# *Can patients be satisfied to death? What was Joshua J. Fenton thinking?*

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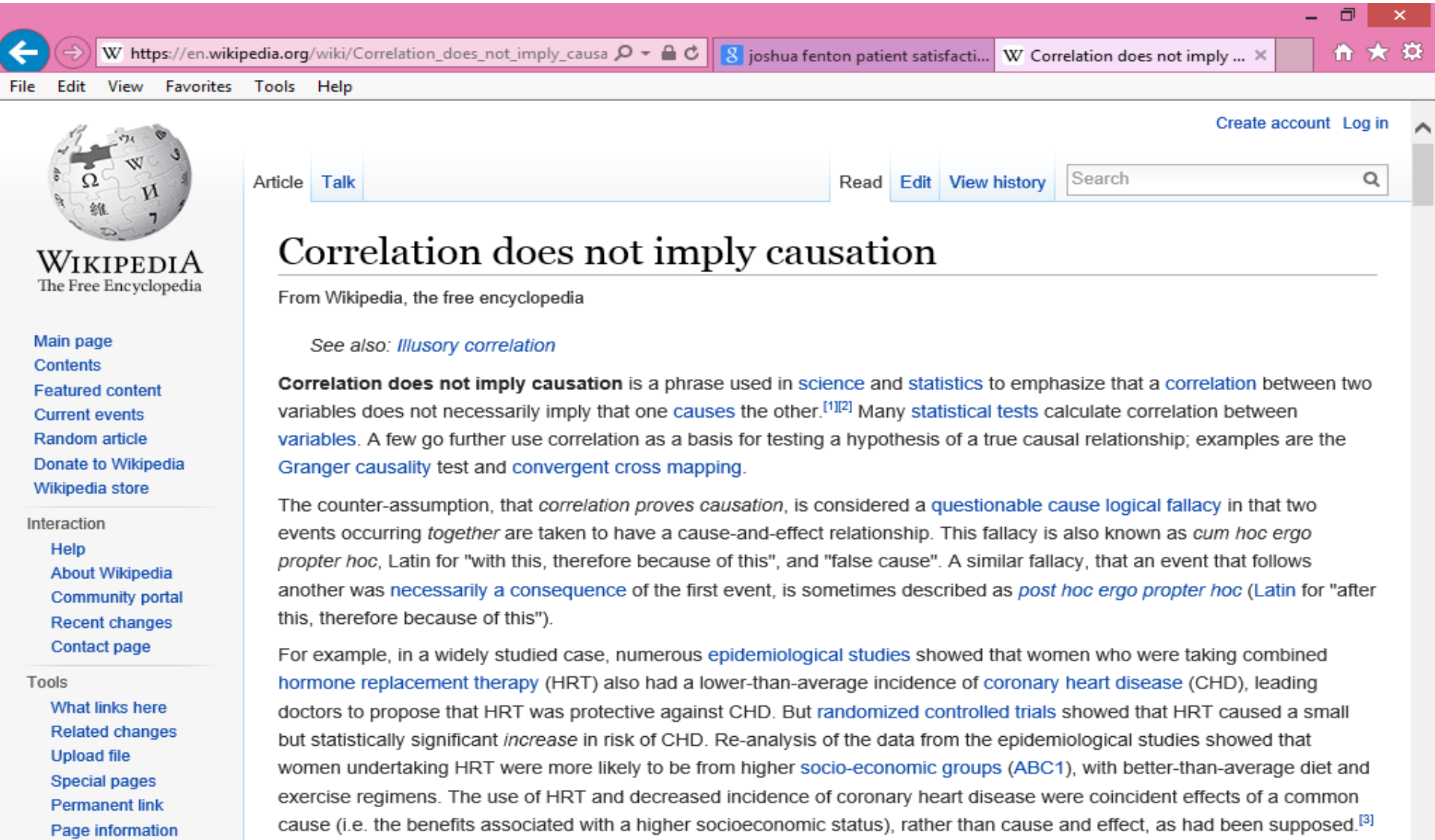
UCLA Center for Maximizing Outcomes and Research on Effectiveness (C-MORE)

http://cmore.med.ucla.edu/seminar/

# One should always be alert to the possibility of spurious associations, especially when results are implausible.



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Correlation does not imply ...

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## Correlation does not imply causation

From Wikipedia, the free encyclopedia

*See also: Illusory correlation*

**Correlation does not imply causation** is a phrase used in science and statistics to emphasize that a correlation between two variables does not necessarily imply that one causes the other.[1][2] Many statistical tests calculate correlation between variables. A few go further use correlation as a basis for testing a hypothesis of a true causal relationship; examples are the Granger causality test and convergent cross mapping.

