Treatment Outcome Research at the Monte Nido Treatment Center
[1 to10-Year Follow-up Study]

Many potential clients and family members may ask, "Does your program work? Do you have any statistics on the benefits of treatment at the Monte Nido Treatment Center?" Because our staff is committed to providing the best available care to every client in our program, we have been evaluating the short and long-term benefits of our services for some years now.

We collect information as part of an ongoing assessment before, during and at several intervals after treatment at our program in order to document effectiveness and determine long-term outcome. To date we have completed a comprehensive follow-up study of clients who have attended our program for at least 30 days[1].

This research involves measuring a variety of eating disorder related symptoms at admission, discharge and follow-up. Follow-up data is collected annually over the course of up to 10 years. This allows us to determine to what extent clients have improved and either lost or maintained that improvement several years after treatment at Monte Nido.

At each assessment time period, participants completed a number of assessment instruments, including the Eating Disorders Inventory-2 (EDI-2), the Beck Depression Inventory (BDI), and a structured eating disorder assessment questionnaire specifically developed for outcome assessment. The EDI-2[2] has 11 subscales that measure a number of important clinical behaviors and personality features of eating disorders, including Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Asceticism, Impulse Regulation, and Social Insecurity.

A simplified summary explanation of the assessment instruments is provided with the results below.

To ensure critical objectivity in the analysis of our data, we contracted with renowned eating disorder specialist and researcher, Dr Timothy Brewerton. Dr. Brewerton is triple board certified in general psychiatry, child/adolescent psychiatry and forensic psychiatry. He is a Fellow of the American Psychiatric Association and Founding Fellow of the Academy of Eating Disorders. He is past President of the Eating Disorders Research Society and has served on the Board of Directors of the Academy of Eating Disorders. Dr. Brewerton has published over 110 articles and book chapters on various aspects of eating disorders, including their psychobiology, psychopharmacology, epidemiology, and comorbidity. He is Editor of the acclaimed textbook, Clinical Handbook of Eating Disorders: An Integrated Approach. Dr. Brewerton has reviewed for over three dozen journals and is currently on the Editorial Boards of the International Journal of Eating Disorders, Eating Disorders: The Journal of Treatment and Prevention, and Current Food and Nutrition Science. He has received numerous awards recognizing his accomplishments. Dr. Brewerton is currently in private practice in the Charleston, SC area and continues as Clinical Professor of Psychiatry and Behavioral Sciences at the Medical University of South Carolina.

Where we insert comments not attributable to Dr. Brewerton, our comments will be italicized.

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[1] Due to the necessary course of treatment and the severity of clients seeking admission to our program, Monte Nido requires a minimum of a 30-day stay.

[2] We used the EDI-2 instead of the EDI-3 because the EDI-2 has been used much more extensively and has a much stronger track record in research studies on assessment and treatment outcome.

Survey Protocol:

Each client was given our assessment survey [as described above by Dr. Brewerton] when they admitted, and when they discharged.

The results of the surveys were used by the primary therapist to complete the psycho-social evaluation of each client, educate the clinical team and ascertain the program's clinical goals for each client. Just before discharge, the survey was done again, and reviewed with the client [and the clinical team] as a means to support the work they had done at the facility and the work they will need to continue post-discharge.

For those who completed our minimum 30-day program, 75% continued to participate in the on-going post-discharge survey process. Most graduates did surveys multiple times after their discharge. The assessment time periods were; 3-months, 6-months, 1-year, 18-months, 2-year, 3-year, 4-year, 5-year, 6-year, 7-year, 8-year, 9-year and 10-year.

Although most graduates did surveys multiple times – Dr. Brewerton used "only" their very last/latest survey response.

To protect the client's confidentiality and anonymity, each respondent was identified with a computer-generated number – no names. By 2003, an Internet system was created allowing for direct entry into the database by the graduate.

An anonymous weight response card was provided so that graduates who continued to follow our philosophical paradigm of not weighing oneself could provide that essential piece of information – without weighing themselves.

Research Findings:

Of a possible 231 potential respondents (those that completed $\geq$ 30 days of the program), 75% (172) participated in the study.

