The Impact of Language as a Barrier to Effective Health Care in an Underserved Urban Hispanic Community

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OCTOBER/NOVEMBER 1998 NUMBER 5 & 6 VOLUME 65:393-397

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Some of the results were presented as a poster for research day, Mount Sinai School of Medicine, Department of Medicine, on October 29, 1996. An oral presentation of the main results was given during medical student research day, Mount Sinai School of Medicine, on February 26, 1997. An abstract of the preliminary results was published (J Gen Intern Med April 1997; 12:Suppl 1:123) for the 20th national meeting of the Society of General Internal Medicine in Washington, D.C., May 1B3, 1997.

Abstract

Background: Language barriers between patient and physician impact upon effective health care. This phenomenon is not well studied in the literature.

Methods: A survey was created in English and Spanish, and administered at the ambulatory site for medical housestaff and faculty at a teaching hospital. ACases@ were defined as patients who reported using a translator or as having poor English skills. Patients who reported not using a translator and having good English skills served as controls. Both groups were predominantly of Hispanic origin.

Results: Analysis revealed 68 cases and 193 controls. The survey completion rate was 96%. The data were predominantly categorical. Chi-square analysis was utilized. Both groups responded that understanding medication side effects corresponds to compliance (87% cases vs 93% controls, $p=0.18$). More cases responded that side effects were not explained (47% vs 16%, $p<0.001$). More controls reported satisfaction with medical care (93% vs 84%, $p<0.05$). More controls agreed that their doctors understood how they were feeling, with statistical significance in Hispanic subset analysis (87% vs 72%, $p<0.05$). Both groups felt they had enough time to communicate with their doctors (89% vs 88%, $p=0.86$). More cases than controls reported having had a mammogram within the last 2 years (78% vs 60%, $p<0.05$).

Conclusions: Lack of explanation of side effects to medication appeared to correlate negatively with compliance with medication. The language barrier correlated negatively with patient satisfaction. Cases reported more preventive testing; test ordering may replace dialogue.

Key Words: Doctor-patient relationship, Hispanic, language, non-English speaking, patient satisfaction.

Language and Effective Health Care**C**David

Introduction

It has been demonstrated that the language barrier is an independent variable responsible for Spanish-speaking Hispanics having worse health status than English-speaking Hispanics (1). An analysis of 21 studies from the MEDLINE database, 1983**B**1993 (2), revealed that the quality of the physician-patient communication was positively correlated with improved health outcome. It has also been noted that, for various logistical and perhaps other reasons, research studies tend to exclude the non-English-speaking population (3).

In response to the above findings, we examined how a language barrier between patient and physician impacts upon selected measures which are representative of the health status of an individual. We focused on compliance with medications, patient satisfaction with medical care, and preventive testing.

Methods

Site and Subjects

The study site was the ambulatory primary care practice of the faculty and housestaff of a major teaching hospital. During the study period, 115 house staff and 20 full-time faculty of the Division of General Medicine attended the practice. The locale was inner city and designated as medically underserved.

Patients were drawn from the clinic population, which is comprised of individuals who are predominantly Spanish-speaking.

Medical office assistants were available to all patients to serve as translators. They aided in interpretation and gave explanations to patients, under the guidance of the physicians. However, they had had no formal training in the skill of translating.

Survey

An evaluative instrument was developed, in both English and Spanish, as a 5-minute survey. Patients were asked to respond by either "Yes" ("Sí") or "No" ("No") to a series of written questions regarding their medical care. First, they were questioned as to their age and gender. Then patients were requested to rate their Spanish and English verbal skills as excellent, good, fair, or poor. They were also asked whether or not they used a translator in order to communicate with their physician.

To evaluate the impact of patients**:** knowledge of the side effects of their medication on their compliance, we asked whether and from whom (physicians, nurses, pharmacists, medical assistants, others) they received information regarding medications. We further asked if receiving this information influenced their compliance with therapy.

We examined patient satisfaction for its value as an indicator of clinical outcome (4). We asked patients if they had enough time with their doctor, if their doctor understood how they were feeling, and if they were satisfied with their medical care.

For preventive testing, we selected mammography and cervical cancer screening. Each of these is included as a measure within the Health Plan Employer Data and Information Set 3.0 (HEDIS 3.0) (4), which is increasingly being implemented in the current managed care era. Beginning in January 1997, these measures became required for managed Medicare and Medicaid monitoring by the Health Care Financing Administration (HCFA) (4). In accord with the HEDIS 3.0 guidelines, female patients were asked whether they had had a mammogram in the previous 2 years and if they had had a PAP test in the previous 3 years.

