Published in final edited form as:

Res Social Adm Pharm. 2013 ; 9(1): 4–12. doi:10.1016/j.sapharm.2012.02.003.

Pharmacists' Provision of Information to Spanish-speaking Patients: A Social Cognitive Approach

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Abstract

Background—Hispanics with limited English proficiency face communication challenges that affect medication use and outcomes. Pharmacists are poised to help patients use medications safely and effectively, however scant research has explored factors that may impact pharmacists' communication with Spanish-speaking patients (SSPs).

Objective—Guided by Social Cognitive Theory (SCT), the purpose of this study was to examine the relationships between pharmacy environmental factors, pharmacists' cognition and pharmacists' communication with SSPs.

Methods—A cross-sectional survey used a vignette to quantify the amount of information pharmacists would provide to a SSP. Pharmacy environmental factors (language-assistance resources, Spanish-speaking staff, and number of Spanish-speaking patients) and pharmacists' cognition (self-efficacy beliefs and cultural sensitivity) that may influence communication also were assessed. The relationships between environmental factors, cognition and pharmacists'

communication with SSPs, including indirect relationships, were examined using composite indicator structural equation (CISE) modeling.

Results—Of the 183 respondents, the majority were white (91%) and male (63%) with a mean age of 47 years (SD=12.77). The CISE modeling revealed that the number of SSPs served by the pharmacy and the pharmacist's self-efficacy in communicating with SSPs were significantly directly associated with pharmacist's provision of information to SSPs. Two environmental factors (presence of interpreter services and Spanish-speaking staff) operated indirectly through self-efficacy to significantly impact the provision of information.

Conclusions—Study findings identify both environmental factors and cognition that could contribute to pharmacists' communication behavior with SSPs. Thus, future interventions to improve pharmacists' communication with SSPs may include training pharmacists to integrate interpretative services and Spanish-speaking staff into service delivery, as well as strengthening pharmacists' self-efficacy beliefs.

Keywords

Pharmacists; Communication; Spanish-speaking patients

INTRODUCTION

Hispanics now account for 16 percent of the United States (US) total population and more than one in ten US residents speak Spanish.^{1,2} The number of Hispanics in the United States has grown five times faster than the rest of the population since 1980, making the US the third largest Spanish-speaking country in the world.³ Additionally, nearly half of Hispanic adults in the US report that they speak English “less than very well.”⁴

Spanish-speaking patients (SSPs) may experience insufficient care and incur greater risks of negative health outcomes due to language barriers.⁵ In one study, approximately half of Spanish-speaking patients with *poor* English skills reported physicians did not give them medication side effect information, compared to only 14% of Spanish-speaking patients with *good* English skills.⁴ Researchers also found that physicians were less likely to provide antidepressant information to Hispanic patients compared to non-Hispanic white patients.⁶ In addition, patients who had limited proficiency of English were more likely to report having an untoward reaction to a prescription medication because they did not understand the instructions provided to them.⁵

Community pharmacists can improve patients' medication use and quality of life through the provision of patient care.^{7,8} However, adequate communication between pharmacists and patients is paramount for improved medication use and patient outcomes.⁹⁻¹² Previous research has found that community pharmacists feel obligated to counsel and provide care to patients no matter what language they spoke, including SSPs.^{13,14} However, 75% of surveyed community pharmacists described their counseling of SSPs as “somewhat effective – having minor problems” or of “no help” to patients.¹⁴ A recent study found that SSPs were more likely to receive less medication-related information and educational messages from pharmacists, compared to English-speaking Hispanic or Caucasian patients.¹⁵ In addition,

research has demonstrated community pharmacists were at increased risk of lacking the ability to communicate properly with limited English proficient patients.¹⁶ Researchers have called for additional research to discern why this increased risk exists within the community setting.¹⁶ To the best of our knowledge, scant research has explored factors that contribute to pharmacists' communication with SSPs.¹⁷