Of the 172 who completed questionnaires, only those with either anorexia nervosa (AN) or bulimia nervosa (BN) were included in the analyses (156 of 172). This is because the sample size (n=16) of clients with Eating Disorder Not Otherwise Specified (EDNOS) was too small for analysis.

In addition, we decided that outcome significance would only be obtained by using surveys beginning no less than one year post-graduate (PG), so only those who had responses at least one year out from discharge were included in the PG analyses.

<u>For all PG analyses only the last or most recent PG variable was used in order to get the longest or greatest follow-up period since discharge.</u>

The average age of both the AN and BN groups was 30.9 years.

The average length of stay was 96 days for the AN clients and 79 days for the BN clients.

Fifty-one percent of the AN clients and 59% of the BN clients attended Bella Mar, our transitional program, prior to discharge.

The average duration of time between discharge and last PG follow-up was 4.5 years for the AN group and 4.1 years for the BN group.

It is notable that many of our clients were not treatment naïve.

Among our clients with AN,

- 21% had been seeing a psychiatrist,
- 43% a therapist and
- 18% a dietitian.

- Thirty-four percent had been previously hospitalized,
    - 26% for their eating disorder, and
- 34% had been in a day treatment program.

Among the BN clients,

- 25% had been seeing a psychiatrist,
- 38% a therapist, and
- 14% a dietitian.

- Twenty-eight percent had been previously hospitalized,
    - 18% for their eating disorder, and
- 21% had been in a day treatment program.

In other words, a large number of our clients had failed previous inpatient, residential and/or outpatient treatment.

The analysis did not separate out clients who had only been hospitalized or only been treated in a day treatment program – so you cannot add the percentage hospitalized with the percentage treated in day treatment to establish how many of our clients had previous treatment.

Data Outcome Presentation:

The outcome report you are about to read analyses and presents the survey data results separately comparing each diagnosis. It was important to us to determine how effective we were with the different groups.

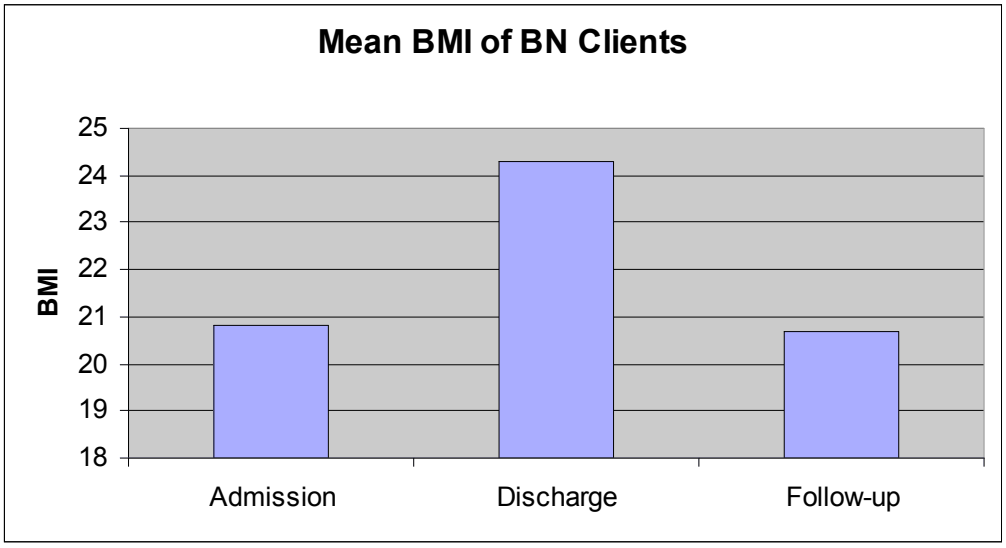
There are two sections to the report. The first section reports the outcomes for clients suffering from anorexia nervosa and the second section for clients suffering from bulimia nervosa.

If you compare this report or its graphs with other people's or treatment facilities outcome studies, please make sure they also separate out the different diagnosis groups as statements or graphs. Clumping the different diagnosis together would not be comparable.

