ORIGINAL RESEARCH

Doctor-Patient Trust Among Chronic Pain Patients on Chronic Opioid Therapy after Opioid Risk Reduction Initiatives: A Survey

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Objective: **This analysis examined patients' perceptions about trust within the doctor-patient relationship related to managing opioid pain medications. We compared perceptions among chronic opioid therapy (COT) patients who were and were not exposed to opioid risk reduction initiatives.**

Methods: **Between 2014 and 2016, we surveyed 1588 adults with chronic pain receiving COT about their trust in their prescribing doctor, their perceptions of their doctor's trust in them, their concerns about opioid prescribing, and their knowledge of opioid safety concerns. The population included adults receiving care in intervention settings that implemented opioid risk reduction initiatives and control settings with similar COT patients that did not.**

Results: **Overall, 82.2% of COT patients said they trusted their doctor's judgment, with more agreement among patients in the control clinics (86.3%; n = 653) than in the intervention clinics (77.9%; n = 935; *P* = .002). Similarly, slightly more patients in the control clinics believed their physician trusted how they managed their opioid pain medicines (91.1%) compared with the intervention clinics (86.2%; *P* = .002). The percent who worried that their doctor would stop prescribing opioid pain medicine was 29.3% in intervention clinics and 21.8% in control clinics (*P* = .007).**

Conclusions: **Although COT patients typically reported favorable perceptions of doctor-patient trust in managing opioid pain medicines, implementation of opioid risk reduction initiatives may have reduced levels of trust for a minority of COT patients. This suggests that it may be possible to implement opioid risk-reduction initiatives while sustaining high levels of doctor-patient trust for most COT patients. (J Am Board Fam Med 2018;31:578–587.)**

Keywords: **Chronic Pain, Opioid Analgesics, Pain Management, Physician-Patient Relations, Risk Reduction Behavior**

A good doctor-patient relationship is an important goal of patient-centered care and is associated with better outcomes for many medical conditions.[1,2] Mutual trust is a critical ingredient in this relationship.[3,4] Yet, for patients with chronic pain, where the underlying cause is often unknown and definitive treatments are lacking, this relationship is often

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challenging.[5,6] Patients frequently feel dismissed, struggle to have their pain acknowledged, and are consequently frustrated with their care.[7–9] Among patients receiving chronic opioid therapy (COT), the doctor-patient relationship can seem adversarial; some patients feel that their physicians believe they are "drug seeking,"[10] and some physicians have experience with patients who deceived them to obtain opioid prescriptions for nonmedical use.[10–12] As risks of COT are becoming better understood, risk reduction guidelines have been proposed by a number of states[13–15] and, more recently, by the Centers for Disease Control and Prevention.[16] Such risk reduction guidelines often include having a single clinician manage all opioids, developing a COT care plan, checking prescription drug monitoring databases, educating patients about opioid risks, close monitoring including periodic urine drug testing, avoiding dose escalation, and tapering patients on high opioid doses to lower levels. Early reports indicate that such strategies can be successful, with Washington State demonstrating a 29% decrease in the rate of deaths attributed to overdoses of prescription opioids in the 5 years since the state implemented efforts to encourage the use of lower doses of opioids.[17]

Because risk reduction initiatives may call for reductions in opioid dose for COT patients, they might have adverse effects on already challenging doctor-patient relationships. Risk reduction initiatives also call for closer monitoring of COT patients, including more consistent use of urine drug screening, which may also raise questions for some COT patients. There is little information on how these initiatives impact the level of trust in the patient-doctor relationship among COT users. As part of a larger study designed to compare outcomes of a structured risk reduction initiative in a large integrated group practice to routine primary care in Washington State, we surveyed 2 random samples of COT patients: 1 from intervention settings that implemented opioid dose reduction and closer monitoring of COT patients, and 1 from control settings that did not implement these initiatives. In both settings, doctors had had long-term exposure to the Washington State risk reduction guidelines, which lacked state support to assist clinics with implementation. We hypothesized that doctor-patient trust would be lower in the intervention clinics where the opioid risk reduction initiatives were implemented compared with those control clinics that did not systematically implement such initiatives.

Methods

The survey data included in this report were collected as part of a larger study of patients using COT that was designed to document the effects of opioid dose and risk reduction initiatives on opioid outcomes and safety.[18] The study was conducted at Group Health Cooperative, a consumer-governed, nonprofit integrated health care system in Washington State.[19] In February 2017, Kaiser Permanente acquired Group Health Cooperative and it became known as Kaiser Permanente Washington. During the study period, roughly two-thirds of members (about 400,000 persons) received their comprehensive care from Group Health clinicians at Group Health-owned clinics and these patients were exposed to the intervention. In the intervention clinics, most prescribers were family medicine physicians, about half of whom were female.[18,20] COT patients were less than 3% of their adult patients.[18,20] The remaining members received care from community doctors, about whom little information is available, contracted by the insurance plan to provide care in other communities (control patients). The study was approved by the Group Health Human Subjects Research Committee.

