# Need for Cultural Sensitivity in Pharmacy Practice: New York City Pharmacy Student Perceptions

Madhu Agrawal
Robert B. Sause

**ABSTRACT.** The purpose of this study was to examine pharmacy student perceptions regarding need for cultural sensitivity in pharmacy practice in New York City. The study also examined the effect of demographic factors on cultural sensitivity perceptions of students. A survey instrument was developed consisting of 21 attitude questions on a Likert scale. Factor analysis revealed six dimensions underlying cultural sensitivity in pharmacy practice. A total of 257 fifth-year pharmacy students answered the survey instrument. The data was analyzed using SPSS 7.5 for Windows. In general, the students appear to recognize the importance for practicing pharmacists to be sensitive to the needs of ethnic populations. The students felt that medication compliance, pharmacist-patient relationship, patient satisfaction, patient trust, and ability to understand over-the-counter and prescription product directions would be greater if the pharmacist could speak the language and understand the culture of the customer population. Gender, ethnicity, and language skills were found to affect student perceptions of need for cultural sensitivity. The results can be useful to educators in preparing future pharmacists for such challenges within the profession. *[Article copies available for a fee from The Haworth Document Delivery Service: 1-800-342-9678. E-mail address: getinfo@haworthpressinc.com]*

**KEYWORDS.** Cultural sensitivity, pharmacy practice, ethnicity, attitude, education

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Madhu Agrawal, Ph.D., is Assistant Professor in the Department of Pharmacy and Administrative Sciences and Robert B. Sause, Ph.D., is Associate Professor in the Department of Pharmacy and Administrative Sciences at the College of Pharmacy and Allied Health Professions, St. John's University, Jamaica, NY 11439.


 

## *INTRODUCTION AND OBJECTIVES*

According to the latest Census estimates, 1 in 10 persons in the United States is foreign-born. New York is the second most populous state with a foreign-born population of 3.2 million (1). This growing cultural diversity demands a new awareness of the need for cultural sensitivity of health-care providers towards their patients and customers.

As pharmacy moves from a technical, dispensing profession to one that is geared towards providing patient care, communication becomes paramount. Communication with customers from different ethnic backgrounds is an even greater challenge. Pharmacists who are ''culturally sensitive'' could build greater trust and better relationships with their customers or patients (2). Culturally sensitive individuals not only understand their own cultural, ethnic, and linguistic background, but also the values and beliefs that they hold about people who are different from themselves (3). Since the proportion of minority pharmacists is still very low compared to the cultural makeup of the country (4), it becomes important for the pharmacy profession to be aware of the needs of customers different from themselves. Patients hold beliefs beyond the Western model of medicine and act on those beliefs. Pharmacists' awareness of these varied beliefs can open lines of communication and result in better compliance, better outcomes, and greater patient satisfaction. Cultural and language differences can also affect perception of illness, treatment-seeking behavior, and response to health care. Inability or unwillingness to understand these differences or ignorance of these differences can result in suboptimal care and outcomes. In addition, health-care professionals may impose their own cultural values on patients, intentionally or unintentionally (5).

In some New York hospitals, doctors are now seeing patients who speak more than 100 different languages and dialects. Medical schools are beginning to recognize this shift in the population and are developing new programs to address the diverse cultures physicians will encounter. Aware that language barriers can interfere with medical care, the University of New Mexico School of Medicine gives special consideration in its admission process to applicants who speak a second language (6). Several researchers in recent years have focused on the level of multicultural awareness and readiness to serve ethnically diverse populations among health-care professionals. One study of senior nursing students assessed their level of comfort in providing nursing care to clients of diverse cultural backgrounds. The study found that the students had little confidence in their ability to give culturally congruent care. The study concluded that nursing students are not provided with the experiences needed to give transcultural care to ethnically diverse populations (7).

A major survey study of over 800 hospital and clinic staff in Wisconsin found that majority of respondents needed assistance to work more effective-

ly with patients and family members of different cultural or religious backgrounds. The most frequent area of assistance needed was in understanding how to communicate better with those who speak a different language. This was followed by the need to understand different beliefs about health, illness, and death, and understanding different customs (8).