The counter-assumption, that *correlation proves causation*, is considered a questionable cause logical fallacy in that two events occurring *together* are taken to have a cause-and-effect relationship. This fallacy is also known as *cum hoc ergo propter hoc*, Latin for "with this, therefore because of this", and "false cause". A similar fallacy, that an event that follows another was necessarily a consequence of the first event, is sometimes described as *post hoc ergo propter hoc* (Latin for "after this, therefore because of this").

For example, in a widely studied case, numerous epidemiological studies showed that women who were taking combined hormone replacement therapy (HRT) also had a lower-than-average incidence of coronary heart disease (CHD), leading doctors to propose that HRT was protective against CHD. But randomized controlled trials showed that HRT caused a small but statistically significant *increase* in risk of CHD. Re-analysis of the data from the epidemiological studies showed that women undertaking HRT were more likely to be from higher socio-economic groups (ABC1), with better-than-average diet and exercise regimens. The use of HRT and decreased incidence of coronary heart disease were coincident effects of a common cause (i.e. the benefits associated with a higher socioeconomic status), rather than cause and effect, as had been supposed.[3]

# Is Receiving Better Technical Quality of Care Bad for Health?

Change in SF-12 PCS regressed on process of care aggregate


Hypothesized positive effect, but regression coefficient was NOT SIGNIFICANT

unstandardized beta = -1.41, p =.188

*Kahn et al. (2007), Health Services Research, Article of Year*

# Use of and Importance of Patient Experience Surveys has Grown…

CAHPS Hospital Survey (HCAHPS) data accounted for 30% of hospitals' Total Performance Score in Value-Based Purchasing Program in FY2014

**…so has misinformation about them**

# Some Suggest that Consumers Lack Expertise Needed to Evaluate Care Quality

- Patients are the best source of information on communication, office staff courtesy and respect, access to care, and other issues covered by CAHPS surveys

- CAHPS complements technical quality measures

# Some suggest patients can be "satisfied" to death.

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NEWS | February 13, 2012

### Patient satisfaction linked to higher health-care expenses and mortality

Doctors may agree to patient requests for services to increase patient satisfaction

**Editor's note:** Read this press release [en español]

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**(SACRAMENTO, Calif.) —** A team of UC Davis researchers found that people who are the most satisfied with their doctors are more likely to be hospitalized, accumulate more health-care and drug expenditures, and have higher death rates than patients who are less satisfied with their care.

Published today in the *Archives of Internal Medicine*, the national study is believed to be the first to suggest that an overemphasis on patient satisfaction could have unanticipated adverse effects.

"Patient satisfaction is a widely emphasized indicator of health-care quality, but our study calls into question whether increased patient satisfaction, as currently measured and used, is a wise goal in and of itself," said Joshua Fenton, assistant professor in the UC Davis Department of Family and Community Medicine and lead author of the study.

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- Darrell Steinberg joins UC Davis Behavioral Health Center of Excellence
- UC Davis Children's Hospital listed in the nation's Best Children's

# Fenton et al. (2012)
# JAMA Internal Medicine

- Medical Expenditure Panel Survey
  - Nationally representative survey of U.S. civilian non-institutionalized population. Panel followed over 2 calendar years with 5 rounds of interviews.
- CAHPS survey
  - 4 communication scale items
  - 0-10 global rating of health care
- Results interpreted as indicating that acceding to patient demands results in expensive and dangerous treatment.




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Only 251 U.S. hospitals receive 5-star rating on patient satisfaction

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How a hospital's chief experience officer tackles barriers to better quality

# Bioethicists say patient-satisfaction surveys could lead to bad medicine

By Sabriya Rice | June 4, 2015

A new report by the Hastings Center suggests patient-satisfaction surveys that Medicare uses to assess healthcare providers are seriously flawed. The authors question whether the government should be relying on them in quality initiatives such as value-based purchasing.

"Good ratings depend more on manipulable patient perceptions than on good medicine," states the report, entitled Patient-Satisfaction Survey on a Scale of 0 to 10. "In fact, the pressure to get good ratings can lead to bad medicine.

The healthcare industry remains under pressure to boost transparency and

# Hastings Center Report

- Dr. Stuart Younger, Professor of Bioethics and Psychiatry at the Case Western Reserve University.

  - Pressure to get good ratings can lead to bad medicine.