Bulimia Nervosa

Body Mass Index

The table below shows average or mean body mass index (BMI) of the clients with BN at admission, at discharge and at post-graduate follow-up. Although weight did increase during treatment at Monte Nido for clients with BN, there was no statistically significant change in BMI from admission to discharge or from discharge to post-graduate follow-up. Weight gain was not a treatment goal for these clients however weight gain sometimes occurs with normalization of eating and abstinence from purging. This is in part due to the correction of the severe dehydration that typically accompanies BN.



Good, Intermediate and Poor Outcomes

The graph below shows the percentage of clients with BN who had good, intermediate or poor recovery at post-graduate follow-up.

- Good or full recovery from BN is customarily defined by the complete cessation of binge eating and purging behaviors.
- Intermediate or partial recovery is defined by at least a 50% reduction in binge eating and purging.

The graph below displays the incredible success Monte Nido has with BN between admission and discharge.

- *97% of our BN graduates show 100% cessation of their binge, purge or other compensatory symptoms while,*
- *3% show the intermediate or partial recovery with at least a 50% reduction their binge, purge or other compensatory symptoms*

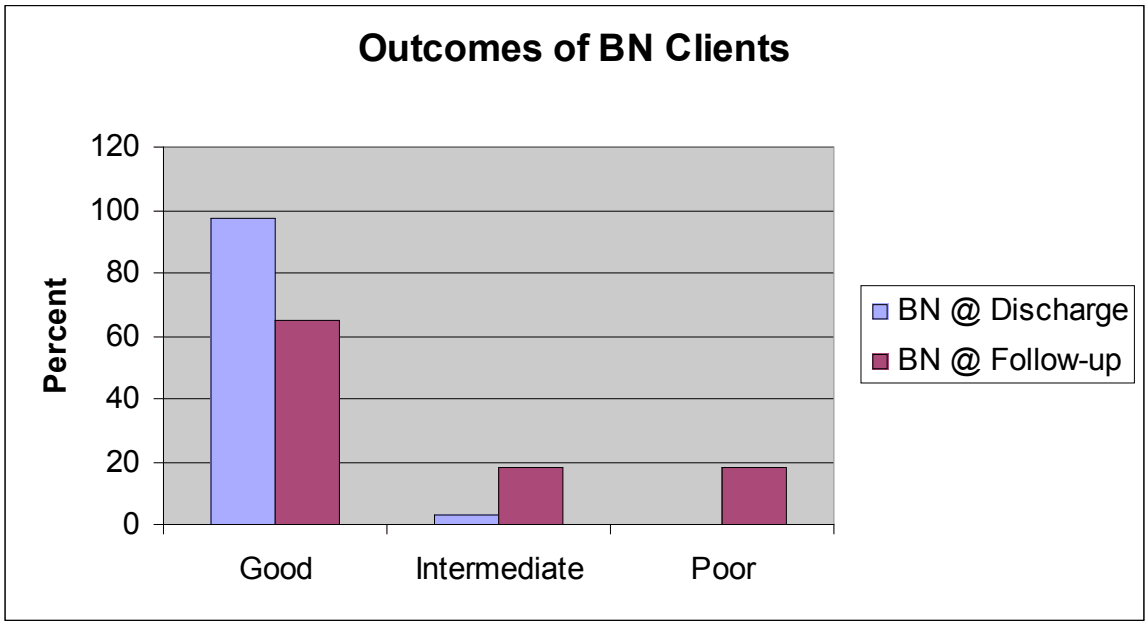
Although it is important that our clients get their symptoms under control between admit and discharge, this is not indicative of post-discharge outcomes. We are most concerned with whether or not control over their symptomology extends to when they have returned to normal life.

