

An Educational Strategy to Enhance Pharmacy Students' Attitudes Towards Addressing Health Literacy of Patients

Kate Wilcoxon, M.Ed., Pharm.D. Candidate and Sean R. King, M.S., Ph.D.

Background

- Approximately one-half of the U.S. adult population possesses inadequate health literacy.¹ This is concerning given the strong correlation that exists between the limited health literacy of patients, inappropriate medication use, and poor health outcomes.^{2,3}
- The Institute of Medicine and the National Work Group on Health and Literacy offered the charge to all professional schools and continuing education programs in the health fields to incorporate health literacy into their curricula and areas of competence.^{4,5}
- Little published research addressing this issue exists in the pharmacy literature.⁶ It is believed vital that schools of pharmacy be proactive and better integrate health literacy into their curricula.

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

- It was believed using a theoretical approach to guide the development of the intervention would help focus the attention on the most critical concepts and skills and create a more efficient learning process. Therefore, the Theory of Planned Behavior (TPB) served as the basis for this investigation.
- TPB 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 Action which suggests the strongest predictor of behavior is an individual's intention to perform the given behavior.
- TPB hypothesizes the greater an individual's perceived behavioral control and attitude, the greater his or her intention to perform the behavior will be.⁷ These three constructs served as the dependent variables and the intervention as the independent variable.

Educational Intervention

- This educational approach consisted of two 50 minute in-class sessions held one week apart and two out of class assignments.
- During the first 50 minute session a presentation on health literacy was provided to the experimental group.
- Students were then provided two out of class assignments, which included conducting a formal health literacy assessment and evaluating "Is Our Pharmacy Meeting Patients' Needs? A Pharmacy Health Literacy Assessment Tool User's Guide."⁸
- The second 50 minute session began with a Pharm.D. led medication counseling demonstration with a patient actor pretending to possess inadequate health literacy. During the counseling session the Pharm.D. intentionally made four errors which could prevent a patient from comprehending proper medication consumption.
- Following the counseling demonstration, experimental students were asked to identify and discuss what the Pharm.D. did wrong during the demonstration.
- This was followed by a discussion of the two out of class assignments given in the prior 50 minute in-class session.

