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RESEARCH ARTICLE

Does a Physician's Attitude toward a Patient with Mental Illness Affect Clinical Management of Diabetes? Results from a Mixed-Method Study

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Objective. To determine whether physician's attitudes toward patients with comorbid mental illness affect management of a chronic disease.

Data Source. A total of 256 primary care physicians interviewed in 2010.

Study Design. This randomized factorial experiment entailed physicians observing video vignettes of patient-actors with poorly controlled diabetes. Patients were balanced across age, gender, race, and comorbidity (schizophrenia with bizarre or normal affect, depression, eczema).

Data Collection. Physicians completed structured and semistructured interviews plus chart notes about clinical management and attitudes.

Principal Findings. Physicians reported more negative attitudes for patients with schizophrenia with bizarre affect (SBA). There were few differences in clinical decisions measured quantitatively or in charting, but qualitative data revealed less trust of patients with SBA as reporters, with more reliance on sources other than engaging the patient in care. Physicians often alerted colleagues about SBA, thereby shaping expectations before interactions occurred.

Conclusions. Results are consistent with common stereotypes about people with serious mental illness. Vignettes did not include intentional indication of unreliable reporting or danger. Reducing health care disparities requires attention to subtle aspects of managing patients—particularly those with atypical affect—as seemingly slight differences could engender disparate patient experiences over time.

Key Words. Clinical decision making, stigma, mental illness, diabetes

Although disparities in health and health care often are associated with demographic characteristics such as race and ethnicity, people with mental illness also experience systematic obstacles to optimal health (DHHS 2012). High rates of diabetes and cardiovascular disease contribute to premature mortality in patients with serious mental illness (SMI), and low rates of cardiometabolic

risk factor detection (Motsinger et al. 2006; Kilbourne et al. 2007) have prompted recommendations for widespread screening, particularly for patients prescribed atypical antipsychotics (Consensus Statement 2004; Dinan 2004; Lambert and Chapman 2004; Marder et al. 2004).

Three factors may contribute to patients with SMI experiencing poor outcomes for diabetes. First, access to regular health care can be hindered by system factors, such as lack of insurance parity for physical and mental health. Second, patient behaviors resulting from symptoms of SMI (e.g., amotivation, cognitive deficits) (Felker, Yazel, and Short 1996; Corrigan 2004) can lower ability to self-manage glucose levels and make lifestyle changes. Third, variation in provider decisions has been shown to contribute to differences in quality of care for diabetes overall (Shackelton et al. 2009; von dem Kneesebeck et al. 2010; Marceau et al. 2011; McKinlay, Marceau, and Piccolo 2012) and for patients with mental illness in particular.

Focusing on quality of care, research has found that diabetes patients with SMI were less likely than those without SMI to be prescribed lipid-lowering and hypertension medications (Kreyenbuhl et al. 2006). Although Veterans Health Administration studies found comparable diabetes care for people with and without SMI (Desai et al. 2002; Krein et al. 2006), results from community-based clinics revealed that people with SMI were less likely to receive the full range of diabetes services (Goldberg et al. 2007), and the nationwide Clinical Antipsychotic Trials of Intervention Effectiveness showed a high rate of nontreatment for diabetes (30.2 percent) (Nasrallah et al. 2006). Reasons for disparate management may include distrust, a belief that somatic complaints are psychological (Graber et al. 2000), or response to stigma associated with SMI (Bunce et al. 1982; Penn and Martin 1998).

Stigma is a mark of difference embodied in social interactions (Goffman 1963; Pescosolido et al. 2008) and structured by power relations (Scambler 2009). Stigma can lead to conscious or unintentional discrimination by invoking explicit or automatic attitudes (Rusch et al. 2011), stereotypes, and prejudice that can shape behavior (Smedley, Stith, and Nelson 2003). Although one

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may expect that physicians would be less susceptible to this process because of increased education about and contact with people with stigmatizing illnesses, research is mixed on whether these factors reduce the effects of stigma (Pescosolido et al. 2008; Corrigan et al. 2012). Research has also shown that physicians are not immune to the common practice of using stereotypes to make sense of vast amounts of information in short periods of time (Smedley, Stith, and Nelson 2003; Welch et al. 2012).

To better understand the provider contribution to disparate care for people with SMI, we examine two questions: Do primary care physician (PCP) attitudes toward patients differ by stigmatizing mental health comorbidity, controlling for other patient, provider, and organizational characteristics? Do differences in attitudes attributable to mental health comorbidity influence management of patients with diabetes?