Studies examining health needs of multicultural populations in pharmacy practice are relatively few in number. A recent study that examined barriers that minority populations face with respect to use of pharmacy services found financial difficulty, language, and physical illness as the most serious barriers (9). A second study found that use of, and access to, community pharmacy services was lower for ethnic minorities (10). A study of pharmacy services for Navajo Native Americans in a primarily American Indian location found that pharmacists in that neighborhood relied on Navajo-speaking pharmacy technicians to perform patient consultation (11). Pharmacists working in large, metropolitan cities such as New York City (NYC) are in a unique position to be able to serve diverse ethnic groups of customers. New York City has the largest ethnic mix of people in the United States.

This study aims to examine cultural sensitivity need perceptions of New York City pharmacy students. Very little is known with respect to how future pharmacists perceive this aspect of their job. Do they perceive a need for greater education or training in this area of serving multiethnic customers? Do they perceive cultural and language differences among customers as a challenge to effective health-care delivery and communication? What are their perceptions with respect to the need and importance for a pharmacist to be culturally sensitive?

## *METHODS*

Cultural sensitivity in this study includes aspects such as ability to speak and/or understand the local language of the ethnic community, an understanding of the needs and preferences of people from different ethnic backgrounds, and a desire to help people of different ethnic backgrounds.

Fifth-year pharmacy students at a College of Pharmacy in New York City participated in an extra-credit research project. The project required the students to respond to a two-part survey instrument and submit a report discussing their responses. A total of 257 students participated in the project. The data was analyzed using SPSS Windows 7.5.

The survey was a structured self-administered undisguised[a] questionnaire.

[a]An undisguised questionnaire makes no attempt to disguise the purpose of the study from the subjects. In other words, the purpose of the research is obvious from the questions in the instrument.

The first part consisted of twenty-one attitude/perceptual items scored on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree) (see Exhibit 1). A higher total score on these items indicates greater perceptual need for cultural sensitivity. The survey instrument items were designed by the authors based on a literature review (2-5,8). Certain of the 21 attitude items were negatively worded to detect response bias (yea-saying response error). The items were designed to minimize response biases such as social desirability bias and item non-response (12). The second part of the survey consisted of demographic information on the respondent. This information was used to determine if factors such as age, gender, ethnicity, and language skills affect need for cultural sensitivity perceptions.

Data collected was input and analyzed using SPSS 7.5 for Windows. Factor analysis and a reliability analysis was performed to isolate the underlying cultural sensitivity dimensions and test the reliability of the survey instrument. Descriptive statistics and t-tests were performed.

## *RESULTS*

*Factor Analysis:* Factor analysis with varimax rotation revealed six underlying dimensions that explained 60 percent of the variance. The six factors (components) had eigenvalues greater than 0.9 and a factor loading of more than 0.5. The six factors were labeled as follows:

Factor 1: Need for Cultural Sensitivity in the Pharmacy Curriculum/ Profession (Items 1, 16, 17)

Factor 2: Benefits of Cultural Sensitivity to Customers (Items 13, 14, 18, 19)

Factor 3: Benefits of Cultural Sensitivity to Pharmacy/Pharmacists (Items 6, 8, 9)

Factor 4: Need for Multilingual Resources in a Pharmacy (Items 3, 11, 12)

Factor 5: Benefits of Foreign Language Skills (Items 5, 21)

Factor 6: Impact of Ethnicity on Medication Response (Items 4, 7)

Four of the negatively worded items were eliminated from the factor analysis because those items were only a test for response error as described above. Reliability analysis for the items taken together provided a Cronbach's alpha of 0.7443 for the instrument, indicating good reliability.

*Sample Description:* A majority (96.5%) of the respondents were between 20-29 years of age. A majority (63%) percent of the students were female and

EXHIBIT 1. Survey Instrument (Part 1–Cultural Sensitivity Perceptions).

