2017-2018

Measuring Inner Wealth

MAKING POSITIVE POSSIBLE.

May 15, 2018

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EXECUTIVE SUMMARY

Building upon the Evaluation Team's findings in 2016-2017 that the Nurtured Heart Approach (NHA) had been successfully integrated into all levels of New Day's organization, **this year's evaluation focused on measuring the development of "Inner Wealth" in the safe home's youth**. It is believed that youth develop Inner Wealth through exposure to the NHA approach created by Howard Glasser, founder and chairman of the Children's Success Foundation.

To measure the development of Inner Wealth in safe home youth, **the evaluation team designed a fifteen-question survey** to be administered when youth first enter the safe home, at regular intervals during their stay, and finally at discharge. This survey was created to specifically measure youth's development of Inner Wealth, through questions related to emotional intelligence, and also to measure youth's exposure to the NHA concepts at the safe home. On 13 of the survey questions, a seven-point Likert scale gives youth a wide range of possible responses from strongly agree to strongly disagree, conforming with best practices in the survey design literature. The remaining two questions are open-ended and elicit youth's descriptions of themselves and their self-identified strengths.

The survey was piloted from January 12 through March 16, 2018 with youth staying at the safe home. A total of forty-four surveys, including initial, follow-up, and discharge surveys, were completed, with 12 individuals completing both a pre-survey and a discharge or other follow-up survey during this period.

From the 12 matched surveys, **we found that individual question responses generally showed greater inner wealth and NHA awareness across the 13 Likert scale questions, and seven questions showed statistically significant increases**. In addition to these findings, when questions are combined in two categories consisting of an "Inner Wealth" category and an "Exposure to Nurtured Heart Approach" category, **both showed statistically significant increases.**

The Evaluation Team recommends **that New Day continues its focus on data collection of the "Greatness Surveys"**, with a few recommended changes for improvement. New Day should (1) **reconsider three of the questions and possibly reword or reposition questions to ensure comprehension by the youth; (2) administer the survey electronically with a one question at a time format; (3) adopt language used by youth; and (4) identify and provide support for New Day staff members to continue with data analysis.**

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1. Introduction

New Day Youth and Family Services assists youth in New Mexico through a homeless and runaway youth safe home, a Life Skills Academy, a young adult living transitional program, and a detention diversion program. Since its inception over forty years ago, New Day has remained singularly focused on meeting the needs of young people in trouble. For the past few years, New Day has been practicing the Nurtured Heart Approach (NHA) within the safe home and throughout the organization to grow and nurture "Inner Wealth".

Last year's evaluation activities included conducting three focus groups with youth at the safe home, staff at the safe home, and the executive leadership team to determine if NHA had successfully been integrated within all levels of the organization and if youth were developing Inner Wealth while at the safe home. After meeting with these groups, the Evaluation Team concluded that New Day had in fact been successful in implementing the NHA and youth were developing Inner Wealth while at the safe home.

Building upon this work, this year's Evaluation Team designed a quantitative evaluation method to assess whether youth at the safe home are developing Inner Wealth during their short stays with New Day.

This year's evaluation team consisted of Rebecca Rae, PhD students Sofia Locklear and Kevin Estes, and New Day staff members Brooke Tafoya and Maureen Schat. Rebecca is an Associate Researcher at the College of Population Health's Center for Participatory Research. Sofia Locklear is a PhD student in the Sociology Department at UNM. Sofia's work focuses on race, social determinants of health, intersectionality, and social justice. Kevin is a PhD student in the Economics Department at UNM. Brooke Tafoya is the Director of Operations for New Day Youth & Family Services. Brooke has over fifteen years of experience working with youth in various capacities around the country. Maureen Schat is the Program Manager for the Safe Home at New Day Youth & Family Services.

To answer the evaluation question "Are youth developing Inner Wealth during their stay at New Day?", the Evaluation Team developed a 15-question survey which gauges youth Inner Wealth development over the course of their stay at the New Day safe home. This instrument was custom developed for New Day to identify development in two areas: Inner Wealth, as measured by questions relating to emotional intelligence, and exposure to NHA concepts. NHA is a relationship-focused methodology, which focuses on three stands to build children's Inner Wealth. Details about these stands are provided below.

2. Work Performed

The Evaluation Team developed the 15-question survey using language and concepts directly from NHA. These questions were proposed, discussed, and refined by all five Evaluation Team members over the course of multiple meetings during the Fall 2017 semester.

The survey included both questions meant for youth response and New Day staff fields to keep track of the data collection, such as: unique youth ID number, survey type, discharge date, and survey date. After these staff fields, question one on the survey is a short open-ended question. Following this short question are thirteen questions asked on a Likert scale the degree to which youth agree with each statement. The survey then closes with another open-ended question asking the youth to list three of his/her strengths. (See Figure 1 and Appendix A.)