# Five Concerns with Fenton et al.

1. Associations may be due to unmeasured variables (e.g., severity of illness).

   - Sicker patients may need more information
   - Clinicians may spend more time with them.

2. Estimated effect was implausibly large, suggesting good patient experience is more dangerous than having major chronic conditions.

3. Only amenable deaths can be prevented by health care.

   - Prognosis for those with end-stage pancreatic cancer is not modifiable by the type of care they receive.
   - Only 21% of the 1,287 deaths in the study were amenable to health care.

# Five Concerns with Fenton et al.

4. Patient experiences with care vary over time.

   - Used CAHPS data at MEPS round 2 to predict mortality 3 months to 6 years later.
   - > half of deaths occurred more than 2 years after this.
   - Among those with best (quartile 4) experiences at baseline, > half had worse experiences 1 year later

5. Only looked at 5-item CAHPS aggregate

# Reanalysis of Fenton et al. by Xu et al. (2014)

- Same data used by Fenton et al.
  - 2000-2005 Medical Expenditure Panel Survey data
  - National Health Interview Survey
  - National Death Index
- Same statistical analysis
  - Cox proportional hazards models with mortality as the dependent variable and patient experience measures as independent variables
- But, unlike Fenton et al.
  - Separated non-amenable and amenable deaths
  - Considered timing of patient experience and death
  - Looked at individual items to better understand the patient experience with mortality association

# Patient Experiences and Mortality: *Non-Amenable vs. Amenable Deaths*

| Patient Care Experience | Non-Amenable Mortality | | Amenable Mortality | |
|---|---|---|---|---|
| | Hazard Ratio | p-value | Hazard Ratio | p-value |
| Quartile 1 (reference) | (1.00) | | (1.00) | |
| Quartile 2 | 1.07 | 0.56 | 1.27 | 0.25 |
| Quartile 3 | 0.96 | 0.70 | 1.28 | 0.25 |
| Quartile 4 (most positive) | 1.26 | 0.03 | 1.23 | 0.32 |
| | | | | |
| Overall p-value for patient care experience quartiles | | 0.03 | | 0.59 |

Adjusted for age, gender, race/ethnicity, education, income, metropolitan statistical area, census region, access to usual source of care, insurance coverage, smoking status, number of chronic conditions, self-rated overall health, SF-12 PCS/MCS, number of drug prescriptions, medical care expenditures, number of office visits, any ER visits, any inpatient admissions, and survey panel.

# Patient Experiences and Mortality: *Consistency of Experiences Over Time*

| Patient Care Experience (baseline : 1 year later) | All-Cause Mortality | |
|---|---|---|
| | Hazard Ratio | p-value |
| Quartile 1 : Quartile 1 (reference) | (1.00) | |
| Quartile 2 : Quartile 2 | 0.89 | 0.42 |
| Quartile 3 : Quartile 3 | 1.13 | 0.57 |
| Quartile 4 : Quartile 4 | 1.09 | 0.54 |
| Different quartiles at baseline and 1 year later | 0.88 | 0.35 |

# Patient Experiences and Mortality: *Significant for Only One Measure*

| Patient Care Experience Items | All-Cause Mortality | |
|---|---|---|
| | Hazard Ratio | p-value |
| Rating of healthcare 9-10 vs 0-8 | 1.10 | 0.15 |
| Listen carefully to you † | 0.98 | 0.76 |
| Show respect for what you had to say † | 1.05 | 0.44 |
| Explain things in a way that is easy to understand † | 1.09 | 0.17 |
| Spend enough time with you † | 1.17 | 0.03 |

† "Always" versus "Never"/"Sometimes"/"Usually"

# Conclusions

- Rather than patient demands producing expensive and dangerous treatment, the data are consistent with other studies that indicate more intensive care at the end-of-of life in the U.S. (Elliott et al., 2013, JAGS).

- Patient experience surveys assess important dimensions of care for which patients are the best or only source of information

- Improving patient experience does not lead to inappropriate and inefficient care or result in trade-offs with high-quality clinical care

# Relevant Readings

Price, R. A. Elliott, M.N., et al. (2015). Should health care providers be accountable for patients' care experiences? JGIM, 30, 253-256.

Price, R. A., Elliott, M. N., et al. (2014). Examining the role of patient experience surveys in measuring health care quality. Medical Care Research and Review, 71, 522-554.

Xu, X., Buta, E. et al. (2014 epub). Methodological considerations when studying the association between patient-reported care experiences and mortality. Health Services Res.

# Thank you.


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**Powerpoint file at:**
http://gim.med.ucla.edu/FacultyPages/Hays/