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# Patient and Physician Perceptions of Dimensions of Necessity of Medical Utilization

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*The goal of this research was to understand better the perspectives held by physicians and patients regarding what factors determine the appropriateness of medical visits. We also wished to create a convenient measure of those perspectives. In our first study, we conducted focus groups separately composed of 22 physicians and 16 patients to determine their respective views. In our second study, a 40-item measure derived from Study 1 themes was administered to a sample of 202 patients. Study 1 identified 20 themes, collapsing into 6 dimensions. Physicians held views that some patients were manipulative when seeking medical care. Study 2 revealed factors of "Symptom Experience" and "Doctor Expertise." The two studies revealed that the perception of medical utilization varies between patients and physicians, but both groups share many similar beliefs.* *Key Words: Medical Utilization, Appropriate Medical Visits, Focus Groups, and Mixed-Methods*

## Introduction

Given the increased strain on health care resources and the progressively pervasive public dependence on managed care over the last decade (Conrad, Bonney, Sachs, & Smith, 1996; Proenca, Rosko, & Zinn, 2000), the ability to distinguish appropriate uses of medical services from inappropriate uses or even misuse is becoming an important investigation area for health care providers. Historically, the health care provider's point of view represented the gold standard of *correct* or appropriate utilization of medical services. However, because medical visits involve both patient and provider, it becomes increasingly important to recognize that standards of medically appropriate visits may differ based on which side of the transaction one is located.

Physicians may view the repeat medical service consumer as manipulative, annoying, or "problem" misusers. Ironically, these *worried well* frequent consumers may really be motivated to make frequent visits as preventive measures because they assume a greater sense of personal responsibility for their health than do other patients (Wagner & Hendrich, 1993). Frequent users will seek care for minor symptoms in a much shorter time frame than would other patients (Wagner, Phillips, Radford, & Hornsby, 1995). People generally consider use of health care services as responsible health behavior, especially for preventive medicine, so such users may consider frequent medical services use to be appropriate, regardless of the cost-benefit ratio. Thus, physicians may view patients acting in a self-efficacious manner regarding their health with cynicism and annoyance.

Reports from older studies have shown that physicians relate "trivial or inappropriate" visits with lowered satisfaction in their practice (Mechanic, 1972), and

that physicians in primary care disciplines (i.e., family practice, pediatrics, internal medicine) report higher incidents of "patient visits seen as unnecessary" (Barr, 1983). Additionally, chronic patients can be seen with a mechanical detachment, showing them less attention than others (Mietolla, Mäntyselkä, & Vaskilampi, 2005). These judgments are based largely on a pragmatic medical viewpoint, where diseases almost always have discernable biological causes and some possibility of treatment or palliative care. Quality health care providers look for movement towards improved clinical outcomes while minimizing costs, which is especially evident when a patient relies on for-profit managed care, where a factor of decision-making is shareholder profit increase (Born & Geckler, 1998). Thus, health care providers judge health care services to be appropriate based on the cost of treatment versus the potential outcomes, and view inordinate spending for repeated care of a single individual to be generally inappropriate. This perspective is particularly important in emergency cases, in which the services provided tend to be time critical, and staff effort is a finite commodity. One study of emergency room (ER) visits found that nurses and physicians felt that more than 20% of the visits would be more appropriate for a walk-in clinic or primary care physicians, and only 28.8% of patients attempted to contact their primary care physician before going to the ER (Harris, Bombin, Chi, deBortoli, & Long, 2004).

However, patients may see their problems as personally significant, thus defining a treatment or visit as appropriate based on their own subjective experiences rather than considering the overall cost-benefit ratio of repeated services. In fact, a review by Bernstein (2006) found that ER patients tended to be sicker than usual and required more health care in general. Therefore, the patient view of appropriateness may be defined in terms of factors such as symptom type and severity, duration and number of symptoms, and overall health.