Figure 1. Survey Reproduction

NM Evaluation Lab 2018 for A New Day Youth and Family Services, Inc. Safe Home Shelter

Apricot ID# _26274_   Initial Survey __X__   30 Day _____   60 Day_____

Discharge Survey (Date) _____

Survey Questions: **Today's Date:** ___12/19___

1. Fill in one word to describe yourself _Jayful_

	Strongly Agree	Agree	Somewhat Agree	Neither Agree or Disagree	Disagree	Somewhat Disagree	Strongly Disagree
2. I have personal goals			X				
3. I feel good about myself	X						
4. When I get angry, I act without thinking			X				
5. People at my home care about my feelings				X			
6. People pay more attention when I mess up then when I don't.				X			
7. I feel recognized for my successes			X				
8. Expectations at New Day are clear to me	X						
9. New Day staff acknowledges my greatness regularly	X						
10. I feel like I am part of a group	X						
11. People at New Day care about my feelings	X						
12. I know how to reset myself				X			
13. I can easily help others see their greatness				X			
14. I feel capable of making positive change in my life	X						

15. I can name three of my strengths:
   1) _happyness_
   2) _curages_
   3) _brava_

The questions on the survey can be sub-categorized into two categories: Inner Wealth, and NHA Concepts.

The Inner Wealth category comprises eight questions. Most of the questions could be described as emotional intelligence questions, assessing the ability of youth to be aware of, control, and express their emotions. Questions in this category included the following statements:

- I have personal goals;
- I feel good about myself;
- When I get angry, I act without thinking;
- People at my home care about my feelings;
- I feel like I am part of a group; and
- I feel capable of making positive change.

The open-ended questions would also be considered as part of this category but are not used in the calculation of category index scores presented in the data analysis section.

The NHA Concepts category consists of the remaining questions, which are:

- People pay more attention when I mess up then when I don't;
- I feel recognized for my successes;
- Expectations at New Day are clear to me;
- New Day staff acknowledges my greatness regularly;
- People at New Day care about my feelings;
- I know how to reset myself**; and
- I can easily help others see their greatness**.

The final two questions in the NHA Concepts category, which are asterisked, could arguably also be included in the Inner Wealth category. An analysis which includes these two questions in the Inner Wealth category as well can be found in Appendix B; the findings of that analysis concur with the main findings presented here.

To better understand why the NHA concept questions directly relate to the NHA, it is important to have a clear understanding of the three NHA stands.

The Nurtured Heart Approach Stand #1 category relates to the "Absolutely No" stand. Absolutely No refers to youth caretakers not reacting, or energizing, negative energy projected by the youth. For instance, practitioners of Stand #1 would not give lots of relationship when things are not working. Two questions on the survey measured youth's exposure to Stand #1; these questions are: "People pay more attention when I mess up then when I don't" and "I know how to reset myself". Each question uses exact terminology described by the stand and show the youth's potential development in this area over the course of their stay at New Day.

The Nurtured Heart Approach Stand #2 category refers to the stand "Absolutely Yes". Absolutely Yes means that New Day staff acknowledges and celebrates the "greatness" displayed by the youth. Most often, this takes the form of staff members relentlessly acknowledging young people challenging themselves, respecting themselves, or others, and growth of any kind. This stand has also

been exhibited through the unique development of "Greatness Cards" at New Day. Staff members every day take time to acknowledge young people's greatness, which are qualities of who they are with supporting evidence, by giving youth 3"x5" index cards as physical reminders of their greatness. Two questions on the survey directly measure this stand; these questions are: "I feel recognized for my successes," and "New Day staff acknowledges my greatness regularly."

Stand #3 of the Nurtured Heart Approach is "Absolute Clarity." Absolute Clarity refers to it being clear what is out of bounds at any given moment. One question on the survey asks this question directly, in the form of: "Expectations at New Day are clear to me."

Following the development of the survey, the Evaluation Team pinpointed appropriate times to implement the greatness survey, based on when youth arrive at the safe home, their length of stay, and when they depart, to measure their development over time. These data collection times included an "initial" survey, which was administered at the first meeting with the case coordinator, which occurs within three days of the youth's admittance into New Day. The amount of time that youth stay at the safe home fluctuates between one day to three-months, so multiple "post follow-up" times were created to capture the varying lengths of stay. These post follow-ups are administered during Youth Centered Meetings for youth that continue their stay at the safe home at 30-days, 60-days, and 90-days intervals. Lastly, a "discharge" data point was planned to survey youth at the time of their discharge from the safe home, which could occur at any time.

Surveys were administered over a three-month period in the Spring 2018 semester, between January 12 and March 16, 2018. After each paper survey was completed it was stored with other completed surveys until they were all entered into New Day's database by an Evaluation team member. Data entry occurred on two different dates within the survey time period (February 23 and March 16). Within the New Day's data system, a staff member had already created the necessary fields to store the data for easy retrieval (including reverse coding for questions four and six), so data entry was an easy task to complete.

From the beginning of the survey period, there was a ramp-up period where surveys were only completed for youth newly admitted to New Day's safe home, but then were administered on all youth entering and leaving the safe home regardless of date of first admittance. During this time period, there were three "inactive" surveys recorded where youth either did not complete the survey, or only selected answers in one column. (See Figure 2.)

