Speaking and Interruptions During Primary Care Office Visits

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Background: *Patients and physicians value effective communication and consider it an essential part of the medical encounter. This study examined physician-patient communication patterns, and interruptions in communication, during patient visits with family practice and internal medicine residents.* Methods: *Observational data obtained from 60 routine primary care office visits included the time that resident physicians and patients spoke and the number and types of interruptions. A total of 22 family practice and internal medicine residents participated, 9 from family practice and 13 from internal medicine.* Results: *Patients spoke, uninterrupted, an average of 12 seconds after the resident entered the room. One fourth of the time, residents interrupted patients before they finished speaking. Residents averaged interrupting patients twice during a visit. The time with patients averaged 11 minutes, with the patient speaking for about 4 minutes. Computer use during the office visit accounted for more interruptions than beepers. Verbal interruptions, a knock on the door, beeper interruptions, and computer use all interfered with communication, and increased frequency of interruptions are associated with less favorable patient perceptions of the office visit. Female residents interrupted their patients less often than did male physicians. All residents interrupted female patients more often than male patients. Early and increased interruptions were associated with patients' perception that they should have talked more. Third-year residents interrupted patients less frequently than did first-year residents.* Conclusions: *Numerous interruptions occurred during office visits. Gender was associated with the pattern of interruptions. Physicians frequently interrupted patients before the patients were finished speaking. Computer use also interrupted physician-patient communication.*

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Most patients and physicians consider effective communication essential for the practice of good medicine. Even with technological advances, taking the patient's medical history remains important for making an accurate diagnosis, and patients highly value this physician competency. However, both patients and physicians rate physicians' communication as the least developed of clinical caregiving skills.[1] Clearly then, family medicine educators need to focus on ways to model, teach, and enhance physician-patient communication.

Demands for increased time efficiency and cost controls limit the time available for individual components of medical office visits. More than 40% of physicians noted a decline in the time they spent with patients between 1992 and 1995,[2] though more recent data refute this trend.[3] Yet, physicians need listening time to understand patients' perspectives, since patients and physicians often have different views of symptoms and treatment effectiveness.[4]

As patient autonomy replaces physician authoritarianism, communication becomes the starting point for enhancing patient responsibility and participation.[5] The volume of health information available on the Internet allows patients to access more health-related information than ever before.[6] Even very sick individuals want to be involved in personal medical decisions.[7,8] Using patient preferences enhances health outcomes[9] and increases patient satisfaction.[10] These technological changes, scientific advances, government regulations, and shifting societal values cause medical prac-

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tice to continuously change. Medical educators need to know if and how these changes affect physician-patient interactions to effectively provide optimal medical training. In this study, we looked more closely at how the time was used during the patient visit and what interruptions occurred. Specifically, we examined communication patterns by measuring the time that residents and patients spend talking during follow-up office visits. We also sought to determine how frequently resident physicians interrupted patients and if gender was associated with interruption frequency.

Methods

This study involved 60 routine office visits in primary care outpatient clinics of a southeastern teaching hospital. Patient participants were drawn from a convenience sample of adults over age 21, and only patients being seen for a follow-up appointment were asked to participate; emergent visits were excluded. Other exclusions included patients who were unable to speak or required an interpreter, pregnant women, prisoners, and individuals with a history of severe mental illness. The study was approved by the Institutional Review Board.

Physicians

Twenty-two family practice and internal medicine residents participated. Ten residents were in their first year of training, six in the second year, and six in the third year. No more than five patients from any resident were included in the sample, and observations were divided between the two clinics. Also, a visit was not observed if the patient had previously participated in the study.

Procedures

Patients and physicians gave consent for a premedical student to observe routine office visits. Both groups were blinded to the specific variables being recorded. Qualifying patients were approached for participation consent by a trained research assistant before their scheduled office visit. For those who agreed to participate, the assistant observed conversational interactions between the patient and his/her physician and recorded them on a standardized data collection form. Two stop watches were used to record the time the resident and patient spoke. The research assistant stood in the corner of the office and did not participate in any exchange with the patient while the resident was in the room. Data collected contained no identifying entries to maintain patient and resident confidentiality. Office visit time was recorded from when the resident and researcher entered the room until the resident left the examining room.

Observations recorded included the amount of time both the resident and the patient spoke, number and type of verbal and external interruptions, and the parts of the physical examination that were performed. Other recorded data included gender, race, and age of patients and residents. Total visit time, including patient wait time, defined as appointment time minus the time the resident entered the exam room, and the residents' year in training also were recorded. Following each visit, the assistant posed several questions to the patient. These questions asked about visit satisfaction, verbal exchange satisfaction, and visit length approximation.

