DOCTORS NONPROFIT CONSULTING

FINAL OUTCOME REPORT

COMMUNITY SENIOR SERV PROGRAM EVALUATION

JULY 2009 TO SEPTEMBER 2012

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INTRODUCTION

DoctorS Nonprofit Consulting (DNC) was hired by Community Senior Serv (CSS) in May 2009 to provide a program wide evaluation for the agency during the 2009-10 fiscal year after providing similar services on a smaller scale for 3 previous years. The goal was to apply the evaluation protocol utilized in the three previous years under the United Way grant to the larger agency as a whole.

DNC was hired by CSS in May 2010 to conduct an evaluation for a sub sample of all clients served in the home delivered meals program during the 2010-11 fiscal year. DNC was again hired in August 2011 to conduct an evaluation for a sub sample of all clients served in the home delivered meals program during the 2011-12 fiscal year. The goal was to compile enough multiyear data to create stronger outcomes. In addition to periodic monitoring of the ongoing data collection, and staff training as needed, we would provide the program with a comprehensive evaluation of the collected data at the end of the year.

METHOD

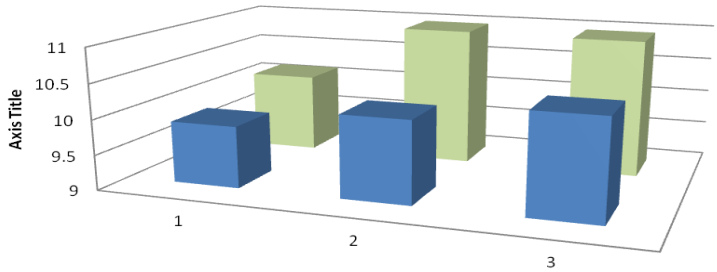
For this project, a spreadsheet utilized by the program to collect and code the data was created by the consultants. The final spreadsheet completed by CSS staff and provided to consultants contained 401 clients. SPSS statistical software was used for the evaluation process which was conducted by consultants in June of 2013. Initially, a series of frequency tables were run to establish basic program statistics on all 401 clients. Following this, a series of correlations, t-tests, and analysis of variance (ANOVAs) were computed on the new clients served in the three year dataset. A full statistical report of the test outcomes is included in appendix A. Correlations are useful because they can show the degree to which two numerical variables "co-relate" in a linear fashion. T-tests are useful because they can compare pre and post data. ANOVAs are conducted to assess whether significant differences exist among the averages of several groups. Finally, a series of comparisons of well-being scores and hospitalization reports was computed. This was completed so CSS can see the long-term impact of their program.

KEY FINDINGS

CSS clients reported statistically significant increases in wellbeing and decreases in the number of hospitalizations within the year. Additionally, clients maintained their weight and stayed fewer days in the hospital when admitted.

Figure 1a.