Persons potentially eligible to be surveyed were randomly selected Group Health enrollees at least 18 years old who had been enrolled in the health plan for at least 12 months before sample selection and were on COT. We defined chronic opioid users as individuals who had, according to electronic pharmacy data, received at least 70 days' supply of opioids in the 90 days before sample selection and in one other quarter of the prior year coupled with at least 45 days' supply in the other

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Table 1. Questions Related to Trust and Management of Opiate Pain Medicines

Questions Asked Of Patients*
I trust my doctor's judgment in managing my opiate pain medicine
I feel my doctor trusts me in how I manage my opiate pain medicine
I sometimes worry that my doctor will stop prescribing my opiate pain medicine
My doctor, pharmacist or other providers made sure I was well informed about potential problems with opiate pain medicines

*Response options were totally disagree, disagree, neutral, agree, and totally agree.

two-quarters of the prior year. In addition, we excluded persons who had at least 2 visits with a diagnosis of cancer (apart from nonmelanoma skin cancer) or who had been admitted to hospice in the past 12 months.

Telephone surveys were conducted between September 2014 and January 2016 with eligible COT patients. The interviews lasted approximately 30 minutes to 40 minutes. All patients gave verbal consent before the surveys were administered. The survey was conducted more than 4 years after the opioid risk reduction initiatives had been implemented, so results should reflect differences observed after long-term implementation.

Most of the survey focused on pain outcomes (assessed via the validated 3-item pain, enjoyment, and general activity scale,[21] which measures global pain intensity and interference), perceived opioid helpfulness, perceived opioid bothersomeness, prevalence of prescription opioid use disorder by using relevant portions of the validated Psychiatric Research Interview for Substance and Mental Disorders,[22,23] prevalence of depression by using the validated Patient Health Questionnaire 8[24], and various sociodemographic information. However, participants were asked how much they agreed or disagreed with 4 newly created questions about trust around COT management in the context of the doctor-patient relationship (Table 1). Each question had 5 response options: totally disagree, disagree, neutral, agree, and totally agree. For some of the results presented, we combined the categories agree and totally agree and, separately, the categories disagree and totally disagree.

Key components of the opioid risk reduction initiatives are provided in Table 2, and additional

Table 2. Key Components of Opioid Risk Reduction Initiatives and Selected Measures of Adherence to Risk Reduction Initiatives

Source	Intervention Clinics	Control Clinics
Washington State COT Guideline (enacted as law in March 2010)[18]		
Check appropriateness of pain treatment	X	X
Screen for drug abuse and diversion	X	X
Group Health Opioid Risk Reduction Initiatives[18,20,50]		
Decrease COT dose (intervention clinic dose decreased from 74 mg MED to 46 mg MED versus control clinic decrease from 89 mg MED to 74 mg MED)	X	
Online CME followed by 1-hour discussion in each intervention clinic (87% of primary care providers participated)	X	
Medical staff leader advocacy	X	
Designated physician to manage COT and expert consultation for physicians in each primary care clinic	X	
Practice education tools (eg, patient education materials, care plan template, online calculator to estimate MED)	X	
COT care plans documented in the EHR and financial incentive for completing the plans (documented care plans increased from 10% to over 80% over the course of the intervention)	X	
Guideline-based monitoring visits and urine drug screening (urine drug screening increased from less than 15% in both intervention and control clinics to about 50% in the intervention clinics and less than 20% in the control clinics)	X	
28-day-maximum opioid prescription and 5-day refill notice	X	

COT, chronic opioid therapy; MED, morphine equvalent dose; CME, continuing medical education; EHR, electronic health record; X, component was used in these clinics.

details of the survey are provided elsewhere.[18] In addition to survey data, we used Group Health enrollment files and electronic health record data to obtain information on characteristics including the following: patient age; sex; residence in eastern or western Washington; average opioid dose and excess days' supply; and history of diagnoses for mental health disorders, opioid and nonopioid drug use disorders, alcohol use disorders, and tobacco use disorders. By using data from the year before the interview, we computed the Romano version of the Charlson Comorbidity Index.[25]