METHODS

Design

We used a mixed-method integration approach (Zhang and Creswell 2012; Fetters, Curry, and Creswell 2013) that converged quantitative and qualitative findings from a video vignette factorial experiment. All data were collected concurrently from the same sample. Structured interviews, qualitative interviews, and written chart notes addressed different facets of patient management (clinical actions, subtler aspects of patient encounters, and documentation, respectively).

The experimental design isolated the effects of four patient characteristics (age, gender, race, comorbidity) and two physician attributes (gender, years of clinical experience) on clinical management of diabetes. Thirty-two video vignettes represented all combinations ($2^3 \times 4$) of patient age (35, 55 years), gender, race (black, white), and four comorbidities (eczema as control, depression, schizophrenia with normal affect [SNA] or bizarre affect [SBA]; Figure 1). Patient-actors presented with diagnosed diabetes and one diagnosed comorbidity. Each patient-actor reported the same symptoms (feeling “kind of tired a lot” and “just sort of off,” six-pound weight gain), had the same test results suggesting poorly controlled diabetes (increase in HbA1c from 7.8 to 8.2 percent, high fasting blood glucose of 204 mg/dl, blood pressure of 140/90 mmHg), and self-reported the same behaviors (medication compliance, reduced smoking).

Comorbidity differences were verbally embedded in the off-camera physician-actor voiceover and visually depicted in the patient-actor affect. The

Figure 1: Selected Video Vignette Representations of Changes in Patient Affect across Mental Health Comorbidities

physician voiceover mentioned the comorbidity, the treating specialist, and the corresponding medication and dose. Patient-actors with eczema and SNA appeared with a reasonably typical mood for a patient who was not feeling well, without potential signals of mental health difficulties. Patient-actors with depression appeared with flat affect, and those with SBA appeared with modest symptoms consistent with use of antipsychotic medications (disheveled appearance, delayed responses, somewhat distracted, less eye contact). Two clinical psychiatrists and a PCP attended the filming to ensure clinical authenticity.

Data Collection

PCPs were recruited to evenly fill four cells stratified by gender and clinical experience (4–20, ≥ 21 years). We completed in-person interviews with 256 PCPs (32 vignettes $\times$ 4 physician cells $\times$ 2 replications) throughout Massachusetts in 2010. Eligible physicians were internists or family practitioners who graduated from medical school between 1965 and 2006 and were working in primary care more than half-time. Using a statewide list of physicians, mailed recruitment letters were followed by telephone calls to screen for eligibility. Among eligible physicians, 78 percent completed interviews; participants represented a range of ages, races, and practice types (Table 1).

Interviews took place in respondents' clinical offices using computers to show the vignette and record data. After viewing a vignette, PCPs created a problem list, answered structured questions about clinical management of and

Table 1: Sample Description (*N* = 256)

	<i>Mean (SD), range, or N</i>
Age (years)	47.5 (10.1); range: 29–78
Sex	
Male	128 (50%)
Female	128 (50%)
Race	
White	172 (67.2%)
Black	8 (3.1%)
Asian	48 (18.8%)
Other	26 (10.2%)
Missing*	2 (0.8%)
Ethnicity	
Hispanic or Latino	7 (2.7%)
Not Hispanic or Latino	228 (89.1%)
Missing*	21 (8.2%)
Physician experience	
4–20 years	128 (50%)
21–45 years	128 (50%)
Practice size	
Solo practice	44 (17.2%)
2–3 physicians	42 (16.4%)
4 + physicians	169 (66.0%)
Missing*	1 (0.4%)
Ownership of practice	
For profit	104 (40.6%)
Not for profit	133 (52.0%)
Missing*	19 (7.4%)

*Sensitivity analyses suggested that missing data were roughly equally distributed among strata (design variables) and could be considered missing completely at random and of negligible consequence to analytic results.

attitudes toward the “patient,” wrote a chart note, and participated in a qualitative interview. The study was approved by the Institutional Review Board of New England Research Institutes.

Structured Measures and Analysis

The structured questionnaire asked physicians to characterize the vignette patient. Questions 1–4 assessed the patient’s ability to self-manage health (i.e., diabetes, the comorbidity, overall health, and health-related decisions) on a 4-point scale from “very able” to “not able at all.” Questions 5–10 assessed the patient’s personal attributes (i.e., competence, intelligence, confidence, warmth, sincerity, and being good-natured) on a 4-point scale from

“extremely” to “not at all.” Questions 11–15 addressed willingness to be socially connected with the patient (i.e., spend an evening socializing, become friends, work closely together, move next door, and have the patient marry into his/her family) on a 4-point scale from “definitely willing” to “definitely unwilling.” Questions 16–18 assessed the likelihood of the patient engaging in dangerous behaviors (i.e., behave unpredictably, violently toward others, and violently toward self) on a 4-point scale from “very likely” to “not at all likely.” For each likert scale, we combined the first two response categories (e.g., “very able” and “somewhat able” became “able”).