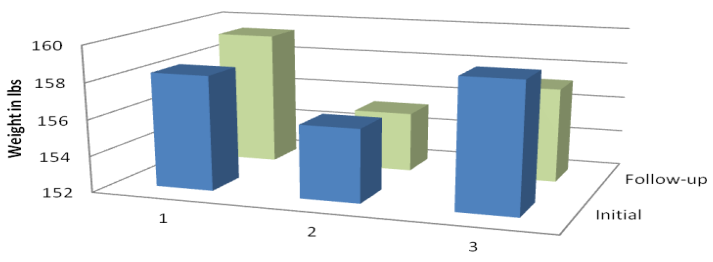
Reported Averages of Wellbeing Scores



	1	2	3
Initial	9.88	10.17	10.41
Follow-up	10.14	10.98	10.96

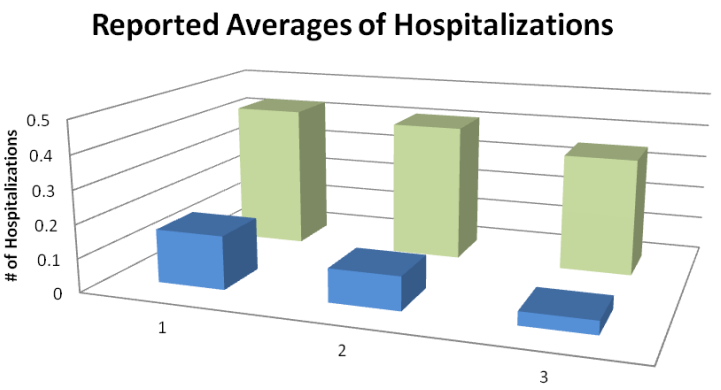
Figure 1b.

Reported Averages of Client Weight



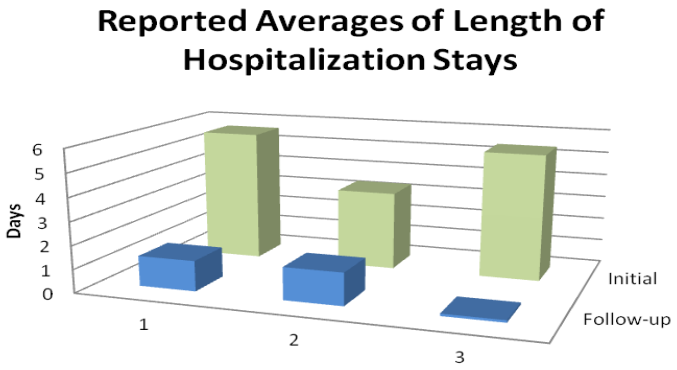
	1	2	3
Initial	158.32	156.02	159.05
Follow-up	159.4	155.33	157.23

Figure 1c.



	1	2	3
Follow-up	0.16	0.1	0.04
Initial	0.43	0.41	0.35

Figure 1d.



	1	2	3
Follow-up	1.3	1.39	0.1
Initial	5.65	3.37	5.42

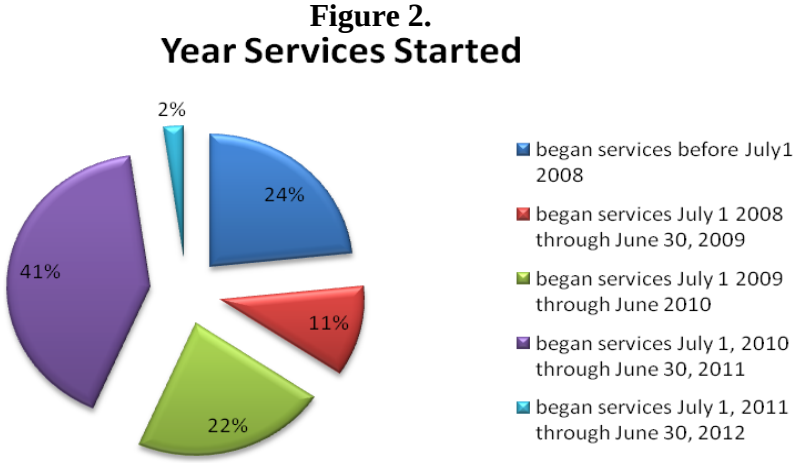
From the 401 total clients serviced, 128 New Clients (clients that began receiving services July 1, 2009 or later) reported being hospitalized the previous year at intake. Forty one percent (53 clients) had follow-up data one year later. These 53 clients initial average number of hospitalizations were 1.08 times and spent on average 15.66 days. After one year of CSS service the average number of days went down to .26 times (75.9% decrease). Furthermore, when they did go to the hospital they stayed less time (3.23 days; 79.4% decrease). One thing to additionally note is that data was collected on 20 New Clients for two years with hospitalization history. The trend of not going back to the hospital continued with a decrease of 95% in the number of times and 92.4% in the length of stays. This is well under the 18.4% readmission rate for Medicare patients reported at the national level on May, 2013 (Carlson, 2013; Jencks, 2009).