The graph below shows that

- *62% of our BN clients had a "good" outcome [100% cessation of their binge, purge or other compensatory symptoms] while,*
- *19% experience an intermediate outcome [or partial recovery with at least a 50% reduction their binge, purge or other compensatory symptoms] and*
- *19% had poor outcomes. [a recovery with less than a 50% reduction their binge, purge or other compensatory symptoms]*

A study conducted in 1997, titled "Outcome in Bulimia Nervosa" combined results of various studies conducted by others, and it states that between 5-10 years following treatment, approx 50% of patients with BN recover, 30% improve and 20% continue to meet full diagnostic criteria. Risk of relapse appeared to decline 4 years after treatment [3]

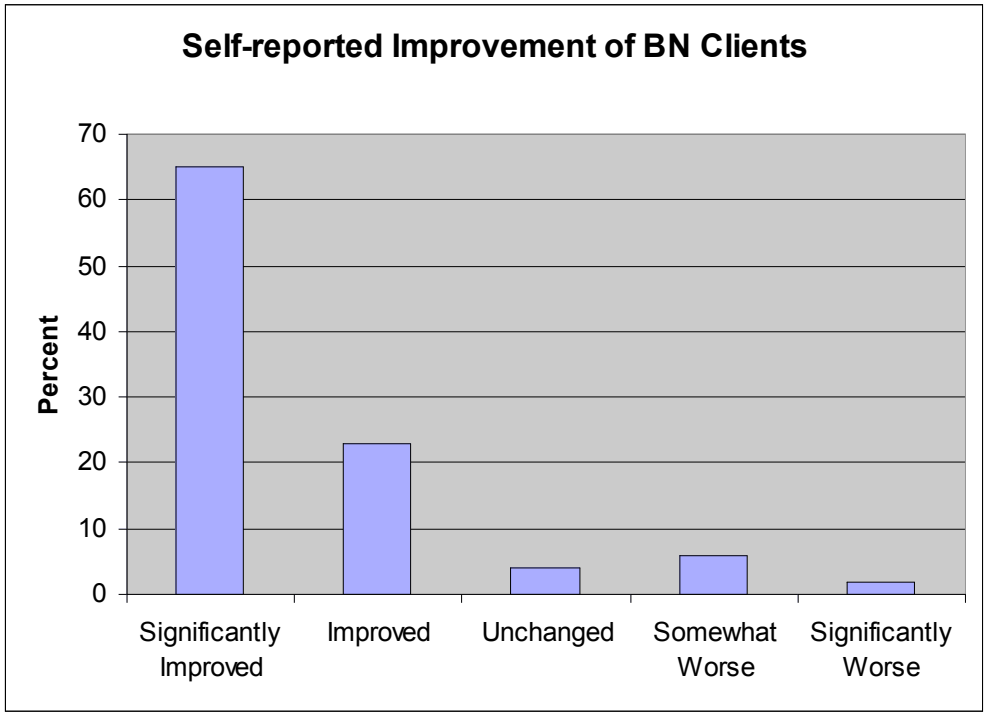
This means that the Monte Nido BN clients' outcomes are more (12%) successful than the outcomes reported by one of the very few independent studies of BN results. Since the independent study reports that the risk of relapse appears to decline 4 years after treatment, this implies that Monte Nido BN clients should retain their higher rates of success.



[3] *Keel, Pamela, J.E Mitchell, "Outcome in bulimia nervosa", American Journal of Psychiatry, 154 #3 (1997): 313-321*

Self Report of Improvement

When clients with BN rated their own degree of improvement at post-graduate follow-up, 88% rated themselves as "significantly improved" or "improved." (see below)



It appears that our client's self-reported perceptions of their improvement at follow-up match *the results produced by the standardized testing.* We are pleased that in both the standardized measures and subjective reports our clients with BN are so greatly improved.

