Manual:

The Treatment Outcome Profile

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About the Treatment Outcome Profile System

Historical Development of the Treatment Outcome Profile (TOP)

TOP was designed to be a self-report measure of each of the key dimensions of measuring outcome: **Quality of Life, Level of Functioning, Symptomatology, and Satisfaction with Services**. Each of these subsections was developed with clinical populations, including clients being seen in outpatient settings, inpatient settings, and residential care facilities. We used classical test theory, with internal reliability coefficients and factor analysis, to develop each sub-section.

The **Quality of Life** section of TOP was developed out of research with mentally ill clients in a state hospital (n=101) and in community residential treatment facilities (n=100) (Holcomb, 1983). An extensive review of the literature on Quality of Life was done, and a large pool of items was generated to measure both general life satisfaction and domains of quality of life. Results of this initial research indicated that four major areas of quality of life accounted for the majority of the variance in quality of life ratings. These four sub-dimensions of quality of life were autonomy, self-esteem, social support, and physical health. Items that had the highest internal reliability coefficients, and the strongest factor loadings on these four subscales were then adapted and used for measurement of Quality of Life in TOP. It should be added that these four subscales correlated very highly with clinical ratings of symptomatology using the Brief Rating Psychiatric Scale (BPRS) and the Global Assessment Scale of Functioning (GAF). In addition, they correlated with other self-report and interviewer ratings of quality of life and significantly discriminated patients living in the hospital versus patients living in the community.

The second section of TOP measures **Symptomatology**. The original research on this section was completed with 451 patients admitted to an acute treatment unit in a state hospital. Originally, the SCL-90 was used to measure client symptomatology as the patients were admitted and discharged from the state hospital. Factor analysis of this data resulted in nine stable factors, with three factors accounting for the majority of variance in total symptom scores. These three factors were depression, somatization and paranoia. Examination of the factor analysis clearly showed that there was some overlap between a factor labeled hostility and paranoia. Based upon factor analytic results, and internal reliability coefficients, we grouped three symptoms with the highest reliabilities for each of the sub-scales in TOP. We then modified the wording of the items to fit the grammatical style of TOP (Holcomb, 1983).

The third section of TOP measures self-reported **Level of Functioning**. The initial pilot sample for this section consisted of 300 patients residing in two state hospitals and one state-operated nursing home in the state of Alabama. Patients were chosen at random from all patients residing in state hospitals and in state-operated nursing homes for the mentally ill. Again, the research literature on measuring Level of Functioning with individuals with mental illness was thoroughly reviewed, and a large

pool of items was put together. The results of the initial survey using the Level of Functioning questionnaire were used by the Wyatt Commission to redesign the Alabama Department of Mental Health. The United States Circuit Court of Appeals had appointed the Wyatt Commission to examine level of functioning data in order to implement a full continuum of care for clients of the Alabama Department of Mental Health.

Again, using factor analysis and internal reliability coefficients, we selected two major dimensions of level of functioning, and then we selected the most reliable items to be incorporated into these two sub-scales of the level of functioning section of TOP (Holcomb, et al., 1994).

The final section of TOP measures **Consumer Satisfaction** with behavioral health services. The initial validation research was done with a state-wide sample of all patients admitted to state-operated acute psychiatric units throughout Missouri (n=366). Factor analysis was done with a large pool of items, and five factors of client satisfaction were identified. A second statewide sample (n=390) was used as a replication sample for results from the first sample. Three factors of client satisfaction were identified and replicated in the second sample. These factors were **treatment effectiveness, trust of staff, and hospital environment**. It was clearly shown that patients were able to discriminate among these three factors of satisfaction (Holcomb, et al., 1989). Since this initial validation work, the client satisfaction section of TOP has been used with over 5,000 patients throughout the state of Missouri and in other states, in both state-operated facilities, private not-for-profit facilities, and for-profit facilities. The items chosen to represent these three factors of client satisfaction had the highest internal reliabilities and are applicable to clients served both in inpatient and outpatient settings. It has been our experience that even severely disabled psychotic patients can complete TOP and provide reliable outcome data.

Reliability

Since TOP was constructed using internal reliability coefficient as a criteria for item selection, in addition to factor loadings from factor analysis, it is expected that even the scales with few items will have good reliability. In a recent outcome evaluation of three chemical dependency outpatient centers, reliability for all four major scales and 1 sub-scale of TOP was clearly above minimal standards (Nunnally & Bernstein, 1994).

Validity

All four scales of TOP were developed separately with preliminary concurrent and criterion validity established for each of the sub-sections. In order to test the construct validity of TOP, multi-dimensional scaling was done with a sample of chemical dependency outpatients. The objective of multi-dimensional scaling was to ascertain if the four major scales and 12 sub-scales could be meaningfully plotted in a two-dimensional space. (Nunnally & Bernstein, 1994; Young & Harris,1993). The four major

