

ENDGAMES

STATISTICAL QUESTION

The Hawthorne effect

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Researchers evaluated the effectiveness of a newly developed integrated care programme in facilitating the return to work for patients with chronic low back pain. The newly developed programme was a combined patient and workplace directed intervention delivered in the outpatient setting. A randomised controlled trial study design was used. The control arm received usual care. The study lasted one year.¹

Trial participants were recruited from primary and secondary care if they were aged 18-65 years, had been having low back pain for more than 12 weeks, were in paid work for at least eight hours a week, and were absent or partially absent from work. The primary outcome was length of time absent from work until a fully sustained return to work. Secondary outcome measures were intensity of pain and functional status. The researchers reported that the length of time until a fully sustained return to work was significantly shorter for patients receiving integrated care than for those receiving usual care. The researchers commented that the results may have been distorted by the Hawthorne effect.

The Hawthorne effect is best described as a response to which of the following?

- Observation and assessment
- The ritual of adhering to a therapeutic regimen
- The patient-doctor interaction
- The natural course of recovery from chronic back pain

Answers

Answer *a* is the correct answer.

The Hawthorne effect is a change in the trial participants' behaviour or outcomes that is not directly attributable to the therapeutic treatment regimen received but simply to the awareness of being in a research study. In particular, the Hawthorne effect is a motivational response to the interest, care, and attention received through observation and assessment (*a* is true). The extent of the Hawthorne effect in the above trial is not obvious or easily quantifiable. Often the patient care received in trials exceeds that received in routine clinical care, even in the control arm. Any changes in behaviour and outcomes as a

result of the Hawthorne effect would decline when the study finished, even if participants still adhered to their allocated treatment in subsequent clinical care. It was not possible for the participants or therapists delivering the intervention to be blinded to the treatment allocated. However, the Hawthorne effect could still have existed if the trial was double blinded.

The Hawthorne effect derived its name from a study of the psychological aspects plus physical and environmental influences in the workplace at the Hawthorne Plant of the Western Electric Company in Cicero, Illinois, during the 1920s. Workers increased their productivity when they were studied, but it declined when the study finished. The results implied that participants in a research study may change their behaviour simply because of the attention they receive, regardless of any experimental manipulation.

The Hawthorne effect is one of several non-specific treatment effects that may have caused changes in the trial participants' behaviour or outcomes. The Hawthorne effect is one of three such non-specific treatment effects collectively known as the placebo effect, described in a previous question.² Other components to the placebo effect are the patients' response to a therapeutic ritual (regular medical treatment) (*b* is false) and their response to the patient-doctor interaction (*c* is false). No doubt the association between the components of the placebo effect is complex. The other major recognisable non-specific treatment effect is the natural course of recovery for patients with chronic low back pain—some patients would have achieved a sustained return to work in the absence of any intervention (*d* is false). The placebo effect can be elicited by the provision of any therapeutic regimen and not solely in clinical trials that include a placebo arm.

Competing interests: None declared.

1 Lambek LC, van Mechelen W, Knol DL, Loisel P, Anema JR. Randomised controlled trial of integrated care to reduce disability from chronic low back pain in working and private life. *BMJ* 2010;340:c1035.

2 Sedgwick P. The placebo effect. *BMJ* 2011;343:d7665.

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