CORE Partnership Occasional Paper

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Is initial overall CORE-OM score an indicator of likely outcome?

CORE Partnership Occasional Papers

The CORE Partnership consists of the CORE Benchmarking/User Network, the CORE System Trust (CORE CST - responsible for the copyright of CORE measures), CORE Information Management Systems Ltd. (CORE IMS - responsible for Change Agency and software support), and associated researchers. This series of Occasional Papers is aimed primarily at sharing with practising clinicians and service managers the experience gained in wide scale use of the CORE System.

Data source

The data is drawn from the 2005 primary care psychological therapy service sector of the CORE National Research Database (NRD) which contains outcome data for 35,000 patients treated in routine clinical practice across 34 services by almost 600 therapists over a period of three years ending June 2005. Pre- and post-therapy measures were available for 12,000 patients.

Further information about the CORE Partnership, the nature of these Occasional Papers and the data source is given at the end of this paper.

Summary

Patients below cut-off

- For the 'healthy' patient (with a CORE-OM mean score of less than 0.6), the chance of their score deteriorating is almost four times higher than the chance of their score improving. The chance of improvement is negligible. They cannot 'recover' because they are already 'healthy' (below cut-off).
- For the 'low level' patient (with a CORE-OM mean score between 0.6 and 1.0), there is only about a one-third chance that they will improve. They cannot 'recover' because they are already below cut-off.
- The conclusions above might suggest a policy of not generally accepting patients with below cut-off scores for treatment. If such a policy is adopted it needs to be borne in mind that some patients suffering quite severe mental health problems over a long period develop coping strategies which result in them presenting with a very low CORE-OM score. The clinician should be free to make their own judgement regarding the patient's condition in determining whether to accept them for treatment and not rely entirely on the CORE score.

Patients above cut-off

- Patients in the 'Mild' range are rather less likely to achieve improvement than patients in the 'Moderate' or above ranges. But virtually all will also achieve recovery (because they are only just above cut-off when they start).
- Patients in the 'Moderate' range and above have about an 80% chance of achieving improvement regardless of the severity of their score. But their chance of achieving recovery declines quite sharply with severity of initial score.
- There are grounds for believing that more severe patients would achieve recovery if they were given more sessions. It may be worth considering a policy of the form "If the patient's score is showing improvement session by session then continue therapy either until recovery is achieved or the improvement ceases".

Score 'bands'

Feedback from users has shown that a very high proportion of clinicians commonly use the descriptive terminology 'Mild', 'Moderate' or 'Severe' in preference to a patient's actual CORE score. Accordingly, this terminology is used throughout this paper. The boundaries of the 'bands' have been chosen to reflect those commonly adopted by users. The bands correspond reasonably well with similar terminology describing scores for commonly used measures such as the BDI. They are 5 points wide (with the exception of the two lowest bands) - so a statistically reliable change (which requires a 5 point change) will commonly mean that a patient has moved up or down one band.

Internally, services have adopted three different systems for recording or discussing CORE scores. The most commonly used is the simple overall total score. There are 34 questions in the full CORE outcome measure and each question can be scored from 0 to 4 so that the overall total score will lie somewhere between 0 and 136.

Other services use the average score which is obtained by dividing the overall total score by 34 so that the average score will lie somewhere between 0 and 4.0

Services using CORE-Net invariably use the average score multiplied by 10 so that the score will lie somewhere between 0 and 40.

Table 1 sets out the boundaries for each band for each of these three scoring systems.

Table 1

Band	Total overall score Range 0-136	Average score = total score/34 Range 0-40	Whole number average = average score* 10 Range 0-40
Severe	85 to 136	Over 2.5	Over 25
Moderately Severe	68 to 84	2.0 to <2.5	20 to <25
Moderate	51 to 67	1.5 to <2.0	15 to <20
Mild	34 to 50	1.0 to <1.5	10 to <15
Low Level*	21 to 33	0.6 to <1.0	6 to <10
Healthy*	0 to 20	0 to <0.6	0 to <6

clinical cut-off

* The band descriptors 'Low Level' and 'Healthy' are currently used in CORE-PC, CORE Net, the CORE-10 User Manual and associated paper tracking tools to describe the two lowest score bands for CORE Outcome Measure scores. We are currently consulting on the idea of renaming the low-level band as 'Healthy' and the previous healthy band as 'Very Healthy' in order to better reflect the fact that patients in both of these bands are below clinical cut-off.