Three sets of questions (ability to self-manage health, social connection, and danger) were drawn from the General Social Survey (Pescosolido et al. 1999; Davis and Smith 2000), with modification as necessary to reflect study conditions (e.g., diabetes). Questions assessing personal attributes follow the research finding that social group stereotypes cluster around two negatively correlated factors: warmth (including sincerity and being good-natured) and competence (including intelligence and confidence) (Fiske et al. 1999).

Three degree of freedom chi-squared tests assessed differences in physician attitudes between the four comorbidity groups, with one degree of freedom chi-squared tests identifying which of the six possible comorbidity pairings contributed to overall differences.

Standardized Cronbach's alpha was used to verify that each set of questions could be represented by a subscale. Questions 1–4 are best described as Ability to self-manage health ($n = 224$, range 5–16, mean = 11.1, SD = 2.2), questions 5–10 as Personal Attributes ($n = 169$, range = 9–24; mean = 16.9, SD = 2.9), questions 11–15 as Social Connection ($n = 174$, range = 5–20; mean = 10.6, SD = 3.3), and questions 16–18 as Lack of Danger ($n = 174$, range = 4–12, mean = 8.6, SD = 1.7). Internal consistency analyses showed each subscale has adequate reliability (Ability, $\alpha = 0.869$; Personal Attributes, $\alpha = 0.758$; Social Connection, $\alpha = 0.869$; Danger, $\alpha = 0.819$).

Analysis of variance (ANOVA) models were fit to assess group differences using the subscales; F -tests were computed with pairwise t -tests done as appropriate. Both unadjusted models and those adjusting for other patient, physician, and organizational characteristics (practice size and type, practice supports, and professional autonomy and job satisfaction as assessed by The Physician Worklife Survey [Konrad et al. 1999]) were fit.

Physicians also were asked about clinical actions they would take to manage the patient, including additional information to request, exams, tests, medications, lifestyle advice, referrals, consultations, and time to follow-up appointment. Analyses include as outcomes the number of items listed for

each type of action (e.g., number of pieces of advice); attention to American Diabetes Association clinical guidelines for glycemic control and screenings for cardiovascular disease, nephropathy, retinopathy, neuropathy, and foot care; and time to requested follow-up visit. Linear regression models were fit to assess relationships between attitude subscales and clinical actions.

The primary analysis was completed for respondents with available data; however, many participants responded “don’t know” to one or more questions. Sensitivity analyses were performed to ensure robustness of results.

Qualitative Interview and Analysis

The semistructured interview asked physicians about impressions of the vignette patient, additional information they would have included in their chart note if they had additional time, and what they would verbally tell other providers that was not in their chart note. Probing encouraged respondents to elaborate in directions they viewed as pertinent. Qualitative interviews were recorded digitally and transcribed verbatim by a professional transcription company. *ATLAS.ti* software (ATLAS.ti Scientific Software Development GmbH, Berlin, Germany) facilitated data organization and coding.

Analyses used one full replication of respondents ($n = 128$) to maintain balance across the six experimental design factors, yielding 32 respondents for each of the four comorbidities. Analysis began with two analysts undertaking “initial coding” (Lofland and Lofland 1995). During this process, each analyst inductively coded a subset of transcripts and met to compare and resolve differences. A codebook with initial codes and definitions captured the physician’s first impression of the patient, additional information and treatment directions the physician would pursue if he/she had more time, and what physicians would tell colleagues about the patient. Analysts applied initial codes to another subset of transcripts and again met to compare and reach consensus, adding and revising codes as needed. As this process continued, analysts engaged in “focused coding” (Lofland and Lofland 1995) by elaborating the codes that were being used more often. This process was repeated for five batches of transcripts, at which point the analysts agreed on a code list and were applying it consistently. One analyst coded subsequent transcripts in batches; after each batch, analysts discussed and resolved questions.

One qualitative analyst conducted thematic analysis for each comorbidity group. To facilitate comparison by comorbidity group, we limit this analysis to data about the vignette patient specifically and exclude information about general patient management. Frequencies of the most common codes were

compared across comorbidities. Quotations within comorbidity group were closely examined to fully develop themes and substantive differences between groups.