Data Analysis

To evaluate the associations between the response variable, length of time speaking, and the independent variables (physician gender, patient gender, physician age, patient age, physician year in training, and number of interruptions), we used analysis of variance (ANOVA). This modeling approach allowed for comparison of the mean length of time speaking among the various levels of each independent variable, while controlling for the effects of the others. Two of the primary assumptions of ANOVA, homogeneity of variance and normally distributed errors, were checked and found to be satisfied, while the third assumption, independence of errors, seemed to be met by virtue of the study design.

To test for relationships between each of the independent variables listed above, and the number of interruptions during a patient visit, we used Poisson regression. This model is appropriate in this context because it is designed for data arising from a counting (or Poisson) process. In contrast, the standard general linear model approach (either multiple regression or ANOVA) would make the assumption that the data come from a normal distribution, rather than from a distribution of counts.

Finally, to model the interruptions that occurred when the patients first spoke, we used logistic regression. In this case, the dependent variable is binary and thus should not be analyzed using the standard general linear model approach. Logistic regression accounts for the dichotomous nature of the variable through the use of a link function, which in turn allows for the estimation of a linear model using the independent variables listed above.

Results

Subjects

The average patient age was 55 years. Two thirds (n=40) were female. Eighty-seven percent (n=52) were African-American. Hypertension (n=14, 24%) and diabetes mellitus (n=11, 19%) were the most common diagnoses. The remaining visits were for problems associated with asthma, pain, or other medical disorders.

Of the residents, 17 (77%) were Caucasian, 2 (9%) were African-American, and 3 (14%)were other races. Female residents (n=13, 59%) outnumbered males (n=9,

41%). The average age of the residents was 31.5 years. All residents were delivering primary care services: 41% (n=9) in family practice and 59% (n=13) in internal medicine. Residents saw an average of three patients per hour.

Interruptions

The residents averaged spending 11 minutes with each patient. No differences were found when examined by specialty. From the time the resident entered the examining room, patients spoke an average of 12 seconds before being interrupted. One fourth of the patients (n=15) were interrupted by the resident before they finished speaking for the first time. During the visit, the patient spoke an average of 4 minutes, 30 seconds longer than the average resident speaking time. Female patients spoke 4 minutes on average, and male patients spoke for about 3 minutes. Figure 1 gives a breakdown of the total visit time. Patients who reported that they had talked too much during the visit were more likely to have talked more than those not reporting that they talked too much (*P*=.0112).

Residents interrupted patients an average of twice during a visit. Patients who felt they should have talked more were interrupted by the resident more often (*P*=.0026). When patients reported that they should have talked more, there had been more beeper interruptions, knocks on the door, and computer use (*P*=.0093). Also, patients who thought they should have talked more had been interrupted more frequently when they first spoke (*P*=.0013). Third-year residents interrupted patients less frequently than first- (*P*=.0021) and second-year residents (*P*=.0060).

Physical examination took up most of the time not spent in conversation. The examinations done most frequently, expressed as a percent of all visits, were: heart (n=48, 80%); lungs (n=46, 76%); head, eyes, ears, nose, or throat (n=34, 57%); extremity (n=31, 51%); and abdominal (n=23, 39%). A neurological examination was done less frequently (n=5, 9%). Four residents took vital signs.

The most frequent interruption to resident-patient communication came when residents turned their attention to the computerized medical record. On average, residents looked at the computer at least once per visit, with 66% (n=40) of visits involving use of the computer. A knock on the door occurred during 15% (n=9) of the visits, and beepers interrupted 8% (n=4) of visits. Residents left the room and then returned during about one third (n=19, 31%) of visits. Attending physicians discussed cases with residents after the visit, and this time was not recorded.

Gender Differences

Male physicians interrupted patients more frequently than did female physicians (*P*=.0005). Both female and male physicians interrupted female patients more often than male patients (*P*= .0402). Male patients overestimated the visit length (6 minutes) more often than did female patients (3 minutes, *P*=.0170).

Patient Satisfaction

Most patients (n=46, 77%) were satisfied with the amount of time they spoke, though some (n=8,13%) thought they had talked too much. Only 10% (n=6) thought that they did not talk enough. While 59% (n=35) said they were satisfied with their visit, the remainder raised issues related to the service they had received, including the amount of time spent waiting for the physician, both in the reception area and in the examination room. The resident/patient relationship (n=27, 45%) and medical information received (n=24, 41%) were the parts of the visit patients valued most. Only a few (n=3, 7%) mentioned the medical treatment they received as the best thing about their visit.