Figure 2. Number of Surveys Completed Per Week
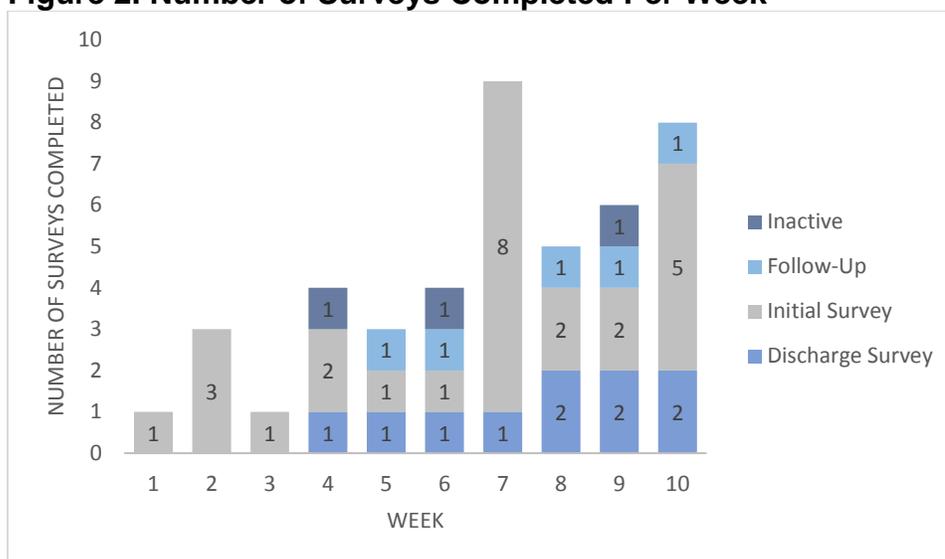
Note: The first week began Friday January 12, 2018 and the weeks were measured from Sunday-Saturday. Follow-Up surveys include 30-day, 60-day, and 90-day surveys.

The Evaluation Team used a t-test to determine if statistically significant changes had occurred from initial surveys to the various post follow up and discharge surveys. Additional analyses performed by the Evaluation Team included looking at potential overall changes in youths' Inner Wealth development and exposure to NHA concepts by creating an index of multiple question responses for each category. Finally, the change in youth responses from initial surveys to follow-up surveys on both open-ended questions were examined.

3. Data Analysis

A total of 44 surveys were completed during the data collection period, with 12 individuals completing both a "pre" survey (in the form of an initial survey or a follow-up survey dated before a discharge survey) and a "post" survey (in the form of a discharge survey in most cases or a later dated follow-up survey in others). It is important to note that only one youth during the pilot period refused to participate in the survey; and there were only three other instances of inactive survey completions. In two instances, youth marked straight down a single column of the survey (one down the "Strongly Agree" category, the other down the "Neither Agree or Disagree" column"). In the other case, the youth only completed the first four questions of the survey.

In most surveys, it appeared that youth had answered thoughtfully and would tend to respond in a positive manner; but the reverse coded questions seemed to cause confusion. You can see on some surveys where youth had scribbled out an initial answer to one of the reverse coded questions and answered differently after more reflection. Both of the reverse coded questions should be reconsidered by New Day staff, and possibly re-worded to ensure youth's understanding of the question.

While not an ideal sample size for rigorous statistical analysis, some themes can be inferred from the survey responses.

Likert Scale Questions Analysis

The thirteen Likert scaled questions were analyzed using two different methods, each coming up with very similar results. The analysis presented in this report comes from the matched group of 12 respondents who took both a pre-survey and a post-survey. Results from a more exclusive group of ten youth (removing one youth who stayed at the safe home a single day, and another youth who completed an inactive post survey) reach the same findings and can be found in Appendix B.

For the survey questions, the youth selected their level of agreement with each question, on a scale of strongly agree, agree, somewhat agree, neither agree or disagree, somewhat disagree, disagree, and strongly disagree. For analysis, the seven-point scale, starting from strongly agree, was scored a seven (except for the reverse coded questions where strongly disagree was scored a seven), down to a one for strongly disagree. Essentially, the higher average results for each question, the better.

Four individual questions in the Inner Wealth category and three individual questions in the NHA concepts category showed statistically significant increases in youth responses at discharge. What is meant by statistically significant, is that the difference between two sets of data (pre-surveys and post-surveys) represent a real difference and aren't just the result of chance. While a simple calculation of the difference between the means shows that there are differences, a statistical test helps determine if the differences are real. (See Table 1.)

We used a matched pairs t-test to assess if the youth experienced any changes during the time from the pre-survey and post-survey. The p-value that is reported shows the probability that the difference is a result of chance. The standard cut-off for determining real difference is 0.10, which means that there is a 10% probability that the difference is real and would occur in another sample of the same population. However, in policy settings, we often want to know which results are likely to be real with a reasonable degree of certainty. In this analysis, we thus expand the cutoff to include differences that have a 75% probability of being real. This cutoff meant that questions, "I can easily help others see their greatness" with a p-value of 0.22; and "I feel good about myself" with a p-value of 0.14 were included as marginally statistically significant.

When designing the survey, we included the questions "When I get angry, I act without thinking," and "People at my home care about my feelings" to measure emotional intelligence and the development of Inner Wealth. At the time youth are admitted to New Day, their relationships with parents/guardians at home are often fractured. The statistically significant results (p=0.06 and p=0.02) for both questions may indicate that youth at New Day, through exposure to the Nurtured Heart Approach, are able to reflect on their recent experiences that brought them to the safe home and understand that their parents/guardians do care for their feelings.

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Looking at the results for both the NHA Concepts category (p=0.05) and the Inner Wealth Category (p=0.01), we see that youth made statistically significant increases in both areas during their time at New Day. This is very promising preliminary evidence that youth are in fact developing Inner Wealth while at the safe home and could correlate with consistent exposure to NHA concepts.

