Assessing Child Outcomes with the CANS

Many providers have asked for guidance about how to assess child outcomes with the CANS.

Individual level

At the individual level this is straightforward and is an appropriate activity for clinical supervision.

- First ask: do the ratings reflect the actual progression of the treatment, including therapeutic gains, new problems identified, and setbacks along the way? If not, you need to revisit the accuracy of ratings.
- In general, items rated 3 due to intensity of need should be converted to 2 relatively promptly, if the acuity of the need is addressed.
- When treatment is effective, items rated 2 will resolve to 1 (or occasionally 0) if they are a focus of treatment. Items rated 2 that are not a focus of treatment are not expected to decrease.
- It is not a bad thing to identify new problems. Assessment is an ongoing process and it's common to learn more about existing issues during the course of treatment. It's also very possible that development or life circumstances will create new needs (or strengths) that didn't exist at the beginning of treatment.
- As the CANS changes over time, does your treatment plan change too? In most cases CANS changes should be reflected in adaptations of your plan.
- If you wish, you can summarize a child's CANS in terms of number (or percentage) of actionable items (2s and 3s) in the first three domains (functioning, symptoms and risk behaviors). In general, successful treatment will result in a decrease in actionable items. If actionable items are a focus of treatment, and are not resolving, they should generally be a focus of supervision and of discussion with the youth and family.

Aggregate level

There are many ways to look at the progress of multiple children over time. Don't forget that changes in ratings can reflect two different processes: changes in the actual status of the child (child doing better or worse), and changes in the quality of your information (which usually reveals more needs as time progresses).

You will probably want to look at change over a fixed number of CANS – such as first CANS and third CANS, reflecting intake and the six-month point in treatment. The interval you choose is up to you, but should be meaningful in terms of typical length of stay in the service you provide.

One straightforward approach is to look at the number (or percentage) of actionable items as described above. For the group, you can take either the average or the median number of actionable items to get a group score.

You can also look at a group of children on a single item basis. This approach makes sense in thinking about interventions for specific issues that affect many children in your population. For example, how are you doing in treating clinical issues reflected in the CANS items for Depression or Anxiety?

To answer this question, do two calculations. Let's suppose you are interested in how your group is doing on the Depression item from first CANS to third CANS:

- First, count the number of children who have a 2 or 3 on Depression at CANS 1, and then the number of them are who are no longer actionable (0 or 1) at CANS 3. (The second number can never be larger than the first.)
    - The percentage change between these numbers is a measure of children experiencing a meaningful decrease on Depression.[1] (For example, if you had 20 children actionable on Depression at CANS 1 and 15 of them were still actionable at CANS 3, then 25% of the actionable group were improved. It is possible that some of this change is a result of better information over time – we learn that a child initially rated as depressed really was not – but this scenario probably does not happen often.)
- Second, count the number of children with an initial 0 or 1 on Depression, and the number of those children who are actionable (2 or 3) on CANS 3. (Again, the second number can never be larger than the first.)
    - The ratio of the second number over the first is a measure of children experiencing a meaningful increase on Depression. (For example, if you had 10 children nonactionable on Depression at CANS 1, and 3 were actionable at CANS 3, then 30% of the non-actionable group became actionable. This could be due to them becoming more depressed; it could also reflect better understanding a pre-existing problem.)

If you use this methodology you will see considerable variation from one item to another – for items that are a focus of clinical treatment in IHT, for example, we often see declines in the range of 30 to 60 percent for children in IHT, from first CANS to fourth CANS. With Depression, there was 48% decrease in the number of children actionable, while 13% of those not actionable on the first CANS were actionable on the fourth CANS.

A third approach to looking at aggregate data is to average the item scores for a collection of items (e.g. a domain or the first three domains) across a group of children. You can then compare the group means for, say, the first CANS versus the third CANS. The drawbacks to this approach are two:

- First, this gives an average change but no information about the numbers of children increasing versus those decreasing.
- Second, the magnitude of change has no intuitive meaning.

[1] We assume that when an item is accurately rated and changes from actionable to non-actionable (or vice-versa), that this is a clinically meaningful change.

One solution to the second problem is to use a device like the Reliable Change Index or RCI (Jacobson & Truax, 1991; Beutler & Moleiro, 2001), although this method tells you only if an individual's change is statistically reliable and not whether it is clinically meaningful.[2]

References:

Beutler, L. E., & Moleiro, C. (2001). Clinical Versus Reliable and Significant Change. *Clinical Psychology: Science and Practice*, *8*(4), 441–445.

Jacobson, N. S., & Truax, P. (1991). Clinical significance: A statistical approach to defining meaningful change in psychotherapy research. *Journal of Consulting and Clinical Psychology*, *59*(1), 12–19.

[2] In order to calculate RCI you will need an estimate of Standard Error of Measurement. Please feel free to contact CBHI for more information.