The Development and Partial Assessment of the Medical Communication Competence Scale

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The purpose of this research was to develop and partially assess a self-report scale for measuring doctors' and patients' perceptions of self-communication and other-communication competence during a medical interview. Previous research into the components of communication competence and medical discourse were used to develop the Medical Communication Competence Scale (MCCS). It was hypothesized that the items of the MCCS would form four clusters: information giving, information seeking, information verifying, and socioemotional communication. The cluster analysis results provided support for the hypothesis. Results of several other analyses provided additional support for the validity of the MCCS.

Although considerable attention has been given to doctor–patient communication over the last three decades (Ong, DeHaes, Hoos, & Lammes, 1995; Thompson, 1994), several researchers have observed that little is actually known about exactly how doctor–patient communication impacts health outcomes (e.g., Korsch, 1989; Lohr, 1988; Stiles, 1993; Street, 1993; Waitzkin, 1990). It perhaps goes without saying that significant advancement in our understanding of doctor–patient communication requires continued close attention to the actual interaction between

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doctors and patients during medical consultations. Although direct observation of conversation is critical, assessment of participants' perceptions of communication can also play an important role in advancing health communication research. As with all communication situations, there is the potential for discrepancy between medical consultation participants' discourse and perceptions of what was said. For example, Street (1992) reported a discrepancy between patients' perceptions of doctors' communication and doctors' actual messages, particularly with respect to informativeness. Similarly, Makoul, Arntson, and Schofield (1995) found that patients' overestimated doctors' informativeness about medications by about 25%. Understanding the reasons for, and sources of, these discrepancies is important to obtaining a clearer understanding of how communication functions in the medical context and how to improve it. The purpose of this research is to assess the potential utility of an instrument designed to measure perceptions of self- and other-communication during medical consultations.

**ASSESSMENT OF PERCEPTIONS OF MEDICAL COMMUNICATION**

Most of the effort to assess perceptions of communication in medical consultations has centered on the concept of patient satisfaction, as opposed to communication per se. Hall and Dornan's (1988a, 1988b) meta-analysis of research into patient satisfaction indicates that most patient satisfaction measures assess patients' perceptions of providers' informativeness and socioemotional communication, or both. However, there is considerable variance in the number of items used to assess these aspects of communication, and researchers often have mixed situation-specific items with general items. Moreover, satisfaction measures typically also include items that are designed to assess other aspects of satisfaction, such as providers' technical competence and the adequacy of, and access to, physical facilities. Thus, even when satisfaction measures include items designed to assess communication, they are often limited in number, and communication-related items are mixed with items intended to assess other aspects of medical care. Perhaps most important, though, is that satisfaction measures almost always focus on only patients' perceptions. Relatively little attention has been given to assessing doctors' satisfaction or doctors' perceptions of medical communication (see Shore & Franks, 1986; Winefield & Murrell, 1992). Given that both doctors and patients contribute

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1 In this regard, the senior author (Donald J. Cegala) has developed a language coding system that tracks the topic of medical consultation participants' conversation, the function served by an utterance, and the extent to which a subsequent utterance addresses the central meaning and intent of the prior utterance (Cegala, 1997; McNeilis, 1995). These features of the coding system are relatively unique, as most existing schemes do not assess the content of participants' utterances or the extent to which subsequent utterances address central concerns implied in prior utterances.
to the communicative environment of the medical consultation, it would appear important to employ instruments that assess both doctors' and patients' perceptions of communication.

Some scholars have recognized many of the problems in using satisfaction instruments to assess perceptions of doctor–patient communication. For example, Schneider and Tucker (1992) and Galassi, Schanberg, and Ware (1992) developed scales designed specifically to assess doctor–patient communication. However, even these scales do not provide an adequate assessment of participants' perceptions of communication during a medical consultation. The Schneider and Tucker scale consists of general items (as opposed to situation specific) and, thus, the instrument is less useful for assessing perceptions relevant to specific medical consultations. In addition, the instrument includes some items that do not focus on communication per se (i.e., waiting time), and there is relatively little attention given to information exchange. The Galassi et al. instrument includes situation-specific items, but several items reference global behavior rather than specific communicative acts (e.g., "Doesn't seem interested in me as a person"; "Person really respects me"; "Difficult to get conflicting information straightened out"). In addition, the information subscale emphasizes communication about the recommended treatment to the exclusion of other important topics, whereas the communication subscale items deal only with question asking. Similar to satisfaction instruments, both the Schneider and Tucker (1992) and Galassi et al. (1992) instruments measure patients' perceptions of providers' communication, but do not assess providers' perceptions. Overall, then, there appears to be a need for a communication-focused instrument for assessing self- and other-perceptions of doctors' and patients' interaction.

MAJOR COMPONENTS OF COMPETENCE IN THE MEDICAL CONSULTATION

Although physicians and patients have other goals during a medical consultation (Smith-Dupre & Beck, 1996), the literature on doctor–patient communication clearly emphasizes two major goals: information exchange and relational development (e.g., Beisecker & Beisecker, 1990; Ben-Sira, 1980; Frederikson, 1993; Guttman, 1993; Kreps, 1988b; Ong et al., 1995; Roter, Hall, & Katz, 1988; Squier, 1990; Thompson, 1994). However, despite the attention these communication dimensions have received, they have not been precisely defined conceptually or operationally.

Information Exchange

There is general agreement that information exchange is at the heart of the medical consultation. Doctors need information from patients to determine an accurate diagnosis and effective treatment plan, and patients need information about their
medical problem and the rationale and procedures for its treatment. Yet, available language coding systems have been criticized for having inadequate categories for identifying and tracking information exchange during medical consultations (e.g., Roter, 1989; Tuckett & Williams, 1984), and instruments designed to measure perceptions of communication typically include only a few information-related items, usually emphasizing doctors’ information giving (Hall & Dornan, 1988a).

The senior author’s research program has focused on information seeking, giving, and verifying as important components of information exchange during medical consultations. For example, research into doctors’ and patients’ thoughts during medical consultations reveals that they give considerable attention to these information processing components (Cegala, McNeilis, Socha McGee, & Jonas, 1995). Similarly, these components are reflected in doctors’ and patients’ responses when they are asked to identify competent communication behaviors relevant to medical consultations (Cegala, Socha McGee, & McNeilis, 1996), and they have been shown relevant to communication skills training for both doctors and patients (Cegala, 1997; Socha McGee & Cegala, 1997). Thus, there is a strong suggestion that an adequate assessment of information exchange should include attention to consultation participants’ information seeking, giving, and verifying.

The senior author has developed a language coding system that includes multiple categories to assess each of these information exchange components (Cegala, 1997; McNeilis, 1995). In this study, information seeking was limited to items about doctors’ and patients’ use of questions and their gathering of needed information. Information-giving items assess participants’ provision of information about the cause of the medical problem, its history and symptoms, diagnosis, treatment, required tests, and prognosis. Information-verifying items reflect participants’ use of repetition and information checking to enhance understanding.

