

PATIENTS WHO DECEIVE

An Empirical Investigation of Patient-Physician Communication

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A field investigation was completed surveying the communication practices of 754 adults. Questionnaire items were designed to tap the multidimensional nature of deception in patient-physician interactions. A battery of sociodemographic items was also included. Data reduction techniques were used to produce a measurement model with concealment / equivocation, falsification, and truthfulness as three orthogonal, internally reliable dimensions of deceptive communication in the practice of clinical medicine. Statistical controls indicated that social desirability of honest versus duplicitous responses were not correlated with willingness to admit using deception in patient-physician interactions. Summaries of frequency of use of different kinds of deceptive communication by different population subgroups were offered. Discussion focused on the theoretical utility of the measurement model and the practical implications for the practice of medicine. Finally, information management techniques available to health care providers were suggested to (a) increase conversational surveillance, (b) detect language selection / use associated with different kinds of deceptive communication, and (c) provide interactional strategies to reduce patient deception.

Hippocrates was well aware that "patients are often lying when they say they have regularly taken the prescribed medicine" (Haynes, 1979, p. ix). Given the state of medical science in the time of Hippocrates, and for many centuries thereafter, the aversive consequences of non-compliance may have been negligible or, given the consequences associated with following what are now known to be medical practices that actually aggravated symptoms and conditions, practiced noncompliance with physicians might have even been beneficial to patients (Haynes, 1979). Today, with the remarkable advances in medical care, living with preventable diseases, suffering from treatable conditions, and premature morbidity are the potential tangible results of noncompliance. However, when patients are less than forthcoming with their

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physicians about symptoms, adherence to prescribed treatment regimens, and alterations in suggested lifestyles, it is impossible to determine to what extent people are needlessly suffering from curable conditions and/or inducing otherwise preventable ailments and diseases. Thus the issue of how truthful patients are about disclosing relevant information prior to and following diagnoses is germane to an understanding of disease prevention and control.

Proper diagnoses, along with the intelligent selection of alternative treatment regimens, are a function not only of a physician's skill at recognizing manifest symptoms but also of the physician's deftness at interpreting medically relevant information gleaned from patients during patient-physician interactions. As many (cf. M. Burgoon & J. K. Burgoon, 1990) point out, to insure proper diagnosis and treatment, physicians tend to assume that the information they receive from patients is truthful, complete, and accurate. Further, the unique attributes of the medical context in which patient and physician interact may contribute to physicians developing what has been labeled a *truth-bias* regarding information disclosed to them by their patients (Buller & Hunsaker, 1994; McCornack & Parks, 1986).

A presumption of verity in interactions between physicians and patients makes sense for a number of reasons. Physicians have a variety of both medical and interactional responsibilities that may distract them from attending to behaviors that may indicate that deception is taking place. These responsibilities demand a significant amount of cognitive effort to manage an interaction from moment to moment. Turn-taking, encoding responses, behaving appropriately, and so forth, all require effort that might otherwise be directed to more careful monitoring of a patient's behavior. In addition, the truth-bias mirrors one of the general maxims of conversation in all kinds of social interaction. Grice (1975) contends that the maxim of *quality* (i.e., truthfulness) is basic and necessary for meaningful interaction to take place. Others suggest it is fundamental and instrumental to all conversations (Clark & Delia, 1979; Kraut & Higgins, 1984).

As mentioned, the general truth bias, manifested as both a preference for and an evaluation that people who communicate with us are indeed being truthful, may be further reinforced in the clinical practice of medicine. After all, patients in a typical medical situation have actively sought out and paid for the expert opinion of the physician. Given the possible negative outcomes of failure to comply with recommended treatment regimens or suggested behavioral modifications, failure to fully and truthfully disclose information relevant for diagnosis and treatment seems implausible and noncompliance with directives improbable. In fact, these circumstances combine to suggest that compliance rates should be high (M. Burgoon & J. K. Burgoon, 1990). However, many adherence studies have found that compliance rates for various treatment regimens are alarmingly low (Becker & Maiman,

1980; Marston, 1970). Although precise information on compliance is difficult to ascertain, Masek (1982) suggests that the typical range of noncompliance, across different patient populations and among people afflicted with various diseases, is 30%-60%.

Physicians, on the other hand, consistently overestimate compliance rates of their own patients and seem to sustain expectations that patients follow their medical directives (M. Burgoon & J. K. Burgoon, 1990; Davis, 1966). In fact, physicians have been unable to predict compliance (or noncompliance) in specific patients better than chance alone (M. Burgoon & J. K. Burgoon, 1990; Norell, 1981; Roth & Caron, 1978; Rothert, 1982). Based upon the supposition that physicians' overestimations of patient compliance is affected to some degree by the information they receive during interactions with patients, then the discrepancy between physicians' expectations of high levels of patient compliance and patients' self-reported low compliance rates suggests that the information provided to physicians by their patients is often incomplete, equivocal, and perhaps deceptive. If this is the case, it is incumbent upon researchers to investigate the degree to which deception occurs within patient-physician communication, the forms those deceptions take, and the circumstances in which patients are most likely to be duplicitous.

DECEPTION

If one assumes that communication is functional, purposive, and strategic (i.e., that individuals make language choices to achieve specific goals or outcomes), it is an essential tenet of such a perspective that people make strategic choices by controlling the kind of language they use, monitoring what they say, and deciding what to include and not to include in their messages (Burgoon & Buller, 1994; Turner, Edgley, & Olmstead, 1975), and that managing conversations, fostering favorable impressions, gaining compliance, and seeking information from others is a function of how much information is communicated and the kind of language used in any given communication transaction (Buller & Burgoon, 1994a, 1994b).

