# Module:
# Psychological Foundations of Mental Health

## Week 5
## Psychological therapies: from behaviour modification to behaviour therapy

### Topic 4
### Evaluating the efficacy of cognitive therapy – Part 3 of 3

**Professor Richard Brown**
Department of Psychology, King's College London

**Lecture transcript**

Slide 3
We are going to look in a bit more depth of the evidence surrounding the efficacy of CBT for the treatment of adult depression. We will look at three questions. The first two relate to predictors of therapy outcome. No therapy works for all patients that receive it, whether psychotherapy or medication. Where it does have a benefit, the size of that benefit may vary from a partial reduction in symptoms to a complete elimination of them. Furthermore, any improvement may be sustained or only temporary.

Understanding what factors predict the degree of response is critical for two reasons. First, we may be able to match particular types of patients to a particular treatment approach. It's time that CBT may be good for some but not for others. We saw some evidence of this from the 2014 trial by Hulleman and colleagues showing that the added benefit of CBT was most obvious in those with severe symptoms of shorter duration.

Second, where that standard CBT is not effective, can we adapt CBT or develop alternative treatment approaches that meet the needs of those particular types of patients? If we know in advance which patients are likely to benefit and which not, then we can plan to use the best treatment from the start rather than trial and error.

Finally, we will ask the crucial question about the longer term value of CBT in terms of promoting sustained recovery. Once again in this section, we are going to be using systematic reviews and meta-analyses to try to draw conclusions from across the wider range of studies rather than focus on individual results.

Slide 4
First though, let's make sure we are clear about the terminology used when talking about outcome. This is the 5R's-- response, remission, recovery, relapse, and recurrence. This diagram illustrates the five key terms. We see the hypothetical time cause of the patients as they develop depression and enter treatment and follow through the different phases.

The vertical axis of the figure represents the presence and severity of the depression. The horizontal line represents an arbitrary boundary between the presence of depressive symptoms above the

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line and below it symptoms of sufficient severity to warrant a diagnosis of depressive disorder, the syndrome.

On the left, the patient shows a worsening of their symptoms and the emergence of depressive disorder at which point they enter treatment. This is the start of the acute phase. It is hoped that the patient will then start to improve and show a reduction in the number and severity of their symptoms. When the severity is 50% of that at the start of treatment, the patient is said to have shown a positive treatment response shown by the first x in the acute phase.

50% is an arbitrary figure, but one commonly used in clinical trials. Importantly, however, they are still only half way to the elimination of all of their symptoms and may still show syndromal depressive disorder. If the patient continues to improve with treatment, the point will come when they are no longer diagnosed as being depressed although they may still show some symptoms.

If they continue further, they may reach the point when they have no or few symptoms of depression. When this seems to be stable for a month or two, they will be said to be in remission. Treatment may end at this phase although it may also end sooner if the patient has had the maximum number of treatment sessions that can be offered.

At some point, the decision will be made as to whether the patient has fully recovered. This is usually defined as a period of sustained remission of between 6 to 12 months. Ideally, having remitted or recovered, the patient will stay well. Sometimes patients may be offered top up CBT sessions to help sustain this remission.

However, it is a characteristic of depression that patients experience a return of their symptoms. A relapse is defined as another occurrence of depression following some remission but before a full recovery. When a patient has another episode of depression after having recovered, this is called a recurrence.

### Slide 5

Before we continue, here are a couple of important definitions. A predictor is a general term to describe any factor that on its own or in combination predicts clinical outcome. In the context of evaluating clinical trials, we tend to use the term to describe nonspecific predictors, typically, characteristics of the patients at baseline that explains some of the variance and subsequent outcome regardless of which treatment they received. Alternatively, it could relate to the experience of those providing the treatment with less experienced therapists having poor outcomes regardless of the specific therapy they are delivering.

A moderator is also a predictor but the term is used to define those baseline or other characteristics that interact with the treatment and influence the size of the eventual treatment effect. The search into moderators addresses the question on whom and under what conditions do treatments have different effects. Thus, if patients have more severe symptoms at baseline get better more quickly than patients with mild symptoms regardless of whether they are receiving the active treatment or the control treatment, symptom severity would be considered a nonspecific predictor of outcome.

However, if symptom severity only had an influence in those patients receiving the active treatment, severity will be considered a moderator of the treatment effect. In other words, severity will modify or change the outcome but only for that treatment.

### Slide 6

Some published treatment guidelines recommend the use of antidepressant medication rather than CBT for patients with severe depression. This is based on evidence that treatment effects of CBT are less than those seen from medication in such patients. In other words, the severity is a moderator of CBT outcome.

This evidence has come from a number of previous meta-analyses and therefore has been taken as strong evidence to support treatment recommendations. However, such analyses have been based on the average change across groups of patients with mild, moderate, and severe depression rather than change in individual patients with different levels of severity. Such methods may be less sensitive than if they were able to look at the results of the individual patient level.

A recent meta-analysis by Wright and colleagues in 2015 conducted such an individual patient data meta-analysis. 24 trials were identified and the authors of those studies asked to provide their raw data. This data was obtained from 16 studies, altogether 1,700 patients that received either CBT or antidepressant medication.

The analysis examined whether individual patient severity differentially predicted outcome between the two treatments. Separate analyses were carried out for mean depression scores and for percentage treatment response and remission.

### Slide 7

This graph illustrates the results from a regression analysis that shows the relationship between the patients' depression score at the start of treatment and their score at the end. The x-axis is centred on the group mean so that patients are shown with scores above or below this figure rather than their actual scores.

We see, as expected, a positive relationship between pre- and post-scores. In other words, patients with the lower scores to begin with tend to have the lower scores often treatment. They did not get worse. Those with the most severe to begin with still had higher scores but showed a greater proportional reduction.