Nonresponse Adjustment

By using electronic health care data available for all individuals eligible for the survey, we were able to compare the characteristics of those who completed the survey with nonrespondents.[18] We then used logistic regression to estimate probability of survey response as a function of the following: patient characteristics that may be related to survey response, including the characteristics described in the previous paragraph; comorbidity score; hepatitis C or cirrhosis diagnoses; average opioid dose; excess days' supply[26]; the setting (intervention or control clinic); and interactions between these characteristics and the setting. From this model, we computed the inverse probability of response weights that were then used to weight results from the survey respondents to account for potential bias due to nonresponse.[27–29]

Statistical Analysis

We first reported patient characteristics of the survey respondents in the intervention and control clinics, showing the distributions of these characteristics without weighting for nonresponse. Next, we provided the raw counts for responses to each of the 4 trust questions. Then, by using the weights described earlier, we computed and reported percentages that reflect the estimated distribution of responses to the trust questions weighted to account for nonresponse. Lastly, we computed *P* values from χ^2 tests of whether the distribution of these (weighted) responses to each question differed between intervention and control COT patients. Analyses were performed using SAS software, version 9.4 (SAS Institute, Inc., Cary, NC).

Results

Survey Participants

We contacted 4704 COT patients who met the eligibility criteria, 2353 from the intervention clinics and 2351 from the control clinics. A total of 935 COT patients (39.7% of those contacted) from the intervention clinics completed the interview compared with 653 COT patients (27.8%) from the control clinics. Very few patients had missing data on the trust questions (the proportion ranged between 0.2% and 1.2% for each question).

Respondents from the intervention and control clinics were similar on most characteristics (Table 3). Substantially more respondents in the intervention clinics compared with the control clinics lived in western Washington. In addition, more respondents in the control clinics were prescribed an average daily dose of at least 120 mg morphine equivalents, whereas more in the intervention clinics had been diagnosed with nonopioid drug use disorder and were prescribed an average daily dose of less than 15 mg morphine equivalents, reflecting effects of the dose reduction initiatives in the intervention clinics.[30] Most respondents reported that COT therapy was "very or extremely helpful," and their pain, enjoyment, and general activity scores indicated moderate to severe pain and functional impairment.[31]

Patient Perceptions Regarding Trust

More than 3 in 4 COT patients (82.2%) agreed with the statement that they trusted their doctor's judgment in managing their opiate pain medicine (Table 4), with 86.3% of COT patients in the control clinics agreeing or strongly agreeing with this statement versus 77.9% in the intervention clinics ($\chi^2 = 17.07$; $df = 4$; $P = .002$). A high percentage (88.7%) believed that their doctor trusted them to manage their opiate pain medicine, with somewhat more COT patients (91.1%) in the control clinics agreeing or strongly agreeing with this statement than in the intervention clinics (86.2%; $\chi^2 = 16.80$; $df = 4$; $P = .002$). Patients who reported they did not feel their doctor trusted them were more likely to report they did not trust their doctor. Among the 73 patients who thought their doctors did not trust them, 54.5% said they did not trust their doctors. By contrast, among the 1405 patients who thought their doctors did trust them, only 3.4% said they did not trust their doctor.

Table 3. Characteristics of Survey Respondents

	Intervention Clinics		Control Clinics		
	n	%	n	%	*P* value*
Total	935		653		
Age, y					.001
18 to 44	73	7.8	57	8.7	
45 to 64	434	46.4	358	54.8	
65+	428	45.8	238	36.4	
Mean Age, y (SD)	63 (12)		61 (12)		.010
Female	589	63.0	420	64.3	.590
Non-Hispanic white	783	84.7	559	87.3	.147
At least some college	691	74.0	448	68.8	.025
Employment status					.008
Full time/part time	314	33.6	223	34.2	
Disabled	182	19.5	170	26.0	
Retired	410	43.9	245	37.5	
Other	28	3.0	15	2.3	
Married (or living as married)	615	65.9	438	67.2	.601
Lives in western Washington	693	74.1	358	54.8	<.001
Mental health disorders (dx in past 36 months)	623	66.6	423	64.8	.444
Alcohol use disorder (dx in past 36 months, not in remission)	50	5.3	32	4.9	.692
Nonopioid drug use disorder (dx in past 36 months)	89	9.5	34	5.2	.002
Opioid drug use disorder (dx in past 36 months)	101	10.8	76	11.6	.602
Tobacco use disorder (dx in past 36 months)	224	24.0	151	23.1	.701
Charlson comorbidity score (based on past 12 months)					.030
0	426	45.6	307	47.0	
1 to 2	219	23.4	180	27.6	
3+	290	31.0	166	25.4	
Average COT dose (in prior quarter)					<.001
<15 mg	232	24.8	96	14.7	
15 to <50 mg	432	46.2	296	45.3	
50 to <120 mg	199	21.3	150	23.0	
120+ mg	72	7.7	111	17.0	
Mean # days of opioid use (in prior month) (SD)	29 (3)		29 (3)		.269
Mean PEG score (SD)	5.8 (2.2)		5.9 (2.1)		.708
Helpfulness of COT					.510
Not at all or a little helpful	57	6.1	43	6.6	
Moderately helpful	302	32.3	193	29.6	
Very or extremely helpful	576	61.6	416	63.8	
Bothersomeness of COT					.283
Not at all or a little bothersome	808	86.7	547	84.2	
Moderately bothersome	99	10.6	86	13.2	
Very or extremely bothersome	25	2.7	17	2.6	