Chart Note Analysis

Using the same replication ($n = 128$), chart narratives were coded for domains of information. One analyst reviewed a subset of narratives to develop the code list, a second analyst reviewed the code list and narratives, and the two met to resolve differences and revise codes. Then, one analyst coded the narratives in batches, the second analyst reviewed, and changes were made as appropriate. The data do not include qualitative explanations of why physicians included or excluded certain domains, but differences in frequencies by patient comorbidity were tested statistically using 3 degree of freedom Fisher's exact tests. No adjustment was made for multiple comparisons.

Integration

We analyzed each data source independently and interpreted results in parallel. Findings were merged by comparing results for physician attitudes and the different facets of patient management addressed by each data source. Consistent with this approach to merging the data, results are integrated in the narrative in contiguous sections (Fetters, Curry, and Creswell 2013).

RESULTS

Structured Interview

Attitudes toward Patients. PCPs' attitudes toward patients differed by comorbidity, with more negative attitudes about patients with SBA in particular. Only 63 percent of PCPs thought patients with SBA could make their own decisions about the treatment they receive compared with 81 percent for eczema, 85 percent for depression, and 80 percent for SNA ($p = .018$). Sixteen percent of PCPs thought patients with SBA were warm as compared with 71 percent in the eczema group ($p < .001$), with similar results for the other personal attributes: competent ($p = .018$), intelligent ($p = .002$), confident ($p < .001$), and good-natured ($p < .001$). There were no differences in willingness to be in social situations with the patient, but a higher proportion of PCPs ranked patients with SBA as likely to behave unpredictably ($p < .001$) and

violently toward others ($p = .016$) or themselves ($p < .001$). Overall, pairwise comparisons between SBA and the other groups confirmed that these differences significantly contributed to overall differences in attitudes.

For the subscales, analysis revealed statistically significant differences in means for two of four (Table 2). The Personal Attributes subscale indicated the most positive attitudes for the eczema and SNA groups and the least positive for SBA ($p < .001$). The Lack of Danger subscale indicated most perceived danger with the SBA group and least with the eczema group ($p < .001$). The trend of poorer attitudes toward patients with SBA was similar, but not statistically significant for the Ability ($p = .10$) and Social Connection ($p = .11$) subscales. When examining interactions by patient gender, most physician attitudes toward patients in each comorbidity group were not significantly different; however, for women patients, physicians were less willing to be Socially Connected with those with SBA compared to other comorbidities ($p = .03$).

Sensitivity analysis revealed that except under highly unlikely scenarios (e.g., all missing values set to the highest value), the above observations hold. Results held after adjustment for patient, physician, and organizational characteristics (not presented).

Clinical Management. Overall, differences in attitudes toward vignette patients attributable to comorbidity did not predict systematic variation in clinical actions measured quantitatively after controlling for other patient, provider, and organizational characteristics. The single exception was an inverse relationship between the Social Connection subscale and the likelihood of

Table 2: Unadjusted[†] Difference in Physician Attitudes by Patient Comorbidity

<i>Attitude Subscale</i>	<i>Comorbidity</i> <i>Least Squares Mean (SE)</i>				<i>F (p-value)</i>
	<i>Eczema</i>	<i>Depression</i>	<i>Schizophrenia, Normal Affect</i>	<i>Schizophrenia, Bizarre Affect</i>	
Ability	11.4 (0.30)	11.1 (0.29)	11.5 (0.30)	10.6 (0.29)	2.14 (.10)
Personal Attributes	17.9 (0.39)	16.6 (0.40)	17.8 (0.43)	15.2 (0.44)	8.60 (<.001)
Social Connection	11.3 (0.48)	10.9 (0.51)	10.7 (0.52)	9.6 (0.50)	2.03 (.11)
Lack of Danger	9.6 (0.22)	8.6 (0.24)	8.4 (0.26)	7.6 (0.26)	11.79 (<.001)

[†]Unadjusted Analysis of Variance results held after adjusting for patient, provider, and organizational characteristics.

neuropathy screening ($p = .03$). Differences in attitudes by comorbidity did not significantly influence time to follow-up appointment, although the positive nature of the relationship indicated longer time to follow-up for more positive attitudes about a patient. Pairwise comparisons revealed that time to follow-up was statistically significantly shorter for patients with SBA than those with SNA for the Social Connection ($p = .03$) and Lack of Danger ($p = .04$) subscales.