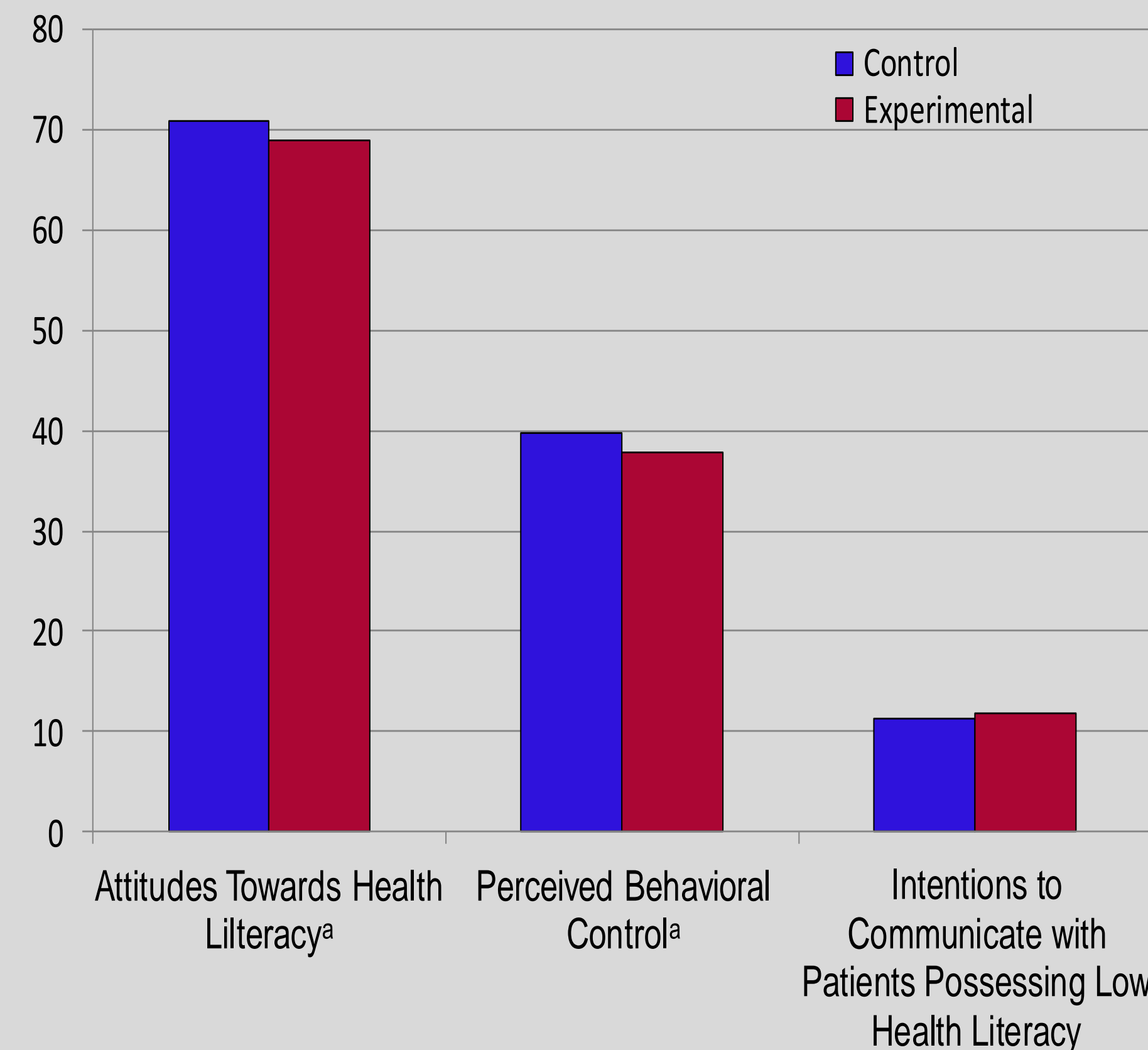
Data

Educational intervention learning objectives

- Discuss methods of identifying patients potentially possessing inadequate health literacy.
- Assess an individual for inadequate health literacy using one of the four validated instruments discussed in class.
- Apply strategies discussed in class to better communicate with patients possessing inadequate health literacy.
- Discuss techniques that can be used to become comfortable with assisting patients who possess inadequate health literacy.
- Discuss the prevalence of inadequate health literacy.
- Discuss the consequences of inadequate health literacy.
- Discuss "Is our pharmacy meeting patients' needs? A pharmacy health literacy assessment tool," which is a publication produced under contract to the Agency for Healthcare Research and Quality (AHRQ).

Comparison of Control and Experimental Groups for Demographic Variables at Pretest (n=82)			
Variable (possible range)	Control (n=42) Frequency (%)	Experimental (n=40) Frequency (%)	Chi-Square
Gender			0.553 (ns)
Male	18 (42.9)	20 (50.0)	
Female	23 (54.8)	20 (50.0)	
Not Reported	1 (2.3)	0 (0.0)	
Age			0.093 (ns)
20-25	27 (64.3)	21 (52.5)	
26-30	10 (23.8)	16 (40.0)	
31 and over	3 (7.1)	3 (7.5)	
Not Reported	2 (4.8)	0 (0.0)	
Race			0.276 (ns)
Caucasian	26 (61.9)	33 (82.5)	
African American	2 (4.8)	2 (5.0)	
Asian	11 (26.2)	4 (10.0)	
Other	2 (4.8)	1 (2.5)	
Not Reported	1 (2.3)	0 (0.0)	