Socioemotional Communication

Part of the ambiguity of the relational aspect of communication in medical consultations is that it is referred to by different labels. Some scholars use the term relational communication to refer to such matters as expressing care, concern, warmth, empathy, understanding, friendliness, and trust (e.g., Kreps, 1988b). Other scholars use the term affective to refer to such messages (Ben-Sira, 1980; Buller & Street, 1991), and others use the term socioemotional to label these messages (Hall, Roter, & Katz, 1987; Roter et al., 1988).

In addition to the multiple labels used to identify this component, some scholars have expanded the component to include such concepts as “partnership” and “dominance–control.” Although both of these concepts fit under the construct of relational communication, they have a different, broader emphasis than what is typically implied by affective or socioemotional messages. The notion of partnership refers to a model of provider–patient communication that centers on mutual
negotiation and decision making in matters such as talk about treatment options (see Perry, 1993). The definition of dominance-control in medical consultations ranges from the frequency of providers' interruptions and amount of talk (Beckman & Frankel, 1984; Realini, Kalet, & Sparling, 1995; Roter, 1989) to more global matters such as the evocation of medical frames and language registers (Mishler, 1984; Todd, 1984; Waitzkin & Britt, 1993) and the role of status, social class, and gender (Rogers, 1996; Scott, Shiell, & King, 1996).

Although concepts such as partnership and dominance-control are important aspects of the provider-patient relationship, we have not included items to assess directly participants' communication related to these matters. In part, we believe that partnership and some aspects of dominance-control are better viewed as overarching models of provider-patient relationships (e.g., Perry, 1993). Moreover, we believe that important aspects of partnership and dominance-control are reflected in patterns of information exchange (e.g., control exerted through withholding information; providing information so that another can make an informed decision). The items we included to assess relational aspects of medical consultations focus on such matters as trust, warmth, and expression of care. Accordingly, we believe the term socioemotional is an appropriate label to describe these items.

**HYPOTHESES (Hs) AND RESEARCH QUESTIONS (RQs)**

The Medical Communication Competence Scale (MCCS) was developed to include self- and other-assessment of information exchange and socioemotional communication during a medical consultation. Accordingly, our main Hs are intended to test the extent to which the items of the MCCS form clusters representing information seeking, giving, and verifying and socioemotional communication:

**H1:** The items designed to assess doctors' communication competence during a medical consultation will form four clusters representing information seeking, information giving, information verifying, and socioemotional communication.

**H2:** The items designed to assess patients' communication competence during a medical consultation will form four clusters representing information seeking, information giving, information verifying, and socioemotional communication.

Given expected support for the main Hs, we thought it useful to probe available data to further assess the MCCS. Accordingly, the following RQs were addressed:

**RQ1:** What are the distributional characteristics of doctors' and patients' scores on MCCS subscales, and how do subscale scores compare within and across participant samples?
RQ2: What is the relation between participants' MCCS subscale scores and participants' satisfaction with selected aspects of the consultation?

METHOD

Participants

The sample for this study includes 65 doctors and 52 patients from different locations within the state of Ohio. The participants represent 28 different counties in locations ranging from small towns to large cities. Of the 65 doctors included in the sample, the average age was 45 years (range 28 to 83). There were 49 male and 16 female doctors. Two of the doctors were Asian, one African American, one Hispanic, 58 White, and 3 Other. Patients' average age was 49 years (range 19 to 89). There were 18 male and 34 female patients. One patient was Asian, 5 African American, and 44 White. Two patients had a grammar school education, 12 a high school education, 21 had some college, 12 were college graduates, and 5 had graduate degrees. Most were return patients ($n = 36$), and 13 were new to the doctor. On average, return patients had seen their doctor for 8.4 years (range 1 month to 33 years).

Scale Development

The items comprising the final version of the MCCS were developed in two stages. The first stage is reported in detail in another published study (Cegala et al., 1996), the results of which are summarized in the following paragraph.

Immediately following a medical consultation, doctors and patients independently evaluated self- and other-competence using Likert scales, then they provided descriptions of the self- and other-behaviors that prompted their competence judgments. The descriptive data were then content analyzed. As expected, the behavior descriptions formed two superordinate categories, information exchange and socioemotional communication. More importantly, the behavior descriptions under each superordinate category formed subgroups composed of specific communication behaviors. The information-exchange subgroup consisted of behaviors describing what we have since labeled information seeking (e.g., “I used open questions,” “I asked what I needed to know”); giving (e.g., “I conveyed how to use the medication and possible side effects,” “I talked about my problems thoroughly”); and verifying (e.g., “I tried to evaluate if the patient understood my explanations,” “If I showed reason not to understand, he would rephrase/explain”).

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2 The descriptive data set also included interview and questionnaire data representing physicians' views about competent doctor and patient communication (see Cegala et al., 1996).
The socioemotional-communication subgroups consisted of behaviors describing the creation of a friendly and trusting atmosphere (e.g., "I was warm and friendly," "He made me feel comfortable"); the demonstration of care, concern, and interest (e.g., "He was very concerned," "I showed I really cared about the patient"); and the display of affective support (e.g., "I tried to sympathize with the patient," "She related my problems with her own feelings").

At the second stage of scale development, the behavior statements provided by doctors and patients in the Cegala et al. (1996) study were examined for relative frequency of occurrence. The most frequent behaviors were rewritten to conform to a Likert-scaling format. A total of 56 Likert items were created and scaled with a 5-point scale continuum ranging from 5 (important) to 1 (unimportant). Physician and patient versions of this instrument were created. The physician version consisted of 33 self-competence items and 23 other-competence (i.e., patient-competence) items. The patient version consisted of 33 other-competence (i.e., doctor-competence) items and 23 self-competence items. The items on both versions were parallel. The instrument was administered to a small sample of experienced family physicians (n = 6) and patients (n = 13). Respondents were instructed to read each item and evaluate how important each was to self- or other-communication competence during a medical consultation.

Only data from the "important" response alternative were examined (remaining alternatives were: "slightly important," "not sure," "slightly unimportant," "unimportant"). A minimum criterion of 80% agreement among respondents (within each sample) was set for an item to be sufficiently important to consider as a candidate for the final version of the MCCS. For the physician version of the scale, this resulted in 25 self-competence items and 13 other-competence items. For the patient version, 16 self-competence and 25 other-competence items met criterion. Thus, the physician MCCS consisted of 38 items, whereas the patient MCCS consisted of 41 items. Except for the 3 additional items on the patient MCCS, the items comprising the two versions were parallel. However, the precise wording of some items on the two versions varied slightly in an effort to simplify the language of the patient version of the MCCS. The items appeared with a 7-point Likert scale and the prompts (e.g., "I did a good job") as indicated in Tables 1 and 2.