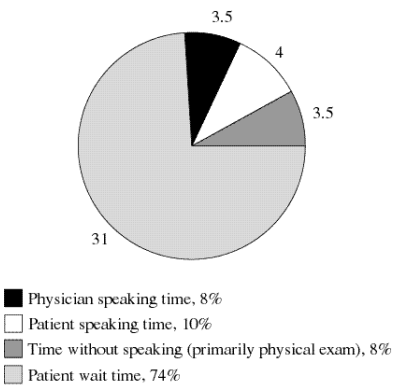
Discussion

We found that the time residents spend with patients, the frequency of interruptions, and the gender of the resident and patient all affect physician-patient communication and patient satisfaction. Patients in our study generally were satisfied with the amount of time they spoke, although, on the average, they were verbally interrupted twice during their visit. Interruptions serve as nonverbal cues that send messages about willingness to listen and provide a gauge of sender-receiver interaction.[11]

The time that physicians spend with patients also influences patient satisfaction.[12] A little over half (n=35, 59%) of the patients in this study were satisfied with their visit. Relationship to their physician and the medical information received were the parts most valued. The long waiting time (31 minutes) before seeing their physician detracted from their satisfaction. Other time-

Figure 1

Patient Time Breakdown, 42 Minutes



related elements not evaluated in this study that can affect patient satisfaction include outcomes of chronic diseases, prescribing habits, physician satisfaction, and risk of malpractice claims. In addition, the content of the visit may affect the outcome.[13]

Office visit length also may affect patient satisfaction. Although longer is generally better for patient satisfaction, limited data exist regarding optimal visit length.[14] A 1995 study reported that the average length for visits with a US family physician was 20 minutes,[15] and a 1998 report found the average family physician visit time to be 13 minutes, with visits ranging from 3 to 39 minutes in length.[16] More recent national data on office-based physician office visits indicate an average visit length of 18 to 21 minutes,[2] and another study reported no change in recent years in the length of office visits.[3] Actual time with patients in our study was 11 minutes, with actual time spent with patients averaging 34 minutes per hour; record keeping and resident-preceptor discussions took up most of the rest of the hour.

Most residents in our study saw three patients per hour, with each visit lasting about 11 minutes. Patients often do not engage in information-seeking behaviors until more than 18 minutes into the visit,[17] much longer than the current average primary care visit. Although the residents in this study listened to patients longer than they talked, they still averaged interrupting patients two times during an office visit. British researchers observed that physicians who increased their average visit length from 6.7 minutes to 7.4 minutes asked more questions related to health history and psychosocial concems.[18] This was supported by a later study, which added that increased rates of hypertension screening and health education discourse added to the benefits of lengthened visits.[19] More than three to four visits per hour are associated with suboptimal visit content,[13] and physicians who see less than 70 visits per week tend to engage in more participatory communication with their patients.[20]

Communication also plays a part in social control.[21] In our study, resident physicians interrupted patients the first time they spoke about 25% of the time, even though the average amount of time that patients spoke was 12 seconds. However, at 25%, this is less than reported by others who found that physicians interrupt their patients during their opening comment 69% of the time.[22] Others report that interruptions communicate power.[23] This may have bearing on the results of our study, which showed that female patients were interrupted more frequently than male patients were. Physician-initiated verbal interruptions and other physician-controlled external distractions can be used as a language strategy, creating the context in which the physician-patient relationship develops.[24] Individuals who interrupt are likely to be perceived as dominant, while those who are interrupted appear more passive.[25] Others call this view into question. Physicians were found to interrupt most frequently with questions rather than statements.[26] Questioning behavior could be interpreted as an effort to elicit pertinent patient information in a time-efficient manner.

Researchers, examining the role of gender on interruptive language patterns, suggest that men often deny women full rights as conversational partners.[27] Within the medical encounter, our study corroborates the findings of West, who found that male physicians interrupted patients more frequently than did female physicians.[28] Also, in our study, both male and female residents interrupted their female patients more than their male patients, confirming gender-related differences in communication.

Limitations

The southeast location and the racial and ethnic mix of patients and physicians in our study may have affected the results. Further, the study provides information about only two primary care residency programs. The length of these resident outpatient office visits and the frequency of interruptions, especially with computer use, may vary widely among programs. These factors limit generalizing results to other residency programs. Finally, although the participants were unaware of the parameters being recorded, just the presence of a student research assistant in the room could have influenced communication patterns.

Conclusions

We conclude that educators and residents should be aware that verbal interruptions are only one type of interruption. Computer use during the office visit now accounts for more interruptions than beepers. Verbal interruptions, a knock on the door, beeper interruptions, and computer use all interfere with communication, and increased frequency of interruptions is associated with less favorable patient perceptions of the office visit. Thus, attention should be focused on minimizing interruptions during patient visits. Also, residents should be made aware of the tendency to interrupt female patients more frequently than male patients and guard against this bias. We suggest that recording the time that patients arrive and when they are seen should become routine practice so that family medicine educators and residents can work to reduce patient waiting time and thereby increase patient satisfaction.

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