# Gowning: Effects on Patient Satisfaction

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**BACKGROUND.** Given an extensive literature regarding the doctor-patient relationship, it appears curious that gowning status has received so little attention. The present study examined potential effects of gowning as opposed to not gowning patients at the point of presenting problem. Specifically, effects that gowning status might have on patients' trust in their physician, as well as overall duration of clinic visit, were investigated.

**METHODS.** Patients (N=1500) were randomly assigned to gown or non-gown status on arrival for clinic visit. Subsequent screening following predetermined guidelines resulted in 895 subjects participating in the study. Fifty-one percent of these patients (n=455) fully completed the Trust in Physician Scale. Total time data from check-in to checkout, by gowning status, were kept on all patients.

**RESULTS.** No significant effects for gowning status were found with respect to patients' trust in their physician or duration of clinic visit. There were also no significant interactions between gowning status, patient sex, physician sex, patient age, or patient education. Significant findings were demonstrated whereby younger patients and patients seeing a doctor for the first time reported less trust in their physician.

**CONCLUSIONS.** There is not sufficient evidence, to date, to suggest that gowning status has a significant impact on the doctor-patient relationship or the duration of clinic visit.

**KEY WORDS.** Patient satisfaction; physician-patient relations; time management; practice management, medical; physicians, family. *(J Fam Pract 1997; 45:397-401)*

The effects of nonverbal communications and ambient environment have been explored in terms of their potential impact on the doctor-patient relationship.[1-3] In considering potential "barriers" between doctor and patient, for example, bed rails, desks, and height differentials (ie, doctor standing while patient seated or in a bed) have been implicated.[1-3] Also, some attention has been paid to issues of privacy and how this may affect doctor-patient interactions.[4,5] A potential barrier and privacy issue that has not been adequately addressed, however, is that of gowning patients, specifically, when to gown patients.

The use of examining gowns in medical settings (inpatient and ambulatory) is clearly standard practice. As such, one reason for a lack of investigation to date regarding gowning practices may rest with perspective. From the perspective of the physician, an examining gown is not a barrier. The gown facilitates the examination by allowing access to the patient's body. From the patient's perspective, however, it is possible that wearing an examining gown (as opposed to being regularly clothed) may be experienced differently, particularly at the point of initial problem presentation.

The authors practice at a Mid-Atlantic land grant university and school of medicine. Our family medicine clinic provides services for over 3000 patient visits per month. In an effort to serve a growing patient population in a timely and efficient manner, an informal policy has evolved whereby patients are asked to put on a gown after

being shown to an examining room. Importantly, gowning takes place in most instances before the treating physician enters the examination room to hear the presenting problem. Our physicians feel that seeing patients already gowned saves time and thereby helps to increase overall clinic efficiency.

Two fundamental questions arise from such practices. First and foremost is the question of whether the doctor-patient encounter (to include the patient's trust in the physician and satisfaction with care) is compromised by the presence of a "barrier" gown. The second issue is whether time is truly "saved" through the practice of immediately gowning patients before hearing the presenting complaint. There is no empirical evidence, to date, to substantiate this belief. This paper details an initial investigation of these questions.

## METHODS

### INSTRUMENT

The Trust in Physician Scale[6] was chosen as an objective measure to assess whether there was any differential impact on the primary dependent variable under study, ie, trust in physician and satisfaction with care. The Trust in Physician Scale provides more than a simple index of trust in one's doctor; as measured by the scale, trust has been found to correlate significantly with overall satisfaction with the medical encounter.[6] The scale consists of 11 Likert-type items and has been shown to be highly reliable (internal consistency Cronbach alphas ranging from .85 to .90).[6,7] Good construct validity has been reported as well.[6,7] We added two additional Likert-type items to the Trust in Physician Scale* to directly assess patients' comfort levels with being gowned: (1) "My talking with a doctor is not affected one way or another by my having an examining gown on"; and (2) "I feel self-conscious (uncomfortable) trying to explain health care concern(s) to my doctor while wearing an examining gown."

### PROCEDURE

In July 1995, the first 1500 patients to visit the family medicine center were randomly assigned at

*The Trust in Physician Scale is available from the author; the scale has been published in a book edited by Fischer and Corcoran, entitled *Measures for Clinical Practice: A Sourcebook.*[7]

reception/registration to one of two groups: gowned or non-gowned. Receptionists were instructed to exclude patients who were: (1) younger than 18 years old, (2) return obstetrical patients, and (3) patients of the investigators.