Deception is typically seen as a specific, strategic communication behavior in which a communicator consciously intends to create in a target person a belief the sender believes to be false (Zuckerman & Driver, 1985). This may be accomplished by the transmission of direct, false verbal information, as well as by linguistic constructions that produce vague, ambiguous messages, or simply by withholding pertinent facts or ideas. Simply stated, deception often involves an intent to deceive another by controlling language choices and information in some specifiable way (Buller & Burgoon, 1994).

Although a number of typologies of deceptive acts have been offered in the deception research literature (cf. Metts & Chronis, 1986; Hopper

& Bell, 1984; Turner et. al., 1975), many of them can be classified into five types of deceptive acts: (a) falsification/fabrication, or supplying false information; (b) concealment, which involves withholding relevant truthful information; (c) exaggeration, or embellishing truthful information; (d) mixing truthful and deceptive information; and/or (e) obfuscating, which occurs by implying false conclusions or misdirecting attention away from the issue at hand.

In medical contexts, as well as in society at large, an assumption of veracity is generally well-founded (Goffman, 1959; Grice, 1975). However, it is also the case that communicators frequently make judgments that honesty is not the best policy for meeting their desired ends and that some measure of dishonesty will increase the likelihood of achieving a preferred outcome (Zuckerman, DePaulo, & Rosenthal, 1986; Ekman, 1985). It stands to reason, then, that the decision to deceive can fit a rational choice model, that is, people can use deceptive communication for instrumental purposes to achieve some determinable end goal (Buller & Burgoon, 1994, *in press*).

The motivation to deceive has been likened to three motives, or objectives, proposed by Clark and Delia (1979) and O'Keefe and Delia (1982) to describe the strategic selection of language options that are intended to influence others' beliefs: (a) instrumental motives refer to communication intended to affect specific attitudinal or behavioral changes in a target that a communicator desires; (b) interpersonal motives are those related to communication directed at the initiation, maintenance, or dissolution of interpersonal relationships; and (c) identity motives refer to communication behaviors intended to foster a specific image projected by the source. Depending upon circumstances, individuals may decide that the likelihood of achieving one or more of these outcomes will increase through some form of deceptive communication.

It is manifest that all of the above communication strategies might motivate patients to carefully monitor their communication behavior with physicians. In addition to the above motives that might produce the intentional selection of ambiguous language constructions, withholding of information, and being less than straightforward, other factors might contribute to deception in the clinical practice of medicine. For example, patients may experience heightened privacy needs (Burgoon, 1982; Parrott, Burgoon, Burgoon, & LePoire, 1989) in patient-physician interviews. It is also possible that patients are unwilling to fully disclose symptoms or enacted behaviors to avoid receiving bad news, being prescribed effortful treatment regimens or difficult lifestyle changes, or being embarrassed, which articulates nicely with the work of Burgoon and Buller (1994), by having the physician know of actions they are taking that are counterproductive to the generally accepted goals of living a healthy life and avoiding preventable conditions. Thus all of the reasons articulated by others,

plus a host of conditions unique to the clinical practice of medicine, might combine to produce a communication situation in which deceptive communication is quite probable.

THE STUDY

The focus of this research project, then, is to identify the degree to which patients withhold, conceal, distort, or falsify relevant information provided to their physicians in a variety of medical contexts and to characterize patients' motives for distorting the information they contribute, or fail to contribute, to their doctors. Thus this study will provide insight into physician-patient communication patterns and aspects of noncompliance related to deceptive communication. First, a measurement model of the dimensions of deceptive communication used by patients will be developed. After development of such a model, subgroup analyses will be completed to determine the characteristics of patients who use one or more forms of deceptive communication most frequently in interactions with physicians.

METHOD

SUBJECTS

Subjects in this investigation were drawn from the jury pool for the Superior Court of Pima County in Arizona. Any registered voter or resident who has a current driver's license and who resides in the county is eligible to be called for jury duty in this population area. Thus people responding to a summons for jury duty tend to be highly representative of the local population. A total of 754 adults completed the questionnaire. The demographic characteristics of the sample are the following:

Gender	Male	44.7%	Female	55.3%
Median age	46.00 years			
Ethnicity	Anglo	79.5%	Minority	20.5%
Education	High school or below	25.2%		
	Beyond high school	38.7%		
	College graduates	36.1%		

The sample was roughly representative of the overall population as reflected in the 1990 census data for the State of Arizona. Questionnaires were completed while prospective jurors waited in the assembly room to be called. The refusal rate was less than 5% of the total jury pool.

QUESTIONNAIRE CONSTRUCTION

Questionnaire construction began with identification of reasonable nominees to the pool of statements that might capture the variety of deceptive strategies, broadly construed, that patients might employ in interactions with their physicians. Initial item generation was guided by a review of the deception literature and related research on concealment and equivocation language strategies (cf. Buller & Burgoon, 1994, *in press*; Bavelas, Black, Chovill, & Mullett, 1990). Subsequently, the initial items were presented to two physicians and other health practitioners with the request that items be added, deleted, or altered. Health care professionals were asked to evaluate the items as to whether they were likely to occur in clinical visits.

The result was a 70-item questionnaire assessing patient deception strategies. Each item was responded to on a 5-point interval scale with 1 representing *never* and 5 representing *always*. To ensure that the full range of possible responses was captured, a number of statements tapping the same dimension were reworded to include both negative and positive phrasing of the question (e.g., "I have been completely honest with my physician concerning my alcohol intake," and "I have not been completely honest with my physician concerning my alcohol intake").

Items were also included to measure demographic characteristics of the sample. Information on age, gender, ethnic origin, education, household income, marital status, and employment status were included in this battery of demographic markers.

Admitting to practicing deception, equivocation, concealment, or various kinds of dishonesty in patient-physician communication could be correlated with some notion of what is socially desirable communication behavior. Thus, as a control measure, the 33-item Social Desirability Scale (Crowne & Marlowe, 1964) was given to each subject.

