Pain and Treatment From a Human Primate Perspective

Article *in* Journal of Pain & Palliative Care Pharmacotherapy · May 2014

DOI: 10.3109/15360288.2014.911237 · Source: PubMed

1 author:

Mark Collen
Collen Method, PainExhibit.org
26 PUBLICATIONS **96** CITATIONS

Journal of Pain & Palliative Care Pharmacotherapy. 2014;Early Online:1–6.

ISSN: 1536-0288 print / 1536-0539 online
DOI: 10.3109/15360288.2014.911237

informa
healthcare

COMMENTARY

Pain and Treatment From a Human Primate Perspective

Mark Collen

ABSTRACT

Human animals have evolved with the primary missions of survival and reproduction and these natural drives may impact behavior whether humans are aware of them or not. The author offers evidence in support of the idea that injury and resulting acute or chronic pain may trigger the unconscious human primate brain to believe there is a threat to survival. This perceived threat may be exacerbated or mitigated by the pain manager, both of which may impact health outcomes in a negative or positive way, respectively. The commentary argues the patient–health care provider relationship is of paramount importance for those with chronic pain and illness and should be nurtured for the best possible outcomes.

KEYWORDS catastrophize, chronic pain, doctor-patient relationship, patient-centered care

INTRODUCTION

Chronic pain (CP) impacts an estimated 100 million Americans at an annual cost of approximately $600 billion.[1] A systematic review of common treatments for CP by Turk and colleagues found that, "Of all treatment modalities reviewed, the best evidence for pain reduction averages roughly 30% in about half of treated patients, and these pain reductions do not always occur with concurrent improvement in function."[2] Pain is inadequately treated, resulting in unnecessary human suffering and exorbitant health care costs.[1,2] The current treatments are failing.

The patient-physician relationship or more broadly the patient–health care provider relationship should not be underestimated in its ability to both help and harm the patient.[3,4] This may be especially true in cases of people having chronic pain and illness where drugs and medical technology may provide insufficient relief.[3,5]

This paper examines pain and the patient–health care provider relationship from a human primate perspective and offers evidence and opinion on treating the human animal in pain for improved health outcomes.

Address correspondence to: Mark Collen, BS, Collen Method, 2443 Fair Oaks Boulevard, #334, Sacramento, CA 95825, USA (E-mail: Collen@CollenMethod.com).

HUMAN PRIMATES AND PAIN

Although human and chimpanzee DNA are nearly identical,[6] *Homo sapiens* make great efforts to deny or minimize the fact that they are animals.[7] Denial of the animal is denial of the self—know the monkey, know thy self. Evolutionary biology and psychology posit that the human body and brain evolved with the primary missions of survival and reproduction,[8,9] and human behavior may be influenced by these natural drives whether one is conscious of them or not.[10–12]

Throughout history, human primates have been food for other predators and this remains true today.[13] Moreover, injured animals in nature are vulnerable to predation, or injured animals get eaten. When a person has an injury resulting in acute or chronic pain, the unconscious mind may signal to the animal that there is an immediate threat to survival, even if there is none. In addition, this unconscious perceived threat may impact behavior.

Pain functions to enable the animal to escape, avoid further injury, and recover.[14] The human facial expression of pain may have evolved to alert others of threat[15] and to, "... signal suffering and attempt to gain relief from pain and emotional suffering."[16] Injured animals, including nonhuman primates, hide their pain to avoid showing their vulnerability to predators.[17–19] Referring to *Homo sapiens* evolution, A.C. Williams wrote, "The individual in pain might

gain both by amplifying pain expression better to convey need to allies, and by suppressing pain expression to hide vulnerability in the presence of antagonists."[15] Dorflinger and colleagues wrote, "Many patients report not feeling understood by providers, and some report that they either withhold or emphasize certain aspects of their pain experience based on reactions they have received from providers in the past."[20]

People who catastrophize, or obsess about and exaggerate their pain experience, may be doing so as a way to solicit help.[21] Pain catastrophizing at the onset of injury and pain may not be abnormal considering that an individual's unconscious animal brain may be telling itself there is an immediate threat to survival. Catastrophizing may be interpreted as the individual being in a state of panic and fear, and if this is sustained health outcomes diminish.[21–24] A panicked and frightened human primate needs to feel safe, secure, and hopeful.