Qualitative Interview

Analysis of the semistructured interviews suggested patterned variation in more subtle aspects of patient management not captured by the structured measures. Most respondents across comorbidity groups had unanswered questions about the vignette patient. Variation appeared for patients with SBA regarding types of information physicians wanted and reasons for gathering it, how additional information would be gathered, and how they would discuss the case with colleagues.

Engagement about Mental Health Increases for Depression and SNA, but Reverses for SBA. Without being directly asked, a majority of respondents mentioned something additional that they would do to gather more information if they had more time with the vignette patient. The proportion generally grew with increasingly stigmatizing conditions: 18 of 32 (56 percent) for eczema, 25 of 32 (78 percent) for depression, 28 of 32 (88 percent) for SNA; however, the pattern reversed for SBA to 22 of 32 (69 percent; Table 3). Moreover, the substance of the information that would be gathered and how physicians would gather it differed for patients with SBA.

Across comorbidities, a main area that physicians would pursue for gathering more information was taking additional family/social history and probing about stressors. For patients with eczema, physicians wanted this information to explain the fatigue and stress (which was perceived as the primary patient concern). A physician offered a typical sentiment:

I would like to take a social history [and] . . . have more information about her family background so that I know why she's looking so fatigued and why she looks so worried and why she's so exhausted. (male PCP, ID:235)

Table 3: Qualitative Interview Frequencies by Patient Comorbidity

	Comorbidity			
	<i>Ecze^ma</i>	<i>Depression</i>	<i>Schizophrenia Normal Affect</i>	<i>Schizophrenia Bizarre Affect</i>
<i>Mentioned gathering additional information if given more time with the vignette patient*</i>	<i>n</i> = 18	<i>n</i> = 25	<i>n</i> = 28	<i>n</i> = 22
Take additional family/social history or probe about stressors	7 (39%)	15 (60%)	16 (57%)	13 (60%)
Ask patient more questions about history of present illness	7 (39%)	8 (32%)	6 (21%)	1 (5%)
Review chart or consult with other MD/family to gather information	0	1 (4%)	5 (18%)	7 (32%)
Take additional prior history-mental health	1 (6%)	5 (20%)	4 (14%)	8 (36%)
Screen for depression	3 (17%)	N/A	8 (29%)	3 (14%)
Gather information about schizophrenia diagnosis	N/A	N/A	3 (11%)	10 (45%)
Take additional prior history: physical	3 (17%)	10 (40%)	15 (54%)	9 (41%)
Perform physical exam and/or tests	7 (39%)	8 (32%)	6 (21%)	5 (23%)
Review medications and/or check adherence	2 (11%)	3 (12%)	5 (18%)	7 (32%)
<i>Addressed topic of discussing information not included in the chart note†</i>	<i>n</i> = 23	<i>n</i> = 22	<i>n</i> = 24	<i>n</i> = 31
Would discuss vignette patient	7 (30%)	8 (36%)	9 (38%)	19 (61%)
Give information‡	3 (43%)	2 (25%)	4 (44%)	15 (79%)
Gather information‡	4 (57%)	6 (75%)	5 (56%)	9 (47%)

*Subsample size reflects the number of respondents who mentioned something additional that s/he would do with the vignette patient if given more time.

†Subsample size reflects the number of respondents who addressed whether s/he would discuss something with colleagues that was not in the chart note.

‡Percentages are among the number who said they would discuss the vignette patient. Respondents could report giving information, gathering information, or both.

For patients with comorbid depression, physicians wanted more information about social history not only to understand the fatigue but also to assess a change in the comorbidity.

My focus on the exam, and on the interview, would be much more in terms of how is this person different—is she more depressed?... I mean, she did blanketly say, “Nothing,” her stressors were usual, but I would want to know what those are. And I would want to know what her social situation is. (female PCP, ID:138)

Although the words exchanged between the vignette physician and patient were exactly the same across comorbidities, the flat affect of the patient with depression shaped how some physicians interpreted the interaction, affecting subsequent interactions with the patient. For example:

Well, what's interesting about this case is that, again, I'm going back to that flat affect . . . You don't get warm fuzzies when you look at this guy . . . There was like not a lot of connection . . . And so I would be spending a lot more time, I mean a lot of time trying to get something back from him, in terms of how he was responding to all this. (male PCP, ID:189)

Among respondents who viewed the vignette patient with SNA, the reasons for wanting more social and family history continued to include depression (29 percent would screen for depression) but also extended to assessing any potential connection or "manifestation" of schizophrenia. In a physician's words:

I'd go more into his family history . . . [and] work history. You know, how work is going, whether he's working at all with his underlying psychiatric condition . . . how things are like at home . . . You know, more of the socialization aspects of it, the art of it as opposed to the facts. I'd probably, obviously this would probably be included in a note as to there'd be manifestations of poorly controlled diabetes . . . (male PCP, ID:117)

As with the depression group, PCPs wanted more information about the patient's mental health to account for it in the patient's overall well-being.

