Communication About Behavioral Health Risks:

A Study of Videotaped Encounters in 2 Internal Medicine Practices

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BACKGROUND: As behavioral health risks account for the major causes of preventable morbidity and mortality in the United States, national guidelines recommend that physicians routinely screen patients for risk factors, and counsel as appropriate.

OBJECTIVES: To assess the scope of health risk screening and characterize the communication content of counseling for health behavior change in 2 general internal medicine practices.

DESIGN AND PARTICIPANTS: We studied videotapes of 125 new patient visits to General Internists affiliated with academic medical centers in Chicago, IL (70%) and Burlington, VT (30%). All videotapes were content analyzed to examine (1) the incidence and outcome of screening for diet, exercise, tobacco, alcohol, drugs, sex, seatbelt use, helmet use, firearms, smoke detectors, and sun exposure; (2) the content of counseling for at-risk behaviors, with a focus on 11 counseling tasks associated with health behavior change.

RESULTS: Patient age in these 125 initial visits ranged from 22 to 85 years. Within the 91 visits that included at least 1 screening attempt, there were a total of 361 distinct screening discussions (mean = 3.9, SD = 2.2, range = 1 to 9). Seventy-four (20.5%) of the 361 screening discussions revealed an at-risk behavior. On average, 2.4 of the 11 counseling tasks were accomplished for each of the 74 behavioral health risks (SD = 2.2, range 0 to 9); only education about the problem (56.8%) and general advice about the solution (62.2%) were evident in more than half of the counseling attempts.

CONCLUSIONS: This observational study reveals that communication tasks associated with successful counseling were relatively infrequent occurrences during initial visits in 2 primary care practices.

KEY WORDS: physician-patient communication; health risk; motivational interviewing; counseling.

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Behavioral risk factors account for the major causes of preventable morbidity and mortality in the United States.¹ As a significant proportion of the population engages in at-risk behaviors,² behavior change was identified as a priority for the national prevention agenda outlined in Healthy People 2010.³ The U.S. Preventive Services Task Force (USPSTF) recommends that physicians routinely screen patients for behavioral risk factors, and counsel as appropriate.⁴ Physicians are in a good position to provide screening and counseling, as most adults visit a physician at least once per year.⁵ However, screening and counseling rates are low,^{6,7} and com-

monly used counseling strategies may be inadequate to effect behavioral change.^{8,9}

The utility of extant literature on screening and counseling is limited for 2 reasons. First, most studies have focused on the frequency of health risk discussions, but not on content. Better understanding the content of counseling in everyday clinical practice is particularly important given emerging evidence that, when compared with traditional advice giving, patient-centered approaches (e.g., motivational interviewing) tend to yield better outcomes.¹⁰⁻¹³ Second, screening and counseling rates reported in the literature appear to vary with the methodology used to gauge them. Most studies have relied upon physician and/or patient self-reports, which tend to overestimate rates, or on medical records, which can underestimate rates because of incomplete documentation.^{6,14,15} As self-report and chart-audit methods may be inaccurate, audio recordings or video recordings of actual communication during medical encounters are considered the gold standard for investigating communication in medical encounters.^{16,17} However, the few studies that have used audiotaped visits to examine communication about health risks have focused primarily on specific populations (e.g., chronic disease), specific risk factors (e.g., tobacco, alcohol), or on frequency of screening and counseling.⁷⁻⁹

In this context, we sought to assess the scope of health risk screening and characterize the communication content of counseling for health behavior change in 2 general internal medicine practices, using videotape to capture actual physician-patient interaction.

METHODS

Sample

Consecutive patients were recruited on a voluntary basis from academic general internal medicine practices in Chicago, IL and Burlington, VT during the years 1997 to 1999. The full data set includes 500 videotaped encounters (i.e., 20 physicians, each with an average of 25 patients) with English-speaking adult patients who signed Institutional Review Board-approved consent forms. All physicians consented to participate in the study as well.