WOUNDED PRIMATES AND PREDATOR ASSISTANCE

Imagine a wounded animal sheepishly approaching another for help and is simultaneously kicked and provided care. A kick would signal threat and a human primate may equate "threat" to a hostile or adversarial treatment environment. The frightened and injured animal needs help but the helper may also harm. The helper/harmer or ally/predator role played by the health care provider may generate conscious or unconscious internal conflicts for the injured primate, creating additional stress for an already compromised animal. In describing experiences that people with pain had with their health care providers, Werner and Malterud wrote, "... the doctor has the role of the enemy or protector of the welfare state rather than being the patients' lawyer in the battle for receiving diagnosis, help, and treatment."[25]

There may be situations when a person with pain judges a clinician as being hostile or adversarial even though there was no evil intent.[26] However, there are also examples where a hostile treatment environment may exist or be created for people with CP; these may include, but are not limited to, treatment within the workers' compensation system, and health care providers not believing or trusting their patients.

Workers' compensation is known as an adversarial system of which treatment is integral.[27–30] Strunin and Boden wrote, "Workers described disagreeable interactions with insurance claims personnel and doctors who viewed them as faking their injuries and thereby defrauding or deceiving the insurance companies in order to receive compensation. When this happened, they received little assistance and in some cases were under surveillance."[27] In this example, a predator-prey relationship may have been established with the physician and insurance carrier serving as the predators, with the injured worker being the prey.

One could predict treatment from a predator would likely have poor health outcomes. Therefore, it is not surprising that studies consistently show worse health outcomes for those individuals who were treated in the workers' compensation system.[31–35] LaDou wrote, "Despite the magnitude of the expenditures involved, the system is inefficient and inequitable, frequently a barrier rather than an aid to the delivery of medical care to workers."[28] There remains inconclusive evidence as to why workers' compensation is so costly.[33–35]

Trust is essential for an effective patient-provider relationship,[36–38] and "... the introduction of mistrust can lead to unnecessary negative health effects that contribute to disability."[29] A provider's lack of trust in people with chronic pain may be reflected in the requirement that patients sign a treatment agreement and submit to random drug screens,[39] and/or the provider does not believe the patient about their pain.[25]

The use of treatment agreements and random drug screens for people with CP has been viewed as adversarial,[39,40] and Heit and colleagues wrote in regards to drug testing, "... an adversarial environment may result that could harm the doctor-patient relationship."[41] Agreements and drug tests are considered adherence monitoring tools for opioid therapy and are recommended by professional pain associations,[42–44] but they lack sufficient evidence of efficacy.[45,46]

In addition, people with CP and unexplained ailments are often not believed by their health care provider, and this may also create a hostile treatment environment and affect care.[25,47–49] Chronic pain may be invisible and what is not seen is often not believed and as one patient describes it, "'... my chronic pain does not show up on an MRI or in blood work. Yet it is with me 24/7 and has changed my life completely so that I am very limited in my ability to function ....' "[1] How can a person receive adequate treatment if the doctor does not trust or believe the patient? This lack of validation may undermine the patient-physician relationship, and Edvin Schei writes, "If the patient feels disrespected or met with indifference or emotional incompetence, she immediately loses trust, whereby the therapeutic alliance evaporates."[3]

Studies have shown there is a positive correlation between patient trust in their health care providers

and health outcomes,[38,50–53] but there is a dearth of studies evaluating the impact of the providers' trust in patients.[54] Mutual trust is antithetical to an adversarial treatment environment and may disarm or prevent the establishment of a predator/prey relationship between patient and provider.