This pattern shifted when the vignette patient presented with SBA. Compared to physicians viewing patients with SNA, more physicians viewing patients with bizarre affect wanted additional information about the schizophrenia (11 percent vs. 45 percent, respectively). Not surprisingly, physicians were increasingly concerned about medications and adherence for patients with schizophrenia than for those with eczema or depression; yet, consistent with the quantitative results, this concern was intensified for patients with bizarre affect compared to normal affect (32 percent vs. 18 percent, respectively). These differences between the patients with diagnosed schizophrenia underscore that the physicians were responding to the affect.

The pattern for how to gather information appeared to differ as well. The proportion of physicians who mentioned that they would ask the patient more questions about the history of present illness was highest for eczema and steadily decreased for depression, SNA, and SBA (39, 32, 21, and 5 percent, respectively). In contrast, the proportion who wanted to review a chart or

consult with the specialist or family members (i.e., someone other than the patient) grew from eczema through SBA (0, 4, 18, and 32 percent). Respondents viewing patients with SBA tended to have less trust in information the patient provided and wanted confirmation from other sources.

I was concerned about his affect. He just seemed odd. He seemed to have poor insight, didn't offer any information that wasn't asked of him. I'm not sure he had a . . . good grasp of his symptoms, because he wasn't describing in any detail how he was feeling. (female PCP, ID:150)

As all the "patients" used the same words, the perceived lack of detail was interpreted in the context of the bizarre affect.

Another physician explained the desire to review the chart of the patient with SBA in this way:

So once I . . . get the old record I will know he is a non-compliant patient, that's why his diabetes is so high, or . . . he's telling me . . . he's following with his psychiatrist, and maybe he's not following with him either . . . That's why the old records are so important to help give you some light on it . . . Some people are apprehensive about their illnesses, and if he's schizophrenic he may be more apprehensive than the people without schizophrenia. (female PCP, ID:157)

For patients with SBA, analysis suggested decreasing engagement with the patient about the history of present illness and increasing reliance on sources other than the patient for information.

Alerting Colleagues to SBA. A subset of respondents ($n = 100$) addressed the issue of what they would tell staff or colleagues about the vignette patient that was not documented in the chart. Within this group, the proportion who would discuss the patient was higher for SBA than for SNA, depression, or eczema (61 percent vs. 38 percent, 36 percent, 30 percent, respectively). Moreover, among those who would discuss the vignette patient, physicians observing patients with SBA more often said they would provide information about the patient to colleagues (79 percent vs. 44 percent, 25 percent, 43 percent, respectively).

For patients with eczema, depression, and SNA, gathering insights from colleagues or staff about their impressions or information the patient may not tell a physician was the most common reason for discussing a patient. Gathering information was related to understanding stress and mood-related issues

and was most common for patients diagnosed with depression. In contrast, physicians who viewed patients with SBA more often said that they would give information about the patient to colleagues, particularly to alert them to the psychiatric condition.

Some said that this preparation was needed to ensure effective communication with the patient. For example, a physician explained:

I think I would warn them that she doesn't seem entirely engaged some of the time, and to try to make sure that she was participating in the conversation fully. (male PCP, ID:237)

Others would verbally provide information about the patient with SBA as preparation for potentially untoward behaviors. As a physician said:

And in this particular patient he appears to be completely stable . . . , but sometimes with mental health diagnosis patients, there may be slightly unstable situations in the office so again it's something to be aware about. (female PCP, ID:005)

A third reason was to avoid documenting potentially stigmatizing information. For example:

. . . where somebody who wasn't that mature in practice, I would certainly tell them about his psychiatric component because when you describe somebody's psychiatric symptoms in the paper and the patient actually has . . . access to their information, the patients may have a different reaction to it. (female PCP, ID: 169)

None of the vignettes included intentional indication of violent or unstable behaviors, and the words spoken were exactly the same for all comorbidities, including SNA and SBA. Differences in how physicians would discuss the patient with colleagues reflected their response to the patient's affect.

