Realizing Engel’s biopsychosocial vision: Resilience, compassion and quality of care
“Rendering patient data scientific”

- Broadening the ‘clinical gaze’ to include (inter)subjective, psychological and social data
- Providing a guide to attentive observation of the patient
- Establishing that mind-body interactions matter
- Exposing the fallacies of the body-as-machine, the ‘detached observer’ and mind-body dualism
- Demonstrating scientific and clinical importance of subjective reporting, relationship and dialogue
- Proposing hierarchical systems theory as a fundamental model
- Considering the physician him/herself as an object of study
FIGURE 3
Event 1: Coronary Artery Occlusion

From: Engel GL. The clinical application of the BPS model. Am J Psych 1980
The object of science is to render as reliable as possible whatever claims to knowledge we make ... ;[and is achieved] by reasoned efforts that ultimately depend on evidence that can be consensually validated.

C. E. Odegaard (1986)
We include as biology not only the data obtained by observing other individuals and things but also those that we reach through [our own inner experiences of living].

The biologist is himself ... of the same material of which are composed the living things that he studies.

H. S. Jennings (1933. pps. 14.22)
As a profession and as an institution, medicine owes its origin to three distinctively human attributes.

First, we humans are aware of death and its inevitability and realize that feeling and/or looking bad ("sick") may be its portent.

Second, we suffer when our interpersonal bonds are sundered and feel solace when they are reestablished.

Third, we are capable of examining our own inner life and experience and of communicating such to others via a spoken and written language.

Critical ...for the work of the physician is the distinctively human capability of using words to communicate both what is being observed in the outer world and what is being experienced within the inner world ....

Surely, as scientists dedicated to organizing our experiences and formulating observation, we should be careful to define science in such a way as to be able to include verbal reporting as legitimate data.
...feeling "sick" and "falling ill" more often begin as private experiences not necessarily knowable to anyone else.

Hence, the truly scientific physician not only must access that private world, but also must be reasonably assured that the information (data) accessed can be relied on.

Critical is recognition that the patient is both an *initiator and a collaborator* in the process, not merely an object of study. The physician, in turn, is a participant observer who, in the process of attending to the patient's reporting of inner world data, *taps into his/her own personal inner viewing system* for comparison and clarification.

The medium is dialogue, which at various levels includes *communing* (sharing experiences) as well as *communicating* (exchanging information).

Hence, observation (outer viewing), introspection (innerviewing), and dialogue (interviewing) are the basic methodologic triad for clinical study and for rendering patient data scientific.

To appreciate relationship and dialogue as requirements for scientific study in the clinical setting highlights the natural confluence of the human and the scientific in the clinical encounter itself.

It is not just that science is a human activity, it is also that the interpersonal engagement required in the clinical realm rests on complementary and basic human needs, especially the need to know and understand and the need to feel known and understood. The first, to know and understand, ... is a dimension of being scientific; the second, to feel known and understood, is a dimension of caring and being cared for. Both may be seen as derivative and emergent from biological processes critical for survival...

The need to know and understand originates in the regulatory and self-organizing capabilities of all living organisms to process information from an everchanging environment in order to assure growth, ... self-regulation, and survival. In turn, the need to feel known and understood originates ... in the life-long need to feel socially connected with other humans.

The need to know and to understand ultimately achieves its most advanced development in the disciplined curiosity that characterizes scientific thinking. The need to feel known and understood manifests itself in the continuity of human relationships and in the social complementarity between perceived helplessness and the urge to help. Herein then converge the scientific and the caring ... roles of the physician.

Engel GL. How much longer... 1984, reprinted in Family Systems Medicine, Fall, 1992
The scientific imperative

- Biochemical/structural alteration doesn’t translate into illness – illness is multi-level
- Biological derangement does not shed light on the meaning and impact of the illness, nor on adopting the sick role
- Psychosocial factors and patient-clinician relationships are key determinants of health and response to treatment
- Patients are profoundly influenced by the ways they are studied and cared for, and physician-scientists are similarly influenced by the patients they study and care for
- The key to the science of patient care is knowing patients through dialogue
Where Engel left off...