Unfortunately, these symptom-level factors that may determine the appropriateness of medical utilization for a patient are major predictors of difficult doctor-patient relationships (Hahn, 2001). Mechanic (1974) suggests that frustration arises because the patient's illness and the physician's organic diagnostic and treatment tools often do not match a patient's presenting problems. Physicians cannot directly change life stressors or easily affect somatizing behavior, factors that underlie many office visits (Fink, 1992), and in the case of somatizing behavior, underlie increased ER visits and healthcare costs (Barksy, Orav, & Bates, 2006). Mechanic (1974) also reports that physicians "were most likely to attribute triviality" to patients' complaints when they had insufficient time to investigate them. Given the pressure to see as many patients as ethically possible during the day, it is unsurprising that physicians might sometimes project frustration with their inability to resolve the patients' illnesses onto the patients themselves. Unfortunately, this behavior could result in the physician errantly viewing the patient with disdain, contempt, or as an unnecessary user. Then, the problem may not always lie entirely with apparent patient misuse, but rather with the physician's lack of time and frustration arising from a desire to help but an inability to change both patients' life stress and chronic behavior patterns.

Ironically, patients requiring frequent use of medical services tend to come from lower-income and potentially more vulnerable populations, magnifying the negative effects of physician cynicism towards treatment (Rohrer & Culica, 1999). We were interested in exploring the differences between patient and physician categorization of

"appropriate use" and developing an effective way to measure attitudes on either side of the doctor-patient transaction. While our immediate goal was to understand the dimensions of medical appropriateness, the far-reaching purpose of this examination was to understand the differences in perspective to improve the quality of care provided to patients. So, we conducted the study in two separate phases. In the first phase, we conducted a series of focus groups separately composed of physicians and patients to determine respective views on what constitutes an appropriate and/or necessary medical visit. Then, a qualitative analysis of the content of the sessions was used to develop a 40-item questionnaire for use in the second phase of the study. In the second phase, the questionnaire was administered and factor analyzed to determine what aspects of appropriateness stood out and represented the most variance for the subject. This finding allowed us to produce an abbreviated, representative measure of attitudes regarding appropriate medical utilization with relatively good psychometric properties. Both phases were approved by the Institutional Review Board of the Medical College of Georgia and all participants completed an informed consent before completing the questionnaire. The investigators are trained as psychologists, two at the master's level and one at the doctoral level. Dr. Wagner is the course director of a broad-based module teaching medical students communication skills and she serves as a research director in the Department of Family Medicine. She has an ongoing interest and research activity in understanding how persons make medical decisions both to seek care and adhere to recommendations. Ms. Moseley and Mr. Warren work as communication training facilitators and are on the Family Medicine research team.

## Phase 1

### *Qualitative approach*

We felt that a semi-structured focus group method was an appropriate means of getting at the underlying attitudes held regarding the appropriate use of medical services. Given that the topic was not well understood in the first place, it would have been inappropriate to attempt to use a purely quantitative approach. While producing a quantitative measure was an eventual goal of ours, at the beginning we would not have been certain what we were really measuring, or that we had not missed some important aspect of the subject. We felt that a focus group method would allow us to uncover participants' beliefs in a more naturalistic way, providing us far more depth than a strictly quantitative examination might have at this point in our research. Therefore, we reviewed the existing literature and drew upon our previous work to generate a set of trigger questions the might provoke discussion of what defines an "appropriate" medical visit (Crabtree, Miller, Aita, Flocke, & Stange, 1998; Malterud, 2001).

### *Participants and recruitment*

For the physician focus groups, faculty investigators involved with our project met with various physicians from the Department of Family Medicine at an academic medical center in the Southeastern United States, personally and in groups at regular meetings, and explained the nature of the focus groups and the purpose of our research.

Physicians were recruited through email and word of mouth. Focus groups were scheduled to accommodate as many interested physicians as possible. In the end, three physician focus groups were conducted, each attended by five to nine participants. This is in keeping with Krueger (1994) and Morgan's (1997) recommendations for three to six focus groups. The 22 physicians recruited for the physician focus groups consisted of 5 full-time faculty and 17 residents (12 male, 10 female; 19 Caucasian, three African American, age range 26-55 years). Each physician group was mixed-gender, with one African-American participant per group, both of whom were female. For the patient focus groups, patient participants were recruited through physician referrals and discussions with study investigators as they presented for non-emergency concerns at the Family Medicine Clinic.