Chart Notes

Overall, differences in types of information included in medical documentation did not reach statistical significance, with the exception that a higher proportion of physicians included subjective impressions of the patient (including affect) when the patient had SBA (Table 4).

Table 4: Chart Note Domain Frequencies by Patient Comorbidity

Domain/Subdomain [†]	Comorbidity			
	Eczema (N = 32)	Depression (N = 32)	Schizophrenia Normal Affect (N = 32)	Schizophrenia Bizarre Affect (N = 32)
Affect/subjective impressions**	11 (34%)	12 (38%)	10 (31%)	20 (63%)
Assessment and plan	30 (94%)	30 (94%)	30 (94%)	27 (84%)
A1C follow-up	12 (38%)	8 (25%)	11 (34%)	8 (25%)
Smoking follow-up	17 (53%)	19 (59%)	17 (53%)	15 (47%)
Preventive counseling follow-up	25 (78%)	20 (63%)	23 (72%)	20 (63%)
Clinical reasoning	23 (72%)	22 (69%)	21 (66%)	20 (63%)
Comorbidity status [‡]	21 (66%)	17 (53%)	17 (53%)	25 (78%)
Demographics	22 (69%)	23 (72%)	21 (66%)	19 (60%)
Health indicators [§]	31 (97%)	30 (94%)	30 (94%)	30 (94%)
A1C review	26 (81%)	28 (88%)	22 (69%)	26 (81%)
History	23 (72%)	28 (88%)	22 (69%)	24 (75%)
Medications [¶]	26 (81%)	29 (91%)	27 (84%)	30 (94%)
Patient complaints/symptoms	29 (91%)	28 (88%)	31 (97%)	28 (88%)
Patient compliance	12 (38%)	12 (38%)	17 (53%)	8 (25%)
Patient lifestyle ^{*,††}	27 (84%)	27 (84%)	21 (66%)	20 (63%)
Smoking history	24 (75%)	27 (84%)	21 (66%)	19 (59%)
Physical exam/review of systems	22 (69%)	21 (66%)	27 (84%)	20 (63%)
Reason for visit	13 (41%)	16 (50%)	13 (41%)	17 (53%)
Socio-emotional issues	19 (59%)	17 (53%)	16 (50%)	10 (31%)

[†]Subdomains are included in the frequency for the broader domain category.
[‡]Comorbidity status includes that patient is seen by specialist and/or reports the comorbidity to be stable.
[§]Health indicators include blood pressure, weight, labs, and other tests.
[¶]Medications include side effects due to medications.
^{††}Patient lifestyle includes diet and smoking.
^{*} $p < .10$, ^{**} $p \leq .05$ (based on 3 df Fisher's exact test to compare four groups).

DISCUSSION

We used a mixed-method analysis of data from a video vignette factorial experiment to examine whether physician attitudes toward patients differ with stigmatizing comorbidity (schizophrenia with bizarre [SBA] or normal affect [SNA], depression, and eczema as control) and whether this influences PCPs' management of poorly controlled diabetes.

Attitudes toward Patients

PCPs reported more negative attitudes toward patients with SBA compared to those with other comorbidities, including SNA. Overall, PCPs rated the SBA

group lowest on personal attributes and highest in danger. These results are consistent with common stereotypes about people with SMI (Martin et al. 2007; Pescosolido et al. 2007a,b, 2008, 2010), and they specify the general claim in the literature that provider bias persists in primary care for people with SMI (Lawrence and Kisely 2010; Arboleda-Florez and Stuart 2012; Kaufman et al. 2012) by identifying two types of attitudes that differ.

Importantly, affect was the only aspect that differed in patient presentation; all patient-actors used the same words, answered the same questions, and provided the same information during the interview. The affect of patients with SBA was different, but only modestly bizarre; yet patients with SBA were considered less competent and warm. There was no intentional indication of danger from patients in any comorbidity group; yet patients with SBA were perceived as presenting greatest risk. The finding that physicians were less willing to be socially connected with women patients with SBA compared to men with SBA is consistent with a prior report that more women than men with schizophrenia perceived being treated worse by doctors after disclosure of their diagnosis (Pandya et al. 2011).

Clinical Management

One would expect more negative attitudes to impact clinical management. There was little evidence for this in the clinical actions measured quantitatively or chart notes. The two exceptions pointed to the potentially important role of atypical affect but should be interpreted with caution given multiple statistical comparisons. Specifically, the difference in time to follow-up was between patients with schizophrenia but distinct affects, and the difference in medical documentation was including subjective impressions (including affect) for patients with SBA.