RESULTS

Overall Data Statistics

This data set consists of responses by 401 individuals who received CSS services between the period of July 2009 and September 2012. Generally when working with statistical evaluation, we like to see a large sample. Data sets of this size (n=401) are generally regarded to be an accurate indicator of the measured items. Seventy-six percent of the clients began being served in this period began receiving services starting in 2009/2010 fiscal period or later (see figure 2)

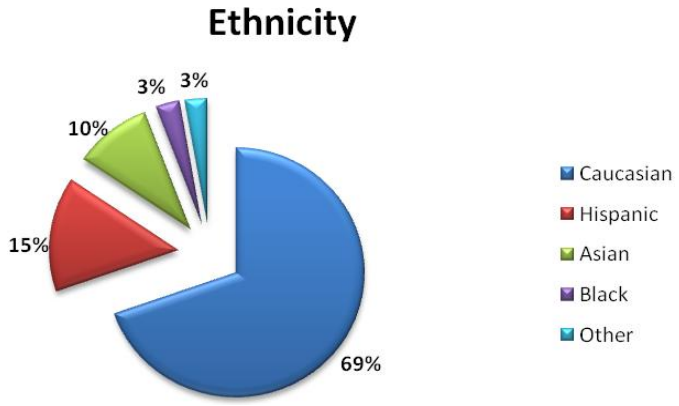
Figure 2.



Frequency Tables

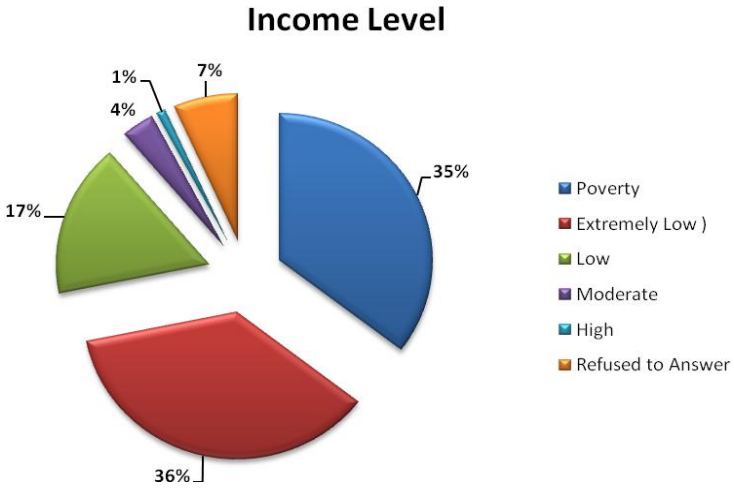
Frequency tables and charts are provided to establish basic period statistics and for future reference purposes. Of the 401 clients, 69% identified as Caucasian and Hispanics made up another 15 percent (see figure 4). The average age of the clients evaluated was 78 years. This tread was similar throughout the years with no year with significant differences.

Figure 4.



From the three year data, 36% of program clients were at the Poverty Level (0-$903 individual/0-$1215 couple per month). The majority (88.8%) of CSS clients were below the Moderate Level of income (less than $2714-4342 individual/$3101-$4958 couple per month) (see figure 5).