RESULTS

Table 1 provides a summary of the response frequencies for each questionnaire item. The tabled data provide compelling evidence that (a) there is a great deal of admitted falsification, nondisclosure, equivocation, and concealment by patients in their interactions with health care providers, and (b) there is substantial variability in the frequency of different kinds of deceptive acts occurring in the clinical practice of medicine. It is also apparent from the frequency data that a very large number of people admit to frequently employing multiple communication acts in their interactions with their physicians that can be labeled as deceptive practices.

Text continues on p. 455

Table 1

Dimensions of Deception and Response Frequencies (in percentages)

	Never	Seldom	Sometimes	Often	Always
Concealment/Equivocation					
When my doctor has asked about my symptoms, I have emphasized the ones I believed were important, and talked only briefly, or not at all, about others.	27.4	28.6	27.7	12.2	4.1
I have neglected to tell my doctor about certain symptoms because I thought they were minor and would eventually go away.	41.2	24.3	27.7	5.9	0.9
I have neglected to tell my physician about certain symptoms because I assumed they were not serious.	48.5	23.1	24.3	3.4	0.8
I have understated certain symptoms because I felt they were the result of my own bad habits/behavior.	63.1	18.2	15.7	2.4	0.5
When I have been asked, I have neglected to tell my doctor everything because I felt it would have been embarrassing to me.	60.6	24.8	13.1	1.2	0.3
I have withheld information from my physician because I didn't think it pertained to my medical problem.	65.6	19.9	12.3	1.6	0.5
I have withheld certain information from my doctor because I have felt that it was none of his/her business.	67.0	18.1	12.9	1.2	0.8
When my physician has asked me certain questions, I have concealed some information because I felt it was an invasion of my privacy.	65.1	22.5	10.7	0.9	0.8
I have neglected to mention certain symptoms I was having because I feared they were serious.	71.1	15.7	9.9	2.4	0.9
I have concealed certain information about my symptoms because I feared the doctor would recommend further testing.	73.5	14.9	9.9	0.8	0.8
I have understated some symptoms because I feared additional expensive testing that I could not afford.	78.9	11.9	7.1	1.7	0.4
I have understated the severity of certain symptoms because I feared that my doctor would tell me something was seriously wrong with me.	81.0	11.2	6.0	1.1	0.7

continued

Table 1 continued

	Never	Seldom	Sometimes	Often	Always
Falsification					
I have overstated the severity of my symptoms because I wanted to make sure my doctor would continue to prescribe medication I considered important and/or necessary.	87.9	7.8	3.2	0.4	0.7
I have overstated some symptoms to my doctor so that I could justify the visit.	89.0	7.3	2.8	0.3	0.5
I have overstated my condition to my doctor in hopes that he or she would recommend me to a specialist.	90.4	6.9	1.8	0.5	0.4
I have told my doctor that I am not feeling well in hopes that he or she would suggest that I take some time off from my hectic schedule.	91.6	5.6	2.3	0.3	0.3
I have reported <i>certain</i> symptoms because I feared that treatment for my <i>actual</i> symptoms would not be covered by my insurance.	92.3	5.3	1.5	0.4	0.5
I have complained to my doctor of <i>certain</i> symptoms, hoping to obtain medication for a <i>different</i> problem.	93.4	3.8	2.3	0.5	0.0
I have told my doctor that I felt more ill than I actually did because I wanted sympathy from my family (or friends) who is (are) often uncaring.	93.2	5.1	1.6	0.1	0.0
I have overstated symptoms to my physician because I needed an excuse for my poor performance at work/school/home.	94.5	3.5	1.6	0.4	0.0
I have overstated my condition to my doctor to ensure continued coverage by my health insurance or workers compensation.	96.0	2.4	0.9	0.4	0.3
I have overstated my condition to my doctor to receive a higher disability rating for workers compensation.	96.4	2.3	0.5	0.3	0.5
I have asked my doctor to refill my prescription, even when I wasn't experiencing any more symptoms, because I felt I was addicted to the medication.	95.6	3.1	1.1	0.1	0.1
Truthfulness					
I have told my doctor about all preexisting conditions even though they may be excluded from coverage on my insurance.	34.7	4.8	5.9	8.5	46.2

Table 1 continued

	Never	Seldom	Sometimes	Often	Always
I have been honest with my physician about my health even though I was afraid his or her treatment plan would conflict with my personal/professional schedule.	32.3	3.7	3.8	10.7	49.5
I have been completely honest with my physician concerning my dissatisfaction with the way I was personally treated while under his or her care.	13.7	13.3	22.1	14.4	36.4
When asked, I have told my physician I was depressed or anxious about something.	16.4	8.6	16.3	16.0	42.8
I have been completely truthful when I have disagreed with my physician's plan of medical treatment.	11.2	9.2	20.0	18.2	41.3
I have been completely truthful with my doctor even when I have been asked to reveal something that was embarrassing.	17.8	5.4	9.2	19.1	48.4
I have been completely honest with my physician when I have been asked whether I was under stress as a result of work, school, or relationships.	7.0	2.5	6.3	13.0	71.3
I have been completely truthful with my physician in regard to whether a particular plan of treatment was helping me.	7.1	1.9	5.3	15.4	70.2
I have been completely honest when my physician has asked about my financial status.	8.0	0.8	5.2	11.4	74.6
Nonloading items					
I have told my physician that I have taken my medication according to schedule, even if I missed a few dosages.	45.7	25.1	20.1	4.8	4.3
I have failed to discuss certain symptoms with my physician because I didn't think they were as important as other problems I was having.	33.7	25.5	30.4	9.0	1.5
When I have been asked, I have neglected to tell my physician that I was not following his or her instructions regarding my diet.	55.3	24.6	15.8	3.7	0.5