- We now take mind-body interactions for granted, and know more about self-regulation and awareness.
- Movement from hierarchically-organized systems to complexity science – self-organizing, circular causality, muddling through.
- The ecology of the social milieu.
- The role of emotional resonance: warmth, kindness, generosity, caring, compassion, love.
- *How* to calibrate the physician, educate the emotions, recognize bias, cultivate mindful practice, inform the intuitions.
- Ethics and autonomy-in-relation in asymmetrical relationships.
- Clinician burnout, resilience and well-being.
Attitudes: Habits of mind

Attentive observation
Of the expected and the unexpected
Self-regulation of attentional process

Beginner’s mind
Holding contradictory truths simultaneously
Seeing information as novel
Seeing “facts” as conditional

Critical curiosity
Cognitive flexibility
Openness
Self-questioning

Presence
Mental stability
Emotional engagement
Self-regulation of reactivity
Slowing down when you should
Reflective questions
Listening
Participant observation and dialogue
Cultivating the observing self
Contemplative practice – formal and informal
Written narratives and appreciative inquiry

Ways of knowing
Reflective questions: cultivating the observing self

“What ideas and feelings are affecting my ability to observe?”

“What is new or unique about this situation?”

“What am I assuming that might not be true?”

“How are prior experiences and expectations affecting how I view the situation?”

“Are there things that I present as fact that are not quite so clear?”

“What would a trusted peer say about the way I managed this situation?”

“How would I know when the visit should be done?”

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Focus on your partner’s experience

- Set your intention to:
  - Spend most of the time listening
  - Be curious about your partner’s experience
  - Ask questions that aim to deepen understanding.

- Don’t:
  - Interrupt or tell your own story... even if it may seem uncomfortable to wait until your partner is finished

..and be aware of your own responses

- Set your intention to:
  - Note what is attracting your attention about the story
  - Observe – but not act on – your urge to comment, interpret, give advice or talk about your own experiences

- Don’t:
  - Make interpretations
  - Give advice
  - Talk about yourself
Appreciative inquiry:
positive psychology

IT'S ALWAYS 'GOOD DOG'—NEVER 'GREAT DOG.'
Association of an Educational Program in Mindful Communication With Burnout, Empathy, and Attitudes Among Primary Care Physicians

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Primary care physicians report alarming levels of professional and personal distress. Up to 60% of practicing physicians report symptoms of burnout, defined as emotional exhaustion, depersonalization (treating patients as objects), and low sense of accomplishment. Physician burnout has been linked to poorer quality of care, including patient dissatisfaction, increased medical errors, and lawsuits and decreased ability to express empathy. Substance abuse, automobile accidents, stress-related health problems, and marital and family discord are among the personal consequences reported. Burnout can occur early in the medical educational process. Nearly half of all third-year medical students report burnout and there are strong associations between medical student burnout and suicidal ideation.

Context  Primary care physicians report high levels of distress, which is linked to burnout, attrition, and poorer quality of care. Programs to reduce burnout before it results in impairment are rare; data on these programs are scarce.

Objectives  To determine whether an intensive educational program in mindfulness, communication, and self-awareness is associated with improvement in primary care physicians' well-being, psychological distress, burnout, and capacity for relating to patients.

Design, Setting, and Participants  Before-and-after study of 70 primary care physicians in Rochester, New York, in a continuing medical education (CME) course in 2007-2008. The course included mindfulness meditation, self-awareness exercises, narratives about meaningful clinical experiences, appreciative interviews, didactic material, and discussion. An 8-week intensive phase (2.5 h/wk, 7-hour retreat) was followed by a 10-month maintenance phase (2.5 h/mo).

Main Outcome Measures  Mindfulness (2 subscales), burnout (3 subscales), empathy (3 subscales), psychosocial orientation, personality (5 factors), and mood (6 subscales) measured at baseline and at 2, 12, and 15 months.