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3 One of the items included on the original version of the MCCS for physicians and patients was dropped after examining the cluster analysis. The item was: "Answering the patient's [my] questions thoroughly." This item was initially intended to cluster as an information-giving item, but instead it clustered with the information-verifying items. Because the item did not appear to fit conceptually with the other information-verifying items, it was dropped from the MCCS and further analyses.

4 The scale ranged from the following alternatives: strongly agree, agree, slightly agree, not sure, slightly disagree, disagree, strongly disagree. These alternatives were assigned values 7 to 1, respectively.
<table>
<thead>
<tr>
<th>Doctors' Self-Competence Items</th>
<th>Patients' Other-Competence Items</th>
</tr>
</thead>
<tbody>
<tr>
<td>I provided good explanations of the following to the patient:</td>
<td>The doctor explained the following to my satisfaction:</td>
</tr>
<tr>
<td>1. The diagnosis of his or her medical problem.</td>
<td>17. What my medical problem was.</td>
</tr>
<tr>
<td>2. The causes of his or her medical problem.</td>
<td>18. The causes of my medical problem.</td>
</tr>
<tr>
<td>3. The treatment for his or her medical problem.</td>
<td>19. What I could do to get better.</td>
</tr>
<tr>
<td>4. The advantages and disadvantages of treatment options.</td>
<td>20. The benefits and disadvantages of treatment choices (that is, choices about what I could do to get better).</td>
</tr>
<tr>
<td>5. The purpose of any tests that were needed.</td>
<td>21. The purpose of any tests that were needed.</td>
</tr>
<tr>
<td>6. How prescribed medication will help his or her problem.</td>
<td>22. How prescribed medicine would help my problem.</td>
</tr>
<tr>
<td>7. How to take prescribed medication.</td>
<td>23. How to take prescribed medication.</td>
</tr>
<tr>
<td>8. The possible side effects of the medication.</td>
<td>24. The possible side effects from the medicine.</td>
</tr>
<tr>
<td>I did a good job of:</td>
<td></td>
</tr>
<tr>
<td>10. Reviewing, or repeating, important information for the patient.</td>
<td>26. Reviewing or repeating important information.</td>
</tr>
<tr>
<td>11. Making sure the patient understood my explanations.</td>
<td>27. Making sure I understood his or her explanations.</td>
</tr>
<tr>
<td>12. Making sure the patient understood my directions.</td>
<td>28. Making sure I understood his or her directions.</td>
</tr>
<tr>
<td>13. Checking my understanding of information the patient provided.</td>
<td>29. Checking his or her understanding of what I said.</td>
</tr>
<tr>
<td>14. Encouraging the patient to ask questions.</td>
<td>30. Encouraging me to ask questions.</td>
</tr>
</tbody>
</table>

*Cluster Numbers*

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
</table>

(Continued)
<table>
<thead>
<tr>
<th>Doctors' Self-Competence Items</th>
<th>Patients' Other-Competence Items</th>
<th>Cluster Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>15. Asking the patient the right questions.</td>
<td>31. Asking me questions related to my medical problem.</td>
<td>✓</td>
</tr>
<tr>
<td>16. Asking questions in a clear, understandable manner.</td>
<td>32. Asking me questions in a clear, understandable manner.</td>
<td>✓</td>
</tr>
<tr>
<td>17. Using open-ended questions.</td>
<td>33. Asking questions that allowed me to elaborate on details.</td>
<td>✓</td>
</tr>
<tr>
<td>18. Using language the patient could understand.</td>
<td>34. Using language I could understand.</td>
<td>✓</td>
</tr>
<tr>
<td>21. Showing the patient I cared about him or her.</td>
<td>37. Showing he or she cared about me.</td>
<td>✓</td>
</tr>
<tr>
<td>22. Making the patient feel relaxed or comfortable.</td>
<td>38. Making me feel relaxed or comfortable.</td>
<td>✓</td>
</tr>
<tr>
<td>24. Being open and honest.</td>
<td>40. Being open and honest.</td>
<td>✓</td>
</tr>
</tbody>
</table>

\[a\]The items on the left side of the table were included on the doctor version of the MCCS, and the items on the right side of the table were included on the patient version of the MCCS. The item numbers indicate the order of the items as they appeared on the two versions of the MCCS. The patient items are arranged out of sequence here so that parallel items could be shown easily.
<table>
<thead>
<tr>
<th>Patients' Self-Competence Items</th>
<th>Doctors' Other-Competence Items</th>
<th>Cluster Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>I did a good job of:</td>
<td></td>
<td>1  2  3  4</td>
</tr>
<tr>
<td>1. Presenting important history associated with my medical problem.</td>
<td>The patient did a good job of:</td>
<td></td>
</tr>
<tr>
<td>2. Describing the symptoms of my medical problem.</td>
<td>25. Providing relevant history associated with his or her medical problem.</td>
<td></td>
</tr>
<tr>
<td>4. Explaining what medicines I am taking.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Answering the doctor's questions thoroughly.</td>
<td>27. Explaining what medications he or she is taking.</td>
<td></td>
</tr>
<tr>
<td>6. Answering the doctor's questions honestly.</td>
<td>28. Answering my questions thoroughly.</td>
<td></td>
</tr>
<tr>
<td>7. Letting the doctor know when I didn't understand something.</td>
<td>29. Answering my questions honestly.</td>
<td></td>
</tr>
<tr>
<td>8. Letting the doctor know when I needed him or her to repeat something.</td>
<td>30. Letting me know when he or she didn't understand something.</td>
<td></td>
</tr>
<tr>
<td>9. Making sure I understood the doctor's directions.</td>
<td>31. Letting me know when I needed to repeat something.</td>
<td></td>
</tr>
<tr>
<td>10. Repeating important information to make sure I understood correctly.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Asking the doctor to explain terms I didn't understand.</td>
<td>32. Asking me to explain terms he or she didn't understand.</td>
<td></td>
</tr>
<tr>
<td>12. Asking the doctor all the questions that I had.</td>
<td>33. Asking me questions about his or her medical problem.</td>
<td></td>
</tr>
<tr>
<td>13. Getting the answers to my questions.</td>
<td>34. Pursuing answers to his or her questions.</td>
<td></td>
</tr>
<tr>
<td>14. Getting all the information I needed.</td>
<td>35. Asking appropriate questions.</td>
<td></td>
</tr>
<tr>
<td>15. Contributing to a trusting relationship.</td>
<td>36. Contributing to a trusting relationship.</td>
<td></td>
</tr>
</tbody>
</table>

*The items on the left side of the table were included on the patient version of the MCCS, and the items on the right side of the table were included on the doctor version of the MCCS. The item numbers indicate the order of the items as they appeared on the two versions of the MCCS. The doctor items are arranged out of sequence here so that parallel items could be shown easily.*
Additional items. The last page of the MCCS included demographic questions (e.g., age, sex, education) and the following questions, each on a 3-point scale\(^5\) (the doctor questions are listed in the following with the patient version in brackets, which is substituted for the italicized portion of the doctor item):

To what extent were you able to satisfy the patient’s objective(s) in seeing you today? [you able to satisfy your objective(s) in seeing the doctor today?]