Initial level of distress

Figure 1 shows that about 12-13% of patients are below clinical cut-off when first seen - that is in the categories labelled 'Healthy' or 'Low level'. Additionally, although primary care psychological therapy is usually seen as being suitable for patients with Mild-to-Moderate levels of distress, in fact 23.5% are in the 'Moderately severe' category and 12.5% in the 'Severe' category.

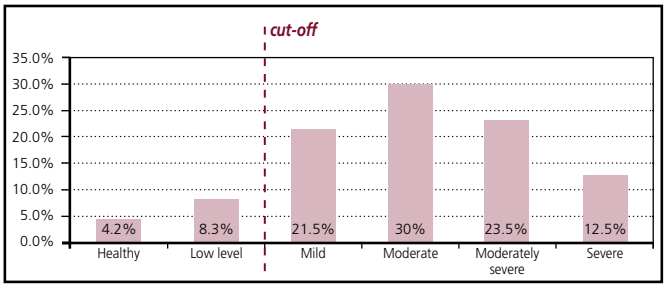

Figure 1: *Percentage of patients grouped according to pre-therapy CORE-OM score*

Patients achieving improvement

As Figure 2 shows, across all patients, 71% achieve reliable improvement (that is, an improvement which cannot be attributed to chance or measurement error). A substantial proportion of these patients, as we will see below, also achieve clinical recovery.

What stands out is that the below cut-off patients (i.e., those in the 'Healthy' and 'Low level' categories) are much less likely to show improvement - simply because they already have a 'Low' or 'Healthy' score.

But on the other hand, patients with 'Moderate' or higher scores are significantly more likely to achieve reliable improvement.

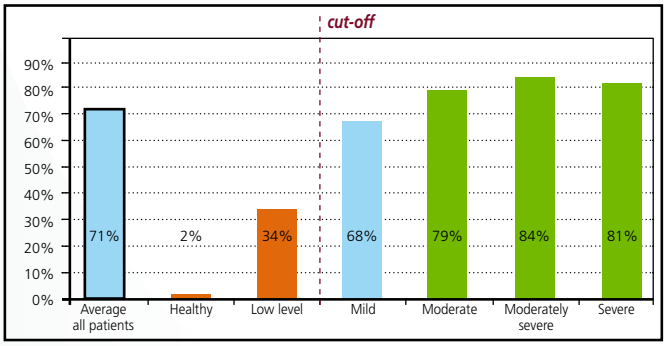

Figure 2: *Patients improved grouped according to pre-therapy CORE-OM score*

Patients achieving recovery

Figure 3 shows that across all patients 54% of patients achieve a clinical recovery - that is, they were above clinical cut-off (and thus suffering a clinical level of distress) when first seen and they moved to below clinical cut-off (in the 'healthy' population) following treatment.

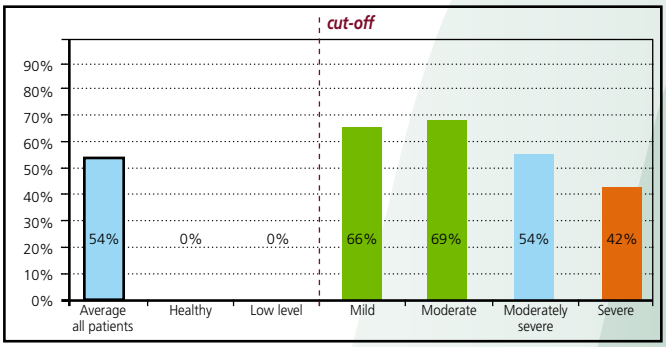

Figure 3: *Percentage recovered grouped according to pre-therapy CORE-OM score*

The figure reminds us visually that patients who were below cut-off when first seen cannot 'recover' since they were already healthy. The profile for more distressed patients is very different to the 'recovery' figure above because it is fairly clear that the more severe a patient's initial score is the less likely they are to achieve full recovery.

The percentages for recovery and improvement in the 'Mild' category are very close together - in other words, patients in the 'Mild' category who improve almost always also recover. But this is actually inevitable - a patient has to make approximately a 5 point improvement in score to achieve statistically reliable change and a 5 point reduction in a score in the 'Mild' band automatically takes the patient below cut-off so that they have also achieved recovery.

The **improvement** percentages for the 'Moderate', 'Moderately Severe', and 'Severe' categories are all around the 80% level. Yet the percentages for **recovery** tail away with severity quite sharply. Why should this be?

