Does an empathic pre-visit conversation with another team member improve perceived surgeon empathy?

Lindy Derkzen

Janna S E Ottenhoff

Carrie Barron

David Ring
Dell Medical School, University of Texas at Austin

Does an empathic pre-visit conversation with another team member improve perceived surgeon empathy?

Does an empathic pre-visit conversation with another team member improve perceived surgeon empathy?

Lindy Derkzen, *Dell Medical School, University of Texas at Austin*, lindyderkzen@gmail.com
Janna S E Ottenhoff, *Dell Medical School, University of Texas at Austin*, jsottenhoff@gmail.com
Carrie Barron, *Dell Medical School, University of Texas at Austin*, carrie.barron@austin.utexas.edu
David Ring, MD, PhD, *Dell Medical School, University of Texas at Austin*, david.ring@austin.utexas.edu

Abstract

Orthopedic surgeon specialists can help alleviate symptoms and reduce self-reported activity limitations by addressing stress, distress, and unhelpful cognitive biases regarding pain (e.g., "hurt equals harm"). But noticing mental and social health opportunities in specialty care can harm the patient-surgeon relationship. This study evaluated the ability of an empathic pre-visit conversation by another team member to improve the patient-surgeon relationship measured as perceived empathy. Factors associated with pain intensity, magnitude of self-reported activity limitations, symptoms of depression, and satisfaction with the surgeon were also studied. We enrolled 100 patients visiting an orthopedic surgeon for the first time. Prior to the visit with the surgeon, 50 patients met with another team member and had a pre-visit discussion about a sense of purpose and meaning in life, availability of loving relationships, and things that elicit laughter—a discussion intended to honor what matters most to an individual—and the other 50 patients did not. At the end of the visit we recorded perceived surgeon empathy, pain intensity, magnitude of self-reported activity limitations, symptoms of depression, and satisfaction with the surgeon. The pre-visit discussion did not affect perceived surgeon empathy (p=0.81), pain intensity (p=0.75), magnitude of self-reported activity limitations (p=0.63), symptoms of depression (p=0.46), or satisfaction with the surgeon (p=0.79). Patient experience with a surgeon does not benefit from a positive milieu created by a non-surgeon team member. Future studies can address relationship-building tactics used by the surgeon.

Keywords

Empathy, communication, patient experience, patient satisfaction, outpatient clinics, patient-centered care, orthopedics

Introduction

An empathic connection, with support, reassurance, and mutual trust, can facilitate patient recovery,[1,2] in part by creating a milieu for open discussion of mental and social health opportunities. Among people seeking the care of an orthopedic surgeon specialist, the magnitude of physical symptoms and limitations is strongly influenced by psychological and social factors[3–5] such as greater symptoms of depression, fear of movement (kinesiophobia),[6] pain anxiety[7–10] and catastrophic thinking.[11] Placebo and nocebo research demonstrates the ability of a positive patient-clinician interaction to relieve symptoms[12–15] and a negative interaction or mindset to worsen them.[16–19] A strong relationship can also enhance satisfaction with care.[20–22]

Cognitive science suggests that as we form impressions, we tend to readily determine if another person's intentions are benevolent and if they can enact them. There are two key-parts of initial judging: judgments of warmth and judgements of competence.[2] These phenomena may be particularly relevant in the medical context and seem to impact health outcomes.[12] When a patient sense their doctor is capable and trustworthy, they more easily gain trust and are more likely to adhere to medical advice.[1,12]

People want to feel valued as an individual. The aphorism "people don't care what you know until they know you care" applies. It's also important for people to become aware of what matters most to them, so they can prepare to make decisions consistent with those values and not based on misconceptions. We developed a pre-visit conversation meant to show genuine interest in people while elucidating their core values. The conversation is based on three lines of inquiry: purpose, love, and enjoyment. This study aims to measure whether a team member who is skilled at such conversations can create a positive milieu prior to a surgeon entering the room. This milieu, in combination with the information passed on to the surgeon, might help the surgeon appreciate, enjoy, and empathize with the patient, leading to fewer missed empathic opportunities and greater trust. The idea is that initiating a conversation about what good health looks like for an individual patient might guide them to improved health and help them feel better and do more. There is

some evidence that this can be effective. For instance, a study of 1624 volunteers from German-speaking countries found that people that completed online daily writing exercises about moments of pleasure, experiences with engagement, and reviewing meaning and positive relationships demonstrated improvements in happiness and mood over a 6-month evaluation period compared to those that did not.[23]

This study tested the primary null hypothesis that among a sample of patients with musculoskeletal illness, an empathic pre-visit conversation by a non-surgeon team member during the initial clinical encounter will not affect perceived surgeon empathy, accounting for other factors. We also assessed if a pre-visit conversation would affect [1] pain intensity, [2] magnitude of limitations, [3] symptoms of depression, or [4] satisfaction with the surgeon at the end of the visit accounting for other factors.