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Pharmacists need to be more culturally sensitive. | 1 | 2 | 3 | 4 | 5 |
| 2. Learning a foreign language is simply not worth the effort for a pharmacist. | 1 | 2 | 3 | 4 | 5 |
| 3. Pharmacists should know to speak the native language of the community in which they work. | 1 | 2 | 3 | 4 | 5 |
| 4. Ethnic populations have special health problems and needs. | 1 | 2 | 3 | 4 | 5 |
| 5. A pharmacist may save a patient's life by knowing the native language of the patient. | 1 | 2 | 3 | 4 | 5 |
| 6. Pharmacists can build greater trust with patients if they can speak the language of the local ethnic community. | 1 | 2 | 3 | 4 | 5 |
| 7. Ethnic differences among patients affect the ways in which they respond to medication. | 1 | 2 | 3 | 4 | 5 |
| 8. Counseling the patient in a language they understand can result in improved medication compliance. | 1 | 2 | 3 | 4 | 5 |
| 9. Ability to communicate with your ethnic customers is good business for your pharmacy. | 1 | 2 | 3 | 4 | 5 |
| 10. Customers who are not able to understand English are simply a nuisance. | 1 | 2 | 3 | 4 | 5 |
| 11. Pharmacies in Hispanic neighborhoods should have at least one Spanish speaking pharmacist. | 1 | 2 | 3 | 4 | 5 |
| 12. Drug information leaflets should be printed in Spanish/Chinese in Hispanic/Asian neighborhoods. | 1 | 2 | 3 | 4 | 5 |
| 13. Patients will be more likely to visit the pharmacy where the employees speak their own language. | 1 | 2 | 3 | 4 | 5 |
| 14. Patients will be more satisfied with the pharmacy where the employees can communicate in a language they understand. | 1 | 2 | 3 | 4 | 5 |
| 15. Non-English speaking customers do not care whether the pharmacist can talk in their native language. | 1 | 2 | 3 | 4 | 5 |
| 16. Pharmacy schools and colleges should incorporate a foreign language into the curriculum. | 1 | 2 | 3 | 4 | 5 |
| 17. There should be more courses in pharmacy school dealing with health problems and cultural differences among ethnic groups of people. | 1 | 2 | 3 | 4 | 5 |
| 18. It is difficult for non-English speaking customers to understand the directions on OTC or prescription products. | 1 | 2 | 3 | 4 | 5 |
| 19. Non-English speaking customers may need explanation about their insurance plans. | 1 | 2 | 3 | 4 | 5 |
| 20. Pharmacists are too busy to have time to communicate with patients from different ethnic groups. | 1 | 2 | 3 | 4 | 5 |
| 21. Knowing a foreign/ethnic language such as Spanish/Chinese/Yiddish can get you a job faster than others. | 1 | 2 | 3 | 4 | 5 |

TABLE 1. Need for Cultural Sensitivity in the Pharmacy Curriculum/Profession.

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Pharmacists need to be more culturally sensitive. | 2.0* | 5.1 | 16.9 | 58.3 | 17.7 |
| 2. Pharmacy schools and colleges should incorporate a foreign language into the curriculum. | 14.5 | 25.9 | 23.9 | 28.2 | 7.5 |
| 3. There should be more courses in pharmacy school dealing with health problems and cultural differences among ethnic groups of people. | 6.7 | 18.8 | 32.5 | 36.5 | 5.5 |

* Percentage of respondents ($n$ = 257).

the rest were male. With respect to ethnicity, approximately 41% identified themselves as ''white'' while the rest identified themselves as belonging to various ethnic groups of which Asians were the largest segment (44.7%). Most (75%) of the pharmacy students were fluent in one or more languages other than English. Almost all (98%) of the students had worked or currently worked in a community pharmacy. The above demographic make-up of the students is not surprising considering the geographic location of the pharmacy school, *i.e.,* a location characterized by a high density of culturally diverse population.

### *Dimension 1: Need for Cultural Sensitivity in the Pharmacy Curriculum/Profession*

The items measuring this dimension related to pharmacy student perceptions of the need to have courses dealing with culture and health issues of ethnic populations in the pharmacy curriculum. Most pharmacy students do not seem to be open to the idea. Few agree[b] that a foreign language should be part of the curriculum. Less than half of the students agree that there should be courses dealing with health problems and cultural differences. However, a majority do agree that ''pharmacists need to be more culturally sensitive'' (see Table 1).