Results  Over the course of the program and follow-up, participants demonstrated improvements in mindfulness (raw score, 45.2 to 54.1; raw score change (Δ), 8.9; 95% confidence interval (CI), 7.0 to 10.8; burnout (emotional exhaustion, 26.8 to 20.0; Δ = −6.8; 95% CI, −4.8 to −8.8; depersonalization, 8.4 to 5.9; Δ = −2.5; 95% CI, −1.4 to −3.6; and personal accomplishment, 40.2 to 42.6; Δ = 2.4; 95% CI, 1.2 to 3.6); empathy (116.6 to 121.2; Δ = 4.6; 95% CI, 2.2 to 7.0); physician belief scale (76.7 to 77.6; Δ = −1.0; 95% CI, −1.8 to −0.6); total mood disturbance (33.2 to 16.1; Δ = −17.1; 95% CI, −11.1 to −23.2), and personality (conscientiousness, 6.5 to 6.8; Δ = 0.3; 95% CI, 0.1 to 5 and emotional stability, 6.1 to 6.6; Δ = 0.5; 95% CI, 0.3 to 0.7). Improvements in mindfulness were correlated with improvements in total mood disturbance (r = −0.39; P < .001), perspective taking subscale of physician empathy (r = −0.31; P < .001), burnout (emotional exhaustion and personal accomplishment subscales, r = −0.32 and 0.33, respectively; P < .001), and personality factors (conscientiousness and emotional stability, r = 0.29 and 0.25, respectively; P < .001).

Conclusions  Participation in a mindful communication program was associated with short-term and sustained improvements in well-being and attitudes associated with patient-centered care. Because before-and-after designs limit inference about intervention effects, these findings warrant randomized trials involving a variety of practicing physicians.


For editorial comment see p 1338.

CME available online at www.jamaarchivescme.com and questions on p 1374.

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The consequences of burnout among practicing physicians include not only poorer quality of life and lower quality of care but also a decline in the sta...
Themes

Perceptual biases

Surprises

Meaningful experiences

Responding to errors

Being with suffering

Burnout

Attraction to patients

Dismissing patients

Self-care and resilience

End-of-life care

Conflict

Teamwork
Effects of the intervention mediated by changes in mindfulness

- **Burnout:**
  - Emotional Exhaustion: $r = -0.32, p < 0.001$
  - Personal Accomplishment: $r = 0.33, p < 0.001$

- **Mood Disturbance:**
  - Total Mood Disturbance: $r = -0.39, p < 0.001$
  - Tension: $r = -0.31, p < 0.001$
  - Depression: $r = -0.34, p < 0.001$
  - Fatigue: $r = -0.32, p < 0.001$

- **Personality:**
  - Conscientiousness: $r = 0.29, p < 0.001$
  - Emotional Stability: $r = 0.25, p < 0.001$

- **Empathy**
  - Perspective taking: $r = 0.31, p < 0.001$

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Building community

“Simply gathering [physicians]... together into a meeting place where they were invited to reflect more deeply.... Just that is tremendous, and that it happened over a year’s time, I think, was very significant.... It takes time for those stories to unfold. That seemed to me, a real engine for both developing community and fostering introspection.”
"I will spend extra time with my patients if they need it, but I felt in some ways that it was kind of sucking me dry...

It’s not that I don’t empathize with them anymore, but [now] I feel OK just to listen and be present with them... and I think that in some ways that helps them more…"
Becoming more honest

“One of the things that comes out of this is that when you establish a practice of thinking more honestly, thinking more clearly, speaking more honestly, that definitely leaks out into your work every day.

It certainly opens you up to being more ready with patients, colleagues, and family, to have ... a more intimate, more honest interaction with people.... That certainly was the case for me that came out in the rest of my work.

It certainly made it much more immediate and easy to do in [my] practice.”
Well being, resilience, quality of care

“Originally I was doing it for the stress reduction, and then as time went on.... I’m learning how to communicate ... with myself as much as anybody else.... I sort of gave myself permission to start thinking.”
Eight leaps to practicing scientifically, with intention and awareness (mindful practice)

“a no holds barred self-suspending leap into the other’s sea – basically without preparation”

Gayatri Chakravorty Spivak, 2004
What parts of your self are you engaging in the care of this patient -- right here, right now?
Patient–physician interactions significantly contribute to placebo effects and clinical outcomes. While the neural correlates of placebo responses have been studied in patients, the neurobiology of the clinician during treatment is unknown. This study investigated physicians’ brain activations during patient–physician interaction while the patient was experiencing pain, including a ‘treatment’, ‘no-treatment’ and ‘control’ condition. Here, we demonstrate that physicians activated brain regions previously implicated in expectancy for pain–relief and increased attention during treatment of patients, including the right ventrolateral and dorsolateral prefrontal cortices. The physician’s ability to take the patients’ perspective correlated with increased brain activations in the rostral anterior cingulate cortex, a region that has been associated with processing of reward and subjective value. We suggest that physician treatment involves neural representations of treatment expectation, reward processing and empathy, paired with increased activation in attention-related structures. Our findings further the understanding of the neural representations associated with reciprocal interactions between clinicians and patients; a hallmark for successful treatment outcomes.