Some data were missing for race/ethnicity (1.5%), education (0.2%), employment (0.06%), marital status (0.2%), PEG score (0.8%), perceived helpfulness (0.1%), and bothersomeness (0.4%) of COT.
Counts and percentages in this table describe the survey respondents only and are not weighted to account for nonresponse.
*P values are based on χ^2 tests (for categorical variables) or t tests (for continuous variables) for whether the distributions of the given characteristics differ between survey respondents in the intervention and control clinics.
COT, chronic opioid therapy; dx, diagnosis; PEG, pain, enjoyment, and general activity.
SD, standard deviation.

Table 4. Distribution of Trust and Related Characteristics among Survey Responders, with Percentages Weighted to Account for Nonresponse

	Intervention Clinics		Control Clinics		
	n	%†	n	%†	χ^2 *P* value*
Total sample	935		653		
Trust doctor's judgment in managing medications‡					.002
Totally disagree	15	1.9	6	0.9	
Disagree	60	6.9	27	4.4	
Neutral	122	13.3	59	8.4	
Agree	308	33.2	218	33.9	
Totally agree	426	44.7	341	52.4	
Believe doctor trusts patient in managing medications‡					.002
Totally disagree	10	1.4	9	1.3	
Disagree	41	4.4	13	1.9	
Neutral	72	7.9	34	5.8	
Agree	308	32.8	186	27.8	
Totally agree	501	53.4	410	63.3	
Sometimes worry doctor will stop prescribing opioids‡					.007
Totally disagree	223	23.7	196	29.8	
Disagree	270	29.1	209	32.3	
Neutral	163	17.9	97	16.0	
Agree	175	19.1	102	15.1	
Totally agree	92	10.2	42	6.7	
Believe health care team made sure patient was well informed about potential problems with opioids‡					.924
Totally disagree	7	0.8	8	1.2	
Disagree	15	1.6	11	1.7	
Neutral	41	4.3	32	4.3	
Agree	318	33.7	209	32.1	
Totally agree	553	59.6	391	60.7	

*P values are based on χ^2 tests of whether the distributions of responses across the 5 categories for each question differ between participants in the intervention and control clinics after weighting for nonresponse.
†While n's represent the raw counts, the computed percentages are based on weighting to account for nonresponse.
‡The proportion with missing data for each of the four questions were 0.4%, 0.3%, 1.2%, and 0.2%, respectively.

A total of 29.3% of patients in the intervention clinic and 21.8% in the control clinics said that they sometimes worried that their doctor would stop prescribing opioids ($\chi^2 = 14.07$; $df = 4$, $P = .007$). Patients who did not trust their doctors were somewhat more concerned that their doctors would stop prescribing opioids. Among the 108 patients who said they did not trust their doctor, 60.5% were worried that their doctors would stop prescribing opioids. Only 20.4% of the 1293 patients who said they trusted their doctor reported these worries.

By contrast, over 90% of patients in both types of clinics reported that their health care teams had informed them about potential problems with opioids, with no significant differences between the intervention and control clinics ($\chi^2 = 0.91$; $df = 4$; $P = .924$).

Discussion

We found evidence of slightly less trust perceived by patients in the doctor-patient relationship related to management of opioid medications in the intervention clinics exposed to the opioid risk reduction initiatives. In these clinics, fewer patients agreed or strongly agreed with questions about trust in their doctor's management of opiate pain medications and their perception of their doctor's trust in their management of their opiate medications. Intervention clinic COT patients also expressed greater concern about opioids being withheld in the future. However,

these differences of roughly 5% to 10% points in agreement between patients from the intervention and control clinics were observed in the context of highly favorable ratings of doctor-patient trust, with a large majority of patients (82.2%) reporting that they had trust in their doctor's judgment in managing their opioid medications and that their doctors trusted them in managing their medications (86.3%). Consistent with these findings, less than 30% of participants worried that their doctor would stop prescribing opioids.