Institutional review board (IRB) approval for the study was obtained, and the procurement of informed consent in writing was waived. The return of a completed survey was determined by the IRB to be indicative of implied consent.

Data Collection

Data collection occurred on days patients when visited their primary care providers. Over a 3-week period, consecutive patients were given the survey after registering for a visit to their primary physician. Patients were asked to complete the survey while waiting to see their primary physician. This created a cross-sectional view of clinic attendees.

The practice site was composed of four geographic areas. The survey was given out in only one area of the practice at any particular time, in order to minimize interference with the flow of the practice. The area was randomly rotated with each successive day. On any given day, either a morning or afternoon session was alternatively surveyed, also to minimize disruption of the practice flow.

Data Analysis

According to the following predetermined criteria, the surveys were separated into cases and controls after they were returned:

1. Responders were defined as Acases@ if they reported on the survey that they had used a translator in the past or had poor verbal English skills.
2. Responders were defined as Acontrols@ if they reported that they had not used a translator and that they had fair-to-excellent verbal English skills.

A "Yes" or "Sí" response was considered a positive result in answer to questions regarding being given information about side effects to their medicines, whether they were satisfied with their medical care, and whether they had had mammography or Pap tests performed. A "No" was considered a negative response to these questions.

The data are predominantly categorical and a chi-square analysis was utilized. The exception to this is patient age, for which the Student's t test was utilized.

Further analysis of the subset of solely Hispanic cases and controls was carried out. This was done in order to examine whether language barrier impacted independently upon measured outcomes, while controlling for cultural barrier between patient and physician.

Results

The survey completion rate was 261 of 272 (96%). Eleven of 272 (4%) were not returned; these represented non-consenters and patients who had called to see their physician before they completed the survey. Cases were separated for analysis from controls in accordance with the above-predetermined criteria, based upon survey responses. A total of 68 cases and 193 controls were identified. Of the 68 cases, 4 reported having poor English skills but not having utilized a translator. This was too small a number to compare separately with cases who had used a translator, or with controls, who had not used a translator. Baseline characteristics are described in Table 1. Results for the entire population are described in Table 2. Subset analysis of Hispanic cases and controls is noted in Table 3.

TABLE 1

Baseline Characteristics of Population Studied

	Cases n=68	Controls n=193	p Value
Males	21%	22%	0.89
Females	80%	79%	0.89
Age	56 years	49 years	0.03
	14**B**86	18**B**88	
Hispanic	79%	44%	<0.001
African-American	12%	37%	<0.001
Caucasian	2.9%	9.3%	0.09
Asian	1.5%	3.6%	0.37
Other	4.4%	6.2%	0.59

TABLE 2
Summary of Results

	Cases n=68	Controls n=193	p Value
Understanding of Side Effects Corresponds to Compliance with Medication	87%	93%	0.18
Side Effects of Medication Were Explained	53%	84%	<0.001
Satisfaction with Medical Care	84%	94%	<0.05
Their Doctor Understands How They Feel	76%	85%	0.13
Feel They Have Enough Time to Communicate with Doctor	89%	88%	0.86
Doctor Discusses Mammography and Cervical Cancer Screening Tests	92%	88%	0.40
Have Had a Mammogram within the Last Two Years	78%	60%	<0.05

TABLE 3

Subset Of Hispanic Cases Vs Hispanic Controls

	Cases n=54	Controls n=85	p Value
Male	22%	20%	0.76
Female	78%	80%	0.76
Age	57 years 14-86	47 years 18-82	0.16
Understanding of Side Effects Corresponds to Compliance with Medication	88%	91%	0.64
Side Effects of Medication Were Explained	53%	88%	<0.001
Satisfaction with Medical Care	80%	95%	<0.05
Their Doctor Understands How They Feel	72%	88%	<0.05
Feel They Have Enough Time to Communicate with Doctor	88%	88%	1.00
Doctor Discusses Mammography and Cervical Cancer Screening Tests	90%	91%	0.84
Have Had a Mammogram within the Last Two Years	74%	58%	0.09

Compliance with Medication Regimen

Both cases and controls responded that an understanding of side effects corresponded to compliance with any proposed regimen (59 of 68 (87%) of cases vs 179 of 193 (93%) of controls, p=0.18). Despite this similarity in the two groups, 53% of cases reported that side effects of medication were explained to them, in contrast to 84% of controls (p<0.001), a statistically significant difference.