Eating Disorder Behaviors

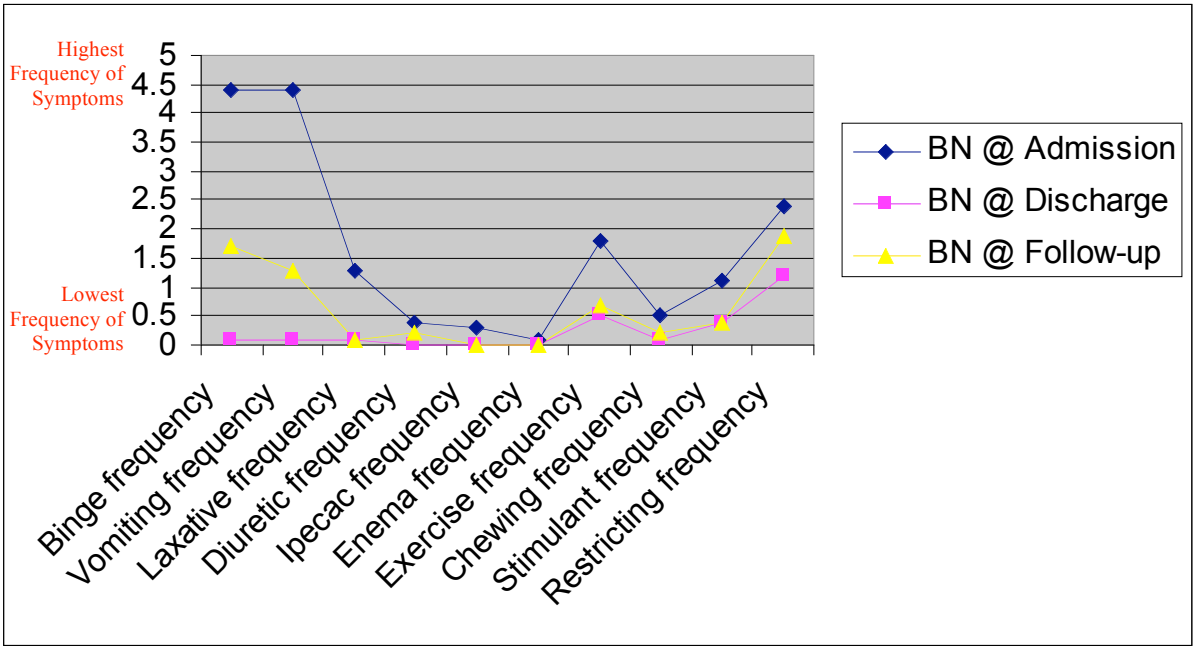
The graph below shows the average ratings of clients with BN on a variety of eating disordered behaviors at admission, discharge and post-graduate follow-up.

There were statistically significant improvements in the frequencies of binge eating, vomiting, laxative abuse, chewing, exercise frequency, stimulant use, and restricting from admission to discharge.

All of these significant improvements were maintained at post-graduate follow-up in comparison to admission values.

The scores are based on a scale of 0-6 and can be understood as follows: 0 = not at all; 1 = once a month or less; 2 = a few times a month; 3 = at least once a week; 4 = at least twice a week; 5 = daily; 6 = more than once a day.

Monte Nido's BN Binge, Purge & Other Compensatory Results Plotted



Our goal in treatment is to give clients the tools to achieve control over both their weight and their life without resorting to destructive behaviors. These destructive behaviors and their use as an anesthesia to life are difficult to combat once discharged from a program. We are very encouraged that the outcome survey shows we are providing our clients with the tools necessary to continue recovery in this area.

Psychological Symptoms of BN

Measured by the Eating Disorder Inventory [EDI-2]