The reports by the students reveal the reasons for why they feel the way they do. Most pharmacy students reported that even they did learn a foreign language, which one would it be? In New York City, the population is far too diverse. The Asian students reported that knowing Cantonese may be of no

[b]''Agree'' includes all respondents indicating ''agree'' or ''strongly agree.'' The same applies to the term ''disagree'' when used to discuss the results of the study in this paper.

help since there are too many Chinese dialects. In addition to the problem of too many dialects and languages, the students overwhelmingly felt that the pharmacy course load was difficult enough without adding another requirement to it.

However, gender, ethnicity, and language skills were found to have a statistically significant effect on student perceptions relating to Dimension 1. Female students, students from ethnic backgrounds, and students with knowledge of foreign languages had a significantly greater agreement with the idea of incorporating cultural sensitivity courses and a foreign language into the pharmacy curriculum as compared to male students, white students, and students with knowledge of only English, respectively. The effect of these variables is discussed later in the paper.

### *Dimension 2: Benefits of Cultural Sensitivity to Customers*

The items measuring this dimension related to pharmacy student perceptions of the benefits of pharmacists being culturally sensitive to customers. Students overwhelmingly agree that greater cultural sensitivity on part of pharmacists/pharmacies benefits the customer. They agree that a pharmacist's ability to communicate in the native language of the customer will result in greater customer loyalty, higher customer satisfaction, ability to understand directions on over-the-counter or prescription products and help in understanding their insurance plans (see Table 2).

### *Dimension 3: Benefits of Cultural Sensitivity to Pharmacy/Pharmacists*

The items measuring this dimension related to pharmacy student perceptions of the benefits to pharmacies/ pharmacists as a result of being culturally

TABLE 2. Benefits of Cultural Sensitivity to Customers.

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Patients will be more likely to visit the pharmacy where the employees speak their own language. | 0.4* | 2.4 | 5.1 | 48.6 | 43.5 |
| 2. Patients will be more satisfied with the pharmacy where the employees can communicate in a language they understand. | 0.4 | 2.7 | 5.1 | 54.9 | 36.9 |
| 3. It is difficult for non-English speaking customers to understand the directions on OTC or prescription products. | 0.0 | 3.9 | 9.0 | 59.2 | 27.8 |
| 4. Non-English speaking customers may need explanation about their insurance plans. | 2.0 | 5.1 | 12.5 | 66.7 | 13.7 |

* Percentage of respondents ($n$ = 257).

sensitive to customers. Again, students overwhelmingly agreed that there could be several benefits to pharmacists as health-care professionals and to pharmacies from a business view point by being culturally sensitive. Most agree (or strongly agree) that greater cultural sensitivity can result in improved medication compliance, greater trust with patients and greater customer loyalty (see Table 3).

### *Dimension 4: Need for Multilingual Resources in a Pharmacy*

The items measuring this dimension related to pharmacy student perceptions of the need for pharmacies to have multilingual resources. About 60 percent agree that ''drug information leaflets should be printed in Spanish/Chinese in Hispanic/Asian neighborhoods.'' However, less than half of the students agree that ''pharmacists should know to speak the native language of the community in which they work.'' In other words, the students think that it is beneficial but not necessary to have multilingual capabilities as indicated by their responses on the items relating to dimension 4 (see Table 4).

TABLE 3. Benefits of Cultural Sensitivity to Pharmacy/Pharmacists.

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Pharmacists can build greater trust with patients if they can speak the language of the local ethnic community. | 1.2* | 2.7 | 5.9 | 54.5 | 35.7 |
| 2. Counseling the patient in a language they understand can result in improved medication compliance. | 0.4 | 0.4 | 4.7 | 40.3 | 54.2 |
| 3. Ability to communicate with your ethnic customers is good business for your pharmacy. | 1.2 | 3.9 | 7.5 | 45.9 | 41.6 |

* Percentage of respondents ($n$ = 257).

TABLE 4. Need for Multilingual Resources in a Pharmacy.

