#### What is already known on this topic

About one in four people do not adhere well to prescribed drug therapy

Poor adherence is considered a critical barrier to treatment success and remains an important challenge to healthcare professionals

## What this study adds

Good adherence to drug therapy is associated with positive health outcomes

The observed association between adherence to placebo and mortality supports the premise of a healthy adherer effect, where adherence to drug therapy may be a surrogate marker for overall healthy behaviour

between good adherence to placebo and lower mortality also supports the existence of the healthy adherer effect, whereby adherence to drug therapy may be a surrogate marker for overall healthy behaviour.

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 Miller NH, Hill M, Kottke T, Ockene IS. The multilevel compliance challenge: recommendations for a call to action. A statement for healthcare professionals. *Circulation* 1997;95:1085-90.

- 2 Morris LS, Schulz RM. Patient compliance—an overview. J Clin Pharm Ther 1992;17:283-95.
- 3 Donovan JL. Patient decision making. The missing ingredient in compliance research. Int J Technol Assess Health Care 1995;11:443-55.
- 4 Ellis S, Shumaker S, Sieber W, Rand C. Adherence to pharmacological interventions. Current trends and future directions. The Pharmacological Intervention Working Group. *Control Clin Trials* 2000;21:S218-25.
- 5 Osterberg L, Blaschke T. Adherence to medication. N Engl J Med 2005;353:487-97.
- 6 DiMatteo MR, Giordani PJ, Lepper HS, Croghan TW. Patient adherence and medical treatment outcomes: a meta-analysis. *Med Care* 2002;40: 794-811.
- Czajkowski SM, Chesney MA, Smith AW. Adherence and the placebo effect. In: Shumaker SA, Schron EB, Ockene JK, eds. *The handbook of health behavior change*. New York: Springer, 1990:515-34.
   McDermott MM, Schmitt B, Wallner E. Impact of medication nonadher-
- 8 McDermott MM, Schmitt B, Wallner E. Impact of medication nonadherence on coronary heart disease outcomes. A critical review. Arch Intern Med 1997;157:1921-9.
- Hays RD, Kravitz RL, Mazel RM, Sherbourne CD, DiMatteo MR, Rogers WH, et al. The impact of patient adherence on health outcomes for patients with chronic disease in the medical outcomes study. *J Behav Med* 1994;17:347-60.
- DerSimonian R, Laird N. Meta-analysis in clinical trials. *Control Clin Trials* 1986;7:177-88.
   Echt DS, Liebson PR, Mitchell LB, Peters RW, Obias-Manno D, Barker
- 11 Echt DS, Liebson PR, Mitchell LB, Peters RW, Obias-Manno D, Barker AH, et al. Mortality and morbidity in patients receiving encainide, flecainide, or placebo. The cardiac arrhythmia suppression trial. N Engl J Med 1991;324:781-8.
- 12 Moher D, Schulz KF, Altman D. The CONSORT statement: revised recommendations for improving the quality of reports of parallel-group randomized trials. *JAMA* 2001;285:1987-91.
- 13 Boudes P. Drug compliance in therapeutic trials: a review. Control Clin Trials 1998;19:257-68.
- 14 Haynes RB, Dantes R. Patient compliance and the conduct and interpretation of therapeutic trials. *Control Clin Trials* 1987;8:12-9.
- 15 Efron B, Feldman D. Compliance as an explanatory variable in clinical trials. *J Am Stat Assoc* 1991;86:9-26.
- Weintraub M. Intelligent noncompliance with special emphasis on the elderly. *Contemp Pharm Pract* 1981;4:8-11.
   Conrad P. The meaning of medications: another look at compliance. *Soc* could loop concerning of medications: another look at compliance. *Soc*
- Sci Med 1985;20:29-37.
  18 Ciechanowski PS, Katon WJ, Russo JE. Depression and diabetes: impact
- of depressive symptoms on adherence, function, and costs. Arch Intern Med 2000;160:3278-85.

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## Commentary: The healthy adherer and the placebo effect

Betty Chewning

Sonderegger Research Institute, School of Pharmacy, University of Wisconsin-Madison, Madison, WI 53705-2222, USA Betty Chewning *director* 

bachewning@ pharmacy.wisc.edu Simpson and colleagues report their systematic review's finding that good adherence to placebos as well as to drug treatments is associated with reduced mortality.<sup>1</sup> They hypothesise that this intriguing finding supports the concept of the "healthy adherer" effect, whereby adherence to drug treatment may be a surrogate marker for overall healthy behaviour.

The potential benefits of any new treatment regimen arise in the context of patients' powerful lifestyle habits and resources, as well as their health status and their histories of health behaviour. In addition, a patient brings to each brief meeting with a doctor their habits for drug adherence. It is quite possible, therefore, that people who adhere to healthy lifestyles also tend to take care of themselves by greater adherence to prescribed treatments.

Evidence on the placebo effect yields a complementary hypothesis, for the association between adherence to placebo and reduced mortality. Controlled trials have measured the positive effects of placebos on a range of physical outcomes for over half a century.<sup>2</sup> Barrett and colleagues argue that healing lies not in the treatment but rather in patients' emotional and cognitive processes of "feeling cared for" and "caring for oneself."<sup>3</sup> The meanings people attach to the "pill" and "behaviour of the healer" are the key to the mind-body connection leading to health outcomes.