After nursing staff obtained vital signs, patients were shown to examining rooms and either instructed to don a gown (ie, "please remove your clothing and put on the gown, open in the back.")† in preparation for the doctor *or* simply advised that the doctor would be in to see them shortly (allowing the patient to remain clothed). These instructions were given consistent with the random gowning or non-gowning assignment noted on the back of the patient fee sheet at reception/registration. However, non-gowned patients who required gowning to facilitate a standard medical examination were gowned *after* their initial contact with the physician.

The nursing staff were also instructed, by standardized training sessions and posted written protocol, to exclude patients from the study under certain conditions. Approximately 40% (n=605) of the original 1500 patients were excluded on the basis of the following guidelines:

1. Those who would *not* be gowned under usual circumstances, such as patients with behavioral medicine complaints, eye complaints, or those requesting prescription refills.
2. Those who would *always* be gowned, such as patients presenting for prescheduled procedures, eg, sigmoidoscopy and colposcopy.
3. Those patients in the gowned group who refused gowning.
4. Those who suffer from dementia or who are otherwise unable to participate because of severe physical, emotional, or developmental disabilities.

Medical staff providing clinical care consisted of family medicine residents (PGY 1-3), a physician assistant, a nurse practitioner, as well as attending faculty physicians. On completion of the medical visit, patients were directed to the checkout desk to turn in fee sheets and schedule return visits, if indicated.

† Patients were asked to remove undergarments only if procedurally necessary.

**Demographics for Patients Completing Modified Trust in Physician Scale**

| Characteristic | Study Group (n=455) |
|---|---|
| Sex, n ( %) | |
| Male | 164 (36) |
| Female | 291 (64) |
| Age, years | |
| Mean (median) | 42.6 (40.0) |
| Range | 19 - 85 |
| Education, years | |
| Mean (median) | 13.8 (12.0) |
| Range | 4 - 22 |
| Race, n ( %) | |
| White | 437 (96.0) |
| African American | 15 (3.3) |
| Other | 3 (.7) |
| Clinic visit, n ( %) | |
| First visit to clinic | 50 (11) |
| First visit with doctor | 200 (44) |

At checkout, the 895 subjects under study were asked if they would be willing to participate in a brief satisfaction survey. Checkout/billing staff administered the modified Trust in Physician Scale and recorded sociodemographic data (Table 1), time data (ie, time of check-in/time of checkout), provider sex, as well as patient assignment to a study group (gowned or non-gowned) for only those patients who completed the scale (n = 455). An additional 56 persons agreed to fill out the survey, but did not answer all items. The approved institutional review board protocol allowed only for recording of time data and study group assignment for those patients who chose not to participate in the survey (n = 384, 43 %).

## RESULTS

To test the hypothesis that the doctor-patient relationship may be compromised by the presence of a "barrier" gown, the effects of gowning status on physician trust were estimated. In the first stage of the analysis, differences in physician trust as a function of gowning status were investigated using a difference of means test. The analysis demon-

strated no statistical difference ($P$=.65) in physician trust between those who were gowned and those who were not gowned. Those who were gowned (n=192) prior to presenting problem had a mean trust score of 4.03, while those not gowned (n=263) had a mean trust score of 3.98. Both groups have mean scores that represent a significant degree of trust (approximately 4 on a 5-point scale, where a value of 5 represents the highest level of trust).

The lack of aggregate differences between gowned and non-gowned patients leads to the conclusion that the patient-doctor encounter (in terms of trust and satisfaction with the medical encounter) was not compromised. Further, the two items added to the Trust in Physician Scale (directly assessing patients' attitudes toward gowning) revealed no statistical differences with regard to patient gowning status.

In the second stage of the analysis, the extent to which other variables might affect the relationship between gowning status and physician trust was examined. An ordinary least-squares stepwise regression technique was employed to estimate the effects of gowning on trust, once other important factors were controlled (Table 2). Variables that make no contribution to model fit were automatically dropped from the regression analysis.

**Stepwise Regression Model Predicting Physician Trust (n=455)**

| Variable | Unstandardized Estimate |
|---|---|
| 1st visit with doctor | −0.112* |
| Age of respondent | 0.004* |
| Education | .007 |
| Gowning status | 0.000 |
| Patient sex | −0.161 |
| Duration of visit | −0.0002 |
| Education by gowning status | 0.015 |
| Age by gowning status | −0.003 |
| Patient sex by duration of visit | 0.002 |

*$P$<.05.