Inclusion Criteria

We focused on initial visits between patients and the study physicians to ensure that participants had not previously

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discussed health risks with each other. Accordingly, we defined initial visits as those between patients who were new to the study physician and had fewer than 12 visits to the practice in the 2 years before the videotaped visit, yielding 125 visits distributed across 19 physicians; 1 physician in the full data set did not have any visits that met the inclusion criteria. The sample included both acute visits (i.e., the patient presented with a specific acute problem) and well visits (i.e., the patient came in for a general check-up, not an acute or immediate complaint). In the Burlington site, patients complete a health risk appraisal form before their initial well visit.

Communication Coding

We indexed and transcribed all risk discussions using an established set of rules which preserves the structure of interactions.¹⁸ A research assistant and 1 of the authors (A.D.) subsequently coded the transcribed health risk discussions, using the videotapes to reference the full encounter. Interrater reliability was high across all of the mutually exclusive coding categories outlined below (average $\kappa=0.89$); the few disagreements were resolved through discussion with the research team.

Screening Patterns. For each risk factor discussed during the visit, we coded: type of health risk (diet, exercise, smoking/tobacco use, alcohol, drugs, sexual behavior, guns, seatbelts, bicycle helmets, smoke detectors, sun exposure), as well as at-risk status for the patient as defined by USPSTF guidelines (e.g., alcohol: >1 drink per day for women, >2 drinks per day for men).⁴

Counseling Patterns. For each risk factor identified, we measured the duration of counseling and indexed communication tasks associated with effective counseling about health behavior change. The task approach calls attention to the reality of communication by acknowledging that different skills and strategies can be used to facilitate any 1 task, and that these may vary with the physician, the patient, and the clinical situation.^{19–21} The list of communication tasks used in this study was developed by reviewing literature on communication skills and motivational interviewing for health behavior change.^{10–13} In their guide for practitioners, Rollnick et al.¹² outlined a series of tasks (e.g., establish rapport; assess agenda; assess importance, confidence, and readiness) and associated strategies for achieving behavior change.

Our research team used this set of tasks and strategies as a guide in working with an experienced primary-care clinician (A.R.) to explicate a set of practical steps in the screening and counseling process. More specifically, 11 tasks are highlighted in this study: educate the patient about the problem; show empathy regarding the problem; identify the health behavior as a problem; assess motivation to change; give general advice regarding risk reduction; enlist the patient's participation in the plan; show empathy regarding difficulties inherent in the potential solution; discuss options; discuss a specific plan; discuss the patient's ability to follow a plan (i.e., self-efficacy); review criteria to evaluate the plan's effectiveness. While the physician may be responsible for achieving many of these tasks, some could be accomplished by either physician or patient (e.g., identify the behavior as a problem).

Additional Factors of Interest

We also gathered demographic information about patients (sex, age, race/ethnicity, level of education completed, occupation-based social class,^{22,23} number of previous visits) and physicians (sex, age, years in practice), as well as the following visit characteristics: type of visit (well or acute); duration of visit (time between physician entering exam room and visit completion); type of prevention (primary, secondary, tertiary) as determined by the relevance of health risk discussions to health problems raised during the videotaped visit.

Statistical Analysis

As the data are clustered by physician and by site, Generalized Estimating Equation (GEE) analyses have been used to formally evaluate all comparisons, controlling for within-clinic, within-physician and/or within-patient clustering where appropriate.²⁴ The Gaussian, Poisson, and binomial families were used for continuous, count, and binary data, respectively. While GEE-generated standard errors were used for formal statistical inference, we report standard deviations in the text to facilitate description of continuous and count variables.

RESULTS

Study Sample

Of the 500 total visits, 125 met the initial-visit inclusion criterion, 87 (70%) from Chicago and 38 (30%) from Burlington. Just over half (54.4%) were acute visits with an average time of 22.2 minutes (SD=13.7); the remainder were well visits, which had an average time of 31.5 minutes (SD=14.8). Generalized estimating equation analyses demonstrated that these visit parameters were consistent across sites.