How would you characterize this patient’s desire for information relevant to this visit? [your desire for information relevant to this visit?]

To what extent did you meet this patient’s information needs? [the doctor meet your information needs?]

These additional items are not part of the MCCS per se, but were included to provide information that might be useful in assessing the instrument (i.e., RQ2).

Procedures

Each doctor received a cover letter explaining the purpose of the study, two postage-paid return envelopes, directions for administering the MCCS, and two versions of the MCCS, a physician version and a patient version. In an effort to avoid self-selection of patients on the part of the physicians, each MCCS was numbered (the physician and patient versions were assigned the same number), and a table of random numbers was used to assign a range of numbers to a particular day and time for the MCCSs to be administered. For example, physicians receiving MCCSs numbered within a certain range were asked to administer them on a Monday at a 10 a.m. appointment. In all, there were 34 combinations of days (Monday through Friday) and appointment times (9 a.m. to 11 a.m., 1 p.m. to 4 p.m.) assigned to numbered groups of MCCSs.

To determine if physicians followed the assignment schedule, we asked each patient in the sample to indicate what day and time his or her appointment was. When MCCSs were returned, we verified the patient’s report of appointment day and time against the assignment schedule. Five physicians indicated that they did not see patients on the day or time assigned to them, so (as per directions) they selected an alternative that was closest to the assigned slot (e.g., if the assigned slot was Tuesday at 11 a.m., the physician was directed to administer the MCCSs on either Monday or Wednesday at 11 a.m.). Excluding the patients of these 5 physicians, 86.7% of the patients in the remaining sample reported their appoint-

\(^5\)The items were scaled as follows. Objectives: all were met, some were met, none were met; Information Desired: wanted a great deal, wanted a moderate amount, wanted little or no information; Information Needs Met: more information than wanted, exactly the amount wanted, less information than wanted. In each instance, the first alternative was assigned a value of 3, the second 2, and the third 1.
ment time as agreeing or partially agreeing (i.e., day correct, time different, or vice versa) with the assigned time. Thus, the procedures used to avoid physician self-selection of patients appeared to be reasonably successful.

Doctors were instructed to complete the physician version of the MCCS immediately following the assigned appointment and to ask the patient to do the same. In addition, we asked the physicians to instruct patients to complete the MCCS, place it in the return envelope, seal it, and either mail it themselves or return it to the doctor's secretary for mailing. In this way, we were able to assure patients that their responses would be confidential. Of course, we have no way of knowing to what extent physicians followed these instructions. However, most of the returned physician and patient MCCSs with the same number (i.e., signifying a dyad)\(^6\) arrived several days apart. This suggests that most patients probably opted to mail the completed MCCS themselves rather than return it to the doctor's secretary, thus assuring that the doctor had no way of seeing how the patient responded.

Data Analysis

Two data files were created, each containing 117 doctors and patients. One of the files included the 25 parallel doctor items (i.e., doctors' self-competence items and patients' other-competence items), and the other file contained the 13 parallel patient items (i.e., patients' self-competence items and doctors' other-competence items). The data in these files were submitted to the SPSS-X Proximities and Cluster programs. One analysis was computed on the doctor items and one analysis was computed on the patient items. The Proximities program was set to compute Euclidean distances among the standardized item responses. These distances were then submitted to the Cluster program using Ward's method (Aldenderfer & Blashfield, 1984).

Recall that 3 of the items on the patient MCCS are unique to that scale. Accordingly, a comparable cluster analysis was computed on the 16 patient items for the patient sample only. This analysis was computed to determine if these additional 3 items clustered as expected. The results indicated that the items did cluster as expected and are reported as such in Table 2.

RESULTS

H1 and H2 predicted that the doctor and patient self-communication and other-communication competence items would each cluster into four groups representing information giving, information seeking, information verifying, and socioemotional communication. The results of the two cluster analyses used to test these

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\(^6\) The sample of 117 doctors and patients includes 100 dyads (85.5% of the total).
hypotheses are reported in Tables 1 and 2. Attention is turned first to the doctor items, that is, the items (both self and other) that assessed doctors’ communication competence during the consultation. These results are presented in Table 1.

The first nine items in Table 1 were intended to assess doctors’ self-competence in information giving (i.e., Items 1 to 9) and patients’ evaluation of doctors’ competence in information giving (i.e., Items 17 to 25). As can be seen in Table 1, these nine items formed the first cluster of the analysis on the doctor items. The alpha reliability coefficient of these nine items is .88. The next four items were designed to assess doctors’ evaluation of their own information verifying (i.e., Items 10 to 13) and patients’ evaluation of doctors’ information verifying (i.e., Items 26 to 29). These items formed the second cluster of the analysis on doctor items and have an alpha coefficient of .83. The third cluster is composed of Items 14 through 17 and Items 30 through 33. Items 15 through 17 and 31 through 33 were intended to assess doctors’ information seeking. Initially, it was not entirely clear how Items 14 and 30 would cluster because they do not focus on doctors’ questioning, but rather doctors’ encouragement of patients to seek information. However, the cluster results indicate that both doctors and patients in the sample perceived their respective items as reflecting doctors’ information seeking. In retrospect, it seems reasonable to view doctors’ encouragement of patient information seeking as a form of information gathering on the doctor’s part. Among other things, doctors are likely to acquire considerable information and insight about patients’ concerns from the questions they (patients) ask. Thus, the items forming the third cluster are interpreted as a subscale assessing doctors’ information seeking. These items have an alpha coefficient of .83. The fourth cluster includes items assessing doctors’ socioemotional communication. All of the items in this cluster were intended to assess socioemotional communication, except for Items 18 and 34. Initially, we expected these items to cluster with the information-verifying items. However, in retrospect it makes more sense for these items to cluster with the socioemotional-communication items. Doctors’ use of clear language does not serve to verify information they receive from patients, but it may signal respect and concern for patients. In addition, inclusion of the clear-language item with this cluster is consistent with other research assessing socioemotional talk within the medical consultation (Hauck, Zyzanski, Alemagno, & Medalie, 1990). The alpha coefficient of the items composing the fourth cluster is .92.