Table 1. Matched Pairs Analysis

Questions by Category	Initial Average	Discharge Average	Difference	p-Value from T-Test
People pay more attention when I mess up then when I don't	3.08	3.83	0.75	0.09*
I feel recognized for my successes	5.08	6.42	1.33	0.02**
Expectations at New Day are clear to me	6.42	6.67	0.25	0.39
New Day staff acknowledges my greatness regularly	6.42	6.50	0.08	0.72
People at New Day care about my feelings	6.17	6.27	0.11	0.81
I know how to reset myself	5.83	6.67	0.83	0.03**
I can easily help others see their greatness	6.17	6.50	0.33	0.22*
NHA Concepts Category (all of the above)	**5.60**	**6.12**	**0.52**	**0.05****
I have personal goals	6.67	6.75	0.08	0.67
I feel good about myself	6.25	6.75	0.50	0.14*
When I get angry, I act without thinking	3.00	4.00	1.00	0.06*
People at my home care about my feelings	4.58	5.75	1.17	0.02**
I feel like I am part of a group	6.08	6.17	0.08	0.81
I feel capable of making positive change	6.67	6.75	0.08	0.34
Inner Wealth Category (all of the above)	**5.54**	**6.03**	**0.49**	**0.01*****

***Statistically significant at 5% level; **statistically significant at 10% level; *statistically significant at the 25% level.

Note: Twelve total respondents. Shaded differences are likely statistically significant, meaning that the result is not due to the sample of respondents, and would likely occur with another sample of youth.

Open-Ended Questions Analysis

Question 1. Fill in one word to describe yourself

This question did not produce meaningful results from the group of matched youth, because several youths did not respond to the question. In each group of pre-surveys and post-surveys, four out of the twelve youth did not respond to this question. Even more surprisingly, the four youth who did not respond to the question on pre-surveys, did respond on the post survey (while the four who did not respond on the post-survey did respond to the question on the pre-survey). Due to this peculiar finding it could be ruled out that some youth did not see the question, even though it is in a location that could understandably be missed (appears near the top of write-in questions meant for New Day staff). This could be evidence that youth did not see value in this question, and perhaps it could be removed in future versions of the survey.

For the youth that did answer this question, their responses were typically personality descriptors (strong, independent, quiet, caring, fun, etc.). Virtually no differences were found between pre-survey answers and post-survey answers from youth who answered the question.

Question 15. I can name three of my strengths.

The final question on the survey asked youth to describe three of their strengths. While no prompts are given on the surveys, most students could identify personal strengths. Of the twelve-matched youth, there were only two surveys (of twenty-four) that did not have any strengths listed. In another instance, one youth stated that they had no strengths.

The youth responses were pooled together in a word cloud, to display the strengths listed by the youth (spelling corrections were made, and illegible responses were removed). For easy tracking, words that related to outward displays of strength were highlighted purple. These words related to external strengths that could be seen through exterior accomplishments. For example, an external strength could be math. Math is often measured at school in the form of homework and test grades, so it's a strength that youth can see the results from. Another example might be dance, which is naturally a skill that must be externally displayed in order to identify it as a strength.

Inner strengths were highlighted green. Examples of inner strengths include caring, which might have external manifestations, but is naturally an internal emotion. Another example would be work ethic, which has external applications but is something that cannot be seen by itself. A small final category of non-positive strengths or skills (including blank responses) were highlighted in red. If a strength was listed multiple times, that strength appears in larger font to represent the higher frequency of reporting.

The matched youth identify inner strengths overwhelmingly more than external strengths. These proportions of inner to external strengths are the same in the pre and post surveys, so these responses provide no evidence of a change. (See Figures 3a and 3b.)

Figure 3a. Initial Strengths Identified by Youth

Figure 3b. Discharge Strengths Identified by Same Youth

Note that the proportions of internal and external strengths were unchanged in the pre and post surveys.

4. Recommendations

Recommendations for the continued analysis of the development of Inner Wealth by youth staying at New Day's safe home include:

- Continue implementing greatness surveys to create a larger pool of matched surveys for data analysis.

- Based on learnings from implementing the pilot-survey, re-examine reverse coded questions (numbers four and six) to ensure that youth comprehend the questions and provide meaningful responses. In addition, repositioning question one to another section of the survey should be considered to increase the response rate or consider deleting it altogether.

- If possible, while administering the survey on a tablet, display each question one at a time. Evidence from individual surveys indicate that youth are not considering each question fully before answering. Displaying each question individually should remedy this potential problem. If paper surveys continue to be administered in the future, the survey administrator could emphasize to the youth the importance of thoughtfully answering each question and that the youth can take as much time as needed to complete the survey.

- Inclusion of the youth's daily language could increase youth interest in survey questions and elicit more thoughtful responses. Tourangeau and Yan (2007) reviewed previous survey research related to sensitive questions and found that familiar words could increase survey reporting and help reduce under/over reporting that appears often in surveys. New Day safe home staff would be the best resource for current language used by the youth.

- Identify New Day staff member(s) who are willing and suited to manage the data analysis. Provide training and support to the staff member(s) to strengthen their skills in data analysis.

5. **Next Steps**

As described in the recommendations, the next steps for New Day are to focus on continued data collection of the greatness surveys administered on safe home youth. With more data, these preliminary findings of the positive effects of the Nurtured Heart approach could be turned into strong, empirical evidence arguing for its implementation in more youth settings. As an aid to continue this analysis, a step-by-step guide for analysis using Microsoft Excel is included in Appendix C that describes how the analysis was completed for this evaluation.