Table 1 summarizes information collected about patients in the study, and indicates where significant site-related differences exist in the full sample of 125 visits as well as the subsample of 91 visits during which at least 1 health risk screening discussion occurred. As we focused on initial visits, none of the patients had seen the study doctor before. However, approximately twice as many patients in Vermont had made at least 1 previous visit to the practice within 2 years, and this was the most prominent site-related difference observed (Poisson GEE model, $P<.001$). While all levels of education were represented within the patient sample, from less than high school to a graduate or professional degree, the overall education level was relatively high: 32.1% of patients were college graduates and another 36.6% reported at least some graduate or professional coursework. Similarly, there was representation of social class categories ranging from unskilled to professional, but most patients were in the higher categories of skilled nonmanual (26.2%), intermediate (53.4%), and professional (10.7%).

The 19 physicians in this sample had an average age of 36.7 years (SD=4.8), and had been in practice a mean of 6.9 years (SD=4.1). All were on faculty at either Northwestern University Feinberg School of Medicine or the University of Vermont College of Medicine. About one-fourth of physicians (26.3%) were women, a representative figure for academic medicine practices when the data were collected.²⁵ Eighteen of the 19 physicians were Caucasian.

Table 1. Characteristics of Patient Sample by Visit Site

Variable	All Visits in Sample (n=125)		Visits with ≥ 1 Risk Discussed (n=91)	
	Chicago (n=87)	Vermont (n=38)	Chicago (n=72)	Vermont (n=19)
Age, y	37.0 (SD=11.8)*	48.9 (SD=19.3)	38.4 (SD=12.3)	42.4 (SD=17.9)
≥ 1 previous visit to practice within 2 y (%)	32.2**	65.8	29.2**	57.9
≥ 1 previous visit to study physician (%)	0	0	0	0
Female (%)	52.9	65.8	52.8**	78.9
Caucasian (%)	73.6**	100.0	73.6**	100.0
Education ($\geq$ college degree) (%)	73.7	58.3	74.6	66.7
Social class (professional/intermediate) (%)	70.4	50.0	71.7	56.3

* $P < .05$; ** $P < .005$; P values are from generalized estimating equation model analyses. The Gaussian family was used for the age analysis and the binomial family for the remainder.

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As illustrated in Figure 1, results can be assessed using either the visit or the individual health risk discussion as the unit-of-analysis. At the visit level, there was at least 1 screening discussion in 91 (72.8%) of the 125 encounters, and screening identified at least 1 health risk in 45 encounters (49.5%). At the level of individual health risk discussions, there were 361 screening attempts in total, which generated 74 clear opportunities for counseling (20.5%).

Screening Patterns. There were no significant differences in patient age, sex, race/ethnicity, education level, or social class between the 91 visits with at least one screening discussion and the 34 visits with no screening. However, there were marked differences associated with both visit type and study site. In terms of visit type, we observed at least 1 screening attempt in 91.2% of the 57 well visits compared with 57.4% of the 68 acute visits (binomial GEE model, $P < .001$). The most frequent screening targets were tobacco, alcohol, and exercise whether visits were classified as well or acute. But the number of risks addressed was considerably higher in well visits (mean=4.9, SD=2.0) than in acute visits (mean=2.8, SD=1.9; Poisson GEE model, $P < .001$). The vast majority of screening attempts were associated with primary prevention in both well and acute visits (88.5% and 68.5%, respectively); screening for secondary prevention in acute visits (30.6%) was triple the proportion observed in well visits (9.9%; binomial GEE model, $P < .05$). Generalized estimating equation model analyses suggested no site-based differences for either visit type or prevention type.

Despite a consistent proportion of well and acute visits in Chicago and Burlington, there was also a clear difference associated with study site: The number of risks assessed per visit was higher in Chicago (mean=4.3, SD=2.2) than in Burlington (mean=2.7, SD=2.1; Poisson GEE model, $P < .05$). Table 2 indicates that, with the exception of diet, common behavioral health risks (i.e., tobacco, alcohol, exercise, drugs, risky sex,

seatbelts) were more frequently assessed in the Chicago study site. This table provides screening rates for all visits in each site, as well as rates for the 91 visits during which at least 1 health risk was discussed. The proportion of patients with previous visits to the practice appears to explain this site-related difference: When the GEE model controls for evidence of previous visits, the P value for previous visits is .002 and the P value for site is .12 (NS). There were no such associations when controlling age, sex, or race/ethnicity, the other variables with significant site-related differences as indicated in Table 1.

