

# Patient Psychology Research Review™

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Issue 4 - 2013

## In this issue:

- *Harnessing the placebo response*
- *e-health management of prehypertension*
- *Benefits of social support in HF patients*
- *Are media warnings self-fulfilling?*
- *NIH social relationship scales*
- *Brief psychological intervention can have long-term impact*
- *Perceptions of osteoporosis*
- *Characteristics of patients with chronic whiplash*
- *Physicians share patients' pain & relief*

## Welcome

Welcome to the latest issue of Patient Psychology Research Review.

We have an intriguing collection of studies in this issue, highlights of which include an excellent review of the current state of knowledge on the placebo response, and a small but impressive study of the use of electronic communication channels to motivate people to stick to fitness and diet programmes. We also present evidence that bolstering social support in heart failure patients is likely to improve their long-term survival, and proof that media warnings about the adverse health effects of modern life can be self-fulfilling.

We hope you find our selection interesting and look forward to receiving your feedback which we will pass onto expert commentator Keith Petrie.

Kind regards

**Dr Chris Tofield**

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## The placebo response in medicine: minimize, maximize or personalize?

**Authors:** Enck P et al

**Summary:** This article discussed 3 strategies that could be used to modulate the placebo response to medicines. Firstly, the placebo effect needs to be minimised in clinical trials to ensure true evaluation of the investigational drug. Secondly, placebo effects should be maximised once the drug is in clinical use to improve treatment outcomes. Finally, personalising placebo responses should help maximise therapeutic outcomes. This process involves consideration of a patient's genetic predisposition, personality, medical history and treatment experience.

**Comment:** This paper is an excellent review of the current state of knowledge on the placebo response. It also takes a further step by examining whether what we know about the placebo effect can be used to develop better drugs or improve the optimal dosage of a therapy or find the best treatment for an illness. To date, medicine has been slow at harnessing expectation effects and conditioning to improve response to medication. However, the authors argue that the placebo effect can be used more in health care to optimise drug treatments and reduce side effects.

**Reference:** *Nat Rev Drug Discov* 2013;12:191-204

<http://dx.doi.org/10.1038/nrd3923>

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Is there an effective way to improve patient outcomes through increased medication adherence?

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## DASH to wellness: emphasizing self-regulation through e-health in adults with prehypertension

**Authors:** Dorough A et al

**Summary:** This study evaluated the use of an electronically-delivered intervention for prehypertension. 23 adults aged 45–65 years with systolic blood pressure (SBP) 120–139mmHg or diastolic blood pressure 80–89mmHg who were overweight to obese (BMI 25–40) were included. Patients were randomised to DASH 2 wellness (D2W) only or to D2W plus groups. Both groups received instruction in the DASH eating and exercise plan. They also received information about social-cognitive theory-based self-regulation strategies. The D2W group received no additional instruction throughout the 10-week programme but those in the D2W plus group monitored and electronically reported key lifestyle behaviours using the DASH diary and the wellness tracker. They also received weekly electronic wellness newsletters and individualised electronic feedback. After the 10-week programme, the D2W plus group showed a larger increase in daily steps (mean 2,900 vs 636); a larger decrease in SBP (mean 15.1 vs 4.6mmHg), and a larger decrease in weight (mean 4.8 vs 1.5kg) than the D2W only group.

**Comment:** This is a small study but it achieved quite impressive results. The intervention group included weekly newsletters and goal setting, along with feedback on progress. There are now a large number of fitness devices being used by the public, such as Fitbit, and this study shows that keeping people motivated and monitoring their activity levels by using electronic communication channels can make a real impact on how individuals stick to fitness and diet programmes.

**Reference:** *Health Psychol* 2012; Nov 26 [Epub ahead of print]

<http://tinyurl.com/d3ovxjt>

## Medication adherence, social support, and event-free survival in patients with heart failure

**Authors:** Wu J et al

**Summary:** This study examined the combined influence of medication adherence and perceived social support (PSS) for prediction of cardiac event-free survival in patients with heart failure. 218 patients completed the Multidimensional Perceived Social Support Scale (MPSS) at baseline and then monitored medication adherence for 1–3 months using the Medication Event Monitoring System (MEMS). They were followed for up to 3.5 years for assessment of cardiac event-free survival. Medication adherence ( $p=0.006$ ) and PSS ( $p=0.021$ ) were found to be independent predictors of cardiac event-free survival. Patients with medication non-adherence and lower PSS had a 3.5-fold higher risk of cardiac events than those who were adherent and had higher PSS. In conclusion, medication adherence and social support predict cardiac event-free survival in patients with heart failure.

**Comment:** This paper reports on a study examining the effect of adherence and social support on survival in heart failure patients. The researchers monitored over 200 heart failure patients for their adherence using a MEMS cap device that measures how often medication is opened, as well as assessing perceived social support from family, friends and significant others. Patients were then followed for over three years and data on emergency room visits, hospitalisation, and deaths were recorded. The study found both adherence and social support to predict cardiac event-free survival. Most patients who had low social support were non-adherent. The study also found that medication adherence mediates the relationship between perceived social support and survival. This suggests that bolstering social support in heart failure patients is likely to improve adherence and long-term survival.