Patient focus groups were set up in a similar fashion to the physicians and participants were recruited through word of mouth and and fliers. The 16 patient participants consisted of two males and 14 females, 13 of whom were Caucasian and two of whom were African American and one of whom was Hispanic (age range 28-73 years). Five patient focus groups were conducted, and each was composed of two to five patients. Although two of our patient groups were very small (two participants each), we chose to include those discussions into our analyses. There were two reasons why we retained the content of these two-person focus groups, even though it runs contrary to typical recommendations that groups contain between six and 12 participants (Bernard, 1995; Krueger, 2000; Morgan, 1997). In some cases, rescheduling focus groups would have been prohibitively inconvenient for the patients who attended these two small groups. More importantly, while having only two participants limited the amount of potential discourse in the groups, we felt that it would have been remiss to omit their input considering our goal of gathering as much data as possible. Krueger (1994) and Morgan both acknowledge that groups of sizes as low as three participants can still provide useful information, especially when the group members have specialized experience. Our participants for the patient groups were all patients at our Family Medicine clinic, and the topic of justification of medical services was one that weighed heavily in their own wellbeing. Thus, we considered their experiences to be valuable enough to the body of information we were collecting that we included them in our group data.

Three of the patient groups were composed entirely of females, and the other two only had one male participant each, both of whom were African American.

Our recruitment process allowed for personal contact with both participant populations, and gave us the opportunity to involve representative samples of both populations. For both patient and physician groups, there was no effort to stratify group composition according to race, gender, or age, and instead groups were composed according to which participants could meet at a given time. All focus groups were conducted in conference rooms within the Department of Family Medicine and lasted between one and two hours.

### *Data collection*

At the beginning of each session a group leader, who was a member of the investigative team with previous experience in qualitative research, explained the purpose

of the study and the format of the group session. We employed three different group leaders, all of whom were drawn from the investigative team, had experience in both medical and academic settings, and were familiar with the issues faced by both physicians and patients. Before starting the session, all participants completed informed consent documents, and were assured that participation was voluntary and that they would not be individually identified. Audio recorders were used to document the focus group discussions for later transcription by the research team. Sessions were conducted as semi-structured interviews with a small number of participants, who were encouraged to share ideas and discuss their perceptions openly (Basch, 1987). See Table 1 for a list of trigger questions. A group leader both facilitated discussions and promoted dialogue through a series of standard questions. This approach was used to keep the groups focused on the topic while allowing the participants to share their thoughts. The data used for later analysis consisted of the transcripts of the recorded focus group discussions.

Table 1

*Focus Group Trigger Questions for Study 1*

| **Physician Trigger Questions** | **Patient Trigger Questions** |
|---|---|
| Tell us your name and number of years in practice. | Tell me your first name, age and occupation. |
| We hear so much today about controlling medical costs—one part of which is the reduction of inappropriate utilization of medical services. The purpose of this discussion is to begin to characterize "appropriate" outpatient utilization. The results of the discussion may be used to develop a *necessity of the visit* scale. We will also be discussing similar questions with small groups of patients. Today we simply want to discuss what you might consider to be an inappropriate visit. | We hear a lot today about controlling the costs of medical care. That makes it important for everyone to agree about when it is appropriate to visit the doctor. That's what we want to talk about today—your opinions about when it is appropriate to visit the doctor. |
| 1. When you hear the words "inappropriate visit" what comes to your mind?<br>2. Can you think of any visits which you felt were not appropriate? Describe. What characterized those visits?<br>3. What percent of patient visits do you consider to be appropriate? Medically necessary?<br>4. In your opinion, is an appropriate visit the same as a necessary visit?<br>5. What variables influence "appropriateness"? | 1. Have you ever gone to see the doctor and then wondered whether or not you should have? Can you describe the visit?<br>2. Did you ever have a problem and hesitate about going to the doctor because you thought maybe it wasn't necessary? How did you make your decision?<br>3. Have there ever been visits with a doctor where you left feeling that he/she had thought the visit was not appropriate (trivial, unnecessary, a waste of his/her time?) Describe.<br>4. What percent of your visits to a doctor do you think are appropriate? Medically necessary?<br>5. In your opinion, what characterizes an appropriate visit? Is that the same as a medically necessary visit?<br>6. What determines how patients decide to visit the doctor? |
| a) Discomfort, pain?<br>b) Unexplainable symptoms, rare symptoms<br>c) Bleeding<br>d) Duration of symptoms<br>e) Severity of symptoms<br>f) Patient personality<br>g) Diagnosis<br>h) Diagnostic tests | a) Discomfort, pain?<br>b) Unexplainable symptoms?<br>c) How long you had the symptoms?<br>d) How severe the symptoms are? |

i) Anything else?