continued

Table 1 continued

	Never	Seldom	Sometimes	Often	Always
I asked my physician for a written excuse, when I wasn't really ill, so that I could miss work/school/event.	91.4	5.2	2.8	0.4	0.3
I have not been completely honest when I have been asked about my sexual behavior.	66.7	14.9	9.8	2.3	6.4
I have been completely honest when my physician has asked me whether I have taken the medications exactly as prescribed.	13.7	4.8	10.7	20.8	50.0
I have not been completely truthful when I was asked about my use of tobacco.	74.0	6.3	6.8	2.5	10.3
I have scheduled an appointment to see my physician because work/school was becoming difficult and I needed some time off.	91.3	5.6	1.6	1.1	0.4
I have overstated the severity of my symptoms because I wanted to make sure my doctor conducted a thorough examination.	78.6	13.1	6.4	1.3	0.5
I have exaggerated my symptoms because I feared my physician wouldn't take my problem seriously.	81.5	12.4	5.0	0.9	0.1
When my doctor has asked whether I have followed his or her instructions, I have neglected to be completely honest because I feared my doctor's response.	71.4	19.7	7.6	1.2	0.1
I have exaggerated certain symptoms because I wanted my doctor to try a different plan of treatment.	83.9	12.1	2.9	0.9	0.1
When my doctor has asked about my lifestyle, I have concealed certain information because I felt he or she would think less of me.	84.1	12.3	3.1	0.4	0.1
When my doctor has asked if I have followed the treatment plan, I have not been completely honest because I feared my doctor would terminate our relationship.	91.2	5.7	2.0	0.3	0.8
When my doctor has asked, I have neglected to tell him or her about habits that I have that are putting my health at risk, because I didn't want a lecture.	74.2	17.4	7.7	0.5	0.1

Table 1 continued

	Never	Seldom	Sometimes	Often	Always
I have omitted certain symptoms when talking to my doctor because I have been too busy to go through further testing that may be required.	80.8	12.7	5.3	0.9	0.3
I have been completely honest when my physician has asked whether I'm getting adequate exercise.	16.0	7.4	13.5	18.8	44.4
I have concealed information about my medical history.	87.1	8.8	2.5	0.9	0.5
I have not been completely honest with my doctor about my symptoms because I was concerned that further testing might be painful.	83.7	9.2	5.1	1.2	0.8
I have not been completely honest with my physician concerning the amount of rest and relaxation I have received.	72.3	14.1	8.9	2.3	2.4
When my doctor has asked whether I'm following his or her treatment plan, I have been less than completely honest because I wanted to avoid a conflict with my doctor.	78.6	14.2	5.5	0.9	0.8
I have not been completely honest with my doctor regarding my diet because I feared his or her response.	71.2	17.6	8.9	1.1	1.2
I have emphasized some symptoms and/or understated others to my doctor because I needed evidence for a problem that I had already made known to my family/co-workers/friends.	85.9	8.4	4.3	0.8	0.5
I have concealed certain information about my behavior from my physician because I knew the behavior was frowned on by society.	88.3	7.2	3.5	0.5	0.5
When my physician has asked certain questions I have concealed some information because I didn't think it was relevant to my medical problem.	70.1	19.2	9.1	0.8	0.8
I have changed the subject when my physician has asked a question that I felt was an invasion of my privacy.	77.8	12.3	7.1	1.2	1.7
I have withheld information concerning my health from my doctor because I feared he or she would think I was unnecessarily worried about my health.	81.3	12.4	4.9	0.8	0.7

continued

Table 1 continued

	Never	Seldom	Sometimes	Often	Always
I have concealed certain information about my condition from my physician because I feared others would hear about it.	90.6	7.4	1.5	0.3	0.3
I have exaggerated somewhat when describing my improvement to my doctor to avoid undesired medication and/or further treatment.	76.1	15.1	7.2	1.5	0.1
I have underemphasized some symptoms so that my physician would admire my courage.	87.6	8.6	3.1	0.3	0.4
I was not completely honest with my doctor when I was physically abused because I feared what would happen to the abuser.	94.2	1.9	1.6	0.4	1.9
I have not been completely truthful with my doctor when answering questions necessary to obtain a life insurance policy.	89.6	3.7	1.4	1.0	4.4
I have told my physician I would comply with my plan of treatment when I knew I would not be able to do so.	73.5	16.0	8.0	0.5	1.9
I have told my physician that I quit smoking when I had not stopped but had merely cut down.	90.9	3.9	3.2	1.0	1.0
I have not been completely honest with my physician when I was asked whether I had any particular concerns about my health.	61.7	14.5	10.0	4.5	9.4
When I have had difficulty understanding something my physician said, I have been reluctant to ask my physician to explain.	53.8	18.1	19.7	5.6	2.9
I have not been completely honest with my physician when asked about the amount and type of exercise I had done.	57.0	15.9	15.5	4.4	7.1
I have not been completely honest with my physician concerning my alcohol intake.	70.4	8.9	6.9	4.3	9.6
Summary statistics	Eigenvalue		Variance		Alpha
Factor 1	8.0		23.6		.88
Factor 2	3.4		10.0		.87
Factor 3	3.3		9.7		.79

Note. Within each of the three listed dimensions, items have been rank ordered. Items with greater mean scores are listed first, indicating that subjects engaged in said behavior more frequently than the preceding behavior.

MEASUREMENT MODEL

Factor analysis. As an initial step in data reduction, the responses from the 754 respondents were submitted to two principal components factor analyses. Unity was placed in the diagonals of the matrices. Varimax rotations to simple structures were used to determine the multidimensional nature of deceptive communication used by patients. This procedure was used to produce a maximum amount of variance accounted for with the fewest interpretable dimensions.

The first analysis included all 70 items used in the data collection. The second analysis was done on the 25 items that had the highest occurrence of admitted deception. Thus the second analysis is on only the items that patients admitted to using most frequently in their interactions with their physicians. It was decided on an a priori basis to include factors only when (a) the eigenvalue of the factor exceeded 1.0, (b) each factor had a minimum of three items, and (c) the items formed a conceptually interpretable dimension of the latent construct. Items were considered to load on a factor in the initial analyses only if the primary factor loading was equal to or greater than .50; items were not retained for further analyses if there were secondary factor loadings exceeding .30.