Also, with the tools and skills developed throughout this evaluation, New Day can implement a similar analysis in its other ongoing programs, such as the Life Skills Academy or the transitional living program.

References

Glasser, H., & Lowenstein, M. (2016). *The transforming the intense child workbook: an experiential guide for parents, educators and therapists for learning and implementing the nurtured heart approach*. Nurtured Heart Publications.

Tourangeau, R., & Yan, T. (2007). Sensitive questions in surveys. *Psychological Bulletin*, 133(5) : 859.

Appendix A: Greatness Survey

1. Fill in one word to describe yourself _____

	Strongly Agree	Agree	Somewhat Agree	Neither Agree or Disagree	Somewhat Disagree	Disagree	Strongly Disagree
2. I have personal goals							
3. I feel good about myself							
4. When I get angry, I act without thinking							
5. People at my home care about my feelings							
6. People pay more attention when I mess up than when I don't.							
7. I feel recognized for my successes							
8. Expectations at New Day are clear to me							
9. New Day staff acknowledges my greatness regularly							
10. I feel like I am part of a group							
11. People at New Day care about my feelings							
12. I know how to reset myself							
13. I can easily help others see their greatness							
14. I feel capable of making positive change							

15. I can name three of my strengths:

1) _____

2) _____

3) _____

Appendix B: Additional Analyses

Table C1. Truncated Matched Pairs Analysis

| Questions by Category	Initial Average	Discharge Average	Difference	p-Value from T-Test
People pay more attention when I mess up then when I don't	2.70	3.50	0.80	0.14*
I feel recognized for my successes	4.90	6.60	1.70	0.01***
Expectations at New Day are clear to me	6.60	6.90	0.30	0.39
New Day staff acknowledges my greatness regularly	6.60	6.70	0.10	0.73
People at New Day care about my feelings	6.30	6.44	0.14	0.81
I know how to reset myself	5.90	6.90	1.00	0.03**
I can easily help others see their greatness	6.30	6.70	0.40	0.22*
NHA Concepts Category	**5.61**	**6.24**	**0.63**	**0.04****
I have personal goals	6.80	7.00	0.20	0.34
I feel good about myself	6.20	7.00	0.80	0.01***
When I get angry, I act without thinking	2.70	3.70	1.00	0.11**
People at my home care about my feelings	4.30	5.80	1.50	0.01***
I feel like I am part of a group	6.20	6.30	0.10	0.81
I feel capable of making positive change	6.90	7.00	0.10	0.34
Inner Wealth Category	**5.51**	**6.13**	**0.62**	**0.003****

Table C2. Matched Pairs Analysis with Updated Inner Wealth Category

| Questions by Category	Initial Average	Discharge Average	Difference	p-Value from T-Test
People pay more attention when I mess up then when I don't	3.08	3.83	0.75	0.09*
I feel recognized for my successes	5.08	6.42	1.33	0.02**
Expectations at New Day are clear to me	6.42	6.67	0.25	0.39
New Day staff acknowledges my greatness regularly	6.42	6.50	0.08	0.72
People at New Day care about my feelings	6.17	6.27	0.11	0.81
I know how to reset myself	5.83	6.67	0.83	0.03**
I can easily help others see their greatness	6.17	6.50	0.33	0.22*
NHA Concepts Category	**5.60**	**6.12**	**0.52**	**0.05****
I have personal goals	6.67	6.75	0.08	0.67
I feel good about myself	6.25	6.75	0.50	0.14*
When I get angry, I act without thinking	3.00	4.00	1.00	0.06*
People at my home care about my feelings	4.58	5.75	1.17	0.02**
I feel like I am part of a group	6.08	6.17	0.08	0.81
I feel capable of making positive change	6.67	6.75	0.08	0.34
I know how to reset myself	5.83	6.67	0.83	0.03**
I can easily help others see their greatness	6.17	6.50	0.33	0.22*
Inner Wealth Category	**5.59**	**6.19**	**0.60**	**0.01****

***Statistically significant at 5% level; **statistically significant at 10% level; *statistically significant at the 25% level.
Note: Twelve total respondents. Shaded differences are likely statistically significant, meaning that the result is not due to the sample of respondents, and would likely occur with another sample of youth.