HEALTH CARE PROVIDERS AS PRIMATES

Health care providers are also human primates and subject to similar inclinations and feelings as their primate, patient brethren. Physicians may have many fears and concerns when treating patients, and Lazre and Levy wrote, "There are high public expectations for performance and an ever-present threat of malpractice suits, and if a suit is filed, the suit itself can be a profoundly humiliating experience, even when optimal care has been provided."[55] In addition, health care providers who treat chronic pain may fear prosecution for a crime associated with prescribing opioids, and fear impacts animal behavior and "... inhibits doctors from prescribing appropriately high doses of opioids to patients who need them."[56] However, this fear may be irrational because very few physicians are actually charged with a crime[57] or prosecuted by a state medical board.[58]

In addition, treating chronic pain and illness, and unexplained maladies, can be very frustrating for health care providers.[59–61] Also, some patients may be deceptive to gain an advantage[62,63] and thus preying upon the health care provider. Deception is common in nature among human and nonhuman primates, other animal species, and even plants.[64] Deception or social cheating does occur,[65] and interestingly enough, a clinician's concern about cheating can result in the underestimation of a person's pain.[66] Social cheating also occurs amongst health care providers, as medicine has turned into a commercial enterprise, with profits sometimes driving treatment decisions.[67,68] Social cheating undermines the patient-provider relationship regardless of who cheats.

Physician burnout may impair a clinician's ability to effectively do their job,[69–71] and "... burnout in physicians can have devastating consequences for patients."[71] Studies suggest that providers may avoid burnout by taking a holistic approach, which may include exercise and care for one's health; meaningful relationships with colleagues, patients, and family; and by being mindful, having a transcendental view of life, or pursuing a spiritual path.[72–74]

WOUNDED PRIMATES AND ALLY ASSISTANCE

Chronic pain may be one of the most challenging afflictions to treat. Opioids were once hailed as the "gold standard" of pain care[75] but no longer,[76] and most treatments have proven ineffective.[2]

The relationship between health care provider and patient can have a therapeutic effect[3,4,77] and should be nurtured. One example of where that relationship is supported is through a concept called "patient-centered care" (PCC). An Institute of Medicine report defines PCC as "... providing care that is respectful of and responsive to individual patient preferences, needs, and values and ensuring that patient values guide all clinical decisions."[5] Patient-centered care leads to improved health outcomes[50,78,79] and involves trust, communication, shared decision-making, emotional support through understanding and empathy, fostering healing patient-provider relationships, providing emotional support through understanding and empathy, helping to manage uncertainty, and promoting patient self-efficacy.[78,80] The clinician is a facilitator of health, with the patient being responsible "... for his or her health care with help from the provider."[78] Epstein and colleagues wrote, "patient-centered care ... at its core, encapsulates healing relationships grounded in strong communication and trust."[79] Although creating a healthy patient-provider relationship is not dependent upon PCC, the ideas behind it may provide valuable insight for the health care provider.

CONCLUSION

When a sick or wounded animal seeks care from another, it is in a vulnerable state and then, "Patients are expected to tell strangers (physicians) about their "defects," remove their clothes, and be examined and probed in uncomfortable and embarrassing postures. Patients reveal, with little control, the most personal and intimate parts of their bodies and minds."[55] The patient–health care provider relationship by its very nature is asymmetrical,[3,47,81,82] with the patient seeking help from a clinician who has the power to help and also to harm.

A healthy and respectful patient-provider relationship using effective communication and which may include patient-centered care is of paramount importance, since these factors impact health outcomes.[51,80,83–87] They may also ensure the provider represents an ally and not a predator.

Common sense would suggest that a health care provider who establishes a safe and secure treatment environment for the injured primate will have better outcomes than those who do not. Patient-provider relationships "... are at the heart of good health care."[5]

Human primate behavior includes the desire to both control and dominate but also to be friendly and cooperative.[88] A provider must be cognizant of the role the animal plays in one's life and that of the patient. This includes taking into consideration the possibilities of what may be occurring in the unconscious animal brain. When a person with pain enters the clinician's office, the provider's first thought should be—injured animals get eaten—and then treat accordingly.

Declaration of interest: The author reports no conflicts of interest. The author alone is responsible for the content and writing of the paper.

REFERENCES

[1] Institute of Medicine. Committee on Advancing Pain Research, Care, and Education. Relieving Pain in America: A Blueprint for Transforming Prevention, Care, Education, and Research. Washington, DC: National Academies Press; 2011.