_Molecular Psychiatry_ advance online publication, 29 January 2013; doi:10.1038/mp.2012.195

**Keywords:** patient-provider; doctor–patient; placebo; pain; analgesia
The ability of an individual to respond to stress in a healthy, adaptive way such that personal goals are achieved at minimal psychological and physical cost; resilient individuals not only “bounce back” rapidly after challenges but also grow stronger in the process.

Epstein & Krasner 2013
Why are some people more resilient than others under extreme stress?

- **Neurobiology / neuroendocrine**
  - HPA axis, DHEA, testosterone, neuropeptide Y, serotonin, dopamine, BDNF (neurotropic factor)
  - Stress inoculation – the ‘right’ dose of stress
  - Genetic / epigenetic processes

- **Developmental processes**
  - Attachment
  - Mentalization and affect regulation
  - Learned self-efficacy (vs learned helplessness)
  - Self-compassion and self-regard
**Absence of PTSD and depression after extreme stress:**

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<thead>
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<th>Cognitive reappraisal</th>
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<td>Humor</td>
<td>Moral compass</td>
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From empathy to compassion

Why aren’t doctors more empathic?
Does empathy deteriorate during training?
Does empathy lead to burnout?
Does compassion attenuate burnout?
Empathy: two faces

... as “exquisite” → leading to shared mind, ‘being-with’

“Highly present, sensitively attuned, well-boundaried, heartfelt empathic engagement”

*Kearney et al, JAMA 2009*

... as “emotional labor” → leading to distress and burnout

“...willingness to subject one’s mind to the patient’s world...”

*Larson et al, JAMA 2006*
Physicians down-regulate their pain empathy response: An event-related brain potential study

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ABSTRACT

Watching or imagining other people experiencing pain activates the central nervous system’s pain matrix in the observer. Without emotion regulation skills, repeated exposure to the suffering of others in healthcare professionals may be associated with the adverse consequences of personal distress, burnout and compassion fatigue, which are detrimental to their wellbeing. Here, we recorded event-related potentials (ERP) from physicians and matched controls as they were presented with visual stimuli depicting body parts pricked by a needle (pain) or touched by a Q-tip (no-pain). The results showed early N110 differentiation between pain and no-pain over the frontal area as well as late P3 over the centro-parietal regions were observed in the control participants. In contrast, no such early and late ERP responses were detected in the physicians. Our results indicate that emotion regulation in physicians has very early effects, inhibiting the bottom-up processing of the perception of pain in others. It is suggested that physicians’ down-regulation of the pain response dampens their negative arousal in response to the pain of others and thus may have many beneficial consequences including freeing up cognitive resources necessary for being of assistance.

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Whole mind to shared mind
“no holds barred”
“learning from below”
community
Non-local mind

Explicit
Slow
Very context sensitive
Individual differences
Controlled and effortful
Late development

Context sensitive
Inferential
Automatic

Implicit
Fast
Domain specific
Dedicated channels
Early development

Stages of social information processing

Regulation
Emotion regulation
Sympathy

Cognition
Empathy

Perception
Emotional contagion

“Emotion”

“Joint action”
Motor coordination
Action imitation

“Theory of mind”
Deception
Self-reflection
Stance alignment

Joint decision
Turn-taking

Mentalizing
Attribution of agency

Joint attention

Knowledge tracking
Detection of biological motion and faces

Gaze following

Pheromones
Social touch
Affiliation

Mimicry
Motor contagion

Chatel-Goldman et al 2013
Eight leaps to practicing mindfully = scientifically, with intention and awareness

- From fragmented self to whole self
- From othering to engagement
- From objectivity to resonance
- From detached concern to “tenderness and steadiness”
- From self-protection to self-suspension
- From focus on well-being to focus on resilience
- From empathy to compassion
- From whole mind to shared mind

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Success

what people think it looks like

what it really looks like
Commitment

- Institutional
- Educational
- Personal
- Research