy is the identification of affected individuals. The limited literacy skills of patients often go undetected by health care professionals, in part because the problem is so widespread and can affect anyone. While education is important, it is known that education level alone is not shown to appropriately determine an individual's health literacy skill.¹⁶ Because many patients do not admit readily, or at all, to possessing inadequate literacy, and given affected individuals cannot be discerned visually, inadequate health literacy is described as a "quiet disability."¹⁷

The ability to comprehend written health information, such as that found on medicine bottles, is an important component of any health care experience.¹⁸ As a result, limited functional literacy skills may keep patients from ultimately receiving the care they need. Health care professionals, including pharmacists, often take for granted their patients' ability to read prescription information, health forms, and other health related publications, and also overestimate what patients can comprehend.¹⁷ Given that a large portion of patients read with only marginal literacy skill, it is often difficult for them to comprehend written health information such as that pertaining to dispensed medicine. For instance, pharmacists expect their patients to consume their medications as directed and properly follow any pharmaceutical care plan. In order to meet these expectations, it is important that patients possess not only adequate information, but also appropriate reading, computational, and self-management skills to utilize that information.^{19,20}

The Institute of Medicine has emphasized that the improvement of health literacy in the United States depends on the collective efforts of all sectors. It is their belief that professional schools and continuing education programs in the health fields must incorporate health literacy into their curricula and areas of competence.²¹ However, little published research addressing this issue exists in the pharmacy education literature.²² The inclusion of active learning exercises and classroom educational strategies have been demonstrated to be an effective means of teaching pharmacy students the concepts associated with the health literacy of patients²³ as well as enhancing pharmacy students' knowledge concerning health literacy.²² However, it is believed using a theoretical approach to guide the development of such pedagogical interventions will more effectively prepare students for interactions with patients possessing inadequate health literacy and serve as a foundation for the development of future interventions.

Because of the concern that pharmacy students may leave their respective programs unprepared to understand and address the impact of low health literacy, the National Work Group on Health and Literacy issued a call for pharmacists and pharmacy students to become better prepared to address the correlation between literacy and health and to acquire the skills necessary to communicate effectively with low health literate patients concerning their medication regimens.^{19,24} It is believed that given their

status within the community as experts on medications, pharmacists are in a unique position to identify and assist patients possessing inadequate health literacy through counseling and other patient interactions. Given the number and severity of negative health related consequences associated with inadequate health literacy, it is imperative that schools of pharmacy be proactive and better integrate health literacy into the curriculum.

Objective

The purpose of this investigation was to evaluate the impact of an educational intervention, based on the Theory of Planned Behavior (TPB), on enhancing pharmacy students' attitudes, perceived behavioral control and intentions concerning identifying and communicating with patients possessing inadequate health literacy.

Conceptual framework

In order to direct attention to the most important concepts and skills and create a more organized learning process, a theoretical approach was used to guide the intervention.^{25,26} The Theory of Planned Behavior (TPB)²⁷ served as the basis for this investigation, as it has been widely cited in the literature as an effective model for eliciting behavior change and assessing intention to perform a given behavior. The TPB is an extension of the Theory of Reasoned Action²⁸ that suggests the strongest predictor of behavior is an individual's intention to perform the given behavior. The TPB postulates that intention to perform a behavior is influenced by three psychological factors: attitude, subjective norm, and perceived behavioral control. Therefore, the theory hypothesizes, the greater an individual's perceived behavioral control, attitude, and subjective norm, the greater his or her intention to perform the behavior will be. Attitude, perceived behavioral control and intentions were the three constructs from the TPB predicted to contribute to the success of this educational intervention. These constructs served as the dependent variables and the intervention served as the independent variable. The hypothesis central to the intervention was that the group receiving the TPB based educational intervention would report significantly higher scores on the three dependent measures compared to the control group at posttest.

Methods

Sample selection

The sample for this investigation consisted of second (P2) and third (P3) professional year pharmacy students. At the time of this investigation these two groups had received a similar amount of formal education concerning health literacy. The P2 student group ($n = 42$) served as the control and did not receive the educational intervention. A control group is helpful for identifying bias in the results due to history, maturation, and testing or instrumentation.²⁹

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