**Reference:** *Health Psychol* 2012; Jul 2 [Epub ahead of print]

<http://tinyurl.com/ct3gleo>

## Are media warnings about the adverse health effects of modern life self-fulfilling? An experimental study on idiopathic environmental intolerance attributed to electromagnetic fields

**Authors:** Withthoft M and Rubin G

**Summary:** This study evaluated whether media reports of environmental intolerance to electromagnetic fields (EMF) promote the development of the condition. 147 adults were randomised to watch a control film or a television report about the adverse health effects of WiFi. They all then received a 15-min sham exposure to a WiFi signal. 54% of participants reported symptoms that they attributed to the sham exposure. Those who watched the television report about the adverse health effects of WiFi were more likely to report EMF-related worries ( $p=0.019$ ), and symptoms were more likely in participants with high pre-existing anxiety ( $p=0.008$ ). The television report also increased the likelihood of people who attributed their symptoms to the sham exposure believing themselves to be sensitive to EMF ( $p=0.049$ ). In conclusion, media reports about the adverse effects of supposedly hazardous substances can increase the likelihood of symptoms being reported.

**Comment:** This interesting study shows how media reports about the health effects of modern technology can impact on both worry and symptoms. After viewing a film about the adverse effects of WiFi, participants were more likely to report concern and more symptoms when exposed to a sham WiFi signal. The effect was stronger in highly anxious participants. The rise in symptoms is consistent with participants selectively paying attention to symptoms people believe are consistent with WiFi radiation exposure, as well as the activation of anxiety about these symptoms damaging health. As such, this model is applicable to other functional somatic illnesses. The study suggests that the number of scare stories in the media about new technology is likely to lead to greater health complaints and undermine perceptions of health.

**Reference:** *J Psychosom Res* 2013;74:206-212

<http://dx.doi.org/10.1016/j.jpsychores.2012.12.002>



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## Assessing social support, companionship, and distress: National Institute of Health (NIH) Toolbox Adult Social Relationship scales

**Authors:** Cyranowski J et al

**Summary:** As part of the NIH Toolbox for the Assessment of Neurological and Behavioral Function, brief self-report scales have been designed to assess aspects of social support, companionship, and social distress. This article described the development and testing of the adult NIH Toolbox Social Relationship scales. Social relationship concepts were selected, and item sets based on expert feedback and a literature review were developed. Items were then tested in a community-based sample of 692 adults to identify items for inclusion in 5–8 item unidimensional scales. Finally, the validity of the newly developed scales was evaluated. The results support the reliability and validity of the self-report scales assessing emotional support, instrumental support, friendship, loneliness, perceived rejection, and perceived hostility.

**Comment:** This paper will be of interest for researchers and clinicians who assess social relationships in health settings. This project essentially refines available psychometric instruments in this area to create brief and psychometrically sound measures for social support, companionship and social distress. Social support is divided into emotional and instrumental support. Companionship is made up of two scales measuring friendship and loneliness, while social distress is made up of perceived rejection and perceived hostility. Most scales have eight items and the scales have demonstrated very good psychometric properties.

**Reference:** *Health Psychol* 2013;32(3):293-301

<http://tinyurl.com/bpgnrb2>

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## Late effects of a brief psychological intervention in patients with intermittent claudication in a randomized trial

**Authors:** Cunningham M et al

**Summary:** This study reported the late effects of a brief psychological intervention to increase physical activity in patients with intermittent claudication. 58 patients with newly diagnosed intermittent claudication were randomised to receive usual care (lifestyle advice and consultation with a vascular surgeon to agree on a treatment plan) or usual care plus a brief psychological intervention (designed to modify illness and walking beliefs, and develop a personalised walking action plan). Patients in the psychological intervention group walked significantly more than those in the control group: the mean between-group difference was 1374 steps/day at 1 year and 1630 steps/day at 2 years. In conclusion, a brief psychological intervention in addition to usual care achieved improvements in walking behaviour in patients with intermittent claudication that were maintained at 2 years.

**Comment:** Intermittent claudication generally shows itself as muscle pain in the calf which occurs during exercise and is a sign of atherosclerosis in the lower extremity arteries. The authors of this paper used a brief psychological intervention to increase walking behaviour in patients with intermittent claudication. The intervention consisted of two 1-hour sessions providing information about the illness and used motivational interviewing techniques in terms of developing a personal walking action plan. The intervention also aimed to modify patients' beliefs and perceptions about walking. An earlier study showed the intervention was successful in increasing walking behaviour at 4 months. This study shows the results were maintained for 2 years. The study is important as it shows how a very brief intervention that changes beliefs and perceptions combined with an action plan can have long-lasting effects. It is also of note that at 2 years 11 participants in the intervention group had undergone revascularisation procedures compared with 20 in the control group.