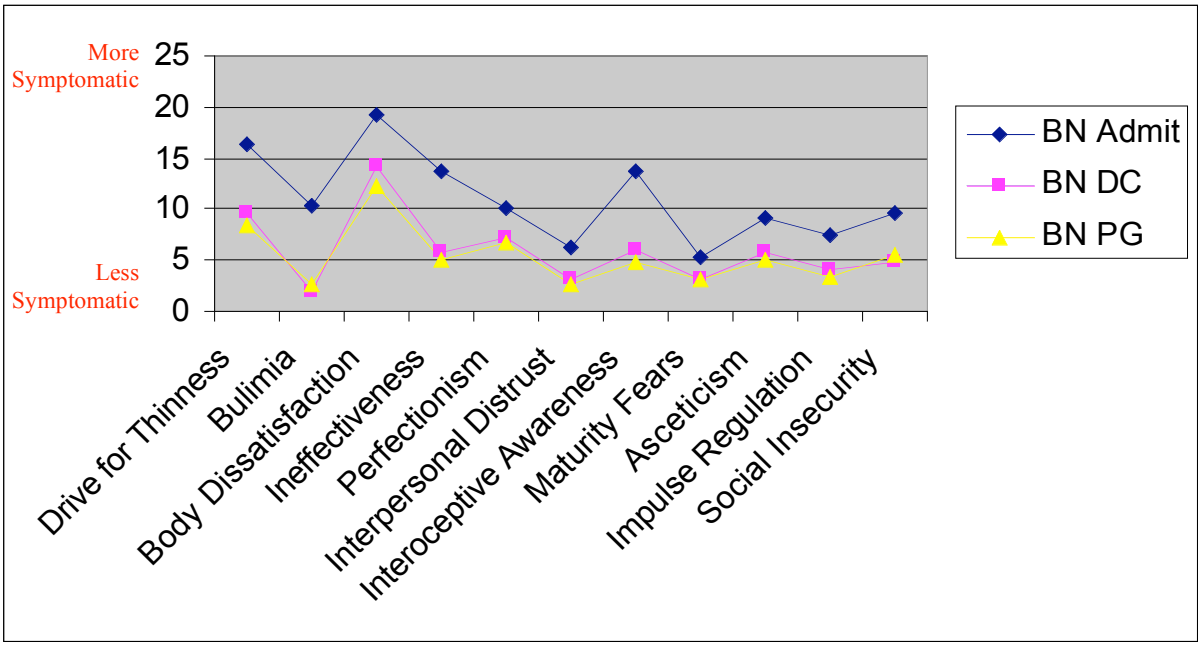
For a detailed description of the EDI-2, including the subscales, see the section in our AN results.

The graph below shows the EDI-2 profile for BN clients at admission, discharge and post-graduate follow-up.

BN clients showed statistically significant improvements in all 11 subscale scores between admission and discharge timepoints (Drive for Thinness, Bulimia, Body Dissatisfaction, Ineffectiveness, Perfectionism, Interpersonal Distrust, Interoceptive Awareness, Maturity Fears, Asceticism, Impulse Regulation, and Social Insecurity).

At time of post-graduate follow-up, BN clients remained improved and showed statistically significant improvements in all EDI-2 subscale scores as compared to admission.

Monte Nido Bulimia Nervosa EDI-2 Results Plotted



It is impressive that clients with BN were not only improved at discharge in their eating disorder behaviors but continued to improved in all the 11 psychological subscales of the EDI – as measured at their more recent survey period. This is a phenomenal result considering it had been an average of 4.1 years since their discharge.

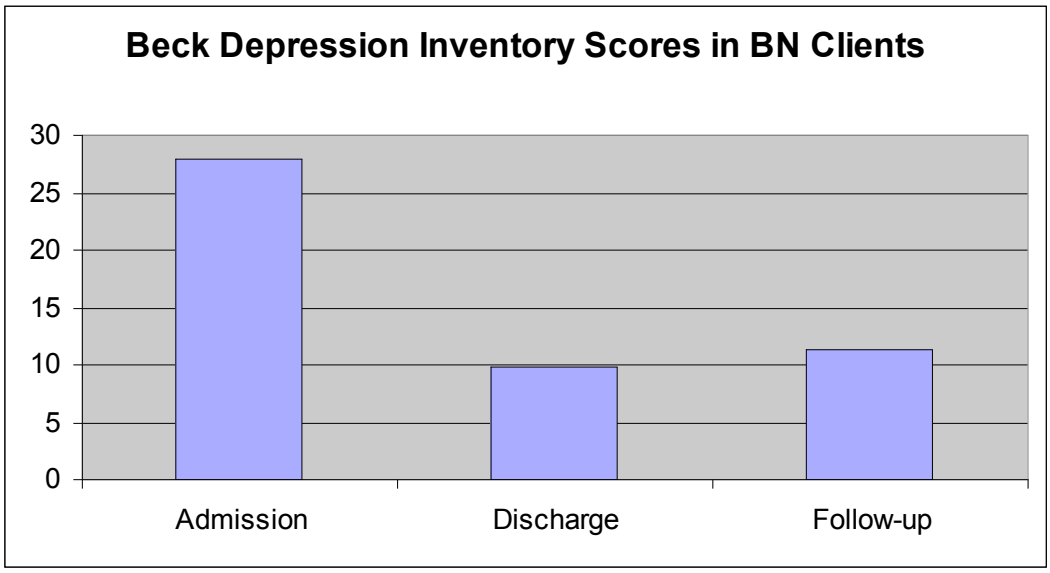
Our overall results indicate that the Monte Nido program is successful with clients suffering from BN and AN in providing them the skills to continue their recovery.