The association with lower mortality in the paper by Simpson and colleagues could arise from positive interaction between these healthy adherer and placebo related effects. If true, what would these hypotheses imply for doctors' decisions and the encounters they have with patients? Traditionally, the healer's greatest tool has been to listen and build on the patient's story and its meaning to determine the most appropriate healing ceremonies, rituals, and therapies. Coupled with other patient centred approaches, practice based on these hypotheses could yield extra value in treatment regimens that patients agree to, believe in, and will sustain over time. Patients' adherence to treatments would show that they were caring for themselves while their clinical encounters would reinforce that their doctors were caring for them.

Motivational interviewing may also be useful.<sup>4</sup> For example, asking a patient, "What would make it worth while for you to take this medication in the next month?" may elicit the patient's most serious fears, valued outcomes, or social pressures. These can be used to shape prescribing decisions, to frame an open and truthful discussion of the treatment rationale, and

to reinforce the value of the patient's choice to follow the regimen, and allow space for patients to discuss different values or weights that may arise over time and necessitate alterations to the treatment regimen later.

Competing interest: None declared.

- 1 Simpson SH, Eurich DT, Majumdar SR, Padwal RS, Tsuyuki RT, Varney J, et al. A meta-analysis of the association between adherence to drug therapy and mortality. *BMJ* 2006;333:15-8. Beecher HK. The powerful placebo. *JAMA* 1955;159:1602-6. Barrett B, Muller D, Rakel D, Rabago D, Marchand L, Scheder J. *Perspect*
- Biol Med 2006:49:178-98.
- Miller WR, Rollnick A. Motivational interviewing. New York: Guilford Press, 1991.

# Patients' own assessments of quality of primary care compared with objective records based measures of technical quality of care: cross sectional study

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Mala Rao, Aileen Clarke, Colin Sanderson, Richard Hammersley

## Abstract

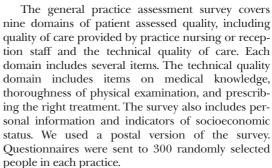
Objective To investigate the relation between older patients' assessments of the quality of their primary care and measures of good clinical practice on the basis of data from administrative and clinical records. Design Cross sectional population based study using the general practice assessment survey. Setting 18 general practices in the Basildon primary care trust area, south east England. Participants 3487 people aged 65 or more. Main outcome measures Correlations between mean practice scores on the general practice assessment survey and three evidence based measures on survey of case records (monitoring for, and control of, hypertension, and vaccination against influenza). Results 76% of people (3487/4563) responded to the general practice assessment survey. Correlations between patient assessed survey scores for technical quality and the objective records based measures of good clinical practice were 0.22 (95% confidence interval - 0.28 to 0.62) for hypertension monitored, 0.30 (-0.19 to 0.67) for hypertension controlled, and -0.05 (-0.50 to 0.43) for influenza vaccination. Conclusions Older patients' assessments are not a sufficient basis for assessing the technical quality of their primary care. For an overall assessment both patient based and records based measures are required.

### Introduction

Research in the United States suggests that patient reports can be used to identify health plans that offer care of higher clinical quality.<sup>1</sup> The general practice assessment survey is a patient questionnaire developed in the United States and adapted for use in the United Kingdom.<sup>2 3</sup> We used the survey to test whether older patients' assessments of the technical quality of their care in general practice were related to evidence based good clinical practice as indicated by data from medical records.

## Participants and methods

We invited 23 general practices in Basildon to participate in the study (see bmj.com for sample size calculation.) Our study population was patients of participating practices aged 65 or more, registered on 1 September 2000.



We chose three indicators of the technical quality of clinical care on the basis of several criteria (see bmj.com).<sup>4</sup> Two indicators were based on adherence to the British Hypertension Society guidelines.<sup>5</sup> We extracted records with sampling fractions dependent on estimated numbers of patients aged 65-79 with hypertension (n=5473). Two research nurses established whether blood pressure had been measured within the past five years (hypertension monitored) and whether hypertension was controlled to British Hypertension Society standards (hypertension controlled).

The third indicator was coverage of influenza vaccination. The current guideline recommended vaccination for patients aged 75 or more.<sup>6</sup> The research nurses extracted data on the vaccination status of such patients (4961 people) in each of the practices.

#### **Data analysis**

ELP:

We estimated mean general practice assessment survey scores for each domain in each practice.23 Analysis of variance was used to assess variation in scores between and within practices. We constructed four socioeconomic groups: access to car, owns or is buying home; access to car, renting home; no access to car, owns or is buying home; no access to car, renting home. For each domain we derived a regression equation, with, as independent variables, five age groups, four socioeconomic groups, and sex. We used these equations to produce practice scores adjusted for these variables.

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## Editorial by Coulter

Department of Health and Human Sciences, University of Essex, Colchester CO4 3SQ Mala Rao honorary professor

Public Health and Policy Research Unit, Queen Mary, University of London, London E1 2AT Aileen Clarke honorary reader in public health

London School of Hygiene and Tropical Medicine, London WC1E 7HT Colin Sanderson reader in health services research

Centre for Behavioural Aspects of Health and Disease, Glasgow Caledonian University, Glasgow G4 OBA Richard Hammersley director

Correspondence to: A Clarke aileen.clarke@ nhs.net

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