6. To what extent do you think patients can assess their need for a medical visit?
7. Would you think a visit was inappropriate if you did not find a diagnosis? Give a prescription? Repeat with the word unnecessary?
8. Do you think patients perceive a visit as unnecessary if they do not receive a diagnosis? Prescription?

One model that has been proposed is to distinguish as follows:

| Inappropriate | Appropriate, Not Necessary/Critical | Appropriate, Necessary/Critical |
|---|---|---|
| Don't visit | Might Visit | Must/Should Visit |

If we were to take the symptom of headaches that a patient might experience, can we put guidelines in *the Don't Visit, Might Visit and Should Visit* boxes?

What about "Stomach Trouble"?
What about "Feeling Blue"?
What about "Chest Pain"?

e) Anything else?

7. Do you think patients can accurately assess their need for a medical visit?
8. Would you think a visit had been unnecessary if you did not receive a "diagnosis"? A prescription?
9. Do you think the doctor perceives a visit as unnecessary if he does not find a diagnosis? Give a prescription?

One model that has been proposed is to distinguish appropriate and necessary medical visits as follows:

| Inappropriate | Appropriate, Not Necessary/Critical | Appropriate, Necessary/Critical |
|---|---|---|
| Don't visit | Might Visit | Must/Should Visit |

If we were to take the symptoms of headaches that you might experience, could you describe the headache experienced in the *Don't Visit, Might Visit and Should Visit boxes*?

What about "Stomach Trouble"?
What about "Feeling Blue"?
What about "Chest Pain"?

### *Analysis*

Each focus group session was transcribed by a member of the research team, from audio tape to digital text format. We wanted to approach our data openly, allowing for different points of view, acknowledging the interpretative nature of qualitative research. To that end, session transcripts were reviewed by members of the investigative team individually and each member noted recurrent phrases and themes. Then, our team met as a group and compared our findings in order to come to a group consensus on which themes consistently recurred, and which concepts were similar enough to be considered coherent themes. We felt that this allowed for a varied and healthy level of individual interpretation while still ensuring that our findings would be consistent. We evaluated transcripts from patients and physicians separately so that we would later be able to make comparisons between the two participant groups with regard to theme content.

Using a process of immersion and crystallization (Borkan, 1999; Miller & Crabtree, 1999), we reviewed the identified themes and, through an iterative process of content analysis (Strauss & Corbin, 1998), developed a table of themes for patients and physicians, each with quotes that exemplified our identified themes. Analysis was carried out through review by individual group members of each complete focus group manuscript. Once each member had reviewed each transcript, coding the themes according to concept and similarity of associated quote, the members came together to discuss their views of what themes appeared to emerge and were redundant enough to consider coherent themes. When there was disagreement between reviewers regarding association of themes, these differences of opinion were resolved through respectful discussion and eventual consensus. Once coherent themes were established, a table of

themes was constructed to use for organization and categorization. By using this theme table, we were better able to compare themes from both patient and physician viewpoints and identify that we had reached saturation as we analyzed each new transcript.

Table 2

*Focus Group Themes and Example Statements*

| **Focus Group Themes and Sub Themes** | **Identified by** | **Example statements** |
|---|---|---|
| Characteristics of symptoms<br>Newness<br>Pain intensity<br>Duration<br>Urgency<br>Potential to be self-limiting<br>Unexplainable | Patients and Physicians | "If the pain is that severe, yeah that's appropriate." (Physician)<br><br>"Like fever of unknown origin and you are guessing all day long what it is, for weeks, that's appropriate." (Patient)<br><br>"…you get into a big problem between what the doctor thinks and what the patients think. What patients think is acute and severe is laughable." (Physician)<br><br>"I have a lot of chest pains. Sometimes, I feel like I could've stayed home, but at the time I'm feeling really ill." (Patient) |
| Decision-Making Authority<br>Patient as expert<br>Physician as expert | Patients and Physicians | "I think patients know their own bodies." (Patient)<br><br>"And necessary vs. unnecessary is usually determined after the doctor visits the patient." (Physician)<br><br>"We know our bodies , since we've been in them our entire lives. We know what's normal and what's not normal." (Patient)<br><br>"Patients cannot usually determine necessity. That's something the doctors determine by examining the patient." (Physician) |
| Psychological Factors<br>Depression<br>Stress<br>Somatization | Patients and Physicians | "I think feeling depressed is an appropriate criteria (sp) for an office visit in most circumstances." (Patient)<br><br>"I think most mentally healthy patients call tell when it is appropriate to visit the doctor." (Physician)<br><br>"…Except for a minority, which may have severe psychological disorders, you can manage these patients [somatizers] by giving them frequent office visits, once every 4-6 weeks." (Physician)<br><br>"„as people get older, I think the record will show they just get paranoid and go to the doctor more." (Patient) |