outcome dimensions can be plotted in unique spaces using a Euclidean distance model. The four sub-factors of Quality of Life group together in the upper left quadrant. The three factors of Symptomatology group together. As would be expected, Anxiety and Depression are closely related in space, and are most closely associated with the Self-Esteem sub-factor of Quality of Life. The level of functioning sub-scales of Living Skills and Disruptive Behavior fall in the bottom half of the plotted space. Again, as can be reasonably predicted, Disruptive Behavior, Paranoia/Hostility, and Social Support are closely related, even though each of these sub-scales is from separate dimensions. These results from multi-dimensional scaling provide initial evidence of the construct validity of the four dimensions of TOP. At the present time, TOP is being used in several different types of settings, including inpatient settings of VA Hospitals, state-operated facilities, private not-for-profit, for-profit facilities, and in large managed care networks. TOP is also being used in outpatient settings, including chemical dependency programs. In our studies, it is clear that other instruments, such as the Beck Depression Inventory and the Zung Anxiety Inventory, are highly related to appropriate sub-scales of TOP. In addition, a consistent finding is emerging that the paranoia/hostility scale is negatively related to outcome. For example, multiple regression has indicated that high scores in paranoia/hostility are negatively related to days of sobriety after chemical dependency treatment. Studies also are consistently showing that satisfaction with treatment is predictive of better treatment outcome. Another finding is that people who complete treatment have higher scores on Quality of Life, and lower scores on Symptomatology, higher scores on Level of Functioning, and higher scores on Treatment Satisfaction, as would be expected. These results argue for both construct and predictive validity of TOP.

Administration

TOP can be administered at numerous times during the treatment process, and the version of the survey tool an agency administers will depend upon the time interval:

TOP 27 -- 27 questions of the TOP form covering three factors of Quality of Life, Symptomatology, and Level of Functioning

TOP 36 -- 36 questions of the TOP form covering all four factors surveyed, including Consumer Satisfaction

Top 27 can be given before the client begins outpatient treatment, or soon after the patient is admitted to an inpatient setting. Either TOP 36 or TOP 39 can be given at timed intervals during outpatient care, as well as different intervals during hospitalization. One model used by many providers and managed care organizations is to administer TOP at the time treatment begins, when treatment ends, at the end of three months, six months, and 12 months. TOP obviously can be given directly to the patient to complete and then handed back to the clinician or to a receptionist. TOP also can be mailed out to clients to obtain follow-up data. Some have argued that mail-out follow-up questionnaires are the most inexpensive and appropriate way to gather follow-up data. A significant problem with mailed questionnaires is return rate. Some research has shown that results from mailout questionnaires are more negative than when clients

directly fill out the questionnaire and hand it back to the care provider (Burger,1983). It is our recommendation that mailed questionnaires be used when feasible. Decisions about when to administer TOP should be made with consideration of cost as well as the intended type of outcome data that is needed.

Scoring

TOP contains four overall factors, and 12 sub-factors. The following list details the items that are added together to form the subscales and the overall major scales of TOP, as well as the reliability scores and original research information.

QUALITY OF LIFE

Self esteem Items 1-3

Social Support Items 4-5

Health Items 6-8

Activity Items 9-10

Overall Reliability: .72

(Coefficient Alpha)

LEVEL OF FUNCTIONING

Disruptive Behavior Items 20-23

Living Skills Items 24-27

Overall Reliability: .92

(Coefficient Alpha)

SYMPTOMATOLOGY

Depression Items 11-13

Anxiety Items 14-16

Paranoia/Hostility Items 17-19

Overall Reliability: .91

(Coefficient Alpha)

SATISFACTION WITH SERVICES

Satisfaction with Treatment Items 28-30

Satisfaction with Staff Items 31-33

Satisfaction with Environment Items 34-36

Overall Reliability: .91

(Coefficient Alpha)

Interpretation

All the major scales of TOP, as well as the subscales, meet the minimum criteria necessary for internal reliability and, therefore, can be used as construct measures. In any type of before-and-after design, where TOP is administered before treatment begins and after treatment, gain scores can be used to ascertain changes related to treatment. There is some controversy in the literature about using gain scores. Some argue that gain scores may actually increase measurement error. Therefore, since the effect may minimize gain, the use of gain scores may make results more conservative. Therefore, we feel that gain scores can be used if the user so wishes. Obviously, conclusions about cause and effect are difficult unless appropriate control groups are used. All the items in TOP were chosen based upon high internal reliability coefficients, but, nevertheless, single item scores are not as reliable as either the subscales or the four major scales of TOP. Caution must be used in interpreting and using single items to measure change. However, some items are trigger items and can indicate the need for active intervention. For example, Item 21 states: "I have recently tried to harm myself or had a plan to do so." TOP scores can be aggregated to assess programs and organizations. In addition, because of the reliability of the TOP factors, individual scores likewise can be interpreted, and changes of an individual over time can be very meaningful.

Comparison of TOP to Basis 32 & Other Scales

The reliability of the overall scale and the four major scales of TOP is much higher than that reported for Basis 32.

TOP's questions are much easier to understand and more meaningful, related both to clinical practice and diagnosis (NOTE: TOP has a 6th grade reading level as ranked by the FLESCH Reading Ease Scale.)

The TOP Subscales are highly correlated with the Zung Anxiety Rating Scale and the Beck Depression Scale in ways that clearly demonstrate the construct validity of the instrument.

Reports Possible from TOP Data

Data Analysis Capabilities

1. Data can be graphed by items, scales, and subscales.
2. Data can be analyzed by key variables prescribed by the agency, such as by region, provider, program, employer, client type, and even by individual client, in graphical format.
3. Different TOP results can be graphed over time for an individual client, producing a pre/post comparison.
4. Dissatisfied, neutral, and satisfied client groups can be graphed.

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