Beck Depression Inventory® -II (BDI-II)

For a description of this assessment for mood and depression see the section in our AN results

Clients with BN showed statistically significant improvement in depressive symptoms between admission and discharge. This improvement was maintained at the time of post-graduate follow-up.

Not only did the client's eating disorder symptoms reduce but according to the Beck Depression Inventory the measures of their emotional well being and self-satisfaction improved and remained improved at follow up.



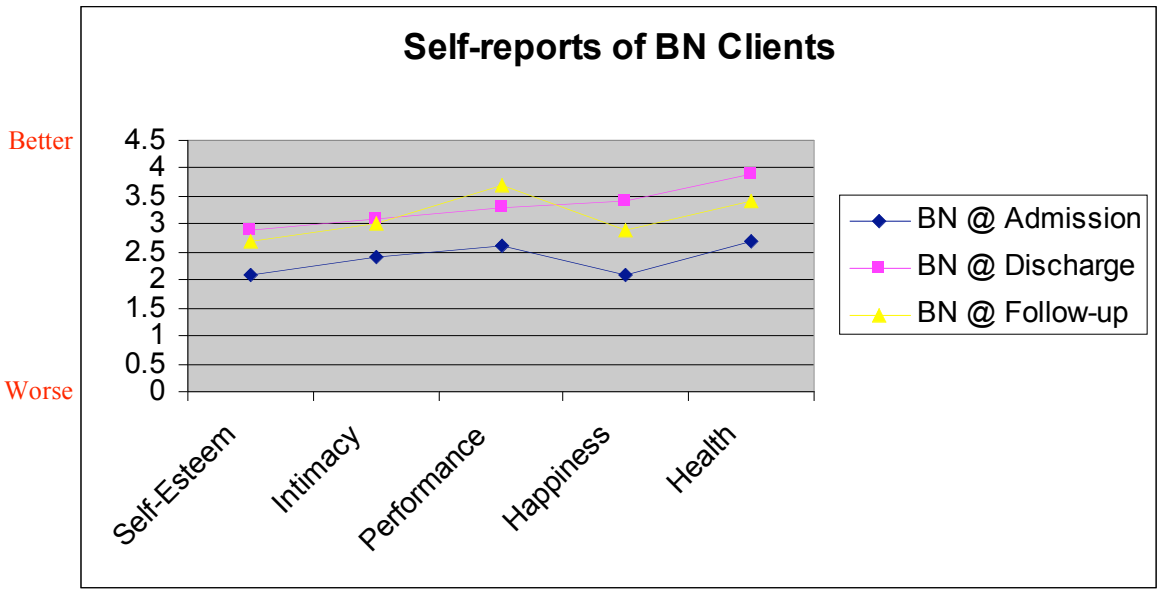
Clients' Perceptions of Themselves

As an eating disorder treatment facility, our mission, of course, is to treat the eating disorder. However, it is important to understand that eating disorder behaviors are used to cope with a variety of feelings, situations and experiences. In this way each client's eating disorder serves a purpose or "performs jobs" for them that they are unable to accomplish in healthier, more appropriate ways. The real task is to help each client learn to understand her needs and cope with life without resorting to self-destructive eating disorder behaviors. This requires developing a strong healthy self.

We believe that upon entering treatment each client has an "eating disorder self" and a "healthy self" but that the eating disorder self is in charge while the healthy self has become weak and in need of reviving. Our goal is to facilitate the emergence of a strong healthy self. This involves working with each client in a variety of areas such as self-esteem and intimacy. We work to ensure that clients themselves begin to see improvements in these areas and consequently improvement in their ability to perform at work, school and in their overall happiness and health. Our survey asks clients to rate themselves in these areas.