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7 All of the reliability coefficients reported in the text are based on the combined sample (N = 117) of doctors and patients. The reliability coefficients for each sample separately are as follows:

<table>
<thead>
<tr>
<th>Sample</th>
<th>Information Giving</th>
<th>Information Seeking</th>
<th>Information Verifying</th>
<th>Socioemotional Communication</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors</td>
<td>.86</td>
<td>.75</td>
<td>.78</td>
<td>.90</td>
</tr>
<tr>
<td>Patients</td>
<td>.79</td>
<td>.76</td>
<td>.85</td>
<td>.92</td>
</tr>
</tbody>
</table>
Overall, the results of the cluster analysis on the doctor items comprising the MCCS provide considerable support for H1. Attention is now turned to H2. The results of the cluster analysis on the items comprising the patient version of the MCCS are reported in Table 2.

The first group of items in Table 2 were designed to assess patients' judgment of their own competence in information giving (i.e., Items 1 to 6) and doctors' judgment of patients' competence in information giving (i.e., Items 25 to 29). These items formed Cluster 1, except for Items 4 and 27, which loaded on the second cluster. From available data, it is not entirely clear why these items were so anomalous. The distributional characteristics of the items indicate that they have considerably more variance than the other items in Cluster 1. Paired t tests indicated that the average response to Items 4 and 27 were significantly lower than any of the five items that clustered as expected. This may be a function of some patients in the sample not taking any medications or that their medications were not relevant to the medical problem for which they sought assistance in this instance. Alternatively, perhaps the term *explaining* is not adequately capturing the intent of this item. It may make more sense to doctors and patients if the item read "identifying what medications he or she [I am] taking" or "listing what medications he or she is [I am] taking." Nevertheless, we were reluctant to eliminate this item from the MCCS because our previous research suggested it was thought to be important by both doctors and patients, and other research supports the relevance of compliance with medications (see Hammond & Lambert, 1994; Parrott, 1994). Accordingly, in computing an alpha coefficient on Cluster 1 items we included Items 4 and 27. The resulting alpha coefficient was .84. When Items 4 and 27 are removed from Cluster 1, the resulting alpha coefficient is .83. Thus, we recommend that Items 4 and 27 be included as part of Cluster 1 even though the results do not support this. In addition, we recommend that this item be reworded along the lines suggested previously in subsequent versions of the MCCS.

Items 7 to 11 and 30 to 32 were intended to assess patients' competence in information verifying. These items formed the second cluster and have an alpha coefficient of .87. The third cluster consisted of Items 12 to 14 and Items 33 to 35. These items were intended to assess patients' competence in information seeking. The item cluster has an alpha coefficient of .84. Finally, Items 15 to 16 and 36 to 37 were intended to assess patients' socioemotional communication. Only two items were developed to assess patients' socioemotional communication because our prior research revealed that neither doctors nor patients identified any socioemotional communication behaviors as relevant to patients' competence during the medical consultation (Cegala et al., 1996). Yet, due to the lack of attention given to patients' socioemotional communication in the literature, despite its potential

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8 Item 3 was unique to the patient version of the MCCS, but clustered as intended using only the patient sample.
TABLE 3
Sum Score Means, Standard Deviations, and Scale Value Means of the Medical Communication Competence Scale (MCCS) Subscales

<table>
<thead>
<tr>
<th>Variable</th>
<th>Doctors⁵</th>
<th></th>
<th>Patients⁶</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>M</td>
<td>SD</td>
<td>Converted M²</td>
<td>M</td>
</tr>
<tr>
<td>Self-competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information giving</td>
<td>51.77</td>
<td>7.96</td>
<td>9</td>
<td>5.75</td>
</tr>
<tr>
<td>Information seeking</td>
<td>23.54</td>
<td>2.58</td>
<td>4</td>
<td>5.88</td>
</tr>
<tr>
<td>Information verifying</td>
<td>23.71</td>
<td>2.86</td>
<td>4</td>
<td>5.93</td>
</tr>
<tr>
<td>Socioemotional</td>
<td>44.20</td>
<td>3.87</td>
<td>7</td>
<td>6.31</td>
</tr>
<tr>
<td>Other-competence</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information giving</td>
<td>29.45</td>
<td>4.34</td>
<td>5</td>
<td>5.89</td>
</tr>
<tr>
<td>Information seeking</td>
<td>17.11</td>
<td>3.23</td>
<td>3</td>
<td>5.70</td>
</tr>
<tr>
<td>Information verifying</td>
<td>15.74</td>
<td>3.69</td>
<td>3</td>
<td>5.25</td>
</tr>
<tr>
<td>Socioemotional</td>
<td>12.54</td>
<td>1.19</td>
<td>2</td>
<td>6.27</td>
</tr>
</tbody>
</table>

⁵n = 65. ⁶n = 52. These means were computed by dividing the sum mean by the number of items, which converts the mean to the scale value ranging from 1 to 7.

impact on doctors (Greene, Adleman, & Majerovitz, 1996), we thought it might be useful to at least minimally assess this aspect of patients’ communication. The two socioemotional items have an alpha coefficient of .87.

With minor exceptions, the results of the cluster analysis support the expected dimensionality of the patient version of the MCCS. Given support for H1 and H2, we conducted analyses to address the two RQs. RQ1 asked: What are the distributional characteristics of doctors’ and patients’ scores on MCCS subscales, and how do subscale scores compare within and across participant samples? The distributional characteristics of the four subscales are reported in Table 3.

Both doctors and patients tended to score on the high end of the MCCS for both self- and other-competence. This can be readily seen by examining the converted subscale means in Table 3. The converted subscale scores range from a low of 5.25 to a high of 6.31 for doctors and from a low of 5.99 to a high of 6.62 for patients. Even so, the MCCS appears sensitive enough to detect differences where they occur. Wilcoxon matched-pairs tests were computed separately among the self- and other-competence subscales within each sample.⁷ The alpha level was set at p = .008 (two tailed) to account for the number of tests computed.

⁷The samples for several analyses relevant to RQ2 lacked homogeneity of variance, so a Kruskal–Wallis, nonparametric test was used. To maintain consistency, nonparametric tests were also used for the within- and between-sample tests relevant to RQ1. These and the following tests were computed on the mean scale value of the subscales to account for the different number of items comprising the subscales.
Of the six Wilcoxon tests computed on doctors' self-competence subscales, three were significant. Doctors rated their own competence in socioemotional communication higher than their competence in information giving, information seeking, and information verifying. See Table 4 for the relevant mean ranks for these and other Wilcoxon tests.

Five of the tests computed on doctors' other-competence subscales were significant. Doctors rated patients' competence in information verifying lower than patients' information giving, seeking, or socioemotional communication. Doctors also rated patients' competence in socioemotional communication higher than patients' competence in information giving and seeking.

Of the six Wilcoxon tests computed on patients' self-competence subscales, three were significant. Patients rated their own competence in socioemotional communication higher than their competence in information giving and information verifying. In addition, patients rated their competence in information seeking higher than their competence in information verifying. Five of the tests computed on patients' other-competence subscales were significant. Patients rated doctors' competence in information giving lower than doctors' competence in information giving.