| | | |
|---|---|---|
| Treatment Effects<br>Physician did something (e.g., wrote prescription)<br>Physician found something (e.g., diagnosis)<br>Physician provided reassurance | Patients and Physicians | "A lot of times when a patient comes in, it's more important for you to tell them what they don't have as it is to tell them what they do have." (Physician)<br><br>"I know I've had some problems, and I didn't know if I was having a heart attack or what. Then they checked me, and told me I was alright." (Patient)<br><br>"…so I left and thought, well I didn't have to come, but you know then I know that it is not something I need to worry about." (Patient)<br><br>"(they) waited 1 ½ hours to be seen for 30 seconds to be told everything is good and fine. They'll tell you that that's inappropriate. But that's more an issue of satisfaction." (Physician) |
| Visit Type<br>Physical exam<br>Follow up visit<br>Prescription renewal | Patients and Physicians | "…I go once a year for a checkup because I can't afford the time down, so a little ounce of prevention goes a long way." (Patient)<br><br>"I feel that preventative care…are [*sic*] appropriate when done at the appropriate time and at appropriate intervals." (Physician)<br><br>"I've often been to follow-up visits and wondered if they were necessary. But I went ahead and went since I had the appointment." (Patient)<br><br>"I think something that is inappropriate is for patients to call for a prescription instead of coming in…you should still come in for your regular checks." (Physician) |
| Characteristics of patients<br>Lack of knowledge<br>Manipulative nature<br>Level of treatment compliance | Physicians Only | "I think it is inappropriate for patients to come to the doctor just to get a note for missed work." (Physician)<br><br>"Even though we're not supposed to use the term 'malingerers,' there are people who use the medical system for their own secondary motives." (Physician)<br><br>"There you have a lot of parents who bring their kids in for a little cold, thinking, well, I can get out of work and only have to pay $5 to visit the doctor." (Physician)<br><br>"It is appropriate to bring the sick child in, but it isn't appropriate to bring the other two kids in who don't show any sign of sickness…I think the mother is just bringing the other two in trying to get three for one care." (Physician) |

## *Results*

This qualitative process identified 20 subthemes, with 17 common to both patients and physicians, three unique to physicians, and none unique to patients. We then collapsed those subthemes, grouping them according to similarity and context. The process of collapsing themes was carried out by group discussion, with all reviewers voicing their views of how the themes were composed. Decisions were made through group consensus, with care taken to ensure that all reviewers were able to have their opinions heard and evaluated with the same weight. This process resulted in the

identification of six major themes that represent overall attitudes of patients and physicians regarding what determines the appropriateness of a medical visit (see Table 2). As with the original subthemes, physicians and patients differed slightly in what they considered important factors in determining the appropriateness of a medical visit. Physicians tended to voice the opinion that patient characteristics, defined by patients' perceived lack of knowledge and levels of compliance and manipulation, led to unnecessary or inappropriate office visits or usage of medical services. In this way, physicians were found to have a somewhat cynical view of some patients, with a theme of patients misusing medical services to their own gain and being manipulative as an aspect to consider when judging the worthiness of a visit. Unsurprisingly, patients did not voice this as a concern. Other than this one area, similar ideas came out of both physician and patient discussions.

## Phase 2

### *Participants*

A convenience sample of 202 patients without acute illnesses over the age of 18 presenting to the participating primary care clinic during a two-month period agreed to participate: 21% were male and 79% were female; 44% were African-American, 54% Caucasian, and 2% neither African-American nor Caucasian. Participants identified their age by selecting the category in which their specific age was included (e.g., 20s, 30s, 40s, etc.). The median age category was 40s, with age categories ranging from the 20s to 70s.