Methods

After approval by our Institutional Research Board, we enrolled 100 patients visiting one of three orthopedic offices in a large urban area in the United States. English speaking patients aged between 18 and 89 years visiting an orthopedic surgeon for the first time were enrolled between January 8 and February 8, 2018. Fifty patients had a pre-visit discussion delving into aspects of good health and emphasizing what matters most to them, and the other fifty patients did not. The conversation was developed and implemented by one of us who is a psychiatrist specializing in positive psychology. In each office, we enrolled an equal number of patients with and without a pre-visit discussion based on the availability of the psychiatrist. For patients receiving a pre-visit discussion, the psychiatrist explained the study prior to the discussion and the visit with the surgeon. The psychiatrist was not involved in diagnosis or treatment. The research assistant enrolled patients and administered questionnaires after the visit with the surgeon.

Patients were asked to complete seven questionnaires: (1) a demographic questionnaire containing age, sex, race/ethnicity, marital status, and education status. (2) The Pain Self-Efficacy Questionnaire 2-item short form (PSEQ-2), (3) the Jefferson Scale of Patient Perceived Perception of Physician Empathy (JSPPPE), (4) Patient-Reported Outcomes Measurement Information System (PROMIS) Physical Function Computer Adaptive Test (PF CAT) (5) PROMIS Depression Computer Adaptive Test (PROMIS Depression CAT), (6) An 11-point ordinal measure of pain intensity, and (7) an 11-point ordinal measure of satisfaction with surgeon. After completing the questionnaires, the research assistant recorded diagnosis, diagnostic category (trauma / non-trauma) and if the patient had a pre-visit discussion (yes/no).

The Pain Self-Efficacy Questionnaire 2-item short form measures the ability to stick to daily routines and achieve one's goals when in pain. It contains 2 items measured on a 7-point Likert scale ranging from 0 "not at all confident" to 6 "completely confident."[24]

The JSPPPE gauges patient rating of surgeon empathy. It is a 5-item questionnaire, measured on a 7-point Likert scale with scores ranging from 1 "strongly disagree" to 7 "strongly agree." The total score is the sum of all item scores (5-35), with higher scores indicating greater perceived empathy.[25]

The PROMIS PF CAT measures self-reported activity limitations. A unique series of questions is presented with each new item based on the response to the previous question (item response theory). It can be completed with as few as 4 questions. Questions about physical abilities are answered on a 5-point Likert scale ranging from 1 "not at all" to 5 "cannot do."

PROMIS PF CAT results are presented as a continuous T-score with a score of 50 representing the mean of the United States population and each 10 points away from 50 representing a standard deviation above or below the mean. Higher scores indicate fewer self-reported activity limitations.[26]

PROMIS Depression CAT measures symptoms of depression symptoms using item response theory with questions answered on a 5-point Likert scale ranging from 1 "never" to 5 "always." PROMIS Depression CAT is also reported using T-scores and higher scores indicate greater symptoms of depression.[27]

Satisfaction with the surgeon was assessed on a 11-point ordinal scale ranging from 0 "no satisfaction at all" to 10 "very satisfied." Pain intensity was measured on a 11-point ordinal scale ranging from 0 representing "no pain" to 10 "worst imaginable pain."

All questionnaires were administered on a secure, HIPAA-compliant electronic platform: REDCap (Research Electronic Data Capture: a secure web-based application for building and managing online surveys and databases).[28]

Half of the patients had a pre-visit discussion with the psychiatrist approximately 10 minutes in length. Patients were asked if they were willing to talk for a few minutes before seeing the surgeon. After agreement of the patient, the psychiatrist explained the purpose of the discussion: "to get to know the patient better, as we believe that knowing someone better will be helpful for the patient, the care, and their concerns." Then, three factors, sense of

Table 1. Patient and clinical characteristics

Variables	Total patients N = 100	Previsit disussion		P value
		Yes N = 50 (100%)	No N = 50 (100%)	
Age in years ± SD (range)	52 ± 15	52 ± 15	49 ± 15	0.42
Men, n (%)	53	25 (50)	28 (56)	0.69
Race/Ethnicity, n (%)				
White	62	27 (54)	35 (70)	
Hispanic/Latino	22	14 (28)	8 (16)	0.23
Other (Black/Asian/Other)	16	9 (18)	7 (14)	
Marital status, n (%)				
Single	36	20 (40)	16 (32)	
Divorced/Separated/Widowed	20	11 (22)	9 (18)	0.51
Married/Unmarried couple	44	19 (38)	25 (50)	
Level of education, n (%)				
High school or less	34	19 (38)	15 (30)	
College	49	23 (46)	26 (52)	0.69
Post-college graduate degree	17	8 (16)	9 (18)	
Diagnosis, n (%)				
Traumatic	33	18 (36)	15 (30)	0.67
Non-traumatic	67	32 (64)	35 (70)	
PSEQ -2	8.8 ± 2.9	8.6 ± 3.2	8.9 ± 2.6	0.56
JSPPPE	30 ± 6.1	30 ± 6.1	30 ± 6.1	0.81
Pain intensity	5.2 ± 2.8	5.1 ± 3.1	5.3 ± 2.5	0.75
PROMIS PF	44 ± 9.0	43 ± 10	44 ± 7.6	0.63
PROMIS Depression	50 ± 9.0	51 ± 8.9	50 ± 9.1	0.46
Satisfaction	8.8 ± 2.1	8.7 ± 2.5	8.9 ± 1.9	0.79