### Table 4
Mean Ranks for Significant Wilcoxon Tests

<table>
<thead>
<tr>
<th>Variable</th>
<th>Information Giving</th>
<th>Information Seeking</th>
<th>Information Verifying</th>
<th>Socioemotional Communication</th>
<th>z</th>
<th>p*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Doctors' self-competence</td>
<td>21.95</td>
<td>32.42</td>
<td>4.96</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>11.35</td>
<td>31.70</td>
<td>5.50</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td>Doctors' other-competence</td>
<td>32.55</td>
<td>19.91</td>
<td>4.03</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>28.04</td>
<td>17.46</td>
<td>4.13</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>15.83</td>
<td>30.93</td>
<td>5.35</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>13.40</td>
<td>25.74</td>
<td>4.33</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>11.81</td>
<td>23.74</td>
<td>4.46</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>13.00</td>
<td>19.03</td>
<td>3.88</td>
<td></td>
<td></td>
<td>.0001</td>
</tr>
<tr>
<td></td>
<td>18.00b</td>
<td>18.00b</td>
<td>2.80</td>
<td></td>
<td></td>
<td>.005</td>
</tr>
<tr>
<td>Patients' other-competence</td>
<td>14.86</td>
<td>22.02</td>
<td>3.16</td>
<td></td>
<td></td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>15.27</td>
<td>21.86</td>
<td>3.10</td>
<td></td>
<td></td>
<td>.002</td>
</tr>
<tr>
<td></td>
<td>15.64</td>
<td>22.67</td>
<td>4.28</td>
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<td>.0001</td>
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<tr>
<td></td>
<td>12.67</td>
<td>16.80</td>
<td>3.37</td>
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<td></td>
<td>.0008</td>
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<tr>
<td></td>
<td>9.31</td>
<td>17.75</td>
<td>3.25</td>
<td></td>
<td></td>
<td>.002</td>
</tr>
</tbody>
</table>

*All probabilities are for two-tailed tests. Although these mean ranks are the same, the sample data differed in sign. Twenty-seven information verifying ranks were less than information seeking ranks, 8 verifying ranks were greater then seeking ranks, and there were 17 ties.
seeking, verifying, or socioemotional communication. In addition, patients rated doctors' competence in socioemotional communication higher than they rated doctors' information seeking and information verifying. The implications of these and other results will be considered in the Discussion section. For now, attention is turned to the between-sample comparisons.

Mann–Whitney tests were computed on each subscale to detect possible differences between doctors' and patients' evaluations. The alpha level for these tests was set at $p = .01$ (two tailed) to account for the number of tests computed. Three of the four tests involving perceptions of doctors' competence were significant. Patients viewed doctors as more competent than doctors viewed themselves in information seeking ($MRs = 72.95, 47.84; z = 4.04, p = .0001$); information verifying ($MRs = 69.59, 50.53; z = 3.05, p = .002$); and socioemotional communication ($MRs = 68.51, 51.39; z = 2.75, p = .006$). Three of the four tests involving perceptions of patients' own competence were significant. Patients viewed their own competence higher than doctors viewed patients' competence in information giving ($MRs = 67.51, 52.19; z = 2.46, p = .01$); information seeking ($MRs = 70.03, 50.18; z = 3.20, p = .001$); and information verifying ($MRs = 73.78, 47.18; z = 4.24, p < .0001$).

RQ2 asked: What is the relation between participants' MCCS subscale scores and their satisfaction with selected aspects of the consultation? Recall that we included additional items with the MCCS regarding information needs, the extent to which these were met, and the extent to which desired objectives were met (see Footnote 5). We used the data provided by these additional items to address RQ2. In posing RQ2, we reasoned that evidence for the MCCS's validity might be found in expected relations between participants' satisfaction and various subscales of the MCCS. These expected relations are discussed later for each set of analyses involving the additional items. Attention is turned first to the item assessing patients' desire for information.

Desire for Information

Of the 50 patients responding to this additional item, 27 indicated they wanted a moderate amount of information, and 23 indicated they wanted a great deal of information (no patients wanted little or no information).\textsuperscript{10} We expected patients who wanted a great deal of information to rate themselves, and to be rated by their doctors, higher in information seeking and verifying than patients who reported wanting only a moderate amount of information. Accordingly, Mann–Whitney tests

\textsuperscript{10}On this item, 44.7% of the doctors and patients agreed that the patient wanted either a moderate amount of information (36.2%) or a great deal of information (8.5%). The remaining doctors and patients disagreed on this item; 51.1% of the patients said they wanted more information than the doctor thought they wanted or vice versa (4.2%).
were computed on patients’ self-competence and doctors’ other-competence subscales for information seeking and verifying. The results indicated that patients who desired more information had higher self-competence scores, and were rated higher by their doctors, in information seeking than patients who wanted less information ($MRs = 27.67, 23.65; z = 2.30, p = .01$, one-tailed; $MRs = 28.36, 21.23; z = 1.88, p = .03$, one-tailed, respectively). The results concerning patients’ self-competence in information verifying were nonsignificant, though in the expected direction ($MRs = 28.17, 23.22; z = 1.21, p = .11$, one-tailed). However, the results of doctors’ other-competence scores in information verifying did support our expectation. They revealed that patients who reported wanting a great deal of information were judged as engaging in more information verifying than patients who reported wanting only a moderate amount of information ($MRs = 28.34, 21.25; z = 1.76, p = .04$, one-tailed).

**Extent to Which Information Needs Were Met**

Only 5 of the doctors indicated that they provided less information than the patient wanted, 43 indicated they provided exactly what the patient wanted, and 17 reported providing more information than the patient wanted. We expected doctors who reported meeting or exceeding patients’ information needs to rate themselves, and be rated by their patients, higher in information giving than doctors who reported providing less information than their patients wanted. A Kruskal–Wallis test was computed on doctors’ self-competence, and patients’ other-competence, in information giving. The results indicated that as doctors’ perceptions of meeting patients’ information needs increased, the doctors’ self-competence scores in information giving also increased, $MRs = 17.10, 31.69, 41.00$ for providing less, exactly, and more information than the patient desired, respectively; $\chi^2(2, N = 65) = 6.82, p = .03$. Similarly, as doctors’ perceptions of meeting patients’ information needs increased, their patients’ other-competence scores in information giving also increased, $MRs = 7.00, 25.02, 32.63$ for providing less, exactly, and more information than the patient desired, respectively; $\chi^2(2, N = 52) = 11.68, p = .003$.