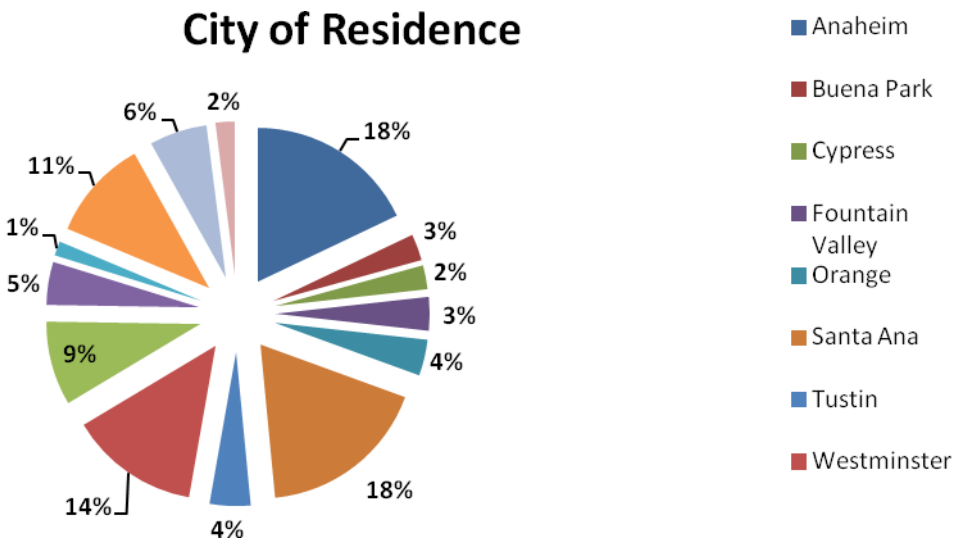
Figure 5.



Thirty-one percent of the household income level was between $6001 and $12,000 (see table in appendix). Sixty-nine percent of program clients were women. Nineteen percent of clients did not graduate high school. Forty-five percent of program clients were currently renting their home. Eight percent of program clients do not speak English in the home (see tables in appendix).

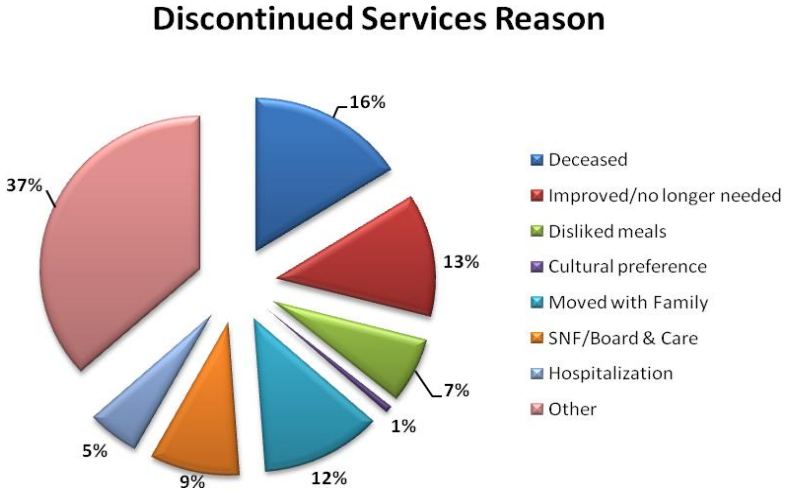
Over the 3 year data, 35.8 percent of program clients lived in Anaheim, 17.9% in Santa Ana, 13.6 % in Westminster, and 10.6 % in Garden Grove.

Figure 6.



Of the 401 clients that received services in the last fiscal years, there were 131 clients that discontinued services. Twenty five percent of the clients discontinued services because they both improved and no longer needed services (13%) or they moved in with family members (12.2%). Sixteen percent of clients discontinued program services because they deceased (see figure 8). Only 6.9% reported discontinuing the program because they disliked the meals.

Figure 8.



3 Year Data Correlations

Forty-two correlation (Pearson *r*) tests were run for 8 data categories on the 3 year data clients. Results indicated that three had significant correlations at .01 level (very significant) and three had significant correlations at .05 (good significance). Correlations are useful because they can show the degree to which two numerical variables "co-relate" in a linear fashion. Tests were run comparing: age, weight, income level, gender, initial total supportive services, number of hospitalizations, length of stays in the hospital and wellbeing. The four correlations with significant results are discussed below.