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Pharmacists should know to speak the native language of the community in which they work. | 6.3* | 20.5 | 25.2 | 34.3 | 13.8 |
| 2. Pharmacies in Hispanic neighborhoods should have at least one Spanish speaking pharmacist. | 1.6 | 14.5 | 17.6 | 50.6 | 15.7 |
| 3. Drug information leaflets should be printed in Spanish/Chinese in Hispanic/Asian neighborhoods. | 3.5 | 8.6 | 16.9 | 58.8 | 12.2 |

* Percentage of respondents ($n$ = 257).

### *Dimension 5: Benefits of Knowing a Foreign Language*

The items measuring this dimension related to pharmacy student perceptions of the benefits of knowing a foreign/ethnic language. A large majority agree that ''a pharmacist can save a patient's life by knowing the native language of the patient.'' About 60 percent also feel that knowledge of a foreign language can be advantageous in the job market. However, about one-fourth of the students surveyed are not sure whether this is the case (see Table 5).

### *Dimension 6: Impact of Ethnicity on Medication Response*

The items measuring this dimension related to pharmacy student perceptions of whether ethnic populations have special needs and/or health problems. Although most tend to agree that they do have special needs, a significant number of students appear to be unsure. In other words, students acknowledge the difficulties that ethnic populations may have with regard to communication and understanding medication information but are not sure if ethnic populations' physiological and/or biological make-up is any way different from the rest of the population (Table 6).

TABLE 5. Benefits of Foreign Language Skills.

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. A pharmacist may save a patient's life by knowing the native language of the patient. | 2.0* | 7.1 | 14.2 | 57.1 | 19.7 |
| 2. Knowing a foreign/ethnic language such as Chinese/ Spanish/Yiddish can get you a job faster. | 5.1 | 9.4 | 25.9 | 46.7 | 12.9 |

* Percentage of respondents (*n* = 257).

TABLE 6. Impact of Ethnicity on Medication Response.

| Items | Strongly Disagree | Disagree | Neither Agree nor Disagree | Agree | Strongly Agree |
|---|---|---|---|---|---|
| 1. Ethnic populations have special health problems and needs. | 2.0* | 7.1 | 21.6 | 58.4 | 11.0 |
| 2. Ethnic differences among patients affect the way in which they respond to medication. | 2.4 | 10.6 | 23.2 | 48.0 | 15.7 |

* Percentage of respondents (*n* = 257).

## *WHAT IS THE IMPACT OF AGE, GENDER, LANGUAGE SKILLS, AND ETHNICITY ON PHARMACY STUDENTS' CULTURAL SENSITIVITY?*

Gender, ethnicity, and language skills were found to have an effect on cultural sensitivity perceptions. Female students were found to exhibit greater perceptual need for cultural sensitivity than male students as revealed from the mean values on the items. Similarly, students from ethnic backgrounds and multilingual students have higher cultural sensitivity need perceptions than those from white/Caucasian background or English-only students, respectively. Since most students were in one age group, the effect of age could not be tested. The test for effect of gender on cultural sensitivity was found to be independent of ethnicity (females were found to be more culturally sensitive in both ethnic as well as white/Caucasian groups); similarly, the effect of multilingual skills on cultural sensitivity was found to be independent of ethnicity (multilingual students were found to be more culturally sensitive in both ethnic and white/Caucasian groups).

### *Effect of Gender on Cultural Sensitivity Perceptions*

Table 7 gives the results for the effect of gender on cultural sensitivity perceptions. Female students have higher mean scores on Dimensions 1 and 4. Dimension 1 relates to ''Need for Cultural Sensitivity in the Pharmacy Profession/Curriculum'' and Dimension 4 relates to ''Need for Multilingual Resources in a Pharmacy.'' Female students feel more strongly than male pharmacy students that there should be foreign language courses in pharmacy education. They also perceive a greater need for multilingual resources in a pharmacy as compared to male pharmacy students. The differences as shown are statistically significant.

TABLE 7. Effect of Gender on Cultural Sensitivity Perceptions.

| Items | Female Students Mean Score* (n = 160) | Male Students Mean Score (n = 94) | T Value and Significance |
|---|---|---|---|
| 1. Pharmacies in Hispanic neighborhoods should have at least one Spanish speaking pharmacist. | 3.76 | 3.44 | $T = -2.64$, $p < 0.05$ |
| 2. Drug information leaflets should be printed in Spanish/Chinese in Hispanic/Asian neighborhoods. | 3.79 | 3.48 | $T = -2.62$, $p < 0.05$ |
| 3. Pharmacy schools and colleges should incorporate a foreign language into the curriculum. | 3.04 | 2.61 | $T = -2.87$, $p < 0.05$ |

* 1 = strongly disagree, 5 = strongly agree.