Continuous variables as mean ± Standard Deviation; Discrete variables as number (percentage); PSEQ-2 = Pain Self-Efficacy Questionnaire 2-item short form; JSPPPE =Jefferson Scale of Patient Perceptions of Physician Empathy; PROMIS PF = Patient-Reported Outcomes Measurement Information System Physical Function; PROMIS Depression: Patient-Reported Outcomes Measurement Information System Depression.

purpose and meaning in life, availability of loving relationships, and things that elicit laughter were discussed. After the discussion, the psychiatrist shared the information with the surgeon prior to seeing the patient. Patients that had a pre-visit discussion were similar to those that did not (Table 1).

Discrete variables are displayed as proportions, continuous variables are displayed as mean ± standard deviation (SD). We used Student t-test to compare continuous and dichotomous variables, Chi-squared test for two dichotomous or dichotomous and nominal variables, ANOVA for nominal and continuous variables, and Pearson's correlation coefficient for two continuous variables. We created five multivariable linear regression models and included all factors with $P < 0.10$ on bivariate analysis (Table 2). Adjusted R^2 indicates how much variability in the outcome variable the model accounts for. Semi-partial R^2 expresses the specific variability of a given independent variable in the model. Our four final linear regression models contained no signs of multicollinearity with Variance Inflation Factors scores all below 2.1.

A priori power analysis indicated that 85 patients would provide 90% statistical power, with alpha set at 0.05, for a regression with seven predictors if the intervention would account for 10% or more of the variability in outcome, and our complete model would account for 20% of the overall variability. To account for incomplete responses and faulty data, we enrolled 100 patients.

Table 2. Bivariate analyses

Variables	JSPPPE	P value	Pain intensity	P value	Promis PF	P value	Promis De	P value	Satis-faction	P value
Age in years (*r*)	0.31	**0.0020**	-0,0045	0.96	-0.15	0.13	-0.17	0.085	0.16	0.12
Sex										
Female	31 ± 5.6	0.17	4.9 ± 2.9	0.32	42 ± 9.2	0.12	51 ± 8.2	0.75	9 ± 2.2	0.34
Men	30 ± 6.4		5.4 ± 2.7		45 ± 8.6		50 ± 9.7		8.6 ± 2.2	
Race/Ethnicity										
White	31 ± 4.9	0.052	4.5 ± 2.5	**0.017**	44 ± 8.7	0.98	50 ± 7.8	0.95	9.0 ± 1.8	
Hispanic/Latino	31 ± 6.4		6.2 ± 3.4		43 ± 10		51 ± 12		9.0 ± 2.2	0.11
Other (Black/Asian/Other)	27 ± 8.6		6.1 ± 2.6		43 ± 8.5		50 ± 9.6		7.8 ± 3.1	
Marital status										
Single	28 ± 7.0	**0.0073**	5.0 ± 2.8	0.68	44 ± 8.1	0.75	52 ± 8.6	0.16	7.9 ± 2.7	**0.0085**
Divorced/Widowed/Separated	33 ± 3.5		5.7 ± 3.2		42 ± 12		47 ± 8.9		9.2 ± 2.3	
Married/Unmarried couple	31 ± 5.6		5.1 ± 2.7		44 ± 8.0		51 ± 9.2		9.3 ± 1.3	
Level of education										
High school or less	30 ± 7.4	0.72	5.8 ± 3.1	0.070	43 ± 9.8	0.84	49 ± 11	0.66	8.6 ± 2.5	0.83
College	31 ± 5.3		5.2 ± 2.6		44 ± 8.7		51 ± 8.3		8.9 ± 2.2	
Post-college graduate degree	30 ± 5.7		3.9 ± 2.4		43 ± 8.2		50 ± 6.4		8.8 ± 1.5	
Diagnosis										
Traumatic	31 ± 6.8	0.55	3.9 ± 2.8	**0.0010**	45 ± 8.9	0.23	50 ± 9.6	0.78	9.2 ± 1.7	0.16
Non-traumatic	30 ± 5.8		5.8 ± 2.6		43 ± 9.0		51 ± 8.7		8.6 ± 2.4	
Previsit discussion										
Yes	30 ± 6.1	0.81	5.1 ± 3.1	0,75	43 ± 10	0.63	51 ± 8.9	0.46	8.7 ± 1.9	0.79
No	30 ± 6.1		5.3 ± 2.5		44 ± 7.6		50 ± 9.1		8.9 ± 1.9	
PSEQ-2 (*r*)	0.29	**0.0030**	-0.25	**0.013**	0.34	**<0.001**	-0.26	**0.0093**	0.28	**0.0056**
PROMIS Depression (*r*)	-0.15	0.14	0.14	0.16	-0.19	0.060	-	-	-0.12	0.22
JSPPPE (*r*)	-	-	-0.07	0.49	-0.16	0.11	-0.15	0.14	0.61	**<0.001**