Theoretical framework

Shah and Chewning highlight the usefulness of conceptual models as guides for identifying factors that can influence pharmacists' services.¹⁸ Social cognitive theory (SCT) provides a theoretical framework for understanding the psychosocial mechanisms that influence human thought, affect, and behavior.¹⁹ SCT is based on the concept of reciprocal determinism.²⁰ Reciprocal determinism is a model of triadic mutuality in which the environment, cognition, and behavior operate as interactive determinants of each other.¹⁹ The term *reciprocal* refers to the mutual action between causal factors and *determinism* signifies the production of effects by certain factors, rather than effects being completely determined by a prior sequence of factors acting independently of the individual.¹⁹ In this model, environmental influences, cognition and behavioral patterns all operate as interacting determinants that influence each other.¹⁹ For example, the environment can shape, maintain, and constraint behavior; but people are not passive in the process, as they possess cognitive capacity that can interact with environmental factors to influence behavior.²¹

In the context of community pharmacy, a pharmacist (cognition) functions within a pharmacy (environmental factors) to provide care to SSPs (behavior): Figure 1 depicts the directionality of this case. Pharmacies may contain phenomena in the physical or social environment (i.e., environmental factors) such as translational software or Spanish-speaking staff that may impact pharmacists' communication with SSPs. Pharmacists' possess beliefs that may exert influence over their communication with SSPs. The concept of self-efficacy is perhaps one of the most salient of all self-beliefs.²² Bandura defines self-efficacy as "people's judgments of their capabilities to organize and execute courses of actions required to attain designated types of performances" (p.391).¹⁹ In addition, pharmacists may have beliefs towards cultural factors (i.e., cultural sensitivity) that affect the quality of care they provide to SSPs.^{23,24} Furthermore, pharmacy environmental factors could have an indirect effect on pharmacists' communication with SSPs through cognition.

Previous studies investigating pharmacist services have found SCT to useful in understanding pharmacists' smoking cessation counseling.^{25,26} Guided by SCT, the purpose of this study was to examine the relationships between environmental factors, cognition, and pharmacists' communication behavior with SSPs as depicted in Figure 1. The following research objectives were addressed: (1) to assess the associations between pharmacy environmental factors and pharmacists' communication with SSPs, (2) to examine the associations between pharmacists' cognition and communication behavior with SSPs, and (3) to investigate whether any association between pharmacy environmental factors and communication behavior operates through pharmacists' cognition. This study seeks to gain a better understanding of factors that influence community pharmacists' communication with

SSPs. Findings may elucidate mutable phenomena that could positively impact the communication process between pharmacists and SSPs with the goal of improving care.

METHODS

Secondary analyses were conducted on data collected in a randomized, between-subjects study exploring the effect of patient ethnicity and language skills on pharmacists' provision of information.¹⁵ The study used a confidential cross-sectional survey which assessed pharmacy environmental factors, pharmacists' cognitions and pharmacists' communication behaviors with SSPs. Survey items were based upon previous literature.^{14,27-29} The survey also was pilot tested with two communication experts and six practicing community pharmacists to evaluate content validity; items were revised based upon their suggestions. This study specifically analyses data from a subset of participants that responded to the following vignette: A patient comes into your pharmacy to fill a prescription for Paroxetine Hydro-chloride, also known as Paxil. The prescription is for 20mg QD and may increase dosage by 10mg/day increments each week to a maximum dose of 50mg/day. The patient is male, 45-years old, and Hispanic. He is 5'9" tall and weighs 185lbs. He has been diagnosed with depression but is otherwise a healthy individual. This is his first prescription for Paxil. Paxil will be the only medication he is taking. He speaks only Spanish.

The survey containing the Spanish-speaking patient vignette was mailed to a random sample of 340 pharmacists licensed and living in Wisconsin. The sampling frame was generated from a database obtained from the state licensing board. Each pharmacist in the database was assigned a number. A random number generator was used to select pharmacists for solicitation into this study. Because the database did not contain information about licensed pharmacists' practice settings, the first item on the survey asked participants to indicate their practice site from a list of potential settings. To ensure the collection and interpretation of data from pharmacists in community settings, respondents who indicated working in hospital in-patient or long-term care/nursing homes were directed to return the survey without completing any further survey items. Data were collected in four waves following Dillman's procedures.³⁰ This study was approved by the University of Wisconsin-Madison Institutional Review Board (Protocol: SE-2007-0420, 8/12/2007).