**Satisfaction With Achieving Objectives**

Seven of the patients indicated that they satisfied only some of their objectives, and 43 patients indicated that they satisfied all of their objectives.\(^{11}\) Given the belief

\(^{11}\)The $n$ is 50 because two patients failed to respond to any of the additional items. The distribution of responses to this item indicated that 80.8% of the doctors and patients agreed that all the patients’ objectives were met, whereas 4.3% agreed that only some objectives were met. The remaining 14.9% indicated that either the doctor thought more objectives were met than the patient (8.5%) or vice versa (6.4%).
that information exchange is critical to patients satisfying their health care objectives (e.g., Beisecker & Beisecker, 1990; Donaldson & Vanselow, 1996; Guttman, 1993; Kreps, 1996; Ratzan, 1996; Waitzkin, 1984), we expected certain MCCS subscales to reflect doctors’ and patients’ perceptions of the extent to which objectives were met. In particular, we expected satisfied patients to have higher self-competence in information seeking and verifying and higher other-competence in information giving than less satisfied patients. Similarly, we expected doctors of satisfied patients to have higher self-competence in information giving and higher other-competence in information seeking and verifying than doctors of less satisfied patients.

The Mann–Whitney test results indicated that patients who reported satisfying all of their objectives had higher self-competence scores in information seeking and other-competence scores in information giving than patients who reported satisfying only some of their objectives (MRs = 28.47, 7.29; z = 3.68, p = .0001, one-tailed; MRs = 26.44, 13.14; z = 2.34, p = .009, one-tailed, respectively). The results were nonsignificant, though in the predicted direction, for patients’ self-competence in information verifying (MRs = 26.24, 20.93; z = 0.90, p = .18, one-tailed). As expected, doctors of patients who reported satisfying all of their objectives had higher self-competence scores in information giving (MRs = 26.18, 14.64; z = 2.02, p = .02, one-tailed), but the results for other-competence in information seeking and verifying were nonsignificant (MRs = 25.09, 21.07; z = 0.71, p = .24; MRs = 24.59, 24.00, z = 0.10, p = .45, one-tailed, respectively).

DISCUSSION

The purpose of this research was to develop and partially test a self- and other-communication competence instrument for doctors and patients. Our main goal was to develop an instrument that focused exclusively on doctors’ and patients’ communication during the medical consultation. The results of our study provide support for the MCCS. We first discuss the results pertinent to the two main Hs, then we consider the implications of the results concerning RQ1 and RQ2.

Main Hs

Overall, the cluster results of the items comprising the physician and patient versions of the MCCS provide considerable support for the expected dimensionality of the instrument. Of the 37 items comprising the physician version of the MCCS and of the 40 items comprising the patient version of the MCCS, only 6 parallel items did not cluster as initially expected. However, 4 of these 6 items (i.e., Items 14 and 18 on the physician version and Items 30 and 34 on the patient version) clustered in ways that conceptually fit with other items in their obtained clusters. Indeed, the obtained results made more sense conceptually than our initial expec-
tations for clustering of these items. Only Item 27 on the physician version and Item 4 on the patient version did not cluster as expected and also did not load on an alternative cluster in a conceptually consistent manner.\(^\text{12}\) Even so, the reliability data for these 2 items supported our decision to retain Items 27 and 4 in their original expected cluster (i.e., patients’ information giving).

We believe the MCCS offers significant advantages over other instruments that have been used to assess perceptions of communication in medical consultations. First, the MCCS items focus exclusively on participants’ communication, and rather than being solely researcher generated, they are based on previous research into doctors’ and patients’ perceptions of competent communication behaviors (Cegala et al., 1996). Second, our previous research (Cegala, 1997; Cegala et al., 1995; Socha McGee & Cegala, 1997) suggests the components of the MCCS, particularly the information exchange subscales, are important to doctor–patient communication. Indeed, several scholars have identified information exchange as centrally important to health communication in general (Kreps, 1988a) and medical consultations in particular (e.g., Beisecker & Beisecker, 1990; Frederikson, 1993; Guttman, 1993; Ong et al., 1995; Tuckett & Williams, 1984). The MCCS not only reflects this emphasis on information exchange, but it also assesses specific aspects of information exchange (i.e., giving, seeking, and verifying). Third, the MCCS assesses both doctors’ and patients’ perceptions of communication and allows for comparisons of self-and other-competence perceptions for each participant. This is especially useful in assessing congruence and discrepancies between participants’ perceptions of communication.

Overall, the results of this study suggest that the MCCS is assessing meaningful dimensions of communication competence associated with the medical consultation. The results concerning the research questions provide additional support for this interpretation.

RQ1

RQ1 was posed, in part, to explore whether the participants’ scores on the MCCS subscales reflected trends in the literature on doctor–patient communication. We reasoned that if the MCCS scores did reflect trends in the existing literature, there would be indirect evidence for the validity of the MCCS. Several results from the within- and between-sample comparisons of the subscales are noteworthy in this regard.

\(^{12}\) Technically, this is also true for an item that was eliminated during the preliminary stages of the cluster analyses (see Footnote 3). Thus, of the original 79 items comprising both versions of the MCCS, only 4 items (5%) did not cluster in a manner conceptually consistent with the definitions of the subscales.
Within-sample comparisons. These results revealed that doctors rated their socioemotional competence higher than their competence in information exchange (i.e., the socioemotional subscale was significantly higher than any of the information subscales). This result is consistent with the relative emphasis placed on socioemotional matters compared to information exchange when doctors and residents are exposed to communication skills training (e.g., Ben-Sira, 1980; Marshall, 1993; Suchman & Matthews, 1988). Often, for doctors, "being a better communicator" means having a good bedside manner. Yet, there is considerable literature showing that doctors typically do not meet patients' information needs (Beisecker, 1990; Beisecker & Beisecker, 1990; Joos, Hickman, & Borders, 1993; Waitzkin, 1984, 1985; Williams, Weinman, Dale, & Newman, 1995). This trend in the literature is reflected by the result here in that patients rated doctors' socioemotional competence higher than they rated doctors' competence in information exchange. Especially reflective of the literature indicating patients' information needs are often not met, is the result that patients rated doctors' information giving lower than they rated doctors on any other subscale.

Other within-sample comparisons are consistent with the literature on patient training in information-exchange skills (see Anderson & Sharpe, 1991; Bertakis, 1977; Socha McGee & Cegala, 1997). For example, in this study doctors rated patients higher in socioemotional communication than they rated patients on any of the information-exchange subscales. Similarly, patients rated their own competence in socioemotional communication higher than their own competence in information giving and verifying. These results are consistent with research that indicates that patients lack training in information provision and verifying (Anderson & Sharpe, 1991). In addition, doctors in this study rated patients' information verifying lower than any other MCCS subscale. This is consistent with Cegala's (1997) finding that patients used very few information-verifying utterances during a medical consultation.

Overall, the results of the within-sample comparisons of the subscales provide indirect support for the validity of the MCCS as a measure of doctor–patient communication. The results of the between-sample comparisons also lend support to the MCCS.