Pearson correlation indicated by r; values are mean ± Standard Deviation, unless otherwise indicated; bold indicates statistically significant difference; JSPPPE =Jefferson Scale of Patient Perceptions of Physician Empathy; PROMIS PF = Patient Reported Outcomes Measurement Information System for Physical Function; PROMIS De = Patient Reported Outcomes Measurement Information System for Depression; PSEQ-2 = Pain Self-Efficacy Questionnaire 2-item short form

Results

A pre-visit discussion did not influence patient ratings of perceived clinician empathy (P = 0.81) pain intensity (P = 0.75), the magnitude of self-reported activity limitations (P = 0.63), symptoms of depression, or satisfaction with the surgeon (P = 0.79) (Table 2).

In multivariable analysis, accounting for potential interaction of variables greater perceived clinician empathy was independently associated with older age and greater patient self-efficacy (Table 3). Greater pain intensity correlated with non-white race, college degree, and traumatic diagnosis (Table 3). Fewer self-reported activity limitations were associated with greater self-efficacy correlated with fewer physical limitations (Table 3). Greater symptoms of depression were associated with lower self-efficacy (Table 3). Satisfaction with the surgeon was high (mean 8.8 ± 2.1) and higher satisfaction correlated with greater perceived empathy (Table 3).

Table 3. Multivariable analysis, factors association with Satisfaction, Pain intensity, JSPPPE, PROMIS PF and PROMIS De

Dependent variables	Retained variables	Regression coefficient (95% Confidence Interval)	Standard Error	P value	Semipartial R^2	Adjusted R^2
JSPPPE	Age in years	0.088 (0.0076 to 0.17)	0.041	**0.032**	0.039	
	Race/ethnicity					
	White	2.2 (-1.0 to 5.4)	1.6	0.18		
	Hispanic/Latino	2.4 (-1.4 to 6.2)	1.9	0.21		
	Other (Black/Asian/Other)	Reference value				0.18
	Marital status					
	Single	-2.8 (-6.2 to 0.62)	1.7	0.11		
	Married	-1.3 (-4.4 to 1.7)	1.5	0.38		
	Widowed/divorced	Reference value				
	PSEQ-2	0.54 (0.16 to 0.93)	0.19	**0.006**	0.065	
Pain intensity	Race/ethnicity					
	White	-1.8 (-3.2 to -0.36)	0.72	**0.015**	0.049	
	Hispanic/Latino	- 0.47 (-2.2 to 1.3)	0.88	0.59		
	Other (Black/Asian/Other)	Reference value				
	Education					
	Highschool or less	1.3 (-0.19 to 2.9)	0.77	0.084		0.21
	College	1.6 (0.16 to 3.0)	0.71	**0.030**	0.039	
	Post graduate	Reference value				
	Diagnosis					
	Trauma	1.9 (0.75 to 3.0)	0.57	**0.001**	0.086	
	Non-trauma	Reference value				
	PSEQ-2	-0.18 (-0.37 to 0.0029)	0.093	0.054		
Promis PF	PSEQ -2	0.97 (0.37 to 1.6)	0.30	**0.002**	0.093	0.11
	PROMIS De	-0.11 (-0.30 to 0.087)	0.098	0.28		
Promis De	Age	-0.099 (-0.21 to 0.015)	0.058	0.088		0.076
	PSEQ -2	-0.79 (-1.4 to -0.20)	0.30	**0.010**	0.065	
Satisfaction	Marital status					
	Married	0.55 (-0.37 to 1.5)	0.47	0.24		
	Single	-0.26 (-1.3 to 0.74)	0.50	0.61		
	Widowed/divorced	Reference value				0.38
	JSPPPE	0.20 (0.14 to 0.26)	0.031	**<0.001**	0.25	
	PSEQ-2	0.77 (-0.046 to 0.20)	0.062	0.22		

Bold indicates statistically significant difference; JSPPPE =Jefferson Scale of Patient Perceptions of Physician Empathy; PROMIS PF = Patient-Reported Outcomes Measurement Information System for Physical Function; PROMIS De = Patient-Reported Outcomes Measurement Information System for Depression; PSEQ-2 = Pain Self-Efficacy Questionnaire 2-item short form.

Discussion

Prior studies indicate that an empathic connection in the medical milieu can relieve patient anxiety,[23] create optimism,[23] speed recovery,[1] and increase satisfaction with medical care.[20,21] This study evaluated the ability of an empathic pre-visit conversation to affect a patient's rating of an orthopedic surgeon's empathy. Furthermore, we assessed factors associated with pain intensity, magnitude of limitations, symptoms of depression, or satisfaction at the end of the visit.