Dependent variable

Pharmacists' communication behavior was operationalized as the amount of information they would provide to a SSP patient. The "*amount*" refers to the total number of key pieces of information a SSP might be given. Participants were asked to indicate which specific topics of medication information they would provide to the patient (in the vignette) at the time of dispensation. Ten items assessed pharmacists' *provision of information* (yes/no) regarding the following topics: medication name, purpose, dose, schedule, what to do if a patient misses a dose, duration of therapy, expected benefits, side effects, barriers to use, and technical information (e.g., mechanism of action, onset and duration of action). A composite provision of information score was constructed by summing the affirmative responses; scores theoretically range from 0 to 10 (higher scores indicating more information provided).¹⁵

Independent variables

Environmental factors were conceptualized as phenomena in the physical and social pharmacy environment. Pharmacy environmental factors were operationally defined as pharmacy-level characteristics that may influence pharmacists' interactions with SSPs. Survey items determined the presence (yes/no) of the following language-assistance resources: interpretation service, books, and translation software. Participants also reported the number of pharmacy staff that speak Spanish and the number of Spanish-speaking patients filling prescriptions per day.

Pharmacists' cognition that may influence communication with SSPs was conceptualized as pharmacists' *self-efficacy* and *cultural sensitivity*. Self-efficacy was operationally defined as a pharmacist's belief in her/his ability to communicate with a Spanish-speaking patient during the dispensing of prescription medications. The pharmacists' self-efficacy in communicating with Spanish-speaking patients (PECS) instrument was used to measure pharmacists' self-efficacy.³¹ The PECS instrument has 9-items scored on a 5-point scale (1-not at all confident to 5-extremely confident). The instrument also has two factors: Opening the Encounter (Cronbach's $\alpha = 0.75$) and Health and Drug Information (Cronbach's $\alpha = 0.92$). Each factor was entered into the model: self-efficacy in opening the encounter and self-efficacy in health and drug information. Pharmacists' cultural sensitivity was operationally defined as a pharmacist's beliefs about minorities' integration into mainstream society/culture. Cultural sensitivity was assessed with a scale developed by Muzyk et al.¹⁴ This scale contains 6-items with a 5-point response option from 1-strongly disagree to 5-strongly agree (Cronbach's $\alpha = 0.66$).

The survey also assessed pharmacists' demographic information (age, gender, ethnicity (White, non-Hispanic or other)), years of experience, highest degree obtained (PharmD, BS, or other), and Spanish-speaking ability (yes/no). Practice characteristics including type of pharmacy (hospital outpatient, independent, chain, mass merchandiser, supermarket, managed care/HMO, or other), number of prescriptions filled per day at the pharmacy, the number of staff (pharmacists and technicians) at the pharmacy, pharmacist vacancy and pharmacy address were also collected.

Data analysis

Descriptive analyses were conducted to characterize all study variables. Composite indicator structural equation (CISE) modeling was used to examine the relationships between environmental factors, cognition, and pharmacists' communication behavior with SSPs (Figure 2). CISE modeling is a specific approach to conducting structural equation modeling in which measurement errors for the constructs are fixed to estimates of reliability (e.g., Cronbach's alpha); this strategy provides a valid method for addressing measurement error that arises in multiple regression.³² To determine how environmental factors and cognition influenced information provision to SSP (objectives 1 and 2), we examined the direct effects of these factors on the total amount of information provided. To further understand whether environmental factors operated through the pharmacists' cognition (objective 3), we examined the indirect effects of environmental factors on the total amount of information provided. A direct effect represents the effect of an independent variable on a dependent

variable.³³ An indirect effect represents the mediated effect of an independent variable on a dependent variable (i.e., an independent variable has an indirect effect on a dependent variable through a mediating variable).³³ All models were adjusted for clustering of pharmacists within pharmacies, based on pharmacy address. The Model Chi Square test statistic (χ^2), the Comparative Fit Index (CFI), Standardized Root Mean Square Residual (SRMR) and Root Mean Square Error Of Approximation (RMSEA) were used to assess how well the data fit the proposed model. Analyses were conducted using STATA, SE 9 (Stata, College Station, TX) and Mplus Version 6.1.³⁴ An apriori p-value was set at 0.05.