Between-sample comparisons. Perhaps most interesting among the between-sample comparisons was that doctors rated patients' competence in information exchange (i.e., on all three subscales) lower than patients rated their own competence in information exchange. Although it may be tempting to interpret this result as "patient bashing" on the part of doctors, we view it quite differently in light of previous research indicating that patients generally ask their doctors few questions (e.g., Beisecker & Beisecker, 1990; Ley, 1988; Lochman, 1983; Matthews, 1983; Parrott, 1994) and that patients lack skills in information provision and verifying (Anderson & Sharpe, 1991; Cegala, 1997). In other words, we believe
the doctors' assessment of patients' competence in information exchange is probably accurate. The intriguing question for us is: How can we account for patients' apparent inflated self-assessment of competence in information exchange? This study cannot address this question directly, but it appears worthy of attention in future research. Perhaps one account may be found in patients' tendency to seek information indirectly, as opposed to asking direct questions (Cegala, 1997; Frankel, 1990; Quill, 1989). Patients may perceive themselves as engaging in more information seeking than is apparent to doctors. However, even if this accurately accounts for discrepancies between doctors' and patients' evaluation of patients' information seeking, it does not explain discrepancies in evaluations of information providing and verifying.

Additional between-sample comparisons revealed that patients rated doctors' competence in information seeking and verifying and socioemotional communication higher than the doctors rated themselves. Each of these results are discussed in the following paragraphs.

We suspect that patients rating doctors higher in information seeking than the doctors rated themselves may reflect fundamental differences in the perspectives of doctors and patients (see Bochner, 1983; Cegala et al., 1995; Rubin, 1990). Doctors probably assess their information-seeking competence in terms of obtaining necessary information for arriving at an accurate diagnosis. Such assessment is likely weighed against technical information about the patient's medical condition. To the extent that medicine is still more of an art than a science, such assessment is potentially subject to second guessing and some degree of uncertainty on the doctor's part. In contrast, most patients lack enough technical expertise about their medical condition to evaluate a doctor's information seeking along lines that are similar to the doctor's self-assessment. Thus, it may be expected that, generally, patients may evaluate doctors' information seeking competence more highly than doctors would evaluate themselves.

Patients also rated doctors' competence in socioemotional communication higher than the doctors rated themselves. This result seems to reflect a consistent trend in the literature, particularly with respect to patient satisfaction, in which patients assess their affective experiences with their own doctor quite positively, even though their general assessments of medical care tend to be negative (e.g., Baker & Harris, 1985; Hall & Dornan, 1988a; Lewis, 1994). In addition, it should be noted that the physicians in this sample are in family medicine and, as a group, may be more sensitive to patients' socioemotional needs in comparison to other physicians the patients have experienced. In another study, we also found that patients rated family practice doctors higher in socioemotional communication than the doctors rated themselves (Cegala et al., 1995).

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13. This is especially true in primary care medicine because most of the patients' medical concerns are varied and undifferentiated at the time they see primary care physicians (Mushtin, 1991; Rosser, 1996).
Finally, patients rated doctors higher in information verifying than the doctors rated themselves. This may be accounted for by contrast effects. Cegala (1997) reported that patients used very few information-verifying utterances in comparison to doctors ($M = 5.97$ vs. $M = 18.19$). In this study, doctors evaluated patients’ information verifying lower than any other subscale, and Anderson and Sharpe (1991) observed that communication skills training for patients has given little attention to information verifying. Together, these results suggest that patients’ baseline for information verifying is probably quite low in comparison to doctors’ baseline. If this is the case, it may be expected that patients would evaluate doctors’ information verifying higher than doctors’ would evaluate themselves.

**RQ2**

The results pertinent to RQ2 also provided support for the validity of the MCCS. As expected, patients who said they desired more information rated themselves, and were rated by their doctors, higher in information seeking than patients who desired less information. Similarly, doctors who reported meeting or exceeding patients’ information needs rated their own competence in information giving, and were rated by their patients, as higher in information giving than doctors who reported providing less information than their patients wanted. This convergence of participants’ competence judgments with their satisfaction regarding information needs suggests that the information-seeking and information-giving subscales accurately reflected participants’ views of the information-exchange process.

Less support was found for our expectations regarding the information-verifying subscale and patients’ desire for information. As expected, patients who wanted more information were rated highly in information verifying by their doctors, but these patients did not rate themselves higher in information verifying than patients who desired less information. In retrospect, perhaps this result has more to do with differences in self–other perceptions of information verifying than it has to do with the validity of the information-verifying scale. Because information verifying does not involve the acquisition of new information, but rather involves clarifying information one has received, it seems reasonable that patients might not associate their own information verifying with their desire for new information. On the other hand, from the doctors’ perspective, patients’ verification utterances may very well suggest a desire for information because it reveals an intent to confirm and check the accuracy of information that has just been provided.

Some additional support for the MCCS was provided by the analyses regarding the extent to which patients’ objectives were obtained. We reasoned that patients who reported satisfaction in obtaining desired objectives would likely engage in more information seeking and verifying and, in turn, their doctors would engage in more information giving.
As expected, patients who reported satisfying their objectives rated themselves higher in information seeking and rated their doctors higher in information giving than patients who were less satisfied in meeting their objectives. In addition, as expected, doctors of satisfied patients rated their own information giving higher than doctors of less satisfied patients. However, three of our expected results were not significant.

In particular, patients did not significantly associate their information verifying with their satisfaction of objectives. However, this result may again suggest that patients did not view information verifying as an information-gathering tool and, thus, was not perceived as associated with obtaining consultation objectives. Doctors of patients who reported satisfying their objectives did not rate patients significantly higher in information seeking or verifying than doctors of patients who were less satisfied in obtaining objectives. These results were especially surprising in light of the fact that doctors of patients who desired more information rated those patients highly in information seeking and verifying. It may be that doctors did not view the satisfaction of patients' objectives in terms of patients' actions, but rather viewed meeting patients' objectives in terms of their own actions (i.e., the doctors' provision of information), apart from whatever patients did. If nothing else, these results suggest that it is worth examining the relation between doctors' perceptions of meeting patients' objectives and the role doctors see patients' communication playing in their ability to meet patients' objectives. Overall, the results relevant to RQ2 provide reasonable support for the validity of MCCS subscales by indicating congruency between perceptions of communication and reports of satisfaction with information needs and obtaining desired objectives.

Although the results of this study provide support for the MCCS, additional research is needed. We are currently collecting data that will allow comparison of MCCS scores with participants' actual communication during a medical consultation. Also, it should be recognized that although the MCCS assesses participants' perceptions of information exchange and socioemotional communication, it does not directly assess other aspects of medical communication that are also important to the provider–patient relationship. For example, one may use MCCS scores to draw inferences about the extent of partnership operating in a medical consultation, but the MCCS does not provide a direct assessment of participants' judgments of partnership. Thus, although we believe the MCCS is a useful tool for assessing perceptions of medical communication, it should probably be used in conjunction with other instruments to obtain a more complete, detailed assessment of the medical context.

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