**Reference:** *Brit J Surg* 2013; Mar 6 [Epub ahead of print]

<http://dx.doi.org/10.1002/bjs.9100>

## How do osteoporosis patients perceive their illness and treatment? Implications for clinical practice

**Authors:** Besser S et al

**Summary:** This study investigated cognitive and emotional perceptions of illness and treatment in patients with osteoporosis. Data for 14 female outpatients with osteoporosis or osteopenia were collected using both semi-structured interviews and drawings (these were used to elicit participants' visual representations of their condition). Patients were found to have illness and medication beliefs that differed from current scientific evidence. They had good knowledge of what osteoporosis is, but a low understanding of the role of treatment in reducing fracture risk. They also had concerns about the side effects of medication and poor knowledge of the causes of osteoporosis. Drawings were useful for eliciting information about the perceived effects of osteoporosis and the patients' emotional reactions to it. In conclusion, patients with osteoporosis need to have a better understanding of their fracture risk and what they can do to control their condition.

**Comment:** This study used a qualitative interview and patient drawings to explore the ideas patients have about osteoporosis and its treatment. In general, patients tended to see fractures as a result of factors other than osteoporosis and many had not thought about medication as a way of reducing fracture risk. When asked about the impact of osteoporosis, most patients talked about spine curvature and loss of height. Many patients reported misunderstandings and concerns about medication for osteoporosis. Most patients saw the doctor-patient relationship as an important factor that affected adherence. There was confusion among patients about whether the condition could be controlled. The researchers found patient drawings to be a powerful way of talking about their personal ideas about osteoporosis.

**Reference:** *Arch Osteoporos* 2012;7:115-124

<http://dx.doi.org/10.1007/s11657-012-0089-9>

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### What characterizes individuals developing chronic whiplash?: the Nord-Trøndelag Health study

Authors: Myrteveit S et al

Summary: This study evaluated predictors of chronic whiplash in patients after a whiplash accident. Baseline characteristics of 199 patients who developed chronic whiplash were compared with those of 20,600 patients who did not. Those who developed chronic whiplash reported worse baseline health than those who did not. Risk factors for chronic whiplash included poor self-rated health (odds ratio 2.26), musculoskeletal pain (odds ratio 1.21), diffuse somatic symptoms (odds ratio 2.09), use of different health services (odds ratio 1.31), high use of medications (odds ratio 1.28) and anxiety (odds ratio 1.93). Physical activity at baseline predicted against chronic whiplash (odds ratio 0.67). In conclusion, poor somatic and mental health prior to a whiplash accident increases the risk of a patient developing chronic whiplash.

Comment: Many Scandinavian countries have the wonderful ability to link large national or provincial psychological surveys to health and social welfare databases. This allows researchers to examine the effect of psychological factors measured prior to an accident on variables such as health expenditure and time off work. In this study we were able to look at the influence of psychological factors in a survey collected in a region of Norway around 1995 and again 10 years later. Overall, over 33,000 people participated in both surveys. We found psychological factors and somatic complaints predicted the development of later chronic whiplash following an accident. The data pointed to the importance of prior perceptions of health and the use of a large number of different health providers as risk factors for patients developing chronic whiplash. Symptoms of anxiety and previous diffuse somatic symptoms were also predictive of chronicity.

Reference: J Psychosom Res 2013; 14 Mar [Epub ahead of print]

http://dx.doi.org/10.1016/j.jpsychores.2013.02.004

### Sharing pain and relief: neural correlates of physicians during treatment of patients

Authors: Jensen K et al

Summary: This study investigated physicians' brain activations during physician-patient interactions when their patients were experiencing pain. 18 physicians and 2 females who were trained to play the patient according to a rehearsed script were included. The experiment included four steps: (1) physicians were given pain stimuli and personal experience of the effectiveness of a sham analgesic device; (2) patient-physician interaction during a clinical examination; (3) physician fMRI scan during patient-physician interaction and treatment with the sham device; and (4) debriefing. Physician responses during treatment of the patient were found to involve neural representations of treatment expectation, reward processing and empathy, together with increased activation in attention-related structures. These findings further the understanding of the neural representations associated with clinician-patient interactions.

Comment: In a very innovative study physicians (not patients!) were put in an MRI scanner while they were administering pain relief to a patient. The researchers at Harvard found that doctors activated brain regions implicated in expectancy for pain relief. A similar region as would a patient when administered pain relief. The study also showed that the doctor's ability to take the perspective of the patient measured by questionnaire was associated with brain activation in this area during the consultation. Functional MRI scanners are being used in some interesting work in the placebo area and this fascinating study extends this to show a biological underpinning of empathy in the doctor-patient relationship.

Reference: Mol Psychiatry 2013; Jan 29 [Epub ahead of print]

http://dx.doi.org/10.1038/mp.2012.195

### Patient Psychology Research Review

#### Independent commentary by Professor Keith Petrie

Keith Petrie is Professor of Health Psychology at Auckland University Medical School. Keith Petrie worked as a clinical psychologist in medical settings before taking up a faculty position in Auckland.



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