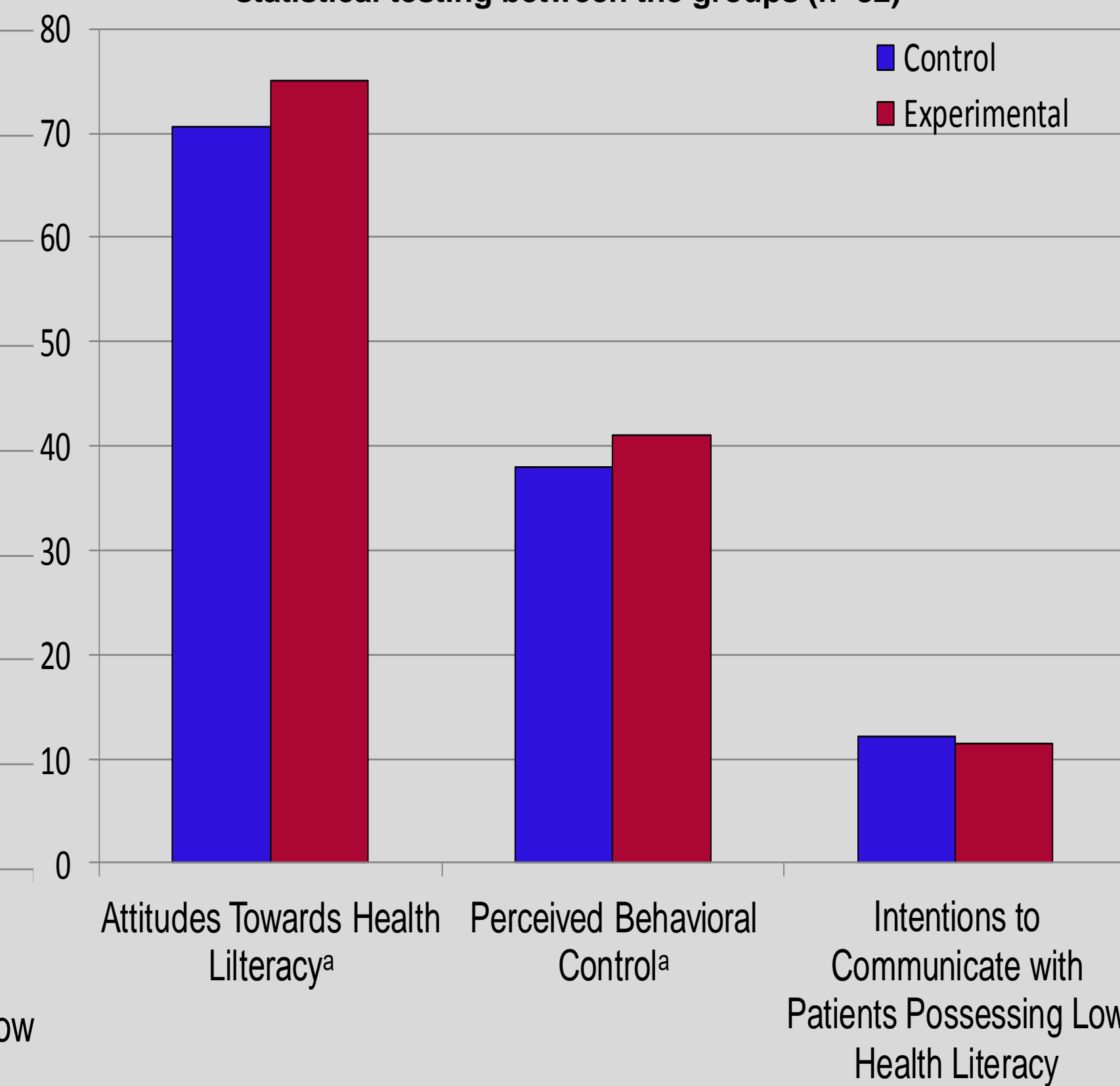
Comparison of control and intervention groups for study variables at pretest (n=82)