The high levels of perceived trust are surprising considering that most of the literature about the doctor-patient relationship and opioids is about difficulties in communication and lack of trust.[32–40] Possibly, COT patients who participate in focus groups and other studies of the doctor-patient relationship around opioid prescribing for chronic pain are those who are most dissatisfied with their care[32–35] and that doctors tend to remember and report interactions with the minority of COT patients where conflict and impaired doctor-patient trust are most prominent.[32,36–39] If this were true, the minority of doctor-patient relationships with impaired trust could lead to overly broad generalizations regarding the difficulties of reducing opioid dose and implementing closer monitoring with more typical COT patients. The instances where doctor-patient trust is impaired may be stressful for doctors and patients alike.

Our research had several limitations. The survey response rate was low and was lower in the control clinics than the intervention group. This raises questions about how representative the survey is of the underlying population of COT users. We attempted to address this limitation by adjusting for a wide range of clinically relevant variables potentially related to survey nonresponse, including mental health disorders, overuse of alcohol and other drugs, comorbid conditions, and average opioid dose. This adjustment was possible because we had access to electronic health data for everyone selected for the sample. By randomly selecting eligible COT patients and using inverse probability weighting to adjust for nonresponse, we think that our findings reflect that of patients on longer-term COT in the Group Health population. The survey was conducted in a single health plan located in the State of Washington with a population that was largely white and well educated, so generalizability to other settings and geographic areas is not known. Our trust questions were not previously validated. No suitable surveys on patient trust in doctors regarding opioid prescribing exist. Although at least 10 general scales measure general aspects of patients trust in their doctors,[41,42] all them are somewhat different. Nonetheless, our question on trusting the doctor's judgment in managing opioid pain medicine is quite similar in format to more general questions on several scales.[43–46]

This was a cross-sectional study. We cannot know whether perceptions of doctor-patient trust among the intervention clinic patients were present before the opioid initiatives or developed as a result of these initiatives. It would have been ideal to have collected data on doctor-patient trust before the implementation of the initiatives in both the intervention and control clinics, but unfortunately this kind of longitudinal assessment was not possible. Nonetheless, the differences in opioid risk reduction initiatives had been sustained for at least 4 years[47–50] at the time the survey was conducted, suggesting that they were robust. Differences in characteristics of COT patients between the 2 settings before implementation of the initiatives were modest.[51] Comparisons of survey data regarding pain status[31] and prevalence of prescription opioid use disorder[18] did not find significant differences in key relevant clinical characteristics between the intervention and control populations after the opioid risk reduction initiatives. These observations support the inference that the dose and risk reduction initiatives may have reduced perceptions of trust in their doctor for some COT patients.

Our large study includes notable strengths as well. We believe it is the first survey of patient perceptions of trust in the doctor-patient relationship pertaining to the management of opioid medications. We had access to extensive electronic health care data on the entire population selected for the survey sample, which allowed us to adjust for possible nonresponse bias. The patients exposed and not exposed to the opioid risk reduction initiatives were similar in most respects and came from the same health plan. The survey was conducted after both initiatives had been implemented for more than 4 years, permitting assessment of long-term effects of the initiatives.

These findings are important given the key role that the doctor-patient relationship plays in treating chronic pain.[2,6] They are consistent with more

general studies of patients that report trust in their primary care doctors is high.[41,42] We believe these results are both counterintuitive, given the published literature on the topic of opioid prescribing and the doctor-patient relationship[32–40] and reassuring because they demonstrate generally high levels of patient perceptions of trust in their doctor and only modestly lower levels of trust related to opioid management among COT patients after implementation of opioid risk reduction initiatives. This suggests that it may be possible to implement opioid risk reduction initiatives while sustaining high levels of doctor-patient trust for most COT patients. However, our results also suggest that trust may be impaired among a relatively small percent of COT patients after implementation of these initiatives.

Future studies are needed that assess the impact of opioid risk reduction initiatives in more diverse populations, including younger patients, less educated patients, more disadvantaged patients, and more minority patients, all of whom might have a different experience with their doctors. For example, these groups could face greater stigma, more discrimination, and poor access to health care. Future studies should include more general questions on trust and patient satisfaction as part of the doctor-patient relationship, by using appropriate and validated measures. Understanding the impact of specific risk reduction initiatives on patient trust would be important. In addition, longitudinal studies of risk reduction initiatives of patients on COT therapy, although challenging to undertake, would be useful for understanding how patient's trust in their physicians may change over time. Our findings serve as a benchmark for such studies as well as a stimulus to investigate this topic in more depth.

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