### *Materials*

A forty-item Likert-type questionnaire was developed based on the content of the focus groups reported in Phase 1 (See Table 2). We developed scale items reflecting the conceptual dimensions from the focus groups. In order to create the individual items from the themes, we examined the themes themselves, as well as exemplary statements from each theme. To adapt these themes and statements to a quantitative form, we rephrased statements and concepts from each theme into a Likert-type item in such a way that a participant could rate his/her degree of agreement with each representative statement on a scale of "Strongly Disagree," "Disagree," "Neither Agree nor Disagree," "Agree," and "Strongly Agree." These response choices were coded from one to five, respectively, such that a higher score indicated a stronger degree of agreement with the question. For example, one of the items used to represent the theme of "Physician as expert," was "The doctor can tell if the visit is necessary." Likewise, for the theme "Manipulative nature," referring to characteristics of patients, one of the items we used was "Patients often use medical visits to get out of situations they don't like." Our initial survey was composed of 40 items (See Table 3), representing two items per initial subtheme identified, based on discussion among investigators involved in themeing This resulting measure was then administered to participating patients. The resulting data were subjected to factor analysis to determine empirical groupings of items reflecting attitudinal beliefs in the necessity of medical utilization. Items with the highest pattern/structure coefficients were used to construct a condensed survey.

Table 3

*40-item Patient Measure Items*

1. Feeling very worried is a good reason to see the doctor.
2. The reason patients go to see their doctor so often is because they have to hear the same advice many times before they follow it.
3. Stress may be reduced by a visit to a medical doctor.
4. If patients would do what their doctors tell them, they wouldn't need as many visits.
5. Patients cannot accurately determine what is urgent.
6. Some patients have aches and pains that are unexplainable and need to have them checked out by their doctor.
7. The more patients know, the more unnecessary visits they make.
8. Patients should see a doctor for rare symptoms.
9. People who are sad or "blue" should seek medical care.
10. How often a patient sees the doctor is a matter of personal choice.
11. Medical doctors know what is best for their patients.
12. Patients often use medical visits to get out of situations they don't like.
13. People know when they need to go to the doctor.
14. An unusual symptom should be checked out by a doctor.
15. The greater the pain, the quicker a person should go to see the doctor.
16. Some people go to the doctor even for very minor problems that would be fine if they just gave it some time.
17. If symptoms last a long time, a doctor should be seen.
18. Feeling sad, blue, or "down" is no reason to go to the doctor.
19. Anyone who has put up with something for a while should have it checked out.
20. Giving a patient reassurance is a valuable use of a doctor's time.
21. If someone has already tried to treat their illness with medicines they bought on their own and felt no better, then they should call a doctor.
22. Someone with a history of medical problems should go to the doctor often.
23. Sometimes a person's age means they should go to the doctor more frequently.
24. The doctor can tell if the visit is necessary.
25. People who have more risk of illness should see their doctors regularly.
26. It is OK for a person to see the doctor even if they are feeling no pain.
27. Young children and older adults need to see the doctor but middle-aged people usually do not.
28. If over-the-counter drugs don't work, see a doctor.
29. When patients have symptoms that they don't understand, they should be seen by a doctor.
30. Severe discomfort is a good reason to get a doctor's opinion.
31. Sometimes people just need to hear that they are ok from their doctor.
32. Many people visit their doctor before the problem is very serious.
33. Many patients do not have much medical knowledge and need to go to the doctor to get it.
34. It is up to the patient to figure out how urgent their health problem is and if they should go see their doctor.
35. Physical symptoms that come from worrying about personal troubles can be helped by a doctor.
36. Patients see doctors too frequently.
37. People should decide for themselves if they need to seek medical help.
38. Some patients expect doctors to fix their life problems and use them for other than medical services.
39. When there is something new with a person's health problem, they should see the doctor.
40. Lots of problems would simply clear up in time without a medical visit.