Qualitative interviews provided insight into subtle variations in management of patients with SBA. Not surprisingly, PCPs would gather more information about mental health from patients presenting with mental health comorbidities, but variation in how they would use and gather the information emerged. Mental health comorbidities generally increased engagement with patients regarding social history, but PCPs appeared to have less trust that patients with SBA would or could give reliable information. For some, this led to reliance on other sources rather than engaging the patient in his/her own care. Again this is striking as each group provided the same information and answered questions appropriately, without evidence of unreliable reporting.

This finding supports a prior study showing that providers doubt self-reported symptoms from people with SMI and may give them less information about their medical care (Kaufman et al. 2012),

This seemingly minor shift in patient management could affect outcomes over time. Reduced trust of information patients provide could lead to significant discrepancies in quality of care. In addition, patient perceptions of PCPs not being interested in or doubting their symptom reports may contribute to patient disengagement from care. Difficulties with relationships with providers is one reason that people with mental illness disengage from mental health care (Smith et al. 2013), and patient trust in their PCPs has been shown to affect medication adherence and outcomes for blood pressure control (Schoenthaler et al. 2013).

In addition, physicians viewing patients with SBA were more likely to tell colleagues about a schizophrenia diagnosis when the patient had a bizarre affect, thereby shaping expectations about the patient before interactions occurred. PCPs' lack of confidence in their own skills for communicating with patients with a complicating mental illness (Loeb et al. 2012) could fuel concern about colleagues' abilities in this area and lead to alerting about SMI, but this practice could inadvertently heighten the risk of stigmatizing the patient through advance labeling and status loss (Link et al. 2004). Having knowledge that someone has schizophrenia, without receiving adequate training, can open the door for biased interactions with patients that may engender variation in adherence and outcomes over time.

This study highlights the value of a mixed-method approach for understanding how stigma associated with mental illness can contribute to variation in clinical management of patients with a chronic physical condition such as diabetes. Quantifying PCP attitudes, decisions, and charting patterns allowed for statistical comparison across types of mental health conditions; this identified the difference in attitudes for SBA and revealed few differences in clinical decisions and charting. Complementary qualitative data revealed the subtle aspects of patient management not captured by structured measures. Comparing and merging findings from multiple types of data from the same sample served to expand our understanding (Fetters, Curry, and Creswell 2013) of the connection between PCP attitudes and patient management that would not have emerged using only one of the data types.

Limitations and Future Research

The experimental design and use of video vignettes to systematically vary nonverbal cues ensured excellent internal validity but can create a trade-off with external validity as there may be elements of a clinical encounter that influence decision making that are not replicable with video vignettes. To enhance external validity, great care was taken to ensure clinically authentic patient presentation. Clinical experts reviewed scripts and attended the filming, and all actors were carefully rehearsed to present the same symptoms and portray the appropriate affect. Efforts to visually portray affect associated with mental health conditions appeared to be effective because respondents reported detecting differences (results not shown), increasing our confidence that PCPs were responding to the affect. In addition, respondents viewed the vignette during their practice day amidst encounters with real patients, and they were instructed to make decisions about the patient-actor as they would for their own patients.

The observed variation in patient management occurred for a subset of physicians, thereby reducing the sample size of interest for the qualitative analysis. In addition, to ensure rigorous interpretation, the sample size for analysis of what physicians would discuss with colleagues was further limited to respondents who spoke directly about the vignette patient rather than about patients more generally. The patterns of substantive differences suggest there is variation in the process by which physicians engage and manage patients with diabetes who present with SBA, but results need to be replicated in a representative sample. Future research could incorporate implicit association tests to further specify the nature of PCP bias and effects on clinical care (Stull et al. 2013).

Implications

This study detected differences in attitudes and subtle shifts in management of patients with comorbid SMI, particularly with atypical affect. Despite medical training, physicians are not immune to common stereotypes that can shape behavior, thereby potentially perpetuating these stereotypes. Antistigma campaigns should highlight subtle aspects of managing patients—particularly those with atypical affect—as seemingly slight differences can engender disparate patient experiences over time, and these campaigns should be extended to all staff members. PCPs with increased confidence that they and their colleagues are trained to interact appropriately with patients with SMI may feel

less need to alert others to a mental health condition. Video vignettes are becoming routine for recredentialing clinicians and may offer an innovative approach, particularly if linked to actual patient data.

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SUPPORTING INFORMATION

Additional supporting information may be found in the online version of this article:

Appendix SA1: Author Matrix.