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ORIGINAL RESEARCH

Does a higher frequency of difficult patient encounters lead to lower quality care?

This study would suggest it does not. Despite physician burnout, dissatisfaction, and related stresses associated with challenging practices, investigators found that quality of care was unaffected.

ABSTRACT

Background ▶ Difficult patient encounters in the primary care office are frequent and are associated with physician burnout. However, their relationship to patient care outcomes is not known.

Objective ▶ To determine the effect of difficult encounters on patient health outcomes and the role of physician dissatisfaction and burnout as mediators of this effect.

Design ▶ A total of 422 physicians were sorted into 3 clusters based on perceived frequency of difficult patient encounters in their practices. Patient charts were audited to assess the quality of hypertension and diabetes management and preventive care based on national guidelines. Summary measures of quality and errors were compared among the 3 physician clusters.

Results ▶ Of the 1384 patients, 359 were cared for by high-cluster physicians (those who had a high frequency of difficult encounters), 871 by medium-cluster physicians, and 154 by low-cluster physicians. Dissatisfaction and burnout were higher among physicians reporting higher frequencies of difficult encounters. However, quality of patient care and management errors were similar across all 3 groups.

Conclusions ▶ Physician perception of frequent difficult encounters was not associated with worse patient care quality or more medical errors. Future studies should investigate whether other patient outcomes, including acute care and patient satisfaction, are affected by difficult encounters.

Physicians who have high numbers of difficult patient encounters are more likely to report burnout and related stressor effects than are colleagues with fewer difficult encounters.[1] More of them also perceive that they provide suboptimal care than do colleagues who report fewer difficult patients.[1] These were some of the findings taken from the Minimizing Error, Maximizing Outcome (MEMO) Study that we conducted from 2001 to 2005.[1] But these findings prompted us to wonder: Is that perception accurate?

Whether physicians reporting high numbers of difficult patient encounters *actually* provide poorer care is unknown. In a recent study of physicians from one large primary care system, patient panels that were more challenging—as determined by higher rates of underinsured, minority, and non-English-speaking patients—were associated with lower quality care.[2] Hinchey and Jackson

found that 2 weeks after initial presentation, patients involved in difficult encounters at a walk-in clinic experienced worsening physical symptoms.[3] However, this study did not address whether difficult patient encounters affected the care rendered by providers to patients in general.

A detailed, rigorous model describing the interplay and relationships among difficult encounters, adverse physician outcomes (eg, burnout, dissatisfaction), and patient health outcomes has yet to be developed. To better understand the effects of these interactions, we revisited data from the MEMO study.

The findings that prompted another look at the data

When we conducted the MEMO study, we surveyed 422 physicians working in 119 primary care clinics in the upper Midwest and New York City.[4] Almost half (49%) of the physicians reported moderately or highly stressful jobs; 27% reported burnout; and 30% were at least moderately likely to leave their practices within 2 years. Of these physicians, 113 (27%) reported high numbers of difficult encounters, which corresponds with other reports of 10% to 37% in primary care settings.[5-7] These 113 physicians were 12.2 times more likely to report burnout compared with colleagues with fewer difficult encounters.[1] They also reported lower job satisfaction, increased stress, more time pressure, and greater intent to leave practice, which are also echoed in other studies.[8-10]

We found in our study (and at least one other) that physicians experiencing burnout are often younger and female, work long hours, and practice in a medicine subspecialty.[1,11] Many physicians who care for difficult patients report that they secretly hope these patients will not return.[6]

Our hypothesis

We hypothesized that frequent difficult encounters may amplify an adverse work environment, and that physicians facing time pressure and a lack of work control brought on by these encounters might be unable to sustain a high standard of care for their overall patient load.

METHODS

Participants

Physician and patient participants and design of the MEMO study are described in detail elsewhere.[12] The following, though, is a recap:

We recruited 422 general internists and family physicians from 119 ambulatory care clinics in New York City and the upper Midwest. These regions offered a diverse patient and payer mix. Physicians were asked via onsite presentations and mailed invitations to complete a survey derived from focus groups and the Physician Worklife Survey.[13,14]

We also recruited up to 8 patients per participating physician via mailed invitations. Inclusion criteria were a minimum age of 18; a diagnosis of at least one target condition (hypertension, diabetes, congestive heart failure); ability to read in English, Spanish, or Chinese; and at least 2 visits with their primary physician in the previous year.

