Computer-aided self-exposure therapy for phobia/panic disorder: a pilot economic evaluation

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Record Status
This is a critical abstract of an economic evaluation that meets the criteria for inclusion on NHS EED. Each abstract contains a brief summary of the methods, the results and conclusions followed by a detailed critical assessment on the reliability of the study and the conclusions drawn.

CRD summary
This study examined the cost-effectiveness of computer-guided self-exposure, using the FearFighter system, compared with clinician-led exposure, and relaxation for the management of panic disorder or phobia. The authors concluded that FearFighter was as effective as and cheaper than clinician-led exposure, but, due to the limitations of their study, the results should be considered with caution and further research was necessary. These conclusions were appropriate.

Type of economic evaluation
Cost-effectiveness analysis

Study objective
This pilot study compared the cost-effectiveness of three strategies for the management of patients with panic disorder or phobia.

Interventions
The three interventions were: computer-guided self-exposure using the FearFighter system; computer-guided relaxation placebo, using a stand-alone computer in a clinic; and clinician-guided self-exposure.

Location/setting
UK/out-patient, secondary care.

Methods
Analytical approach:
The economic evaluation was based on data from a single study with a 14-week time horizon. The authors did not explicitly report the perspective adopted.

Effectiveness data:
The clinical data came from a single-centre, intention-to-treat, randomised controlled trial (RCT). The sample included 90 patients, with 36 randomised to the FearFighter group, 36 to the clinician-led group, and 18 to the relaxation group. The length of follow-up was 14 weeks and the primary endpoint was the change in self-rating of the main problem and the global phobia, which was estimated using the Fear Questionnaire (Marks, et al. 1979, see 'Other Publications of Related Interest' below for bibliographic details).

Monetary benefit and utility valuations:
Not relevant.

Measure of benefit:
The units of improvement on the main problem scale and on the global phobia rating were the summary benefit measures.

Cost data:
The economic analysis included the costs of therapists and clinicians and the costs of FearFighter, provided in general practice or in the primary care trust. The costs of FearFighter were from an independent review by the National Institute for Health and Clinical Excellence. The time spent by clinicians was recorded during the RCT. The unit costs
were obtained from published literature. All costs were reported in UK pounds sterling (£). The price year was not explicitly reported.

**Analysis of uncertainty:**

Bootstrapping was used to compare the mean differences in costs and to generate 90% confidence intervals (CIs). An incremental net benefit approach assessed the cost-effectiveness, using a range of societal values, and mean differences in net benefits were estimated, using regression analysis. The regression coefficients for group variables were generated using bootstrapping and these probabilities were used to produce cost-effectiveness acceptability curves. A sensitivity analysis was conducted using the assumption that treatment was provided by nurses, which incurred a lower professional time cost.

**Results**

The mean improvement in the main problem scale was 3.95 and the standard deviation (SD) was 2.16 with FearFighter. The mean improvement was 3.93 (SD 1.62) with clinician-led exposure, and 0.71 (SD 1.20) with relaxation. The difference between FearFighter and clinician-led exposure was not statistically significant. The mean improvement in global phobia rating was 2.95 (SD 1.84) with FearFighter, 3.59 (SD 1.87) with clinician-led exposure, and 1.07 (SD 1.86) with relaxation. For the whole sample, the mean intervention costs for FearFighter were £281 when provided in general practice and £201 when provided in the primary care trust. They were £363 for therapist-led exposure and £110 for relaxation.

Using the main problem scale, the incremental cost-effectiveness ratio (ICER) of FearFighter over relaxation was £64 per extra unit of improvement, in general practice, and £37 per unit, in the primary care trust. The ICER of clinician-led exposure compared with relaxation was £100. FearFighter dominated clinician-led exposure as it was more effective and less costly. Using the global phobia rating, the ICER of FearFighter compared with relaxation was £112 (general practice) or £67 (primary care trust). The ICER of clinician-led exposure compared with relaxation was £128. The ICER of clinician-led exposure compared with FearFighter was £175 (general practice) or £308 (primary care trust).

Using the main problem scale, clinician-led exposure had a minimum probability of being more cost-effective than relaxation of 50%, at a societal value of £100 for a unit of improvement, while FearFighter achieved this minimum probability at lower societal values (£65 for general practice and £35 for primary care trust). Using the global phobia rating, clinician-led exposure (over relaxation) achieved the minimum probability of 50%, at a societal value of £130 and FearFighter (over relaxation) achieved it at lower values (£115 or £65). At values above £160, clinician-led exposure was more likely to be cost-effective than FearFighter.

These results were highly sensitive when practice nurses were assumed to provide the treatment.

**Authors’ conclusions**

The authors concluded that computer-aided self-exposure using FearFighter was as effective as and cheaper than clinician-led exposure, but it became less cost-effective when nurses administered the treatment instead of psychotherapists. They stated that further research should be carried out to corroborate these findings.

**CRD commentary**

**Interventions:**

The interventions were clearly reported, but it was not clear whether the usual practice in the authors’ setting was included.

**Effectiveness/benefits:**

The use of a RCT to derive the clinical data was appropriate given the strengths of its design. Some characteristics of the trial, such as the inclusion criteria, the comparability of groups, and power calculations were not reported, which makes it difficult to objectively assess the validity of the data. A disease-specific endpoint was used as the measure of benefit and this will prevent cross-disease comparisons. The uncertainty around the effectiveness estimates was not investigated in sensitivity analysis.
The authors did not explicitly state the perspective of the economic analysis, but it appears that it was that of the third-party payer in the UK. The reporting of the cost analysis was limited and the costs other than those of professional time and FearFighter, such as the cost of computers, were not included. This limitation was acknowledged by the authors. The costs and resource use were not reported separately. The sources for unit costs referred to different price years, but adjustments for inflation were not reported. The price year was not reported, which will impede future reflation exercises. The use of statistical tests was reported.

**Analysis and results:**
The authors did not need to calculate the cost-effectiveness ratio for FearFighter compared with clinical-led exposure as the latter was dominated by the former. They acknowledged several limitations to their study, such as the short time horizon and the use of a single-item scale to evaluate the clinical endpoints. The issue of greater drop-out rates, which were observed in the FearFighter group, was not appropriately addressed.

**Concluding remarks:**
This study was characterised by several limitations, which were mentioned by the authors and their conclusions were appropriate.

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