NOTE: Other variables tested in the regression analysis, but not retained by the stepwise regression procedure because of lack of effect, include: Patient-physician gender match, first visit at clinic, race, sex of physician. Interaction terms: Gowning status by first visit to clinic; gowning status by first visit with physician; sex of physician by duration of visit.

The following variables were initially included in the analysis: First visit to facility; first visit with doctor; patients' years of education; gowning status; patient race; sex of physician; patient sex; patient age; and duration of visit (time in minutes). All interactions among these variables were tested. Only two variables had a significant effect on the physician trust scale. Those patients seeing the doctor for the first time generally had lower trust scores and a positive linear relationship between patient age and trust in physician was revealed. Gowning status had no demonstrable effect on physician trust or any interaction with other variables under study.

The second question under study of whether gowning patients before the physician's arrival in the examination affects the overall duration of the clinic visit. A difference of means test between all patients who were gowned (n=382) and all patients who were not gowned (n=513) shows that gowned patients spent less time (albeit statistically insignificant) in the clinic. The average duration (ie, total time from patient registration to patient checkout) was 56.79 minutes for the gowned patients, and 57.38 minutes for the non-gowned patients, a difference of 35 seconds ($P$=.759).

## DISCUSSION

The primary objectives of this study were to analyze potential effects of gowning practices on the doctor-patient relationship as well as the duration of clinic visit. Analyses failed to demonstrate a significant relationship between gowning status and patients' trust in their physician and satisfaction with care. Furthermore, no statistically significant differences were found in time data.

The finding that immediate gowning did not compromise patient trust or satisfaction may indicate that the examining gown is no more a "barrier" for the patient than for the treating physician. The construct of the scale (ie, trust in physician) must be carefully considered, however. It is possible that a patient could hold a high degree of trust in his or her physician while still objecting to the nature of the clinical encounter (ie, feeling rushed or not invited to collaborate in the process). The choice of measurement (whether objective instrument or thematic analysis) may then lead to alternative conclusions as to the effects of immediate

gowning on the doctor-patient encounter.

Unrelated to gowning status and time, statistically significant results were demonstrated in this study for other variables. Patients who saw a physician for the first time and younger patients demonstrated less trust in the physician. These findings do point to the importance of rapport building in a first visit with a patient. They also serve as a reminder to the provider of the potential for age-cohort effects. Older patients may still view the physician as an unquestioned authority, whereas a physician may have to earn the trust of younger patients.

A possible study limitation is selection biases in our sample. One selection bias issue involves those patients randomly assigned to gowning status who refused to be gowned. These individuals may have clearly held negative attitudes toward gowning practices that went unmeasured. A second concern is those patients (n=384) who refused the "satisfaction survey" at checkout. It should be noted, though, that the reported 51% response rate is a conservative one; it includes only those subjects who completed *every* item on the modified Trust in Physician Scale.

Our subject participation level (while less than optimal) does fall within accepted guidelines and allows for extrapolation of findings to populations.[8] Further, an additional 6% (56) of respondents returned incomplete questionnaires, which were included in many analyses. It is also known that subject dropout rates may be affected by poor reading skills, and, indeed, this proved to be a problem with our sample.[8] Checkout personnel compiled a list of comments made by patients who declined to participate in the survey. Many of the comments are of the kind identified as being frequently used by nonliterate or semi-literate persons (eg, "I left my reading glasses at home."). Nationally, West Virginia ranks 40th in levels of literacy proficiency; nearly 50% of adults in West Virginia experience difficulty with literacy tasks.[9]

Further examination of gowning status and its potential effects on the doctor-patient encounter are needed. Time analysis refinements are also necessary.

The current study, for example, measured the duration of clinic visit from the point of patient arrival in the clinic to the point of checkout. Information regarding actual patient time in the

examining room might be more useful to the busy clinician. The reported time data also fail to differentiate between non-gowned patients *later* asked to don a gown (after presenting problem) and non-gowned patients who were *never* asked to don a gown. Finally, practice setting (eg, university medical center, large group practice, small private practice, rural, suburban, or urban) may have implications for generalizability.

## ACKNOWLEDGMENTS

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