We acknowledge several limitations to our study. First, there was a strong ceiling effect for the measures of satisfaction (most ratings were 9 [13%] or 10 [62%] out of 10; Figure 1) and empathy (48% of all patients reported JSPPPE scores of 34 or 35, with 35 being the maximum, Figure 2). This lack of spread in experience scores makes it difficult to study factors associated with patient experience. A study using experience measures with less ceiling effect might have different results. Second, patients were not involved in the study design and might have ideas for how to better incorporate information about what matters most to them. Third, we did not account for the

influence of the specific surgeon. It was an oversight due to the fact that initially we thought we would enroll patients of just one surgeon. The ceiling effects of the experience measures were present for all surgeons and likely eliminated any surgeon-to-surgeon variation. It is face valid that some people and therefore some surgeons are more empathetic and that some surgeons have more satisfied patients. If we could measure and quantify the full breadth of patient experience, we could provide better feedback and training of surgeons that would benefit from improved relationship and communication skills. Fourth, the PROMIS depression questionnaire asked about symptoms of depression in the past 7 days. The perception of symptoms of depression in the last 7 days may or may not be affected by a single visit. We might see a greater effect on these measures over time. Fifth, most of the patients were white, well-educated people presenting with a non-traumatic diagnosis, and seen by an orthopedic surgeon in a large urban area in the United States. The results might not apply to other populations, regions or practice settings. Disadvantaged people might find it more difficult to trust a surgeon and we might see more spread in the experience measures. Sixth, we only recorded satisfaction with the surgeon and not with the overall visit.