RESULTS

Of the 340 potential respondents, 60 were ineligible because they worked in hospital in-patient (n=51) or long-term care/nursing home (n=9) settings. Ultimately, 183 (65%) of the 280 eligible pharmacists responded. Table 1 presents the descriptive statistics of the respondents' demographics as well as environmental factors and cognition. The average age of respondents was 47 years (SD=12.77) and the majority were male (63%) and white (91%). Respondents predominantly worked in chain (45%) and independent (19%) pharmacy settings.

A majority of respondents indicated that their pharmacies had translation software (77%) and at least one staff member who spoke Spanish (58%). In general, pharmacist self-efficacy was moderate (M=2.12, SD=0.76) with greater self-efficacy around opening the encounter (M=2.42, SD=0.91) compared to providing health and drug information (M=1.89, SD=0.89).

Environmental factors' direct effect on provision of information

Results from the CISE modeling showed a direct effect between the number of Spanish-speaking patients served in the pharmacy (coefficient of 0.003) and pharmacists' provision of information (Figure 3). No additional significant direct effects were found between other environmental factors and the provision of information.

Cognition's direct effect on provision of information

Findings indicated a negative direct effect of self-efficacy in opening the encounter (coefficient of -0.42) on the provision of information. CISE model results also revealed a positive direct effect of self-efficacy in health and drug information (coefficient of 0.35) on the provision of information.

Environment's indirect effects on provision of information

An examination of the indirect effects revealed that the impact of interpretative services was mediated by self-efficacy in opening the encounter (coefficient of -0.25). In addition, the effect of Spanish-speaking staff was mediated by self-efficacy in opening the encounter (coefficient of -0.33) and self-efficacy in health and drug information (coefficient of 0.17). Indirect effect coefficients are the products of the direct effect coefficients between 1) environmental factors and cognition and 2) cognition and the provision of information.

DISCUSSION

The growing diversity within the US population presents challenges to the US health care system.¹ The ability to provide care in a multicultural context often involves bridging communication gaps that exist between health care providers and patients.³⁵ This study details factors that may impact pharmacists' communication with Spanish-speaking patients, the largest minority population in the US. Using SCT as a guide, this study finds roles for both environmental factors and cognition in pharmacists' communication with SSPs. Specifically, self-efficacy plays a key role in shaping the amount of information provided to a SSP. Furthermore, environmental factors, such as interpretative services and Spanish-speaking staff, operate only through self-efficacy to influence the amount of information provided to a SSP.

Patients with limited English proficiency such as SSPs are at risk for receiving limited or no education during the dispensing of prescriptions in community pharmacies.^{15,16} Understanding the factors that lead to this limited communication is crucial to creating interventions to ensure these patients receive needed information.¹⁶ Findings from this study suggest that pharmacist self-efficacy in communicating with SSPs is significantly related to their communication behaviors with this population. Researchers have found similar relationships between self-efficacy and pharmacists' smoking cessation and diabetes counseling.^{25,26,36} Furthermore, the presence of environmental factors such as interpretative services and bilingual pharmacy staff in the pharmacy may not be sufficient to influence the provision of information to SSPs. Considering how humans interact with the resources in their environment is critical to the successful implementation of such resources into health care work systems.³⁷

These findings suggest the need for programs and curricula to bolster pharmacists' self-efficacy related to interacting with multicultural populations. VanTyle et al discussed a Spanish language and culture initiative that was integrated into a Doctor of Pharmacy curriculum.³⁸ The initiative included medical Spanish courses, a medical Spanish service-learning course, and an advanced practice pharmacy experience at a medical care clinic serving a high percentage of Spanish-speaking patients. By participating in this initiative, pharmacy students were able to observe interactions between health care providers and SSPs (observe role models), practice counseling skills in Spanish (gain mastery experiences), and obtain feedback regarding their health care related Spanish-speaking ability (receive feedback); all of these experiences are hypothesized to support self-efficacy.³⁹ Future research should test interventions that incorporate all or a portion of such strategies in an effort to discern mechanisms for improving pharmacists' care for Spanish-speaking populations.