Both the analyses of the entire 70-item pool of statements and the 25 most frequently used deceptive communication strategies yielded a three-factor solution, accounting for 43.3% of the variance, that was the most parsimonious dimensional structure. The Scree test provided further evidence that three orthogonal dimensions of deceptive communication would most adequately represent the data. However, because the 70-item data set included a large number of invariant items (mostly seldom or never used strategies), there were a very large number of items loading on the first factor that did not account for unique variance. Thus, because such loadings are little more than a mathematical artifact that can plague principal components analyses (Burgoon & Hall, in press), the decision was made to construct the measurement model deleting a number of invariant items loading on the first factor. Reliability analyses on the three-factor solution extracted from the pool of the 25 most frequently occurring items yielded unacceptable Cronbach alpha coefficients. Moreover, the second and third factors had a very small number of items, no doubt markedly contributing to low alpha coefficients. Thus the reduced model, deleting invariant items only, leaving a total of 33 items from the original 70-item scale, was used as the sole data set in all subsequent analyses.

Given the similarity of the latent factors, this decision presented no particular problems in interpreting the resulting factor structure. The three-dimensional solution, accounting for 43% of the variance on the larger set of items, met all of the a priori criteria for accepting the measurement model. Not surprisingly, given the principal components

solution used to derive the dimensional structure, the first factor contained a large number of items and accounted for a large portion of the full model's variance. This 12-item cluster represents a sample of the common statements respondents use to conceal information by either nondisclosure or equivocation. Because prior research (Burgoon & Buller, 1994a, 1994b) made arguments for conceptual distinctions between concealment and equivocation, an attempt was made to decompose this first factor into orthogonal dimensions. However, a four-, five-, and six-factor principal components rotation failed to separate items loading on this latent factor. It is clear that concealment and equivocation are highly correlated in patients' responses, and the first factor had to be a combination of *concealment/equivocation* and was so named.

The second factor, labeled *falsification*, contained 11 items, providing further evidence that the number of items on the first dimension ($n = 12$) was probably not inflated by absorbing invariant items. Unlike the first factor (which contained items using equivocal language construction), intentional withholding of information, and less than straightforward communication, the second factor is composed of items that represent intentional, active falsification to achieve some instrumental goal. By and large, items on the falsification dimension were manifestly designed to obtain personal gain by the patient. Relational maintenance, face needs, and fear of social disapproval were motives for concealment/equivocation; motive bases for falsification to a doctor relate solely to personal benefit.

The third factor, *truthfulness*, differs dramatically from what has been found in some previous research efforts and stands in stark contrast to the first two dimensions just discussed. This factor is composed solely of items on which respondents claimed to be completely honest with their physicians. Although few in number when compared with equivocators and concealers, some people routinely tell physicians the truth, no matter how painful it might be. The items on this factor were not recoded, and agreement with the items meant that patients always told the truth.

It is important to note that coding the data in this manner suggests that being truthful is, in fact, an orthogonal dimension compared to concealment/equivocation and falsification. That is, people who tend to tell the truth, tend to be honest across items on this dimension and are probably less likely to engage in concealment, equivocation, and/or falsification. Given the strength of the factor loadings on this nine-item dimension, it is obvious that an identifiable cluster of items represent responses in which large numbers of people report being honest in their encounters with physicians.

Reliability analysis. The second step in developing the measurement model was to determine the internal reliability of each dimension

of the latent construct. An overall Cronbach alpha for each dimension was computed. In addition, item analyses for each dimension with each item deleted were computed for each of the three dimensions. The reliability of the concealment/equivocation dimension was .88; falsification was .87; and truthfulness was an acceptable .79. Deletion of items from any of the three dimensions did not improve any of the reliability coefficients.

EFFECTS OF THE COVARIATE: SOCIAL DESIRABILITY SCALE

The Crowne and Marlowe (1964) Social Desirability Scale is a 33-item measure. The items on the scale were modeled so as to achieve a balance of two types of statements, half culturally acceptable but probably untrue, the other half true but undesirable. Previously published research has obtained (a) high test-retest reliability of .88 with a 1-month interval and (b) significant correlations with social conformity, willingness to give popular answers, and susceptibility to persuasion. It was expected that people scoring high on social desirability might tend to overstate their honesty/truthfulness, while severely underestimating their tendencies to falsify and probably also reporting less of a tendency to conceal and/or equivocate. Such a correlation would make the interpretation of differences in willingness to admit practicing duplicity or being honest most difficult.

The Cronbach alpha on the 33-item scale used in this investigation was high (.83). Pearson product-moment correlations between summated scores on the Crowne-Marlowe measure and summated scores (concealment/equivocation, falsification, truthfulness) were not significantly different from zero ($r < .10$ in all cases). It was clear that social desirability as measured by this scale was not a predictor of responses. Additionally, social desirability was entered as the covariate in all subsequent tests of mean differences among subgroups on willingness to conceal/equivocate, falsify, or to tell the complete truth. In none of these analyses did the covariate approach significance, a less than surprising finding given the negligible first-order correlations between the scale and the dimensions extracted.

SUBGROUP ANALYSES

To test for subgroup differences, demographic variables were reduced to categories:

Gender	two levels (male/female)
Education	two levels (high school or less/above high school)
Age	four levels (18-35, 36-44, 45-54, 55 and above)
Race	two levels (minority, Anglo)

A 2 (Gender) $\times$ 2 (Education) $\times$ 4 (Age) $\times$ 2 (Race) analysis of variance on the summated scores for each dimension was computed. There were several statistically significant main effects and interactions in these multiple data analyses. Significant and interpretable main effects and interactions among the subgroups are discussed for each dimension. The variance accounted for by any single main effect or interaction (η^2) were uniformly small (1%-3% of the variance accounted for by any significant effect).