Figure 1. Ceiling effect JSPPPE

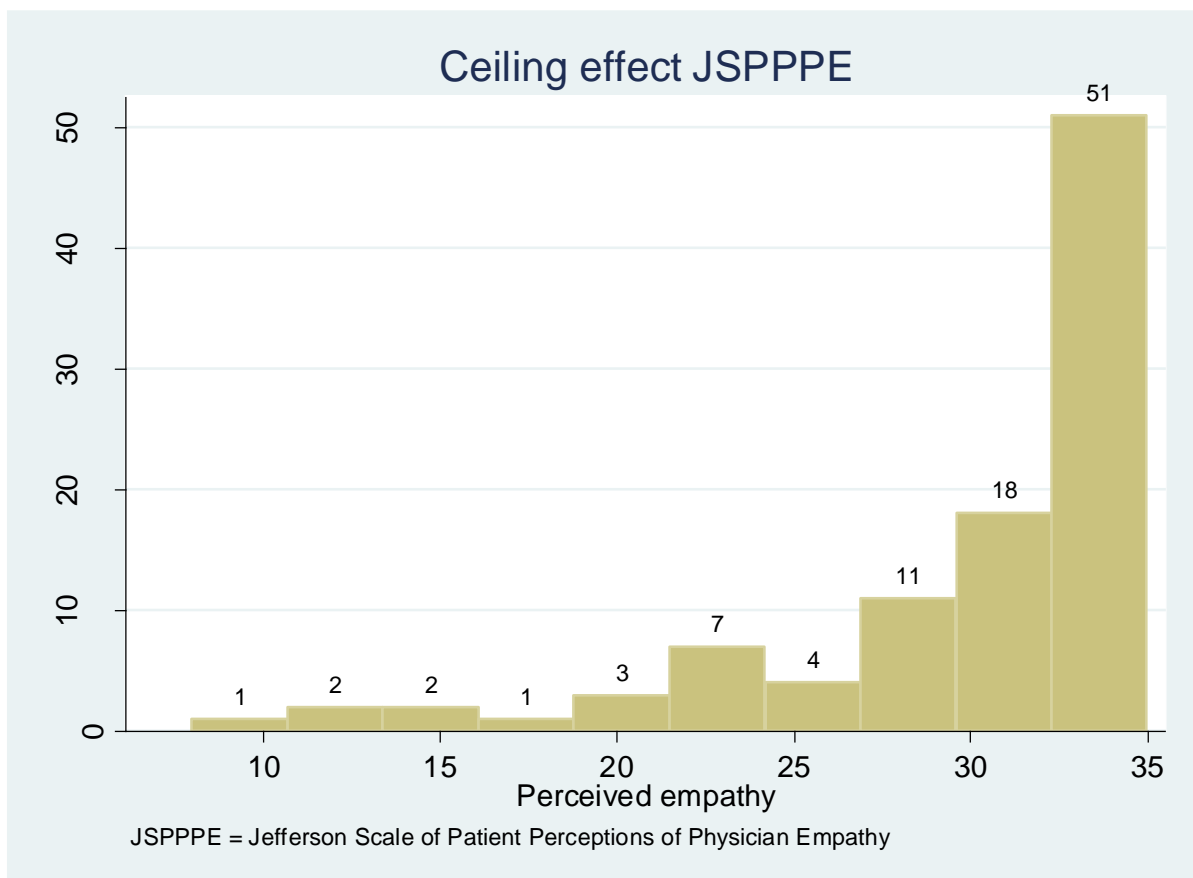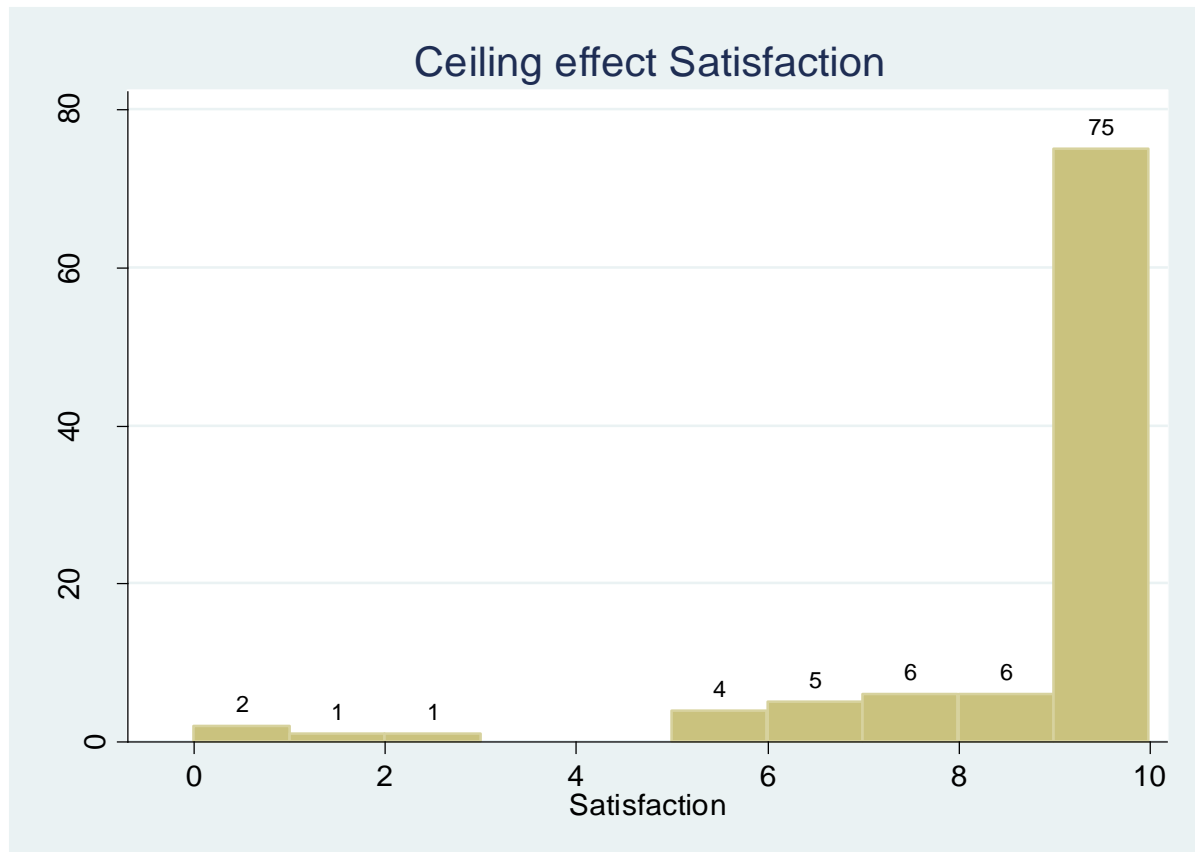JSPPPE = Jefferson Scale of Patient Perceptions of Physician Empathy

Figure 2. Ceiling effect Satisfaction

Satisfaction with the overall visit might have been influenced by the pre-visit discussion, as we had several patients explicitly expressing their contentment with the additional pre-visit discussion. Many wondered why this type of inquiry into what matters to them was not done routinely. Seventh, a more structured plan for how surgeons might make use of the information transferred to them from the pre-visit discussion might lead to a stronger influence on perceived surgeon empathy. Finally, a pre-visit discussion might have an effect on things we did not measure, such as clinician comfort and satisfaction with the visit, clinician connection with the patient, or clinician ease of discussing potentially disappointing aspects of the condition.

The finding that patients with a pre-visit discussion prior to their appointment did not experience greater perceived surgeon empathy suggests that the relationship-building of one team member does not transfer to another. A small amount of perceived empathy was accounted for by older age and greater self-efficacy, but additional research is needed to understand most of the variation in perceived empathy. In the future, we might study the effect of the clinician themselves asking the three questions about sense of purpose and meaning in life, availability of loving relationships, and things that elicit laughter. Or perhaps some other relationship building strategy might be tested.