[2] Turk DC, Wilson HD, Cahana A. Treatment of chronic non-cancer pain. *Lancet.* 2011;*377*:2226–2235.

[3] Schei E. Doctoring as leadership: the power to heal. *Perspect Biol Med.* 2006;*49*:393–406.

[4] Blasi ZD, Harkness E, Ernst E, Georgiou A, Kleijnen J. Influence of context effects on health outcomes: a systematic review. *Lancet.* 2001;*357*:757–762.

[5] Institute of Medicine. Committee on Quality of Health Care in America. Crossing the Quality Chasm: A New Health System for the 21st Century. Washington, DC: National Academies Press; 2001:6.

[6] Chimpanzee Sequencing and Analysis Consortium. Initial sequence of the chimpanzee genome and comparison with the human genome. *Nature.* 2005;*437*:69–87.

[7] Goldenberg JL, Pyszczynski T, Greenberg J, Solomon S, Kluck B, Cornwell R. I am not ananimal: mortality salience, disgust, and the denial of human creatureliness. *J Exp Psychol Gen.* 2001;*130*:427–435.

[8] Institute for Theoretical Biology, Berlin. What is evolutionary psychology? Available at: http://www.anth.ucsb.edu/projects/human/epfaq/ep.html. Accessed February 25, 2014.

[9] Caplan AL. The concepts of health, illness, and disease. In: Veatch RM, ed. Medical Ethics. 2nd ed. Boston, MA: Jones and Barltett Publishers; 1989;66–73.

[10] Rossano MJ. Evolutionary Psychology: The Science of Human Behavior and Evolution. Hoboken, NJ: Wiley; 2003;23–24.

[11] Morsella E, Bargh JA. Unconscious action tendencies: sources of 'un-integrated' action. In: Decety J, Cacioppo JT, eds. Handbook of Social Neuroscience. Oxford, UK: Oxford University Press; 2011;335–347.

[12] Saad G. The consuming instinct. What Darwinian consumption reveals about human nature. *Politics Life Sci.* 2013;*32*:58–72.

[13] North A. Hunting for India's deadliest man-eating tiger. BBC News February 28, 2014. Available at: http://www.bbc.com/news/world-asia-india-26334587. Accessed April 28, 2014.

[14] Bateson P. Assessment of pain in animals. *Anim Behav.* 1991;*42*:827–839.

[15] Williams AC. Facial expression of pain: an evolutionary account. *Behav Brain Sci.* 2002;*25*:439–488.

[16] Kappesser J, Williams AC. Pain and negative emotions in the face: judgements by health care professionals. *Pain.* 2002;*99*:197–206.

[17] Purdue University. Recognizing pain in animals. Available at: http://www.purdue.edu/research/vpr/rschadmin/rschoversight/animals/forms/pacuc_pain_recog.pdf. Accessed February 25, 2014.

[18] Seksel K. How pain affects animals. Available at: http://www.daff.gov.au/_data/assets/pdf_file/0008/299105/kersti-seksel.pdf. Accessed February 1, 2014.

[19] Plesker R, Mayer V. Nonhuman primates mask signs of pain. *Lab Primate Newslett.* 2008;*47*:1–3.

[20] Dorflinge L, Kerns RD, Auerbach SM. Providers' roles in enhancing patients' adherence to pain self management. *Transl Behav Med.* 2013;*3*:39–46.

[21] Sullivan MJ, Thorn B, Haythornthwaite JA, et al. Theoretical perspectives on the relation between catastrophizing and pain. *Clin J Pain.* 2001;*17*:52–64.

[22] Severeijns R, Vlaeyen JW, van den Hout MA, Picavet HSJ. Pain catastrophizing is associated with health indices in musculoskeletal pain: a cross-sectional study in the Dutch community. *Health Psychol.* 2004;*23*:49–57.

[23] Picavet HSJ, Vlaeyen JW, Schouten JS. Pain catastrophizing and kinesiophobia: predictors of chronic low back pain. *Am J Epidemiol.* 2002;*156*:1028–1034.

[24] Edwards RR, Cahalan C, Mensing G, Smith M, Haythornthwaite JA. Pain, catastrophizing, and depression in the rheumatic diseases. *Nat Rev Rheumatol.* 2011;*7*:216–224.