However, what is most important are the orange and the blue lines, that for the patients receiving medication and those receiving CBT. If baseline severity was a moderator of CBT effectiveness, we would see an interaction between these two lines as illustrated by the orange and the dotted blue line with CBT patients showing disproportionately higher scores after treatment compared to medication patients as that baseline severity increased.

Instead, the results are shown by the solid blue line, exactly parallel to the orange line. This tells us that there was no differential interaction between depression severity and outcome between the two treatments. In other words, baseline depression severity does not moderate any differential effect of CBT or medication on symptoms. Rather patients with more severe depression tend to show better treatment response than those with mild depression regardless of whether they are receiving CBT or medication. Similar results not shown were obtained for the percentages of patients showing remission or recovery.

### Slide 8

Let's look at a number of other factors that have been suggested or shown to predict outcome, either in a nonspecific way or as moderators in CBT. Perhaps one of the most obvious issues when evaluating a treatment such as CBT is how well trained are the therapists.

In small trials carried out in special sensors, the therapists tend to be highly trained and expert in delivering the intervention. In larger trials, however, that involve several sensors, the level of expertise of therapists will often vary. In the study that we looked at previously by Elkin and colleagues in 1989, you remember that the outcome from CBT, although similar to other therapies, did not significantly from placebo. This study was carried out in three sensors. In two of them, the therapist treating the patients were relatively inexperienced in CBT and outcomes tended to be worse than other treatments. In the third centre, however, the therapists were better trained and produced outcomes comparable to medication. This and other similar results stresses the importance of adequate training of therapists used in clinical trials to get an accurate assessment of the treatment efficacy. However, it can be argued that the results in less than expert therapists may provide a better reflection of the outcomes that we might see in the real world where the training received by therapists is less than that seen in the very best centres.

Surprisingly, we know very little about whether age is an important predictor or moderator of outcome within adults, or gender, or education. Some studies have suggested that they do, but results often reflect differences in the severity of depression in the different groups defined by age, gender, or level of education. One relatively reliable finding is that patients who are in a relationship and living with another person have better outcomes in CBT, including relative to other therapies. This would suggest that the living status is a moderator variable.

Depression can occur in isolation but often occurs in the presence of other psychiatric disorders, including anxiety disorder, but also with psychosis and personality disorder. A very large multi-center trial called STARD assessed various treatment pathways to determine which patients would do best with different treatment options. The design involved starting patients on the standard antidepressant, and if they fail to respond were switched to one of a number of other treatments, including an alternative anti-depressant or CBT with or without the original drug.

An analysis published by Farabow and colleagues in 2012 showed that patients with combined anxiety and depression were not only less likely to respond to the original treatment, but also showed lower remission rates compared to patients with depression alone. This was seen both for those switched to CBT and those switched to another drug. This suggests that co-morbid depression and anxiety is a nonspecific predictor of poor treatment outcome rather than the moderator of CBT outcomes specifically.

Dysfunctional attitudes describe the set of general beliefs that an individual holds such as perfectionism that is associated with vulnerability to later depression. However, there is also evidence that having high levels of such attitude is a predictor of poor response to both CBT and antidepressant medication. This would suggest that such enduring beliefs are a general predictor of outcome. However, it remains unclear why CBT, which seeks to target dysfunctional cognitions directly does not lead to better outcomes.

Slide 9

One of the biggest clinical challenges of managing depression is not just achieving a worthwhile treatment response or even remission, but in sustaining that treatment response and achieving a full and lasting recovery. For research, the challenge is to identify those factors that predict relapse or recurrence so the treatments, both psychological and pharmacological, can be improved to reduce or delay their occurrence.

Evidence suggests that 80% of people who experience an episode of depression will have at least one more episode at some time in their life with an average number of four. Perhaps surprisingly we have limited evidence of relapse and recurrence rates following successful treatment, whether with medication or psychotherapy. This is because a full assessment requires a long-term followup after the end of the trial, ideally for several years.

A meta-analysis published in 2014 by Christine Steinert and colleagues evaluated the evidence in 11 psychotherapy trials that provided follow-up data of at least two years with the mean of 4.4. Eight of the studies used CBT and six of these used a non-pharmacological control. These are marked with an asterisk on the table here.

We see the evidence in the psychotherapy trials. The event rate refers to relapse or recurrence at some time over the follow-up period. We see from the forest plots that there was a considerable

variability across the studies, but in all cases, the relapse rate was significantly greater than 0 with an overall rate across the studies of 39.1%.

When we look specifically at the trials with a medication controlled condition, the rates were higher at 53.1%. However, the rates for patients with non-medication controlled conditions in those trials was higher still at 71%.

**Slide 10**

Relapse and recurrence of depression remains one of the biggest challenges to treatments, whether through medication or psychological interventions. Evidence suggests that one of the most important predictors in relapse is ending treatment while the patient still has residual symptoms of depression, even if they meet the criterion for recovery or even short-term remission.

Residual symptoms can include any of the symptoms of depression but present in lower total numbers or perhaps lesser severity. They can also include more non-specific symptoms such as general irritability and social avoidance. However, the presence of any symptoms remaining after treatment greatly increases the risk of relapse or shortens the duration before it occurs.

The presence of residual symptoms is strongly predictive of relapse whether the original treatment is psychotherapy or medication or a combination of the two. What does this mean about the original treatment? Does it mean that we simply have to give it more effectively and for longer, or are there ways in which we can improve therapy itself? This may mean that we adjust the original therapy to ensure we address specific targets, or we provide an additional form of therapy that boosts effectiveness and enhances long-term outcome.

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