^a = ≤ 0.05

Attitudes Towards Health Literacy Rubric:
Perceived Behavioral Control Rubric:
Intentions to Communicate Rubric:

Comparison of posttest scores (adjusted for pretest scores) of the dependent variables and results of statistical testing between the groups (n=82)



1 = very unlikely to 7 = very likely
1 = strongly disagree to 7 = strongly agree
1 = strongly disagree to 7 = strongly agree

Methods

- This TPB-based educational approach employed a pretest-posttest control group design.
- The sample consisted of second (P2) and third (P3) year pharmacy students. The P2 student group (n=42) served as the control and did not receive the intervention. The intervention was administered to the P3 student group (n=40) as part of a required *Patient Assessment* course.
- Pretest and posttest data were collected from all study participants approximately one week before and one week after the intervention was delivered to the experimental group.
- Psychometrically tested instruments were developed for measuring constructs of TPB. Readability, face validity, and content validity of the instrument were established by a panel of university professors and the researchers in a two round review process.
- Cronbach's alphas for the three scales assessing TPB constructs ranged from 0.70 to 0.88.
- Descriptive statistics, chi-squares, ANOVA and ANCOVA were generated to examine the data. All comparisons were made using an *a priori* alpha level of 0.05. The Union University Institutional Review Board (IRB) approved this study.

Results

- The two groups did not differ in the distribution of demographic or TPB variables at pretest.
- Analyses revealed significant improvements at posttest for the experimental group when compared to the control for attitudes towards health literacy (p=0.033) and perceived behavioral control for communicating with patients with 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

- This educational intervention demonstrates the value of using a theoretical approach to focus attention on important concepts and skills to create a more efficient learning process.
- The findings of this investigation provide evidence that scores on TPB measures of attitudes and perceived behavioral control toward identifying and communicating with patients with inadequate health literacy are modifiable among pharmacy students through an educational intervention.
- These results may also assist other schools of pharmacy in their efforts to incorporate health literacy into their curricula.
- The intervention may be modified and implemented in advanced pharmacy practice experiences, residency programs and continuing education programs.

References

- Ad hoc committee on health literacy for the American council on scientific affairs. American Medical Association. Health literacy: report of the council on scientific affairs. *JAMA*. 1999;281:552-557.
- Classon DC, Pestotnik SL, Evans RS, Lloyd JF, Burke JP. Adverse drug events in hospitalized patients: excess length of stay, extra costs, and attributable mortality. *JAMA*. 1997;277(4):301-306.
- Schneitman McIntire O, Farnen TA, Gordon N, Chan J, Toy WA. Medication misadventures resulting in emergency department visits at an HMO Medical Center. *Am J Health-Syst Pharm*. 1996;53:1416-1422.
- Report Brief. Health Literacy: A prescription to end confusion. Institute of Medicine. <http://iom.edu/Reports/2004/Health-Literacy-A-Prescription-to-End-Confusion.aspx>. Published April 2004. Accessed March 28, 2012.
- Communicating with patients who have limited literacy skills. Report of the National Work Group of Literacy and Health. *J Fam Pract*. 1998;46:168-176.
- Sicat BL, Hill LH. Enhancing student knowledge about the prevalence and consequences of low health literacy. *Am J Pharm Educ*. 2005;69(4):460-466.
- Ajzen I. From intentions to actions: a theory of planned behavior. In Kuhl J, Beckman J, eds. *Action control: From Cognition to Behavior*. 1985;11-39
- Jacobson KL, Gazmararian JA, Kripalani S, McMorris KJ, Blake SC, Brach C. Is Our Pharmacy Meeting Patients' Needs? A Pharmacy Health Literacy Assessment Tool User's Guide. Agency for Healthcare Research and Quality. <http://www.ahrq.gov/qual/pharmlit/pharmlit.pdf>. Published October 2007. Accessed February 2, 2012.