### *Effect of Ethnicity on Cultural Sensitivity Perceptions*

Differences between ethnic and Caucasian pharmacy students are more pronounced (see Table 8). As stated earlier, 41 percent of the students identified themselves as "White/Caucasian," while the rest identified themselves as belonging to various ethnic groups of which Asians were the largest segment (44.7%). Students belonging to ethnic backgrounds appear to have greater perceptual need for cultural sensitivity than white/Caucasian students on Dimensions 1 and 5. Dimension 1 relates to "Need for Cultural Sensitivity in the Pharmacy Profession/Curriculum." Similar to female students, ethnic students perceive a greater need for cultural and foreign language education in Pharmacy school as compared to white/Caucasian students. They also differ on Dimension 5 which relates to "Benefits of Knowing a Foreign Language." Specifically, ethnic students feel more strongly than white/Caucasian students that knowledge of a foreign language can be advantageous in the job market.

### *Effect of Language Skills on Cultural Sensitivity Perceptions*

Multilingual students appear to have greater perceptual need for cultural sensitivity than English-only students (see Table 9). Students were asked to indicate the number of foreign languages they were "fluent" in other than English. Those students who were fluent in more than one foreign language ($n$ = 70) were compared to those who said they knew only English ($n$ = 60). Multilingual students show statistically higher mean scores than English-only students on items relating to Dimensions 1, 2, and 5. Multilingual students

TABLE 8. Effect of Ethnicity on Cultural Sensitivity Perceptions.

| Items | Ethnic Students Mean Score* (n = 151) | White/Caucasian Students Mean Score (n = 104) | T Value and Significance |
|---|---|---|---|
| 1. Pharmacists need to be more culturally sensitive. | 4.02 | 3.60 | T = 4.06, $p < 0.05$ |
| 2. Pharmacy schools and colleges should incorporate a foreign language into the curriculum. | 3.13 | 2.53 | T = 4.06, $p < 0.05$ |
| 3. There should be more courses in pharmacy schools dealing with the health problems and cultural differences among ethnic groups of people. | 3.38 | 2.83 | T = 4.43, $p < 0.05$ |
| 4. Knowing a foreign/ethnic language such as Spanish/Chinese/Yiddish can get you a job faster. | 3.63 | 3.38 | T = 1.92, $p < 0.1$ |

* 1 = strongly disagree, 5 = strongly agree.

TABLE 9. Effect of Language Skills on Cultural Sensitivity Perceptions.

| Items | Multlingual Students Mean Score* (n = 70) | English-only Students Mean Score (n = 60) | T Value and Significance |
|---|---|---|---|
| 1. Pharmacists need to be more culturally sensitive. | 4.01 | 3.57 | $T = -2.83$, $p < 0.05$ |
| 2. Pharmacy schools and colleges should incorporate a foreign language into the curriculum. | 3.17 | 2.58 | $T = -2.86$, $p < 0.05$ |
| 3. It is difficult for non-English speaking customers to understand the directions on OTC or prescription products. | 4.19 | 3.92 | $T = -1.99$, $p < 0.05$ |
| 4. Non-English speaking customers may need explanation about their insurance plans. | 3.97 | 3.67 | $T = -1.94$, $p < 0.1$ |
| 5. Knowing a foreign/ethnic language such as Spanish/Chinese/Yiddish can get you a job faster. | 3.70 | 3.33 | $T = -2.13$, $p < 0.05$ |

* 1 = strongly disagree, 5 = strongly agree.

favor cultural and foreign language education to a greater extent than English-only students. They feel more strongly about benefits of cultural sensitivity to customers–specifically the difficulties non-English customers have regarding medication information and insurance plans. Multilingual students also feel more strongly that knowledge of a foreign language can be advantageous in the job market. The effect of language skills was found to be independent of ethnicity. In other words, students with foreign language skills in the white/Caucasian groups were more culturally attuned than students with English-only skills in the same group.[c]