Counseling Patterns. Within the 91 visits that included screening, 45 patients were classified as at-risk for an average of just over 1.6 behaviors (SD=1.1). Using health risk discussions as the unit-of-analysis, 74 (20.5%) of the 361 screening attempts resulted in identification of a behavioral health risk. Most of these were in the areas of exercise (31.1%), tobacco (21.6%), and diet (17.6%), although risks associated with alcohol, drugs, risky sex, seatbelts, bike helmets, and smoke detectors were detected and further discussed as well. The proportion of risks identified upon screening was somewhat higher in Burlington (26.9%) than in Chicago (19.4%), but the difference was not statistically significant. At-risk status could not be determined in an additional 22 (6.1%) of the 361 risk discussions due to gaps in screening. For example, a physician might counsel on the importance of seatbelts without asking whether the patient uses a seatbelt. Only screening attempts that clearly identified a risk were included in subsequent analysis of counseling patterns.

On average, 2.4 counseling tasks were accomplished for each of the 74 behavioral health risks (SD=2.2, median=2, range 0 to 9). Generalized estimating equation model analyses indicated that the number and type of counseling tasks accomplished was consistent across study sites. As illustrated in Figure 2, while physicians gave general advice in 62.2% of these 74 risk discussions, other counseling tasks were accomplished less frequently: educate the patient about the problem (56.8%); identify the behavior as a problem (29.7%); discuss a specific plan (24.3%); assess motivation to change (18.9%); empathize with the difficulty of the solution (14.9%); empathize with the problem (12.2%); enlist the patient's participation in the plan (10.8%); discuss the patient's ability to follow a specific plan (6.8%); discuss options (5.4%); review criteria for evaluating plan effectiveness (1.4%).

Overall time devoted to counseling about at-risk behaviors ranged from 5 seconds to 5.5 minutes, the latter for a very in-

FIGURE 1. Incidence of screening and counseling within study sample.

Table 2. Screening Rates Vary with Visit Site

Health Risk	All Visits in Sample (n=125) (%)		Visits with ≥ 1 Risk Discussed (n=91) (%)	
	Chicago (n=87)	Vermont (n=38)	Chicago (n=72)	Vermont (n=19)
Tobacco	73.6*	23.7	88.9**	47.4
Alcohol	69.0**	21.1	83.3**	42.1
Exercise	57.5**	23.7	69.4*	47.4
Drugs	37.9*	7.9	45.8	15.8
Risky sex	37.9**	5.3	45.8**	10.5
Diet	25.3	28.9	30.6	57.9
Seatbelts	32.2**	7.9	38.9	15.8

[†]This table includes risk discussions with screening rates $>5\%$ in both sites (i.e., excludes discussions of bicycle helmets, guns, smoke detectors, and sun exposure).

* $P < .05$; ** $P < .005$; P-values are from GEE model analyses. The binomial family was specified for all analyses.

involved discussion of smoking cessation. The maximum number of tasks accomplished was 9, and this occurred in 2 of the 74 counseling discussions: 1 about diet and lasting 2.4 minutes, the other about smoking and running 2.9 minutes. Sixty-six (89.2%) of the 74 counseling discussions were less than 2 minutes in length; the overall mean was 55 seconds (SD=54, median=38, $n=74$). Gaussian GEE model analyses suggest that time spent on counseling increased with the number of communication tasks accomplished by approximately 17 seconds per task; 95%CI (10.7 to 23.2), $P < .001$, $n=74$. Generalized estimating equation model analyses showed no significant site-related differences in the time spent on counseling tasks.