*Analysis and results*

A principal components analysis (PCA) was performed to reduce the items into representative factors. Principal components analysis was chosen as a method of data reduction in order to uncover the dimensions of appropriate use of medical services. For this analysis, we used a Varimax rotation, employing the assumption that the dimensions of conceptual "appropriateness" for medical visits were distinct from one another (Bryant & Yarnold, 1995). Applying the K1 rule (Kaiser criterion) to the items resulted in retaining 12 first-order factors with eigenvalues greater than one, accounting for a cumulative 59.4% of the total variance. In order to determine which factors were retained, we examined the the Cattell scree plot for the PCA, which showed a marked break after the second component, indicating a substantial amount of meaningful variance was accounted for by those first two components. Thus, items from the first two factors loading at the 0.5 level or higher were retained and accounted for the greatest amount of meaningful coherent variance (17.5%) among the factors. Although setting our loading criteria this high has potential to discount the numbers of observations in a sample (Stevens, 1986), we chose a factor correlation coefficient of 0.5 or higher as an item retention criterion in order to minimize the inclusion of less representative factors for our resultant short-form survey. The first factor consisted of nine items ($\alpha = 0.82$) dealing with subjective symptom experience as a measure of appropriateness (titled "Symptom Experience") and accounted for 11.87% of the variance. The second factor consisted of four items ($\alpha = 0.62$) representing the belief in a physician's judgment as a measure of appropriate medical utilization (titled "Doctor Expertise") and accounted for 5.63% of the variance.

The score reliability, as measured by coefficient alpha, for the total scale was 0.74. Table 4 details individual item loadings on each of the two resulting factors. As expected, both factors were statistically significantly correlated ($r = 0.215$, $p < 0.01$) but not to the degree where they could be considered indistinguishable from one another. The resultant short-form survey composed of items from these two factors is detailed in the Appendix.

A 6 x 3 x 2 multivariate analysis of variance (MANOVA) was conducted using age category, race, and gender as independent variables and scale scores on Symptom Experience and Doctor Expertise as dependent measures. Box's M was statistically significant ($M = 123.4$, $p < 0.01$), indicating that the groups in the analysis did not have similar covariance matrices. Levene's test of equality of error variances was not statistically significant, indicating homogeneity of variance across factors.

A statistically significant main effect of age occurred on the dependent measures ($F$ (4, 298) = 2.01, $p < 0.05$), and no statistically significant interactions occurred among any of the independent variables. Bonferroni adjustment was used to avoid Type 1 error in examining the between-subject effects. Post-hoc testing revealed statistically significant differences on the Doctor Expertise factor between older and younger participants. Participants in their 20s scored statistically significantly lower than did participants in their 50s ($p < 0.05$), 60s ($p < 0.05$) or 70s ($p < 0.01$). Participants in their 30s also scored statistically significantly lower than did participants in their 70s ($p < 0.05$). This finding suggests that older participants might value their physician's

judgment more highly than do younger participants. Table 5 shows mean differences and statistically significant levels.

Table 4

*Items Retained for Two-Factor Measure (Phase 2)*

| | **Factors** | |
|---|---|---|
| | **Symptom Experience** | **Doctor Expertise** |
| An unusual symptom should be checked out by a doctor. | .699 | |
| When patients have symptoms that they don't understand, they should be seen by a doctor. | .681 | |
| Anyone who has put up with something for a while should have it checked out. | .678 | |
| When there is something new with a person's health problem, they should see the doctor. | .664 | |
| If symptoms last a long time, a doctor should be seen. | .664 | |
| Severe discomfort is a good reason to get a doctor's opinion. | .655 | |
| Someone with a history of medical problems should go to the doctor often. | .606 | |
| The greater the pain, the quicker a person should go to see the doctor. | .552 | |
| If someone has already tried to treat his (or her) illness with medicines bought on his (or her) own and felt no better, then he (or she) should call a doctor. | .533 | |
| The doctor can tell if the visit is necessary. | | .678 |
| Patients cannot accurately determine what is urgent. | | .619 |
| Medical doctors know what is best for their patients. | | .609 |
| If patients would do what their doctors tell them, they wouldn't need as many visits. | | .586 |
| | α = .817 | α = .620 |

Table 5

*Significant Mean Differences for Doctor Expertise*

| Age Group | 20s | 30s |
|---|---|---|
| 50s | -2.18* | -1.56 |
| 60s | -2.75* | -2.14 |
| 70s | -3.56** | -2.95* |

* Significant at p<.05
** Significant at p<.01

## Limitations

The strength of this study is the combination of qualitative and quantitative approaches to an understudied area. Qualitative work is constrained by the characteristics of the team who participated in the themeing process, all of whom were psychologists. The quantitative work is limited in generalizability as it was completed at one hospital in one region of the country. Perspectives of other specialty physicians and patients at other non-family medicine practices may be quite different.