Appendix C: Step by Step Guide to Evaluation Analysis

Step 1. Import raw data from Apricot into Excel spreadsheet. It is easy to filter an Excel spreadsheet to only show the data you're interested in (initial vs. discharge, pre-discharge vs. discharge, matched tests, etc.) so I would suggest downloading the full dataset from Apricot each time to ensure that no data is missing. From this initial download, click on the Data tab circled below.
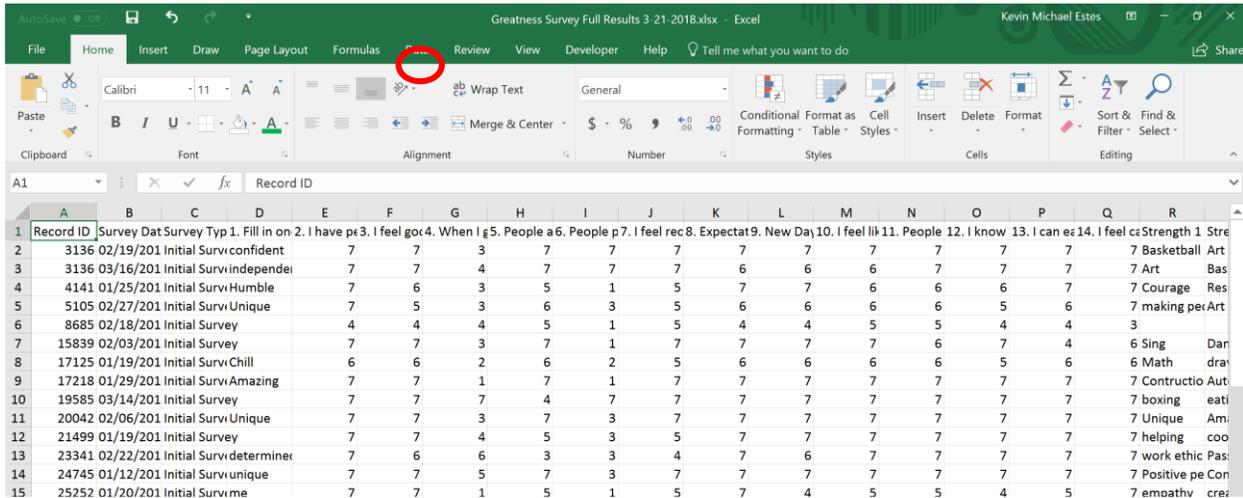
Step 2. Click on the filter button circled below, this will give you the dropdown arrows in each column. From these dropdown arrows, you can now filter any column to show only the criteria you are looking for. To complete an analysis on only initial surveys and discharge surveys, filter column C by clicking on the drop-button in cell C1. Click on the button Select All in the check-box area. After all checks are cleared, re-select Discharge Survey and Initial Survey. Click Ok. Now only surveys that are initial or discharge are displayed from the raw data.
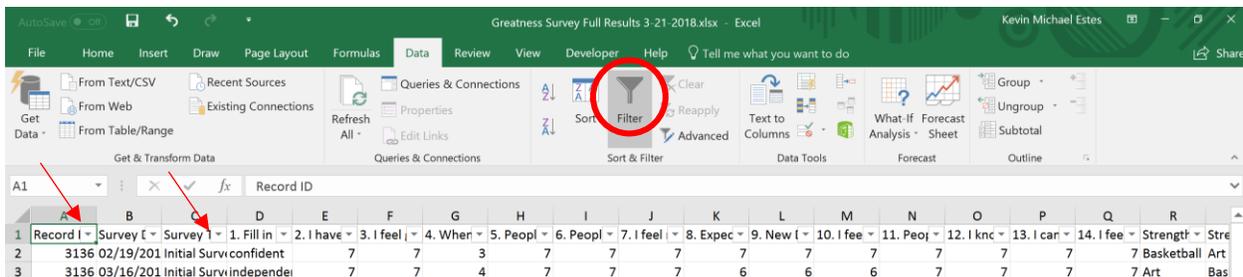
Step 3. Select all data that is currently showing by clicking on the arrow button in the upper left-hand corner of the spreadsheet circled below. Hit CTRL+C to copy this data, open a new sheet in the workbook, and hit CTRL+V to paste this data into a new spreadsheet. This ensures that no other data is incorporated into our analysis and allows us to keep the raw data in its original form in case it needs to be referenced later or if something is accidentally deleted or added during our analysis.

Step 4. Click on any cell in the spreadsheet and re-apply filters as described in Step 1 in the Data tab. Go back to the home tab and click on column A in the lefthand corner of the data. This will select the entire column A. Now, click on conditional formatting in the home ribbon (as circled) and follow the drop-down menus until duplicate values is available, click on it and yes on the next prompt. This will highlight red any values in the Record ID column that are duplicated, meaning that for any youth that has completed multiple surveys, such as a pre and a post survey, are now found.