Here we report on outcomes for those patients with diabetes and hypertension.

Measures

When we initially conducted the study, physicians completed an 8-item Burden of Difficult Encounters measure designed to approximate the frequency of difficult encounters experienced. Latent cluster analyses of this survey measure defined 3 distinct groups of physicians: those who estimated a high, medium, and low frequency of difficult encounters in their practices. Via chart audits, we determined quality of care and errors related to guideline-recommended management and preventive care for hypertension and diabetes. Details of these audits are found elsewhere.[4]

We defined quality care for hypertension as successful blood pressure control (<140/90), and for diabetes, successful control of hemoglobin A1c (≤7.5) and blood pressure (<135/80). One quality point was awarded for each of these 3 measures if achieved for at least 50% of recorded visits over an 18-month period. We calculated the quality score as the proportion of total possible quality points (with 100%=best).

We defined errors as guideline nonadherence and missed opportunities for pre-

The perception of frequent difficult encounters is associated with increased physician burnout and dissatisfaction, but not with suboptimal care or higher rates of errors.

TABLE 1

Burden of Difficult Encounters measure[1]

Latent cluster analyses of this survey measure were used to assign physicians to one of 3 clusters: those who estimated a low, medium, or high frequency of difficult encounters in their practice.

How often do the following interactions occur? (1=never; 4=often)	
Patients who:	No. of physicians providing ratings of 3 or 4 (%); n=422
Visit regularly, but ignore medical advice	155 (37)
Have expectations for care that are unrealistic	68 (16)
Insist on being prescribed an unnecessary drug	58 (14)
Insist on an unnecessary test	54 (13)
Persistently complain, although you have done everything possible to help	50 (12)
Do not express appropriate respect	16 (4)
Show dissatisfaction with your care	4 (1)
Are verbally abusive	1 (0.2)

vention or management, tailored to each patient's age, sex, and diagnoses. We calculated the error score as the proportion of total applicable error points (maximum=15; 0%=best). We assigned an error point for each missing process of care, including missed treatment opportunities, inattention to behavioral factors, guideline nonadherence, lack of tobacco use documentation, and missed prevention activities, such as mammograms, cervical cancer screening, colon cancer screening, and depression assessment.

We normalized scores to a range of 0 to 100 by dividing the number of quality or error points by the number of applicable items and multiplying by 100. We calculated quality and error scores for hypertension or diabetes for each patient and averaged them to determine total scores per physician.

Data analysis

Latent cluster analyses identified 3 distinct clusters of physicians based on their reported frequency of difficult encounters.[1] We used a 2-level hierarchical linear model of patients nested under physicians to assess if a higher number of perceived difficult patients was associated with poorer patient care, as measured by quality of care and medical errors, controlling for physician age, sex, and racial/ethnic minority status. To further adjust for negatively biased standard errors (physicians recruited from the same clinics, for example), we applied the Huber-White sandwich estimator.[15,16]

We analyzed the association between levels of difficult patients and patient outcomes following a conceptual model. Using Cluster 3 (low frequency of difficult encounters) as the reference group, we tested the direct association of Cluster 1 (high frequency of difficult encounters) and Cluster 2 (medium frequency of encounters) with patient outcomes (eg, errors in diabetes and hypertension management, missed prevention activities, quality benchmarks met). We also tested the adjusted influence of Clusters 1 and 2 on patient outcomes, controlling for the mediators of burnout and satisfaction. Finally, we examined the direct influence of Clusters 1 and 2 on the mediators of burnout and satisfaction.