In terms of visit type, an average of 1 more counseling task was accomplished when risks were discussed during well visits (mean=2.9, $n=46$) versus acute visits (mean=1.8, $n=28$; Poisson GEE model, $P < .05$). Similarly, more time was devoted to counseling for risks identified during well visits: 67 seconds (SD=62) versus 36 seconds (SD=31; Gaussian GEE model, $P < .05$). Most counseling was for primary prevention (79.3%); it was infrequently associated with secondary prevention (19.0%) and used only once for tertiary prevention (1.7%).

DISCUSSION

This observational study used videotapes of initial physician-patient encounters to examine communication about behavioral health risks. Screening rates differed by site and are not generalizable. But when physicians identified a risk, counseling patterns in the 2 sites were nearly identical, lending external validity to the results. Only 2 of the 11 counseling tasks examined in this study—education about the problem and general advice about the solution—were evident in more than half of the counseling attempts. These tasks may be considered necessary but not sufficient ingredients for behavior change; the success of counseling will likely depend upon the extent to which other key tasks are realized. In this study, critical tasks such as discussing motivation to change and ability to change (i.e., patient self-efficacy),^{10–13,26–30} were accomplished in less than 20% of relevant encounters. As the process of being videotaped does not significantly alter communication behavior in salient interactions,^{17,31,32} these observations offer a high-fidelity picture of actual practice patterns, highlighting specific communication tasks

[†] Bars represent proportion of tasks accomplished during the 74 instances in which at-risk behaviors were identified.

FIGURE 2. Counseling tasks accomplished for at-risk behaviors.

as potential areas for improvement. Moreover, this study extends previous observational research by examining both frequency and content of risk discussions in everyday clinical practice.

It is difficult to gauge the time it takes to conduct effective counseling, but the task approach may prove useful in this regard. The maximum number of counseling tasks accomplished (i.e., 9) was observed in 1 discussion about diet and another about smoking; these examples suggest that thorough counseling requires at least 2 to 3 minutes. Our GEE model analyses indicate that counseling time increases by approximately 17 seconds per task accomplished, which complements and supports the estimate drawn from individual discussions. But 2 to 3 minutes is not insignificant given the number of other items on visit agendas, and physicians often cite lack of time as an obstacle to counseling for health promotion.³³⁻³⁹ Indeed, primary care physicians are more likely to engage in screening and counseling if time is adequate: working in the UK, Wilson et al.⁴⁰ conducted a controlled trial in which the experimental group had longer encounters, and found that increasing the approximate length of general practice visits from 7 to 8 minutes led to significant improvement in the frequency of both screening and counseling. Determining the relationship between the quantity, quality, and impact of visit time will be an important function of future studies in this area.⁴¹

While our study focused on the content of health risk discussions, we also found study-site and visit-type differences in frequency of screening and counseling that warrant attention. With respect to study site, the lower screening rates observed in Burlington appear to be due primarily to a higher proportion of previous visits to the practice rather than factors such as patient characteristics, physician orientation, or organizational differences. We do not know if previous risk discussions were documented in the chart or indicated by the health risk appraisal. Either way, it may be reasonable for physicians to confirm such information when meeting new patients, particularly for well visits. Turning to visit type, it is not surprising that we observed more screening and counseling in well visits. However, the fact that more than two-thirds of acute visits included screening for primary prevention was somewhat unexpected, given literature suggesting that rates of screening and counseling tend to be lower unless risk reduction is considered therapeutic or beneficial for the patient's current medical problems.⁴²⁻⁵⁰ This finding raises the empirical question of how health risk discussions *should* differ in well and acute visits.

In sum, risk behaviors are common in the U.S. population and account for substantial morbidity and mortality.¹ Although counseling using patient-centered techniques such as motivational interviewing decreases certain risky behaviors,¹⁰⁻¹³ we found that providers rarely accomplished communication tasks associated with these techniques. Potential strategies for increased implementation of the tasks include improving patient and provider education, implementing interdisciplinary approaches to counseling, addressing actual and perceived time barriers for effective counseling, making financial compensation for preventive counseling more straightforward, and providing innovative tools for counseling, all of which warrant careful evaluation. On a population level, improving the use of effective counseling in the health care setting may decrease the high morbidity and mortality associated with risky behaviors.

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