

## Update 71

### DOES HOW PATIENTS DO DEPEND ON HOW THEY THINK THEY'LL DO? A SYSTEMATIC REVIEW

Patient psychological factors, including expectation of outcome, have been found to be crucial to the success of rehabilitation and linked to levels of postoperative pain and recovery. (1,2) On the basis of such evidence, most clinicians would probably agree that what patients think will happen (their expectations) can influence what actually happens (their health outcomes).

The authors of this paper (3), from the Institute for Work and Health, Toronto, Ontario, Canada, set out to qualitatively summarize the results of relevant studies in the medical literature that provide at least moderate-quality evidence.

The authors searched MEDLINE for English language articles published from 1966 to June 1998 with a title or abstract containing at least 1 of the medical subject headings (MeSH) "self-assessment," "self-concept" or "attitude to health," or the MeSH subheading "psychology," and at least 1 word from each of 3 sets: "patient" and similar words; a form of "expectation," "belief" or "prediction"; and a form of "recover," "outcome," "survival" or "improve."

For an article to be included in their review it had to contain original research data, measure patients' recovery expectations, independently measure a subsequent health outcome and analyze the relation between expectations and outcomes. They then assessed internal validity using quality criteria for prognostic studies based on 6 categories (case definition; patient selection; extent of follow-up; objective outcome criteria; measurement and reporting of recovery expectations; and analysis).

The authors found a total of 1243 titles or abstracts through the computer search, and 93 full-text articles were retrieved. Forty one of these articles met the relevance criteria, along with 4 additional articles identified through other means. Agreement beyond chance on quality assessments of 18 randomly selected articles was high ( $\kappa = 0.87$ ,  $p = 0.001$ ). Sixteen of the 45 articles provided moderate-quality evidence and included a range of clinical conditions and study designs; 15 of the 16 showed that positive expectations were associated with better health outcomes. The strength of the relation depended on the clinical conditions and the measured used.

The 16 studies providing moderate-quality evidence invoked a variety of explanations for the role of patients' recovery expectations in predicting outcome. Bandura's concept of self-efficacy was the most common theoretical framework (in 4 of 16 articles). Previous experience, vicarious learning, verbal persuasion and social support were all thought to contribute to recovery expectations. Flood and colleagues (4) summarized 5 mechanisms by which expectations can affect outcomes:

- Triggering of a physiologic response,
- Acting to help motivate patients to achieve better outcomes,
- Conditioning the patient psychologically to observe certain types of symptoms and ignore others,
- Changing the understanding of the disease, or
- Acting in concert with anxiety to heighten or reduce symptoms.

Such alternative explanations are consistent with evidence that feelings and perceptions may profoundly affect biological disease processes through behavioural and nonbehavioural mechanisms. Studies in psychoneuroimmunology and psychoneuroendocrinology have documented mechanisms by which negative-affect states, and the experiences that cause them (e.g., recovery slower or less complete than one expects), can translate into pathogenetic processes. (5-8) Hence 'recovery disappointment' may act through mind-body pathways and result in less than optimal outcomes across illness or injury processes.

The authors conclude,

“Consistency across the studies reviewed and the evidence they provided support the need for clinicians to clarify patients’ expectations and to assist them in having appropriate expectations of recovery.”

#### References:

1. Albrecht GL, Higgins PC. Rehabilitation success: the interrelationships of multiple criteria. *J Health Soc Behav* 1977; 18:36-45.
2. Taenzer P, Melzack R, Jeans ME. Influence of psychological factors on postoperative pain, mood and analgesic requirements. *Pain* 1986; 24:331-42.
3. Mondloch MV, Cole DC, Frank JW. Does how you do depend on how you think you'll do? A systematic review of the evidence for a relation between patients' recovery expectations and health outcomes. *CMAJ*. 2001; 165:174-9.
4. Flood AB, Lorence DP, Ding J, McPherson K, Black NA. The role of expectations in patients' reports of post-operative outcomes and improvement following therapy. *Med Care* 1993; 31:1043-56.
5. Kaplan HB. Social psychology and the immune system: a conceptual framework and review of the literature. *Soc Sci Med* 1991;33:909-23.
6. Sternberg EM, Gold PW. The mind-body interaction in disease. *Sci AM* 1997;7:8-15.
7. Kelly S, Hertzman C, Daniels M. Searching for the biological pathways between stress and health. *Annu Rev Public Health* 1997; 18:437-62.
8. Coe C. Psychosocial factors and psychoneuroimmunology within a lifespan perspective. In: Keating DP, Hertzman C, editors. *Developmental health and the wealth of nations*. New York: Guilford Press; 1999. p. 201-19.