[25] Werner A, Malterud K. It is hard work behaving as a credible patient: encounters between women with chronic pain and their doctors. *Soc Sci Med.* 2003;*57*:1409–1419.

[26] Malterud K, Thesen J. When the helper humiliates the patient: a qualitative study about unintended intimidations. *Scand J Public Health.* 2008;*36*:92–98.

[27] Strunin L, Boden LI. The workers' compensation system: worker friend or foe. *Am J Ind Med.* 2004;*45*:338–345.

[28] LaDou J. Occupational medicine: the case for reform. *Am J Prev Med.* 2005;*28*:396–402.

[29] Lippel K. Workers describe the effect of the workers' compensation process on their health: a Quebec study. *Int J Law Psychiatry.* 2007;*30*:427–443.

[30] Boden LI. Reexamining workers' compensation: a human rights perspective. *Am J Ind Med.* 2012;*55*:483–486.

[31] Harris IA, Dantanarayana N, Naylor JM. Spine surgery outcomes in a workers' compensation cohort. *Aust N Z J Surg.* 2012;*82*:625–629.

[32] Gum JL, Glassman SD, Carreon LY. Is type of compensation a predictor of outcome after lumbar fusion? *Spine.* 2013;*38*:443–448.

[33] Atlas SJ, Chang Y, Kammann E, Keller RB, Deyo RA, Singer DE. Long-term disability and return to work among patients who have a herniated lumbar disc: the effect of disability compensation. *J Bone Joint Surg Am.* 2000;*82*:4–15.

[34] de Moraes VY1, Godin K, Tamaoki MJ, Faloppa F, Bhandari M, Belloti JC. Workers' compensation status: does it affect orthopaedic surgery outcomes? A meta-analysis. *PLoS ONE.* 2012;*7*:e50251.