## Conclusion

The aim of this study was to shed light on what physicians and patients defined as an appropriate medical visit and determine a way to measure attitudes on this subject. We found that the concept of an appropriate medical visit is complex and difficult to describe simply. Qualitative analyses from Phase 1 suggest that the definition of appropriate utilization of medical services varies somewhat depending on whether one is receiving or delivering services. While there is a great deal of agreement between physicians and patients, we found that there were areas where the two groups differed. Themes of symptom characteristics, patient versus physician authority, psychological factors, treatment effects, visit type, and patient characteristics emerged as the most prominent when considering medical visit appropriateness for both physicians and patients. Our findings also suggested that some physicians may have a cynical view of patients with regard to their healthcare-seeking behaviors.

We were able to identify from the focus groups which themes and ideas were more endorsed and then use representative items to construct an initial scale to measure participants' attitudes on this multi-faceted subject. Questionnaire results suggest that the idea of an appropriate medical visit is incredibly complex and comprises separate but related concepts. Twelve separate factors were revealed, but after rotation, only two, Symptom Experience and Doctor Expertise, accounted for the most variance—albeit only 17.5%—in whether or not a patient should see his/her doctor in any given situation. Referring to the focus groups conducted in Phase 1, one can find similarities to these factors in the themes of Symptom Characteristics and Patient Characteristics. It is possible that other themes crystallized from the focus group results also represent the relatively indistinguishable factors identified through factor analysis, but only the first two factors represented enough coherent variance to justify retaining them for the final thirteen-item measure of medical appropriateness.

The notion of an "appropriate" use of medical services is obviously very complex and subject to an individual's personal experiences. Based on our factor analysis, the measure we have constructed captures criteria used to determine when to seek medical services. These findings suggest that the severity, nature, and history of the patients' symptoms, as well as how much faith the patients place in their physician's judgment of their situation influence the attitudes regarding the appropriateness of an office visit. We suggest that this measure could be of great use in further examining patients' decision-making abilities and what types of situations they believe warrant an office visit. This use could be of particular interest given our findings suggesting that older patients tend to value their physician's judgments more highly than do younger patients. Furthermore, the primary component structure of this measure suggests that it may be very useful if incorporated into a medical school curriculum to explore students' attitudes regarding medically appropriate visits. However, before we explore these possible uses, this instrument requires further research for refining and validation.

Also of note is the benefit to using a mixed-methods approach in carrying out this study. We had the goals of increasing our understanding of these factors and finding a means to succinctly measure them. One approach would have been to attempt to create a survey from our own observed experiences and ideas, but then we would not have truly been starting from an accurate base. By starting with a broad, open-ended qualitative

approach, we obtained a rich understanding of the viewpoints of both patients and physicians on the topic of appropriate use of medical resources. From this information representing the attitudes of the patients, we were able to construct and refine a short, representative quantitative measure of our concepts of interest. Although a quantitative measure may lack the ability to pick up on the subtleties of opinion and belief, the measure we have produced can be used to quickly survey these attitudes in a variety of situations.

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## Appendix

Patient Visit Questionnaire

Age: 20s_____30s_____40s_____50s_____60s_____70s_____

Race: African-American_____ White_____Other_____

Gender: Male_____ Female_____

Please circle the answer below each question which best describes how much you agree or disagree with the question. Thank you.

1. An unusual symptom should be checked out by a doctor.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

2. When patients have symptoms that they don't understand, they should be seen by a doctor.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

3. Anyone who has put up with something for a while should have it checked out.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

4. When there is something new with a person's health problem, he (or she) should see the doctor.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

5. If symptoms last a long time, a doctor should be seen.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

6. Severe discomfort is a good reason to get a doctor's opinion.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

7. Someone with a history of medical problems should go to the doctor often.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

8. The greater the pain, the quicker a person should go to see the doctor.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

9. If someone has already tried to treat his (or her) illness with medicines he (or she) bought on his (or her) own and felt no better, then he (or she) should call a doctor.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

10. The doctor can tell if the visit is necessary.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

11. Patients cannot accurately determine what is urgent.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

12. Medical doctors know what is best for their patients.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

13. If patients would do what their doctors tell them, they wouldn't need as many visits.

| | | | | |
|---|---|---|---|---|
| Disagree A Lot | Disagree A Little | Neither Agree Nor Disagree | Agree A Little | Agree A Lot |

## Author Note

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