Step 5. Click on the drop-down button in cell A1, click on Sort Smallest to Largest. This will make it easier to identify any youth who completed multiple initial surveys, or discharge surveys, and remove them later for our matched t-test analysis. Click on the same drop-down button in cell A1 and select filter by color, no fill. Now only those youth who have not completed multiple surveys are selected out of this data. From here click on the top row showing of data (not the row with column names) and select all the rows currently shown by the filter. Right click any row number and select delete row as shown below.
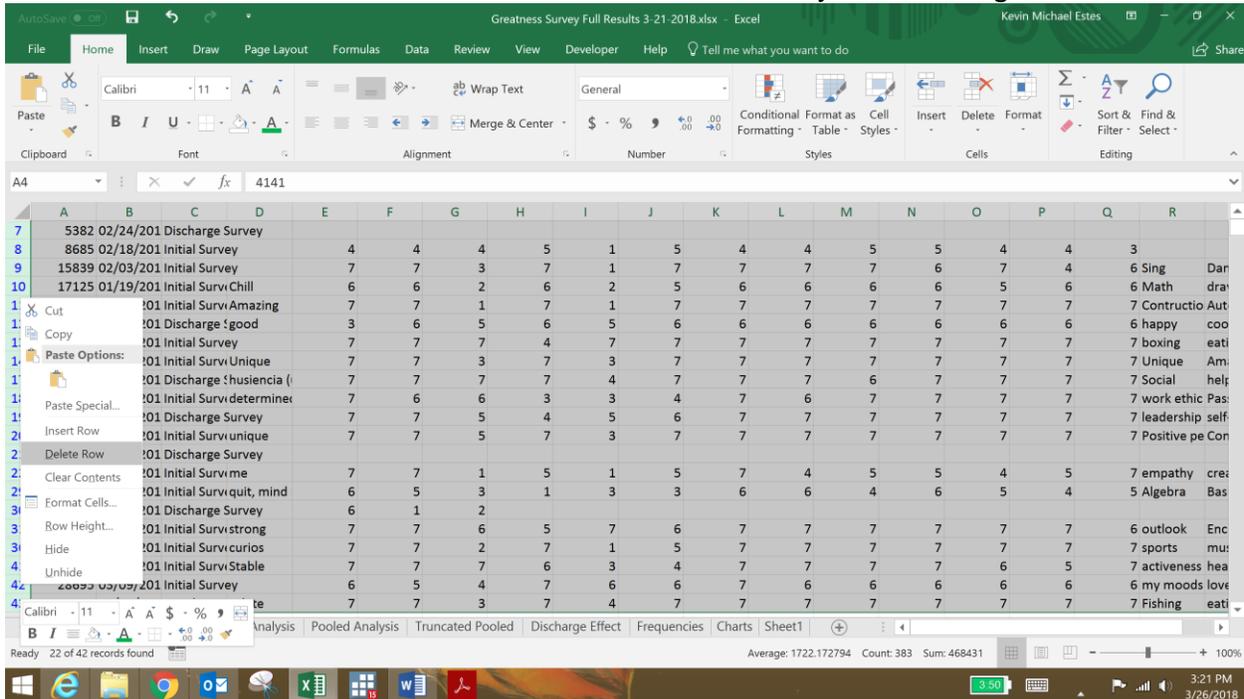
When this is done it will appear as if you have no data, click on the drop down in cell A1 and click on Clear Filter from Record ID. Now data will appear; this is the group of youth who have matching initial and/or discharge surveys. You are almost complete on cleaning the data.

Step 6. A quick analysis should be done to make sure that no Record ID's have multiple initial or multiple discharge surveys, we want only matched initial and discharges for this analysis. If we had more data, we could insert a new column and do a formula (such as =B2&D2) to create a new unique identifier for Record ID and Survey Type. We would then do the same process as in Step 4 to identify and remove those records that are duplicated. For this amount of data, a simple spot check will work. Quickly we identify that Record ID 3136 (circled below) has two initial surveys only, and therefore should not be included in the analysis. Delete these records by selecting the row numbers (click on the numbers 2 and 3 simultaneously on the left-hand part of the screen) and selecting delete rows. Sort column C by Z to A and we are now ready for t-test analysis.

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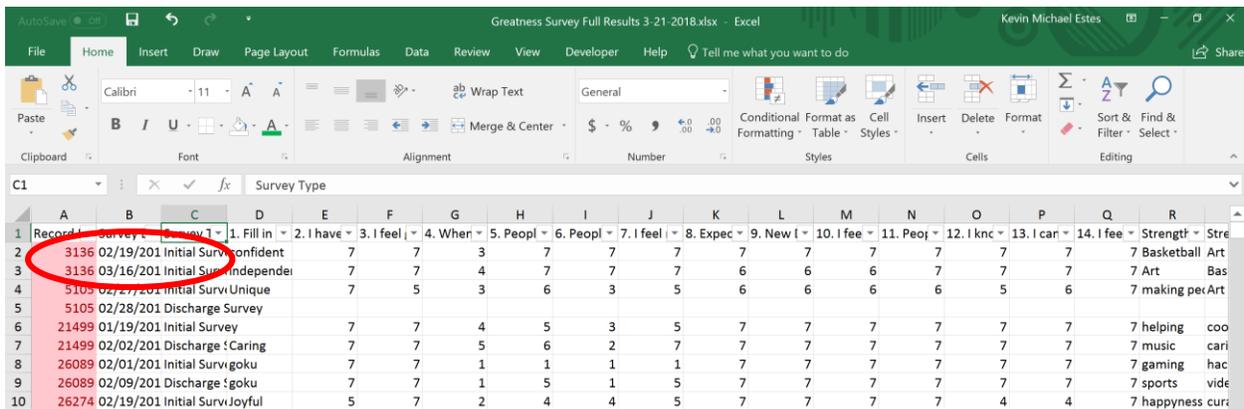
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Step 7. In a row below the data, or above the data by inserting a new row if you prefer, type T-Test in column D like shown below. In column E, which corresponds to question 2 of the survey, type an equal sign then the text "ttest(". You will see a description of what the ttest formula does.

Once you have typed "=ttest(" options will now be given for what type of T-Test you'd like to run. Here's a brief description of what you'd choose for each prompt:

- array1: This is simply the first groups of cells you'd like to analyze. This could be either the Discharge Surveys or the Initial Surveys, in this example I'm selecting the Initial Surveys first. Select cells E2:E10 then put a ",".
- array2: This is the second group of cells you'd like to analyze, for this example I am looking at cells for Discharge Surveys, so select E11:E19 and put a ",".
- tails: this refers to if the critical area of the distribution is two-sided, meaning a sample could be greater than or less than a certain range of values. We are wanting to analyze the potential development, or increase, of Inner Wealth so we select 1 for a one-tailed test. An argument could easily be made to select 2, to allow for both decreases and increases.
- type: This refers to what type of T-Test you'd like to conduct. With a matched initial and discharge survey, you would select the first option of a paired analysis. For this analysis you'd type "1)". If you did not have matching pairs you most often would select option number 3, which is a heteroscedastic (unequal variance) analysis.
-