The finding that pain intensity was associated with completion of college and traumatic diagnosis, but not with mental health (symptoms of depression and self-efficacy) is inconsistent with prior work, perhaps to colinearity. Fear of movement (kinesiophobia),[6] symptoms of depression, greater pain anxiety,[7–9] more catastrophic thinking,[11] and lower pain self-efficacy have relatively consistent small to moderate correlation with pain intensity in previous studies. Since it was not a main focus of this study we chose not to explore this further, but caution is warranted in the study of the interface of mental, social, and physical health because they are so highly related.

The observation that lower magnitude of self-reported activity limitations correlated with greater self-efficacy is consistent with a substantial body of evidence that accommodation and adaptation to pain is a key aspect of health.[7,811,29,30] In one lower extremity example, a study of people seeking care for gluteal tendinopathy in Australia found that greater magnitude of self-reported activity limitations is associated with more unhealthy cognitive bias

regarding pain (worst-case or catastrophic thinking), greater symptoms of depression, and lower pain self-efficacy.[31]

The finding that symptoms of depression correlates with self-efficacy is consistent with prior research.[23] The finding that satisfaction correlates with perceived empathy is consistent with prior research.[20,21] Experience measures tend to correlate and even group onto a single factor in factor analysis.[32] The key element of satisfaction seems to be feeling heard and cared about. This appears to be far more influential than other factors such as time seeing a hand surgeon, perception of duration of the visit, and perception of the surgeon feeling rushed.[21,33]

In conclusion, a pre-visit discussion about a sense of purpose and meaning in life, availability of loving relationships, and things that elicit laughter by a non-surgeon team member did not lead to higher perceived surgeon empathy or satisfaction with the surgeon on the day of the initial visit. Our findings suggest that a warm interaction with other team members may not transfer to the primary clinician providing diagnosis and treatment. Given the documented positive influences of warmth and competence on symptoms and limitations, future research is needed to identify elements of the interaction with an orthopedic surgeon and the entire treatment team that can be modified to enhance health, including studying the perspectives of patients.

References

1. Crum A, Zuckerman B. Changing mindsets to enhance treatment effectiveness. *JAMA - J Am Med Assoc.* 2017;317(20):2063-2064. doi:10.1001/jama.2017.4545.
2. Fiske ST, Cuddy AJC, Glick P. Universal dimensions of social cognition: warmth and competence. *Trends Cogn Sci.* 2007;11(2):77-83. doi:10.1016/j.tics.2006.11.005.
3. Turk DC, Okifuji A. Psychological factors in chronic pain: Evolution and revolution. *J Consult Clin Psychol.* 2002;70(3):678-690. doi:10.1037//0022-006X.70.3.678.
4. Backman CL. Psychosocial aspects in the management of arthritis pain. *Arthritis Res Ther.* 2006;8(6):221. doi:10.1186/ar2083.
5. Lumley MA, Cohen JL, Borszcz GS, et al. Pain and emotion: a biopsychosocial reveiw of recent research. *J Clin Psychol.* 2011;67(9):942-968. doi:10.1002/jclp.20816.Pain.
6. Crombez G, Vlaeyen J, Heuts P, Lysens R. Pain-related fear is more disabling than pain itself: evidence on the role of pain-related fear in chronic back pain disability. *Pain.* 1999;80(1):329-339.
7. Bayat N, Alishiri GH, Salimzadeh A, et al. Symptoms of anxiety and depression: A comparison among

8. Attal N, Lanteri-Minet M, Laurent B, Fermanian J, Bouhassira D. The specific disease burden of neuropathic pain: results of a French nationwide survey. *Pain.* 2011;152(12):2836-2843. doi:10.1016/j.pain.2011.09.014.
9. Demyttenaere K, Bruffaerts R, Lee S, et al. Mental disorders among persons with chronic back or neck pain: Results from the world mental health surveys. *Pain.* 2007;129(3):332-342. doi:10.1016/j.pain.2007.01.022.
10. Lozano-Calderon SA, Souer JS, Jupiter JB, Ring D. Psychological differences between patients that elect operative or nonoperative treatment for trapeziometacarpal joint arthrosis. *Hand.* 2008;3(3):271-275. doi:10.1007/s11552-008-9098-y.
11. Dunn KM, Croft PR. The importance of symptom duration in determining prognosis. *Pain.* 2006;121(1):126-132. doi:10.1016/j.pain.2005.12.012.
12. Howe LC, Goyer JP, Crum AJ. Harnessing the placebo effect: Exploring the influence of physician characteristics on placebo response. *Heal Psychol.* 2017;36(11):1074-1082. doi:10.1037/hea0000499.
13. Price DD, Milling LS, Kirsch I, Duff A, Montgomery GH, Nicholls SS. An analysis of factors that contribute to the magnitude of placebo analgesia in an experimental paradigm. *Pain.* 1999;83(2):147-156. doi:10.1016/S0304-3959(99)00081-0.
14. Kam-Hansen S, Jakubowski M, Kelley JM, et al. Labeling of Medication and Placebo Alters the Outcome of Episodic Migraine Attacks. *Sci Transltational Medcine.* 2014;8(6218):218-5. doi:10.1126/scitranslmed.3006175.
15. Colloca L, Barsky AJ. Placebo and Nocebo Effects. *N Engl J Med.* 2020;382(6):554-561. doi:10.1056/NEJMra1907805.
16. Benedetti F, Lanotte M, Lopiano L, Colloca L. When words are painful: Unraveling the mechanisms of the nocebo effect. *Neuroscience.* 2007;147(2):260-271. doi:10.1016/j.neuroscience.2007.02.020.
17. Bingel U, Wanigasekera V, Wiech K, et al. The effect of treatment expectation on drug efficacy: Imaging the analgesic benefit of the opioid remifentanil. *Sci Transl Med.* 2011;3(70). doi:10.1126/scitranslmed.3001244.
18. Faasse K, Petrie KJ. The nocebo effect: Patient expectations and medication side effects. *Postgrad Med J.* 2013;89(1055):540-546. doi:10.1136/postgradmedj-2012-131730.
19. Barsky AJ. The Iatrogenic Potential of the Physician's Words. *JAMA.* 2017;318(24):2425-2426. doi:10.1001/jama.2017.16216.
20. Menendez ME, Chen NC, Mudgal CS, Jupiter JB, Ring D. Physician Empathy as a Driver of Hand Surgery Patient Satisfaction. *J Hand Surg Am.*