Concealment/equivocation dimension. There were significant main effects for gender $F(1, 672) = 6.55, p < .05$, race $F(1, 672) = 3.95, p < .05$, and age $F(3, 672) = 4.09, p < .05$. There was no significant main effect for education. However, the significant main effects were uninterpretable, given they were overridden by a significant three-way interaction involving age, education, and gender, $F(3, 672) = 2.54, p = .05$ and a second three-way interaction among age, race, and gender, $F(3, 672) = 3.04, p < .05$. Analyses of the first significant three-way interaction (Age $\times$ Education $\times$ Gender) indicated that the subgroups most likely to conceal/equivocate were highly educated, middle-aged females, followed by younger females with less education and middle-aged females with less education. The groups least likely to report using concealment/equivocation were older males with more education, and less educated young males.

An examination of the second significant three-way interaction (Age $\times$ Race $\times$ Gender) indicated that the most likely to conceal or equivocate were younger, minority males, followed by younger and middle-aged female minorities, and then all age groups of Anglo females. The least likely to use concealment or equivocation were older minority females, older minority and Anglo males, and the youngest group of Anglo males. Thus young Anglo males were among the least likely to equivocate/conceal, whereas the same age cohort in the minority population was the most likely to practice this kind of deceptive communication.

Falsification dimension. There was a significant main effect for age, $F(3, 672) = 3.48, p < .05$, and a significant main effect for education, $F(1, 672), p < .05$. However, neither of these main effects were interpretable as a significant four-way interaction (Age $\times$ Race $\times$ Education $\times$ Gender), $F(3, 672) = 2.61, p < .05$, overrode the two significant main effects. Examining the mean differences resulting in this interaction indicated that the subgroups most likely to falsify were lower educated, minority males in every age group except the 55 and older group and minority females in the youngest and oldest age groups. Except for lower educated, minority females in the oldest age groups, all others in the 55 and older group (regardless of education, race, and gender) were the least likely to admit falsifying to their physicians.

Table 2
Subgroups Most Likely and Least Likely to Engage in Concealment / Equivocation, Falsification, and / or Honesty

Most likely to engage in concealment and/or equivocation:
More educated, middle-age females
Less educated, younger females
Less educated, middle-age females
Younger, minority males
All ages of Anglo females
Younger and middle-age females
Least likely to engage in concealment and/or equivocation:
Higher educated, older males
Lower educated, younger males
Younger Anglo males
Older minority and Anglo males
Older minority females
Most likely to engage in falsification:
Lower educated, minority males of all ages, except age 55 and above
Minority females in the youngest and oldest age groups
Least likely to engage in falsification:
Except for lower educated, minority females, all groups in the 55 and older age group, regardless of education, race and gender
Most likely to engage in truthfulness:
No identifiable pattern on truthfulness
Least likely to engage in truthfulness:
Higher educated minority males, age 45-54
All age groups of lower educated, minority males (most especially those over 55):
Lower educated Anglo and minority females (especially lower educated minority females age 45-54)

Truthfulness dimension. There were no significant main effects and only one interaction (Age $\times$ Race $\times$ Education $\times$ Gender), $F(3, 664) = 2.81, p < .05$ on the third dimension. Inspection of subgroup means indicated that the following groups were least likely to score high on the truthfulness dimension: higher educated, minority males in the 45-54 age group; all age groups of lower educated, minority males but especially those lower educated, minority males who were 55 and older; younger females of both ethnic groups who were lower in education, and most especially minority females with lower education in the 45-54 age group. There was no identifiable pattern of differences between subgroups on who was the most likely to report being completely truthful with their physicians.

Table 2 presents a summary of high-scoring and low-scoring subgroups on each of the three dimensions of deception.

Supplemental frequency analyses. To gain more insight on the frequency with which reported deceptive communication occurs between

patients and physicians, several supplemental analyses were completed. First, equivocation and/or concealment strategies were reported by 85.3% of respondents. Less than half (40.2%) claimed to be completely truthful across the summated items forming the truthfulness dimension. Over one third (34.2%) reported making at least one blatantly false statement to their physician, although less than 10% reported making false statements on any given item. That so many patients will admit to such falsification was unexpected (see Table 1 for percentage responses on each item). Finally, an analysis was completed to identify people who reported (a) being completely honest with their physicians, (b) never reported concealing or withholding information, and (c) denied ever directly lying to their physicians. Only 3.1% of the sample met those criteria of verity. It was expected that social desirability might be highly correlated with self-selection into a completely honest classification. It was not correlated ($r = .06, p > .05$) with classification of groups as deceptive versus nondeceptive.

DISCUSSION

EMPIRICAL EVIDENCE

Descriptive data from the field study. Many of the ongoing research programs in deceptive communication have used college populations in laboratory situations (cf. Bavelas et al., 1990; McCornack, 1992) to examine, among other things, the frequency of occurrence of deceptive communication, the conditions under which that deception is detected by observers and/or participants in interactions, and the kinds of language choices that tend to mark deceptive acts. This effort investigated a general population sample in a nonlaboratory environment. However, the results from this field study are consistent with the empirical findings from extant laboratory research programs. For example, the conceptual articulation of the motivations for engaging in deceptive communication as outlined in Interpersonal Deception Theory (Buller & Burgoon, 1994, in press) appear to apply to self-reports of patients about their communication practices with their physicians.

Patients report multiple motives for deceiving physicians. They withhold, exaggerate, conceal, or equivocate in their communication with physicians to avoid social disapproval, to maintain their own notions of what ought be considered private, to avoid receiving bad news or being subjected to further clinical scrutiny, and to generally establish favorable interpersonal relationships with their physicians. They also tend to use their lay knowledge of their own medical condition to make self-diagnoses and prioritize the issues they will or will

not discuss with their attending physicians. Obviously, the extant evidence suggests that patients must believe that deception serves instrumental, strategic ends and that they are willing to devise language strategies designed to serve those ends.