You now have a figure in the cell like below.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
2	5105	02/27/201	Initial Surv	Unique	7	5	3	6	3	5	6	6	6	6	5	6	7	making pe	Art
3	21499	01/19/201	Initial Survey		7	7	4	5	3	5	7	7	7	7	7	7	7	helping	coo
4	26089	02/01/201	Initial Surv	goku	7	7	1	1	1	1	7	7	7	7	7	7	7	gaming	hac
5	26274	02/19/201	Initial Surv	Joyful	5	7	2	4	4	5	7	7	7	7	4	4	7	happyness	cura
6	26797	02/15/201	Initial Survey		7	6	1	2	1	1	4	4	4	3	6	5	6		
7	27281	03/06/201	Initial Survey		5	6	2	5	3	5	4	4	4	4	4	4	4	fast	sma
8	27323	02/19/201	Initial Surv	fun	7	5	1	7	1	7	7	7	7	6	5	6	7	No Skills	
9	27593	03/02/201	Initial Surv	Queit	7	6	3	4	1	6	6	7	7	7	6	6	7	pactions	det
10	27645	02/23/201	Initial Surv	Strong	7	7	7	7	7	7	7	7	7	7	7	7	7	My Faith	My
11	5105	02/28/201	Discharge Survey																
12	21499	02/02/201	Discharge	Caring	7	7	5	6	2	7	7	7	7	7	7	7	7	music	cari
13	26089	02/09/201	Discharge	goku	7	7	1	5	1	5	7	7	7	7	7	7	7	sports	vide
14	26274	03/02/201	Discharge Survey		7	7	1	7	4	7	7	7	7	7	7	6	7	creativity	adv
15	26797	03/15/201	Discharge	Artistic	7	7	4	4	4	6	7	6	6	5	7	7	7	Art	Res
16	27281	03/09/201	Discharge Survey		4	4	4	4	4	4	4	4	4	4	4	4	4	good	bad
17	27323	03/06/201	Discharge Survey		7	7	1	7	1	7	7	6	7		7	7	7		
18	27593	03/13/201	Discharge	Independe	7	7	2	5	3	7	7	7	6	4	6	5	7	Determina	Self
19	27645	02/24/201	Discharge	Strong	7	7	7	7	7	7	7	7	7	7	7	7	7	My Faith	My
20																			
21				T-Test		0.684528													
22																			

Step 8. For the final step all you need to do is click in the cell for which you've entered the ttest formula, and hover over the lower right-hand part of the cell. When you have a cross as your mouse point, click on the cell and drag your cursor to the final question (cell P21 in my example). Let go of the cursor and your ttest has now been conducted on all cells in that range as shown below.

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	
3	21499	01/19/201	Initial Survey		7	7	4	5	3	5	7	7	7	7	7	7	7	helping	coo
4	26089	02/01/201	Initial Surv	goku	7	7	1	1	1	1	7	7	7	7	7	7	7	gaming	hac
5	26274	02/19/201	Initial Surv	Joyful	5	7	2	4	4	5	7	7	7	7	4	4	7	happyness	cura
6	26797	02/15/201	Initial Survey		7	6	1	2	1	1	4	4	4	3	6	5	6		
7	27281	03/06/201	Initial Survey		5	6	2	5	3	5	4	4	4	4	4	4	4	fast	sma
8	27323	02/19/201	Initial Surv	fun	7	5	1	7	1	7	7	7	7	6	5	6	7	No Skills	
9	27593	03/02/201	Initial Surv	Queit	7	6	3	4	1	6	6	7	7	7	6	6	7	pactions	det
10	27645	02/23/201	Initial Surv	Strong	7	7	7	7	7	7	7	7	7	7	7	7	7	My Faith	My
11	5105	02/28/201	Discharge Survey																
12	21499	02/02/201	Discharge	Caring	7	7	5	6	2	7	7	7	7	7	7	7	7	music	cari
13	26089	02/09/201	Discharge	goku	7	7	1	5	1	5	7	7	7	7	7	7	7	sports	vide
14	26274	03/02/201	Discharge Survey		7	7	1	7	4	7	7	7	7	7	7	6	7	creativity	adv
15	26797	03/15/201	Discharge	Artistic	7	7	4	4	4	6	7	6	6	5	7	7	7	Art	Res
16	27281	03/09/201	Discharge Survey		4	4	4	4	4	4	4	4	4	4	4	4	4	good	bad
17	27323	03/06/201	Discharge Survey		7	7	1	7	1	7	7	6	7		7	7	7		
18	27593	03/13/201	Discharge	Independe	7	7	2	5	3	7	7	7	6	4	6	5	7	Determina	Self
19	27645	02/24/201	Discharge	Strong	7	7	7	7	7	7	7	7	7	7	7	7	7	My Faith	My
20																			
21				T-Test		0.684528	0.563028	0.350617	0.071902	0.216838	0.061439	0.227453	0.684528	0.684528	0.804882	0.111416	0.227453	0.350617	
22																			

As described in detail above, the smaller the reported P-value in these cells the more statistically significant the result. To reject the null hypothesis of no difference between the two populations, typically a critical value of .05 must be achieved. Depending on the analysis though .25, .10, and .01 have all been used empirically (.10 is considered weakly significant, .05 is considered significant, and .01 is considered strongly significant.