RESULTS

A total of 449 physicians from 119 clinics consented to participate in MEMO (59.8% of those approached), and 94% of these (n=422) completed the survey.[4] Compared with participants, nonparticipants did not differ significantly by specialty or sex. Physicians were evenly divided between general internists

TABLE 2

Physician characteristics across frequency clusters (n=422)[1]

Physician characteristic	Frequency-of-difficult-encounter cluster		
	High, % (n=113)	Medium, % (n=268)	Low, % (n=41)
Family physicians (vs general internists)	41.6	49.6	58.5
Age, mean (SD)	40.8 (9.0)*†	43.3 (9.0)	46.1 (13.4)
Female sex	50.4†	44.6‡	26.8
Racial/ethnic minority			
• Black or African American	8.0	4.1‡	14.6
• Asian	13.3	11.9	9.8
• Hispanic or Latino	6.6	3.1	0
• Other	6.2	3.4	0
Full-time work status	83.8	83.5	80.5

Exact probability tests were used to contrast proportional differences.

*P<.05 for high vs medium frequency of difficult encounter clusters.

†P<.05 for high vs low frequency of difficult encounter clusters.

‡P<.05 for medium vs low frequency of difficult encounter clusters.

(51.9%) and family physicians (48.1%). The mean age was 43 (range, 29-89), 44.4% were women, most (83.3%) worked full-time, and 22.0% were from a racial or ethnic minority group. Specific results of the Burden of Encounters measure, depicted in **TABLE 1**, have been reported previously.[1]

Physicians were more likely to sort into the high (n=113) and medium (n=268) frequency of difficult encounter clusters as opposed to the low-frequency cluster (n=41) (**TABLE 2**). Of the 1384 patients whose records were audited, 359 were cared for by high-cluster physicians, 871 by medium-cluster physicians, and 154 by low-cluster physicians. Patients had a mean age of 59.6, 65.6% were women, and they had an average of 4.5 chronic medical conditions. A greater percentage of patients with physicians in the high-frequency cluster had a diagnosis of hypertension, compared with the medium cluster (92.4% vs 87.7%; P<.05). Patients did not differ across physician clusters by age, sex, prevalence of diabetes, or number of chronic diagnoses.

We examined the relationship between perceived frequency of difficult encounters and patient outcomes using a double-mediation model with physician burnout and satisfaction as mediators. We found that the greater the perceived number of difficult encounters, the greater the burnout and job dissatisfaction. For example, on a 5-point Likert scale measuring burnout where 1 = no burnout and 5 = significant and persistent burnout, medium-cluster physicians scored 0.48 points higher than the low-cluster physician cohort. High-cluster physicians scored 0.84 points higher than their low-cluster colleagues (both P<.05). Similarly, high-cluster physicians were less satisfied with their jobs; on a 5-point scale where 1 = low satisfaction and 5 = high satisfaction, high-cluster physicians scored 0.60 points lower than low-cluster physicians (P<.05).

Yet, there was no clear association between perceived frequency of difficult encounters and patient outcomes. High-cluster physicians had a 5.57% lower overall error rate compared with low-cluster physicians (P<.05), although this was not true for specific errors, such as those in hypertension or diabetes management, where rates were similar. High-cluster physicians also had a 7.68% lower overall quality rate (P<.05), although, again, this was not true for man-

In light of performance measurement pressures, many doctors are likely to ensure that quality measures are met—even when faced with a challenging patient encounter.

agement of specific conditions such as hypertension and diabetes, where rates were similar. In sum, in our double-mediation model, there was no consistent influence of a physician's difficult-encounter cluster on patient outcomes, even when including physician burnout and level of satisfaction as mediators.

DISCUSSION

Our principal finding is that the perception of frequent difficult encounters—while associated with significant physician burnout and dissatisfaction—was not associated with worse quality of patient care or higher rates of error. Physicians with a high volume of difficult encounters and burnout maintained standards of care for their patients comparable to those of their peers who experienced less frequent difficult encounters. We propose several hypotheses to explain this observation.