The most likely hypothesis advanced to date is that this is a reflection of the limit on number of sessions provided to patients in most of the services (usually about 6 or 8 sessions maximum). If services adopted a policy of continuing therapy sessions until recovery had been achieved then it is likely that the number of patients achieving recovery in the more severe categories would climb closer to those achieving improvement. There is significant support for this hypothesis from PacifiCare Behavioural Healthcare in the US who have used a very similar system to CORE over the last 9 years. They have successfully adopted a strategy of *"if the patient's score is showing improvement session by session then continue therapy either until recovery is achieved or the improvement stops"*.

Finally, at the 'Moderate' level the gap between improvement (79%) and recovery (69%) is 10%. If services adopted the strategy just suggested, would that 10% gap remain? Only further data can answer that question.

Patients achieving no change

Figure 4 again illustrates the fact that patients in the healthy categories are likely not to evidence any measurable change.

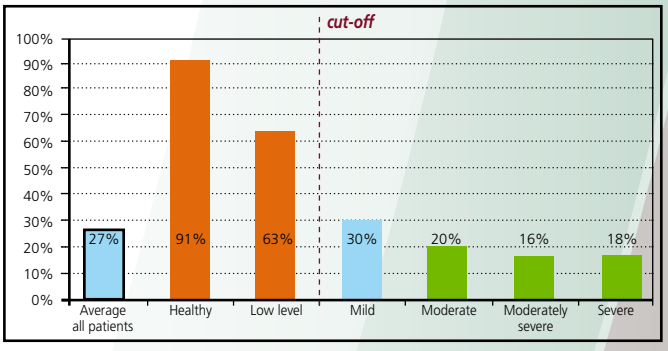

Figure 4: *Patients with 'no change' grouped according to pre-therapy CORE-OM score*

Patients deteriorating

The final chart, Figure 5, shows that across all patients, only 1.6% experience reliable deterioration. Still more reassuringly, the level of deterioration in patients in the severe category is only 0.5%.

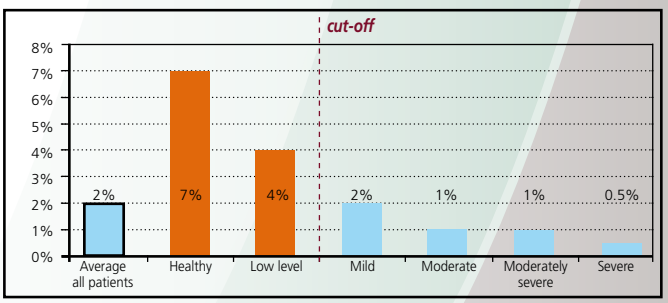

Figure 5: *Percentage of patients deteriorated grouped according to pre-therapy CORE-OM score*

However, the level of deterioration in the healthy patients is surprisingly high at 7%. If we compare this with the earlier chart showing improvement then it becomes apparent that, for the healthy patient, the chance of their score deteriorating is almost four times higher than the chance of their score improving.

There may be good explanations for this but it is clearly a phenomenon which deserves further investigation.

Key References

Barkham, M., Mellor-Clark, J., Connell, J., and Cahill, J. (2006). A core approach to practice-based evidence: A brief history of the origins and applications of the CORE-OM and CORE System. *Counselling and Psychotherapy Research. 6(1)*: 3-15.

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CORE Partnership Occasional Papers

The Occasional Papers are aimed at the development of best practise in mental health care, particularly in the provision of the 'talking therapies' or psychological therapy services. They are based on practise based evidence gained in the routine use of the CORE System in clinical settings rather than randomised control trial based evidence.

The primary readership is seen as practising clinicians and service managers. Given the nature of the data and the intended clinical practice based use of the evidence the papers rely on visual interpretation of data rather than more rigorous statistical analysis. We hope that they will be seen as complementary to academic papers.

Feedback on the papers is welcomed, particularly from practising clinicians or service managers and should be initially directed to riche@coresystemtrust.org.uk Clinician/service feedback is seen as being as effective a mechanism in building a consensual body of practical clinical knowledge (based on evidence gained in clinical practice) as conventional peer review - and more appropriate in encouraging 'ownership' of the knowledge by practising clinicians.

In taking action based upon the evidence provided by the papers it should be borne in mind that the interpretation of the evidence may be revised either in the light of feedback or as further data becomes available (it is planned to update the CORE National Research Database - and thus the content of relevant papers - about every 18 months).

CORE Partnership
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