It is also the case that people will use outright falsification to gain personal benefits from a visit to the physician. Whether that benefit be ill-gotten economic gain, justification for some desired action, or receipt of what the patient believed to be necessary medical treatment, it is clear that a number of people intentionally lie to their physicians. It is also evident that a majority of people do not even pretend that they are completely honest, across a variety of measured communication transactions, with the people charged with providing accurate diagnoses and suggesting reasonable courses of action to control and prevent diseases.

Prior research in laboratory settings has not been able to produce generalizable estimates of how prevalent deceptive communication is in various venues. The frequency data in this field study indicate that 85% of respondents use some form of concealment/equivocation, and approximately a third of the sample admit to outright lying on occasion to their physicians. This finding attests to the ubiquitousness of various kinds of deception in the offices and clinics of physicians. When the "pure-type" analysis was done to isolate individuals who do not report concealment, equivocation, falsification, and/or claim to be completely honest across situations with their physician, only 3% of the sample could be classified as nondeceivers. Because no prior research had attempted to discover the degree to which deceptive communication occurs in physician-patient interactions, the frequency of occurrence of deception discovered in this study is important new information. By any standard, it is manifest that deceptive communication is an established and, perhaps, surprisingly frequent component of the routines patients enact with their health care professionals. Not surprisingly, however, and consistent with all past laboratory research on deception, concealment/equivocation is the most frequently occurring kind of deceptive communication. Falsification is frequently used by less than 10% of patients but occurs with sufficient frequency to warrant concern, if not alarm. Complete honesty is probably as unlikely to occur in interactions with a physician as it is in many other kinds of interpersonal communication transactions.

It should be noted that the data reported are probably conservative estimates of the total amount of deceptive communication that occurs in patient-physician interactions. Even though attempts were made to partition the variance accounted for by what was expected to be the generally socially desirable responses (reporting being honest rather than duplicitous), it appears that what people were willing to report on anonymous questionnaire items was not significantly correlated with a personality trait like social desirability (Crowne & Marlowe,

1964). However, parallel to what Gordis (1979) noted in his review of the compliance literature, that "there is little or no evidence to suggest that complying patients misrepresent themselves as noncompliers, nor is there evidence that those who profess noncompliance in an interview are lying" (p. 38), there is no reason to believe that honest people misrepresent themselves as deceivers or that people lie when they say they lie to their physicians. Thus, if any error in estimation is to be made from these data, it is almost certainly in the direction of underestimating the amount of actual deception that occurs in medical settings.

The measurement model. The data reduction techniques that produced three mathematically orthogonal dimensions, concealment/equivocation, falsification, and truthfulness, yielded a measurement model that satisfied a priori issues of psychometric adequacy. The three independent dimensions had high estimates of internal reliability, indicating that each dimension was tapping some latent dimension of deceptive communication. Moreover, each dimension contained a number of different kinds of items measuring deception or truthfulness in unique medical interaction scenarios. Thus each dimension should represent a stable, internally reliable estimate of the likelihood of patients using the more general strategies of equivocation/concealment, falsification, or truthfulness. Although the reduced measurement model is useful for assessing the more general latent constructs, the nonloading items provide interesting, and potentially useful data on specific issues about which patients frequently employ deceptive communication. For example, patients report being less than honest with physicians about smoking, alcohol intake, exercise habits, and dietary changes, among others. Health care professionals should find the complete listing of what people will admit being less than truthful about most helpful in identifying issues on which deceptive communication is more probable.

Subgroup analyses. Great care was taken to provide accurate information on the sociodemographic profiles of patients most likely to falsify, conceal and/or equivocate, or to be less than truthful with their physicians. Although several research efforts have been mounted to determine patient characteristics and/or structural characteristics of the health care delivery system that might explain and predict patient nonadherence to physicians' directives, no known research has looked at patient characteristics as predictors of deceptive communication in clinical medicine.

It should be noted that demographic and/or personality variables have not been consistent predictors of noncompliance (Becker, 1979; Davis, 1966; Ley, 1976; Zisook & Gammon, 1981). Lane (1983) is among those to point out that no single patient sociodemographic or person-

ality variable, taken in isolation, has been found to consistently influence reported compliance. If one only looked at interpretable main effects for demographic variables in this study, it would be clear that age, ethnic origin, gender, and education do not, when considered one at a time, predict duplicity or honesty. However, the higher order interactions indicate that specific sociodemographic subgroups of patients are more likely to use concealment and/or equivocation strategies; others are more likely to use outright falsification. Still others are significantly less likely to be completely truthful. It is apparent that several demographic breaks must be considered simultaneously (e.g., less-educated minority males under the age of 55 are the most likely to falsify; more-educated, middle-aged females are most likely to conceal/equivocate). Although the subgroups do not lend themselves to simple, main-effect interpretations, physicians with a knowledge of the characteristics of their patient loads can match patient subgroups in their practice with the results presented in this study to determine who is most likely to be deceptive or truthful in their presentations.

DECEPTION AND THE EFFECTS ON THE PRACTICE OF MEDICINE

Obviously, the so-called "truth bias" that physicians hold places a premium on relying on patients to provide complete, veridical, relevant, clear, and personal information to aid in arriving at accurate diagnoses and sensible treatment plans. When patients lie, withhold, equivocate, exaggerate, or provide less than complete information, then under- or overprescription of medication is likely. Without accurate assessments of problem situations or the efficacy of treatment plans or lifestyle alterations, preventable diseases increase, costs are not contained, and health care delivery is not efficient by any measure. The costs, either in monetary terms or as evidenced by needless lack of disease prevention and control, must vary directly with amount of deceptive communication that occurs between patient and physician. Thus the sheer frequency of deceptive communication reported by patients must be taken as an indicant of a social problem of enormous concern in the practice of clinical and/or preventative medicine.