First, the Conservation of Resources (COR) Theory suggests that when resources are depleted or stressed by work demands (difficult encounters), burnout will result.[17] In response, burned-out individuals will reduce their resource expenditure (attention, time) and focus their resources on the most important aspects of their work—in our case, measured quality of care. In the physician-patient communication literature, Williams et al suggest that burned-out physicians use a strictly biomedical style of communication,[18] which is less resource intensive than more patient-centered forms of communication.[19] Thus, while a physician may be burned out and dissatisfied, she or he will focus communication on key clinical aspects of the encounter (the presenting complaint, necessary preventive care) while de-emphasizing the psychosocial aspects of care. Consequently, a physician may be burned out by difficult encounters, but may continue to provide adequate patient care.

Second, these results may reflect (in part) the professional socialization of physicians. The rigors of medical school and residency training provide physicians with a high level of personal hardiness. The nursing literature defines hardiness as the interrelatedness of 3 factors controlled by the individual through lifestyle: control of the environment, commitment to self-fulfilling goals, and reasonable levels of challenge in daily life. Thomsens et al found that these traits serve as buffers to protect individuals from the psychological repercussions of stress.[20]

Nikou designed a study to investigate the relationships among hardiness, stress, and health-promoting behaviors in students attending a nursing student conference.[21] The results indicated that hardiness was inversely related to stress and positively related to health-promoting behaviors. Thus, while physicians face challenging and difficult encounters and become burned out and dissatisfied, they are able to deliver acceptable patient care due to the buffering effect of their professional socialization.

Third, physicians' responses to performance measurement pressures—ubiquitous in the culture of primary care medicine today—may also contribute to our findings. Physicians are called on to meet both national and local standards of care, and are expected to keep patients satisfied. Such objectives may be tied to financial incentives.[22] In this environment, many doctors are likely to respond so that quality measures are met, even when faced with a challenging patient encounter. Higashi et al found that the quality of care delivered to patients was better as the number of chronic conditions increased.[23] Others have argued that current clinical practice guidelines, which have driven quality measurement, have led to unintended consequences—for example, polypharmacy with inadequate consideration of adverse drug-drug interactions.[22,24,25]

Study limitations. This study is limited by its sample size, which may have restricted our ability to discern small but meaningful differences in quality and errors. In addition, enrollment bias—given that a small number of patients per physician were enrolled—could have muted potential positive findings. If possible, future studies should include outcomes from entire patient panels.

While the objective recording of quality and errors is a strength of this study, data on the frequency of difficult encounters were cross-sectional. As a result, causal relationships between physician-experienced diffi-

culty and patient outcomes were not possible to determine.

Lastly, throughout this study the term "patient outcomes" has been limited to the particular medical outcomes used in our investigation. But it is well recognized that important patient outcomes could also include measures such as satisfaction, trust, medication adherence, and costs.

More to explore. We found that the perception of frequent difficult patient encounters was not associated with poorer patient outcomes, even in the setting of physician dissatisfaction and burnout. Although difficult encounters were associated with physician burnout and job dissatisfaction, it appears that physicians who perceived very frequent difficult patient encounters had comparable standards of care relative to their peers who reported fewer difficult encounters.

Future research should examine additional patient outcomes related to chronic conditions and acute care and their relationship to difficult encounters. Furthermore, other potential consequences of difficult encounters need to be explored, especially those that may result from poor physician-patient communication such as medication adherence, patient satisfaction, and trust. JFP

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Other potential consequences of difficult encounters need to be explored, such as patient satisfaction and trust.