[35] Harris I, Mulford J, Solomon M, van Gelder JM, Young J. Association between compensation status and outcome after surgery: a meta-analysis. *JAMA.* 2005;*293*:1644–1652.
[36] Ridd M, Shaw A, Lewis G, Salisbury C. The patient–doctor relationship: a synthesis of the qualitative literature on patients' perspectives. *Br J Gen Pract.* 2009;*59*:e116–e133.
[37] Jones DE, Carson KA, Bleich SN, Cooper LA. Patient trust in physicians and adoption of lifestyle behaviors to control high blood pressure. *Patient Educ Couns.* 2012;*89*:57–62.
[38] Dinç L, Gastmans C. Trust in nurse-patient relationships: a literature review. *Nurs Ethics.* 2013;*20*:501–516.
[39] Collen M. Opioid contracts and random drug testing for people with chronic pain—think twice. *J Law Med Ethics.* 2009;*37*:841–845.
[40] Payne R, Anderson E, Arnold R, et al. A rose by any other name: pain contracts/agreements. *Am J Bioeth.* 2010;*10*:5–12.
[41] Heit HA, Gourlay DL. Urine drug testing in pain medicine. *J Pain Symptom Manage.* 2004;*27*:260–267.
[42] American Academy of Pain Medicine. Use of Opioids for the Treatment of Chronic Pain, A Statement from the American Academy of Pain Medicine. Available at: http://www.painmed.org/files/use-of-opioids-for-the-treatment-of-chronic-pain.pdf. Accessed February 25, 2014.
[43] Chou R, Fanciullo GJ, Fine PG, et al. Clinical guidelines for the use of chronic opioid therapy in chronic noncancer pain. *J Pain.* 2009;*10*:113–130. Available at: http://download.journals.elsevierhealth.com/pdfs/journals/1526-5900/PIIS1526590008008316.pdf. Accessed April 22, 2014.
[44] American Society of Interventional Pain Physicians. Guidelines for Responsible Opioid Prescribing in Chronic Non-Cancer Pain: Part I—Evidence Assessment. Available at: http://painphysicianjournal.com/2012/july/2012;15;S1-S66.pdf. Accessed February 25, 2014.
[45] Starrels JL, Becker WC, Alford DP, Kapoor A, Williams AR, Turner BJ. Systematic review: treatment agreements and urine drug testing to reduce opioid misuse in patients with chronic pain. *Ann Intern Med.* 2010;*152*:712–720.
[46] Dupouy J, Mémier V, Catala H, Lavit M, Oustric S, Lapeyre-Mestre M. Does urine drug abuse screening help for managing patients? A systematic review. *Drug Alcohol Depend.* 2014;*136*:11–20.
[47] Werner A, Malterud K. "The pain isn't as disabling as it used to be": how can the patient experience empowerment instead of vulnerability in the consultation? *Scand J Public Health Suppl.* 2005;*66*:41–46.
[48] Dumit J. Illnesses you have to fight to get: facts as forces in uncertain, emergent illnesses. *Soc Sci Med.* 2006;*62*:577–590.
[49] Lillrank A. Back pain and the resolution of diagnostic uncertainty in illness narratives. *Soc Sci Med.* 2003;*57*:1045–1054.
[50] Coulter A, Ellins J. Patient-Focused Interventions: A Review of the Evidence. London: Health Foundation; 2006. Available at: http://www.researchgate.net/publication/230687402_The_quality_enhancing_interventions_project_patient-focused_interventions/file/79e415082b83388c9b.pdf. Accessed February 23, 2014.
[51] Hall AM, Ferreira PH, Maher CG, Latimer J, Ferreira ML. The influence of the therapist-patient relationship on treatment outcome in physical rehabilitation: a systematic review. *Phys Ther.* 2010;*90*:1099–1110.
[52] Lee YY, Lin JL. The effects of trust in physician on self-efficacy, adherence and diabetes outcomes. *Soc Sci Med.* 2009;*68*:1060–1068.
[53] Bonds DE, Camacho F, Bell RA, Duren-Winfield VT, Anderson RT, Goff DC. The association of patient trust and self-care among patients with diabetes mellitus. *BMC Fam Pract.* 2004;*16*:26.
[54] Brennan N, Barnes R, Calnan M, Corrigan O, Dieppe P, Entwistle V. Trust in the health-care provider–patient relationship: a systematic mapping review of the evidence base. *Int J Qual Health Care.* 2013;*25*:682–688.
[55] Lazare A, Levy RS. Apologizing for humiliations in medical practice. *Chest.* 2011;*139*:746–751.
[56] Reidenberg MM, Willis O. Prosecution of physicians for prescribing opioids to patients. *Clin Pharmacol Ther.* 2007;*81*:903–906.
[57] Goldenbaum DM1, Christopher M, Gallagher RM, et al. Physicians charged with opioid analgesic-prescribing offenses. *Pain Med.* 2008;*9*:737–747.
[58] Richard J, Reidenberg MM. The risk of disciplinary action by state medical boards against physicians prescribing opioids. *J Pain Symptom Manage.* 2005;*29*:206–212.
[59] Stone L. Explaining the unexplainable-crafting explanatory frameworks for medically unexplained symptoms. *Aust Fam Physician.* 2011;*40*:440–444.
[60] Dumit J. Illnesses you have to fight to get: facts as forces in uncertain, emergent illnesses. *Soc Sci Med.* 2006;*62*:577–590.
[61] Page LA, Wessely S. Medically unexplained symptoms: exacerbating factors in the doctor–patient encounter. *J R Soc Med.* 2003;*96*:223–227.
[62] Taylor S, Frueh BC, Asmundson GJ. Detection and management of malingering in people presenting for treatment of post-traumatic stress disorder: methods, obstacles, and recommendations. *J Anxiety Disord.* 2007;*21*:22–41.
[63] Newman CF, Strauss JL. When clients are untruthful: implications for the therapeutic alliance, case conceptualization, and intervention. *J Cogn Psychother.* 2003;*17*:241–252.
[64] Gerwehr S, Russell GW. Deception. In: Gerwehr S, Glenn RW, eds. The Art of Darkness: Deception and Urban Operations. Santa Monica, CA: RAND; 2000;15–16.
[65] Schwartz GT. Waste, fraud, and abuse in workers' compensation: the recent California experience. *Md L Rev.* 1993;*52*:983–1015.
[66] Kappesser J, Williams AC, Prkachin KM. Testing two accounts of pain underestimation. *Pain.* 2006;*124*:109–116.
[67] Collen M. Profit-driven drug testing. *J Pain Palliat Care Pharmacother.* 2012;*26*;13–17.
[68] Brezis M, Wiist WH. Vulnerability of health to market forces. *Med Care.* 2011;*49*:232–239.
[69] Cole TR, Carlin N. The suffering of physicians. *Lancet.* 2009;*374*:1414–1415.
[70] Spickard A Jr, Gabbe SG, Christensen JF. Mid-career burnout in generalist and specialist physicians. *JAMA.* 2002;*288*:1447–1450.
[71] Gundersen L. Physician burnout. *Ann Intern Med.* 2001;*135*:145–148.
[72] Beach MC, Roter D, Korthuis PT, et al. A multicenter study of physician mindfulness and health care quality. *Ann Fam Med.* 2013;*11*:421–428.
[73] Swetz KM, Harrington SE, Matsuyama RK, Shanafelt TD, Lyckholm LJ. Strategies for avoiding burnout in hospice and palliative medicine: peer advice for physicians on achieving longevity and fulfillment. *J Palliat Med.* 2009;*12*:773–777.
[74] Zwack J, Schweitzer J. If every fifth physician is affected by burnout, what about the other four? Resilience strategies of experienced physicians. *Acad Med.* 2013;*88*:382–389.
[75] Fishman S. How Law Enforcement Impacts Pain Management Practice, Improving Pain Management in California: Next Steps. A forum sponsored by the Northern California Pain Initiative, American Cancer Society, California Divisions Inc., Sacramento, California, December 5, 2008.
[76] Von Korff M, Kolodny A, Deyo RA, Chou R. Long-term opioid therapy reconsidered. *Ann Intern Med.* 2011;*55*:325–328.