IMPLICATIONS FOR INTERPERSONAL COMMUNICATION IN THE CLINICAL PRACTICE OF MEDICINE

Prior research has extensively documented different strategies of language selection/use that discriminate truthful from deceptive messages (Bavelas et al., 1990; Buller & Hunsaker, 1994; Buller & Burgoon, 1994; Burgoon, Buller, Guerrero, Afifi, & Feldman, 1994). Burgoon et al. (1994, in press) present evidence that deceivers are less

complete in descriptions, tend to shy away from definite, precise responses because they are harder to defend, and avoid giving very much detail in case it contradicts previous or future statements. Moreover, deceptive communication is less personalized than truthful communication, perhaps indicating that deceivers try to disassociate themselves from deception by framing their communication in general rather than personal terms. Buller and Burgoon (1994, in press) also note that individuals become more reticent when deceiving than when truth-telling. This is perhaps manifested again as a hesitancy to offer information that could contradict or discredit their previous statements. Bavelas et al. (1990) report that equivocation is one of the most used forms of what has been labeled deceptive communication, in part, because people believe it is a form of deception that they can "get away with using."

When physicians encounter patients attempting to use any of the above delineated message strategies, they should entertain the possibility that interpersonal deception might be occurring. Perceived surveillance on the part of physicians might reduce equivocation if such surveillance is perceived to increase the likelihood of detecting deception. Forcing people to be more explicit, personalize their comments, and be more complete in their descriptions of symptoms might either reduce, or at least uncover, deceptive message strategies. Pointing out inconsistencies of present statements with previous comments might also increase the perception of more vigilant conversational surveillance. Forcing people to be more direct by responding to dichotomous "yes or no" questions, followed by immediate interrogatory probes might force more directness and allow less imprecise responses. This might produce more veridical information for the physician while escalating the perceived probability of patients being caught at deceptive communication. These strategies should improve deception detection and might actually have a prophylactic effect on future attempts to deceive.

Although the etiology of reticent behavior may or may not be motivated by some intent to deceive, physician strategies aimed at inducing more completeness, clarity, precision, directness, veridicality, and personalization in patient communication might well produce more useful, usable information in physician-patient interviews. Thus all of the language selection/use strategies designed to reduce various kinds of equivocation/concealment in patients might be deployed to make reticent patients, whether motivated by an intent to deceive or not, more forthcoming with information that would aid in diagnoses and formulation of treatment and prevention strategies.

Research on privacy needs between physicians and patients (Parrott et al., 1989) suggests that patients' needs for informational privacy (confidentiality), psychological privacy (control of revealing intimate

details), social privacy (maintaining status distinctions), and physical privacy (physical accessibility to others) are in high relief in the practice of clinical medicine. Obviously, straightforward communication strategies to underscore the confidentiality of the physician-patient privilege must be used to assure patients' informational privacy needs. Of necessity, patients must often share "private" thoughts and feelings. To insure honest and accurate answers, health care providers must deal not only with the matter of what will be done with this confidential information, but how the patient is made to feel when the truth is revealed.

Other researchers (Burgoon, Parrott, Burgoon, Birk, et al., 1989; Burgoon, Parrott, Burgoon, Coker, et al., 1989) have suggested using a broader range of compliance-gaining strategies, including instrumental verbal aggression. To the extent that patients perceive the use of more verbally aggressive messages as indicating more physician concern for their welfare, they should view such messages as less privacy-invading and related more to a desire to gain information to assist in remedying their personal situations. The degree of formality in a situation, as well as how personal the conversational topics and language are, define social privacy. Past research (Burgoon, et al., 1987) has found a significant correlation between patient satisfaction and physician formality, an indicator that patients not only expect but also desire formality in the context of physician-patient interactions. Physicians might be well served by also being less equivocal and explaining exactly why they are asking specific questions. If disclosure begets disclosure, then physicians are advised to explain clearly and concisely their intent for posing interrogatories that might be seen as privacy-invading by patients.

This investigation also provides information on the kinds of content items most likely to produce blatant falsification by patients. Although all kinds of deception might result in less completeness, clarity, precision, directness, veridicality, and personalization in patient communication, it might also be the case that blatantly false statements may be somewhat closer in content and syntactic form to truthful statements than are statements that are equivocating and/or concealing. Thus lies and fabrications might be more difficult to detect by language markers than are equivocal statements. These data suggest that outright falsification is most likely to occur when the patient has some instrumental goal to gain personal benefit (e.g., certain kinds of drugs, insurance benefits, excuses for actions). When patient requests manifest a desire for personal benefit, the physician might well use all of the language strategies suggested above to increase the perception of surveillance, conversational vigilance, and tests for verity. Again, previous research indicates that conversation management techniques that increase the perception of an increased probability of being caught at deception suppresses actual deception attempts.

ON THE WISDOM OF ABANDONING THE TRUTH BIAS IN PHYSICIAN-PATIENT INTERACTIONS

It would be evidence of an almost complete lack of understanding of the practice of medicine to suggest that physicians could handle the rigors and demands of most patient loads without some assumption of truth-telling by most patients. The so-called truth bias is probably a necessary assumption if physicians are to handle large numbers of patients in a cost- and time-efficient manner. However, these data indicate that deception in the form of equivocation, concealment, and falsification is indeed a part of the established interaction patterns between patients and physicians. Knowledge of the frequency of occurrence of different kinds of deception, awareness of linguistic and content markers of potential deceptive communication, and information on sociodemographic characteristics of honest and deceptive patients should be of practical import to health care providers. With such knowledge, changes in language selection/use by physicians can, at least partially, reduce the incidence and ameliorate the tremendous costs associated with deceptive communication in health care contexts.

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