When clients with BN rated themselves on self-esteem, intimacy, performance [performance at work or school], happiness and overall health, there were statistically significant improvements between admission and discharge on all of these measures.

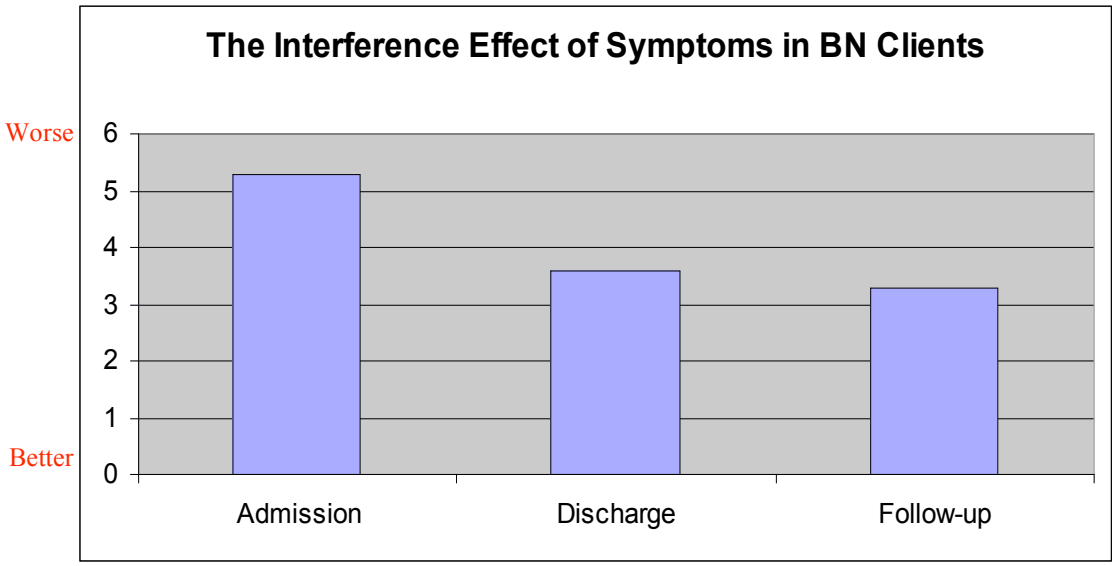
Additionally all of these measures continued to improve post discharge with the improvements in performance at work and/or school, happiness and health remaining statistically significantly different.



Interference Effect of Symptoms

Eating disorder behaviors are intrusive and interfere with normal life functioning. The importance of measuring the interference effect of symptoms is that it reveals how much time clients spend on their eating disorder, either engaging in the behaviors or thinking about them, such as wanting to binge, worrying about getting fat, or trying to avoid eating. We believe that our client's physical and emotional health can only truly improve once the eating disorder interference in that person's life diminishes and is under control.

The interference effect of symptoms was rated by BN clients at admission, at discharge and at post-graduate follow-up. There was a statistically significant improvement from admission to discharge, which was maintained at follow-up.



In Summary

Positive outcomes in supervised treatment facilities do not necessarily predict positive follow-up results.

Our survey results indicate that Monte Nido has successfully bridged the gap between supervised treatment in a facility and the continuation of post-discharge positive outcomes and recovery. This study is important because we see significant changes carried well into post-graduate lives.

From this 1-10 year study, it appears that our philosophy of treatment, our post-discharge transitional program and our out-reach activities provide our clients with the ability to strengthen their "healthy selves" and make life choices allowing them to "give up" their eating disordered selves in favor of a healthy life.

The fact that 75% of our alumni were willing to participate in this very long process of accumulating data over a decade is a testament to the connection we develop with our clients.

We believe that our outcome data will help others feel confident in selecting our program for themselves, their loved ones, their clients or their insured customers.

If you have any questions about this study or anything else,
Please contact us at 310 457-9958 or mntc@montenido.com