The correlation test found a relationship with the reported weight at admissions and income level (r=-.311, p<.01). As one can assume, the income level impacts the ability to maintain a healthy nutritional lifestyle. The clients that reported lower the income also reported higher weight. In fact, 6 of the clients reported weight over 300 pounds and one client was over 500 pounds. Additionally, there was a positive correlation between age and weight (r=.178, p<.01). What this means is that the older clients reported higher weight. Finally, the individuals that reported staying in the hospital also reported staying in the hospital longer (r=.230, p<.01).The 2-tailed significance test shows a probability of .01 with two asterisks (**) on the correlation table in appendix, indicating that this is a statistically significant relationship and very low probability of error.

The total number of supportive services given to clients was related to their income level (r=.103, p<.05). What this means is that those that reported lower income received more referrals. Gender was also related to age (r=-.115, p<.05) and weight (r=.122, p<.05). What this more females were older and weighed less. Additionally, as one would assume, there was a positive relationship between the number of days in the hospital and the length of stay (r=.230, p<.05). The correlations table flags significance at the .05 level with asterisks (*) in the appendix table next to the coefficients, indicating that this is a statistically significant relationship and a low probability of error.

3 Year Data T-Tests

T-tests are useful because they can compare pre and post data and thus show an amount of change over a period of time. The paired t-test was computed on initial, 1 year, 2 year, 33 months month scores, wellbeing, weight, length and amount of hospitalizations data. We were unable to conduct full 3 year data due to the response rate for client data for three years, therefore data was analyzed at the 33 month date. The results indicated that the mean for the wellbeing score at 1 year (M=10.14, SD=2.63) was greater than at the beginning of services (M=9.88, SD =2.77), t(240) = -1.66, p=.097. This does mean that we could argue that clients receiving CSS services report increases in their wellbeing scores throughout the time they receive CSS services. There were 127 clients that received services for 2 continuous years. Their wellbeing scores also increased. The mean for the wellbeing score for these 127 clients was higher at 2 years (M=10.98, SD=2.76) than at the beginning (M=10.17, SD=2.66), t(127) = -3.60, p=.000. With 51 clients receiving even longer services, their wellbeing score increased at the end of the 33 months (M=10.96, SD=2.79) than their initial intake (M=10.41, SD=2.70) , t(51) = -1.60, p=.115.

This outcome is important to highlight because research tends to indicate that reported wellbeing tends to decline as we age (Ryff, 1989).

The first year results additionally indicated that there was a significant decrease in the number of hospitalization averages (*M*=.16, SD=.509) than at the beginning of the program (*M*=.43, SD=.60) t(246)=5.78, p=.00. The number of hospitalizations for the 131 clients in the program for 2 years was lower (*M*=.10, SD=.348) than at the beginning (*M*=.41, SD=.348) t(131)=4.88, p=.00. Finally, the number of hospitalizations reported for the 52 client data reports the same trend. The number of hospitalizations continue to decrease after receiving services for 33 months (Initial M=.35, SD=.082; 33 Months M= .04, SD=.194; p=.000).

Not only are we seeing CSS clients stay out of the hospital, but when they get admitted to the hospital their stays are shorter. At 1 year data follow-up, clients reported staying in the hospital on average 1.3 days that year versus 5.65 days the previous year. At 2 years, 131 clients reported an average of staying in the hospital 3.37 days the previous year and two years later staying 1.39 days the last year. Finally, at 33 months, 52 clients reported an average of originally staying in the hospital 5.42 days and the following year staying .10 days the previous year.

The 3 year results indicated beginning weight average (*M*=158.32, SD=47.00) was maintained throughout the first year (*M*=159.4, SD=47.47) t(226)=.-1.002, p=.308 , second year (initial *M*=156.02, SD 46.75, 2 years *M* =155.33, SD 46.63) and at 33 months (initial *M* =159.05, SD 55.43, 33 months *M* =157.23, SD 53.39 . Because of the wide spread of scores (underweight and overweight) one could not state that this is statistically significant.