[77] Larson EB, Yao X. Clinical empathy as emotional labor in the patient-physician relationship. *JAMA.* 2005;*293*:1100–1106.
[78] Robinson JH, Callister LC, Berry JA, Dearing KA. Patient-centered care and adherence: definitions and applications to improve outcomes. *J Am Acad Nurse Pract.* 2008;*20*:600–607.
[79] Epstein RM, Fiscella K, Lesser CS, Stange KC. Why the nation needs a policy push on patient-centered health care. *Health Aff.* 2010;*29*:1489–1495.
[80] Epstein RM, Street RL Jr. Patient-Centered Communication in Cancer Care: Promoting Healing and Reducing Suffering. Bethesda, MD: National Cancer Institute; 2007. NIH Publication No. 07-6225.
[81] Mead N, Bower P. Patient-centeredness: a conceptual framework and review of the empirical literature. *Soc Sci Med.* 2000;*51*:1087–1110.
[82] Lings P, Evans P, Seamark D, et al. The doctor-patient relationship in US primary care. *J R Soc Med.* 2003;*96*:180–184.
[83] Street RL Jr, Makoul G, Arora NK, Epstein RM. How does communication heal? Pathways linking clinician–patient communication to health outcomes. *Patient Educ Couns.* 2009;*74*:295–301.
[84] Stewart MA. Effective physician-patient communication and health outcomes: a review. *CMAJ.* 1995;*152*:1423–1433.
[85] Stewart M, Brown JB, Donner A, et al. The impact of patient-centered care on outcomes. *J Fam Pract.* 2000;*49*:796–804.
[86] Jayadevappa R, Chhatre S. Patient centered care—a conceptual model and review of the state of the art. *Open Health Serv Policy J.* 2011;*4*:15–25.
[87] Zolnierek KBH, DiMatteo MR. Physician communication and patient adherence to treatment: a meta-analysis. *Med Care.* 2009;*47*:826–834.
[88] Kiesler DJ, Auerbach SM. Integrating measurement of control and affiliation in studies of physician–patient interaction: the interpersonal circumplex. *Soc Sci Med.* 2003;*57*:707–722.

RECEIVED: 1 March 2014
REVISED: 13 March 2014
ACCEPTED: 21 March 2014