## *DISCUSSION AND CONCLUSIONS*

A majority of the pharmacy students, regardless of gender, ethnicity, or other factors, see strong benefits of cultural sensitivity for customers, pharmacists, and pharmacies. In particular the students agree that a pharmacist's ability to communicate in the native language of the customer will result in greater customer loyalty, higher customer satisfaction, ability to understand directions on over-the-counter or prescription products and help in understanding their insurance plans. They also overwhelmingly agree that greater cultural sensitivity can result in improved medication compliance and greater trust between patient and pharmacist.

[c]It is not surprising to find white/Caucasian students in New York City with foreign language skills, especially knowledge of Italian, Spanish, or Russian.

Although students clearly acknowledge the difficulties that ethnic populations may have with regard to communication and understanding medication information, they are not sure if ethnic populations' physiological/biological make-up is any way different from the rest of the population. This result should concern educators because research shows that ethnicity may affect biological responses to medication. For example, Asians generally require lower dosages than whites for many psychotropic drugs. North American Indians metabolize alcohol at a faster rate than whites. Using monotherapy with calcium channel blockers in black hypertensives has been found more effective than the use of beta-blockers or ACE inhibitors. The incidence of disease varies in ethnic groups. For example, Native Americans have the highest rate of diabetes in the world; certain Hispanic groups show an especially high rate of asthma and cancer rates for blacks are higher than for any other racial or ethnic groups (2).

Gender, ethnicity, and language skills are found to have significant effects on cultural sensitivity perceptions on the six dimensions. Female students, students from ethnic backgrounds, and students with knowledge of foreign languages had a significantly greater agreement with the idea of incorporating cultural sensitivity courses and a foreign language into the pharmacy curriculum as compared to male students, white students, and students with knowledge of only English, respectively. Females also perceive a greater need for multilingual resources in a pharmacy as compared to male pharmacy students. Both ethnic students and multilingual students feel more strongly that knowledge of a foreign language can be advantageous in the job market as compared to white/Caucasian and English-only students, respectively.

Increasing representation of females and ethnic minorities in pharmacy education could be a means toward achieving greater cultural sensitivity in pharmacy practice. While the percentage of females in pharmacy is satisfactory, the number of ethnic minorities is not. For example, it is estimated that 90 percent of pharmacists in the United States are white. African-Americans constitute over 12 percent of the U.S. population; but only 3 percent of the nation's pharmacists (4). Underrepresentation of ethnic minorities in pharmacy not only reflects the inequities in access to this profession, but also a maldistribution of pharmacy services to the minority population (13). Studies show that ethnic pharmacy customers prefer to visit pharmacies with pharmacists from similar backgrounds (14-16). A lack of role models in the pharmacy profession also acts as a barrier to the selection of pharmacy as a career option. Colleges of pharmacy should propose long-term programs in recruitment and establish a network of minority role models.

A study of pharmacy students on assessing their understanding of cultural diversity at a major university in the United States found that 70 percent of the students felt the university had done little or nothing to develop their

understanding of cultural diversity (12). According to David A. Knapp, dean of the School of Pharmacy at University of Maryland, the reasons for seeking a diverse student body and a diverse workplace are not only altruistic but also pragmatic. He writes: ''Often, our students have not had the opportunity to come into contact with persons of other races, religions, education, age, or social classes. Yet as pharmacists, they are expected to provide highly personal care to all. Our classes and experiential learning need to prepare students to care across a wide range of human experience'' (17).

The health-care delivery system in the United States continues to be largely unicultural and ethnocentric in approach. This leads to poor communication, stereotyping, and lack of understanding. There is comparatively little literature in the field of pharmacy education concerning how culturally relevant content may most appropriately be incorporated into the curriculum. Several colleges of pharmacy have instituted elective courses in holistic health care, alternative medicine, multicultural issues, and other topics, however, there is little data or scientific studies on the techniques used and the outcomes achieved by such instruction. Experiential learning where students practice in pharmacies in ethnic neighborhoods rather than learn by lectures in a classroom setting may be an effective technique (18).

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