Patient Satisfaction

A higher percentage of controls reported satisfaction with medical care (181 of 193=94% of controls vs 57 of 68=84% of cases, p<0.05). More controls agreed that their doctors understand how they felt, but the difference did not reach statistical significance for the whole population (52 of 68 (85%) of cases vs 163 of 193 (76%) of controls, p=0.13); subset analysis of only Hispanics did in fact achieve statistical significance (39 of 54 (72%) of Hispanic cases vs 75 of 85 (88%) of Hispanic controls p<0.05). Both cases and controls felt they had had enough time to communicate with their doctors (61 of 68 (89%) of cases vs 170 of 193 (88%) of controls, p=0.86).

Preventive Testing (HEDIS-Related Measures)

Among the female patients, both cases and controls reported that their doctors had discussed mammography and cervical cancer screening tests at some point in time (50 of 54 [92%] of cases vs 132 of 150 [88%] of controls, p=0.40). However, more cases than controls reported having had a mammogram within the previous two years (42 of 54 [78%] of cases vs 90 of 150 [60%] of controls, p<0.05).

Discussion

Adherence to a medication regimen has been shown to be less likely when a patient does not clearly understand his or her physician's instructions (5, 6). Conversely, clear communication of medication instructions has been shown to be of critical value in adherence to a medication regimen (6). It was demonstrated that the simple practice of writing dosing information as number of times per day (e.g., q.i.d.) rather than hourly intervals (e.g., q6h) can significantly improve patient interpretation of instructions and compliance with therapy (6).

A language barrier is an obvious challenge to be overcome during a discussion regarding medications. We found that communication of side effects to prescribed medications is an additional issue in compliance with therapy. The lack of explanations regarding potential side effects was reported by patients to have a negative impact on their compliance with medication. We conclude that an intervention as basic as explanation of a medication's side effects is likely to increase compliance with therapy. Particular effort is needed when patients have multiple medical problems and are on complex regimens (5). These patients are more likely to lack a thorough understanding of their medication regimen (5). They are also more likely to have increased noncompliance leading to excess hospitalizations (7). We did not quantify the amount of polypharmacy in our study population. This is an important issue for us to pursue in our clinic practice.

In our study, the language barrier was reported to impact negatively on patient satisfaction.

This may be related to our finding that patients for whom a language barrier exists are more likely to feel that their physician doesn't understand how they feel. Patients did report that amount of time spent with the physician was not a factor in their level of satisfaction with care. This is interesting, since the additional time required to utilize a translator might be expected to create time pressure for the physician. A priori, one might have contemplated whether this could have led to a reduction in the amount of time available to deliver effective care.

Interestingly, cases reported a higher percentage of preventive testing. This finding differs from a study performed utilizing another Hispanic population, Mexican-American women (8). In their study, Suarez and Pulley (8) found that English was a positive predictor of both recent Pap smear and mammography. The difference found may lie in the fact that our population was enrolled in an ongoing primary care practice. Perhaps referring patients for preventive testing served in part as a substitute for verbal communication in our practice. It seems plausible that test ordering is easier than dialogue.

One shortcoming of our study was the lack of documentation as to whether patients may have either over-reported or under-reported preventive testing. Our population has had a significant tendency to obtain services from multiple institutions, making this documentation impractical.

Since the control group was culturally very similar to the case group, it would be expected that any bias due to cultural barriers between patient and physician would apply fairly equally to both groups. The validity of our subset analysis rests on this assumption. Our results were statistically significant when we analyzed the subset of solely Hispanic cases compared to Hispanic controls. We therefore conclude that it is likely that the differences found between the groups were due to a language barrier. It is notable that cases were somewhat older than controls, although among the subset of solely Hispanic cases and Hispanic controls this was not statistically significant (Tables 1 and 3). Whether or not this is related to a tendency towards younger immigrants learning a second language is not apparent from our study. Another weakness of our study is that we did not undertake to ascertain educational background in the survey. It would be important to know if this would impact as a confounding or an independent variable for compliance with medical therapy, patient satisfaction, and preventive testing in our population.

The foundation of primary care is the physician-patient relationship. A great obstacle to the therapeutic bond occurs when a language barrier exists between the doctor and patient. More attention needs to be given to the process of language translation during this interaction. This could be achieved through several different approaches. Spanish and other language courses for physicians is one option. However, it has been demonstrated that brief language courses can lead to significant mistakes on the part of the provider regarding a patient's complaints (9). Specific focus on explanations of medications and their side effects with the help of existing translators may be helpful. Written information in the patient's native language is another option. Bilingual medical assistants, nurses, or pharmacists may also assist in conveying this information. Interventional clinical trials are necessary to define methods which could reduce the impact of language barriers on the delivery of

effective health care.

Acknowledgment

This project was supported in part by the Patricia S. Levinson Summer Fellowship Program for Innovative Opportunities in Medical Education at The Mount Sinai School of Medicine.

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