References

1. An PG, Rabatin JS, Manwell LB, et al. Burden of difficult patient encounters in primary care: data from the Minimizing Error, Maximizing Outcome Study. *Arch Intern Med*. 2009;169:410-414.
2. Hong CS, Atlas SJ, Chang Y, et al. Relationship between patient panel characteristics and primary care physician clinical performance rankings. *JAMA*. 2010;304:1107-1113.
3. Hinchey SA, Jackson JL. A cohort study assessing difficult patient encounters in a walk-in primary care clinic, predictors and outcomes. *J Gen Intern Med*. 2011;26:588-594.
4. Linzer M, Manwell LB, Williams ES, et al. Working conditions in primary care: physician reactions and care quality. *Ann Intern Med*. 2009;151:28-36.
5. Jackson JL, Kroenke K. Difficult patient encounters in the ambulatory clinic: clinical predictors and outcomes. *Arch Intern Med*. 1999;159:1069-1075.
6. Hahn SR, Kroenke K, Spitzer RL, et al. The difficult patient: prevalence, psychopathology, and functional impairment. *J Gen Intern Med*. 1996;11:1-8.
7. Hahn SR, Thompson KS, Wills TA, et al. The difficult doctor-patient relationship: somatization, personality and psychopathology. *J Clin Epidemiol*. 1994;47:647-657.
8. Wetterneck TB, Linzer M, McMurray JE, et al. Worklife and satisfaction of general internists. *Arch Intern Med*. 2002;162:649-656.
9. Calnan M, Wainwright D, Forsythe M, et al. General practice. All stressed up and nowhere to go? *Health Serv J*. 2000;110:28-29.
10. Mathers N, Jones N, Hannay D. Heartsink patients: a study of their general practitioners. *Br J Gen Pract*. 1995;45:293-296.
11. Krebs EE, Garrett JM, Konrad TR. The difficult doctor? Characteristics of physicians who report frustration with patients: an analysis of survey data. *BMC Health Serv Res*. 2006;6:128-135.
12. Linzer M, Manwell LB, Mundt M, et al. Organizational climate, stress, and error in primary care: the MEMO study. In: *Advances in Patient Safety: From Research to Implementation*. Vol. 1. AHRQ publication no. 050021 (1). Rockville, Md: Agency for Healthcare Research and Quality, 2005:65-77. Available at: http://www.ncbi.nlm.nih.gov/books/NBK20448. Accessed February 16, 2012.
13. Konrad TR, Williams ES, Linzer M, et al. Measuring physician job satisfaction in a changing workplace and a challenging environment. *Med Care*. 1999;37:1174-1182.
14. Williams ES, Konrad TR, Linzer M, et al. Refining the measurement of physician job satisfaction: results from the Physician Worklife Study. *Med Care*. 1999;37:1140-1154.
15. Huber PJ. *Proceedings of the Fifth Berkeley Symposium on Mathematical Statistics and Probability*. Berkeley, Calif: University of California Press; 1967:221-233.
16. White H. Maximum likelihood estimation of misspecified models. *Econometrica*. 1982;50:1-25.
17. Hobfoll, SE. Conservation of resources: a new attempt at conceptualizing stress. *Am Psychol*. 1989;44:513-524.
18. Williams ES, Lawrence ER, Campbell KS, et al. The effect of emotional exhaustion and depersonalization on physician-patient communication: a theoretical model, implications, and directions for future research. *Adv Health Care Manag*. 2009;8:3-20.
19. Roter DL, Stewart M, Putnam SM, et al. Communication patterns of primary care physicians. *JAMA*. 1997;277:350-356.
20. Thomsens SB, Arnetz P, Nolan J, et al. Individual and organizational well-being in psychiatric nursing. *J Adv Nursing*. 1999;30:749-757.
21. Nikou VR. The relationships of hardiness, stress, and health-promoting behaviors in undergraduate female nursing students. Paper presented at: Promoting Students' Success, 14th International Nursing Research Congress, Sigma Theta Tau International; July 12, 2003; St. Thomas, US Virgin Islands.
22. Stearns CR, Gonzales R, Camargo CA Jr, et al. Antibiotic prescriptions are associated with increased patient satisfaction with emergency department visits for acute respiratory tract infections. *Acad Emerg Med*. 2009;16:934-941.
23. Higashi T, Wenger NS, Adams JL, et al. Relationship between number of medical conditions and quality of care. *N Engl J Med*. 2007;356:2496-2504.
24. Boyd CM, Darer J, Boult C, et al. Clinical practice guidelines and quality of care for older patients with multiple comorbid disease: implications for pay for performance. *JAMA*. 2005;294:716-724.
25. Linder JA, Singer DE. Desire for antibiotics and antibiotic prescribing for adults with upper respiratory tract infections. *J Gen Intern Med*. 2003;18:795-801.