2015;40(9):1860-1865.e2. doi:10.1016/j.jhsa.2015.06.105.

21. Parrish RC, Menendez ME, Mudgal CS, Jupiter JB, Chen NC, Ring D. Patient Satisfaction and its Relation to Perceived Visit Duration with a Hand Surgeon. *J Hand Surg Am.* 2016;41(2):257-262e4. doi:10.1016/j.jhsa.2015.11.015.

22. Ha JF, Longnecker N. Doctor-patient communication: a review. *Ochsner J.* 2010;10(1):38-43. doi:10.1043/toj-09-0040.1.

23. Gander F, Proyer RT, Ruch W. Positive psychology interventions addressing pleasure, engagement, meaning, positive relationships, and accomplishment increase well-being and ameliorate depressive symptoms: A randomized, placebo-controlled online study. *Front Psychol.* 2016;7(MAY):1-12. doi:10.3389/fpsyg.2016.00686.

24. Nicholas MK, McGuire BE, Asghari A. A 2-item short form of the Pain Self-efficacy Questionnaire: development and psychometric evaluation of PSEQ-2. *J Pain.* 2015;16(2):153-163. doi:10.1016/j.jpain.2014.11.002.

25. Kane GC, Gotto JL, Mangione S, West S, Hojat M. Jefferson Scale of Patient's Perceptions of Physician Empathy: preliminary psychometric data. *Croat Med J.* 2007;48(1):81-86.

26. Jensen RE, Potosky AL, Reeve BB, et al. Validation of the PROMIS physical function measures in a diverse US population-based cohort of cancer patients. *Qual Life Res.* 2015;24(10):2333-2344. doi:10.1007/s11136-015-0992-9.

27. Schalet BD, Pilkonis PA, Yu L, et al. Clinical validity of PROMIS Depression, Anxiety, and Anger across diverse clinical samples. *J Clin Epidemiol.* 2016;73:119-127. doi:10.1016/j.jclinepi.2015.08.036.

28. Harris PA, Taylor R, Thielke R, Payne J, Gonzalez N, Conde JG. Research electronic data capture (REDCap)--a metadata-driven methodology and workflow process for providing translational research informatics support. *J Biomed Inform.* 2009;42(2):377-381. doi:10.1016/j.jbi.2008.08.010.

29. Chabok HA, Ring D. Arm ache. *Hand.* 2014. doi:10.1007/s11552-014-9604-3.

30. Das De S, Vranceanu A-M, Ring DC. Contribution of kinesophobia and catastrophic thinking to upper-extremity-specific disability. *J Bone Joint Surg Am.* 2013;95(1):76-81. doi:10.2106/JBJS.L.00064.

31. Plinsinga ML, Coombes BK, Mellor R, et al. Psychological factors not strength deficits are associated with severity of gluteal tendinopathy: a cross-sectional study. *Eur J Pain.* 2018:1-10. doi:10.1002/ejp.1199.

32. Gonzalez AI, Kortlever JTP, Rijk L, Ring D, Brown LE, Reichel LM. Is there a correlation between the patient-doctor relationship questionnaire and other patient-reported experience measures? *Patient Exp J.* 2020;7(1):44-50. doi:10.35680/2372-0247.1399.

33. Teunis T, Thornton ER, Jayakumar P, Ring D. Time Seeing a Hand Surgeon Is Not Associated With Patient Satisfaction. *Clin Orthop Relat Res.* 2015;473(7):2362-2368. doi:10.1007/s11999-014-4090-z.