The measure used in this study to assess pharmacist self-efficacy in communicating with SSPs had two domains (1) opening the encounter and (2) sharing health and drug information with SSPs. Interestingly, findings suggest that self-efficacy with sharing health and drug information increased the provision of information to SSPs, while self-efficacy related to beginning an encounter reduced the provision of information. One plausible explanation for the negative relationship between self-efficacy of opening encounters and

the provision of information is related to the vignette used in this study (i.e., the initial dispensation of a psychotropic medication). Pharmacists with higher self-efficacy in opening encounters may feel that it is more appropriate to build rapport and establish relationships with patients during first encounters or encounters for psychotropic medications. Alternatively, pharmacists who have higher self-efficacy pertaining to opening encounters may have sound “conversational” Spanish language skills but feel less confident in their “medical” Spanish vocabulary.

Limitations should be considered when evaluating these study results. First, pharmacists’ communication behavior was assessed through responses to a vignette which may be affected by the Hawthorne effect. However, vignettes have been found to be a valid and comprehensive method for assessing the process of care provided in actual clinical practice.⁴⁰⁻⁴² Next, the data used in this study is based on self-report so social desirability may lead to overestimation of the resources in the environment, one’s self-efficacy, or the provision of information. Gather objective audio or video data could address this in future studies.⁴³ Third, no data were available to address non-respondent bias, but 65% of the sample did respond. Fourth, this study was conducted in one state of the US. Although our respondents’ demographics are similar to those of pharmacists’ nationally, pharmacists in other regions of the country may have different experiences in caring for SSPs.⁴⁴ Finally, the model could be expanded to include the potential influence of other cognitive factors posited by SCT such as behavioral capability, expectations, or expectancies on pharmacist provision of information.

Conclusion

Title VI of the Civil Rights Act requires health care organizations who receive federal funding to provide the same level of access to services for Spanish-speaking patients as they do for patients who speak English.⁴⁵ This study found specific environmental factors and cognitions that influence pharmacists’ provision of medication information to SSPs, yet environmental factors alone are not sufficient to increase information provision. Thus, simply supplying books in Spanish or translation software may not produce the desired outcomes. To efficiently address disparities in communication that negatively influence medication use, future research should develop and test interventions to improve the communication between pharmacists and SSPs based on conceptual models. These conceptual models should incorporate relevant cognitive and environmental factors broadly, as well as their potential interactions in practice. In addition, further qualitative research is needed to explain how cognition such as self-efficacy interact with the resources in a pharmacy environment to influence the information received by SSPs.

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Figure 1.
Hypothesized model based upon Social Cognitive Theory

Figure 2.
Composite Indicator Structural Equation Model

Note. Only statistically significant ($p < 0.05$) standardized path coefficients are shown. Chi-square 22.55 df = 8, CFI = 0.88, SRMR = 0.04, and RMSEA = 0.11

Figure 3.
Composite Indicator Structural Equation Model Results

Table 1

Descriptive Statistics

Variables (N=183)	Mean	Std Dev	Percentage
Demographic			
Age	46.95	12.77	
Gender (male)			63.37
Ethnicity (white vs. other)			90.71
Hispanic			1.17
Years of Experience	23.48	13.13	
Highest Degree - B.S.			72.67
Highest Degree - PharmD			22.67
Highest Degree - Other			4.65
Stress	16.81		
Spanish-speaking ability (yes)			38.29
Pharmacy Characteristics			
Pharmacy Type			45.05
Chain			
Independent			19.23
Mass Merchandiser			10.99
Other			10.44
Supermarket			8.79
Hospital Outpatient			4.40
Managed Care / HMO			1.10
Number of scripts per day	356.04	366.54	
Number of pharmacy staff	10.47	9.32	
Vacancy at pharmacy (yes)			22.67
Cognition			
Over all Self-efficacy ^a	2.12	0.76	
Self-efficacy (opening the encounter) ^a	2.42	0.91	
Self-efficacy (health & drug informations)	1.89	0.89	
Cultural Sensitivity ^b	3.28	0.55	
Environment			
Interpretation services (yes)			52.84
Books (yes)			40.00
Translation software (yes)			77.05
At least 1 staff member speaks Spanish (yes)			57.92
Number of SSP per day	10.40	31.54	

Notes:

^aSelf-efficacy scale: 5-point scale (1-not at all confident to 5-extremely confident)^bCultural Sensitivity: 5-point scale (1-strongly disagree to 5-strongly agree)