3 Year Data ANOVAs

Overall analysis of variance tests (ANOVAs) were conducted in four areas (wellbeing scores, number of hospitalizations in the past year, length of hospitalizations in the past year, and weight) at the beginning of the year and throughout the 2009-2012 fiscal years. ANOVAs are conducted to assess whether means on a dependent variable are significantly different among groups. When there is significance indicated in a relationship (.05 or less) this indicates that the difference between groups was not due to chance and that the results are significant.

Significance was found between the well-being scores and weight at 1 year, 2 years and 33 months. Additionally, Significance was found with clients that reported that they were hospitalized in the previous at initial and that one year later. Significance was not found in the number of hospitalizations for the 2 year or 33 month data nor in the length of hospitalization stay at initial and throughout the 2009-2012 fiscal years.

A one way ANOVA was conducted to evaluate the effects between the wellbeing score at the beginning of the period and throughout July 2009 and September 2012. Significance was found 1 year, 2 years, and 33 months. Because the probability (or p level) is less than .01 we can reject the null hypothesis and therefore note that there are significant differences between all groups that are not related to chance. This means if a client reported a higher well-being at initial intake they were likely to report a higher well-being score at 1 year and 33 months (see figures 9a, 9b, and 9c).

Figure 9a.

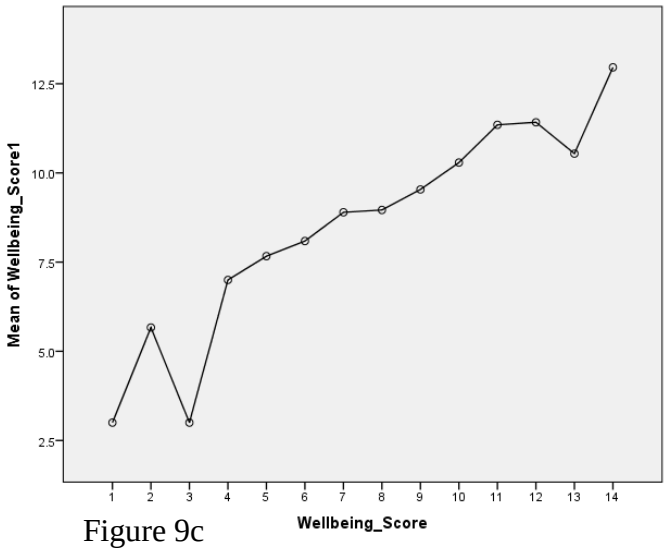


Figure 9c

Figure 9b.

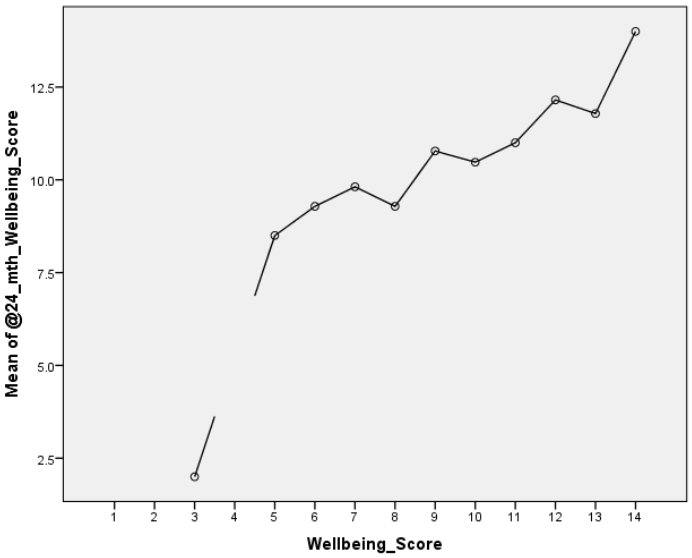
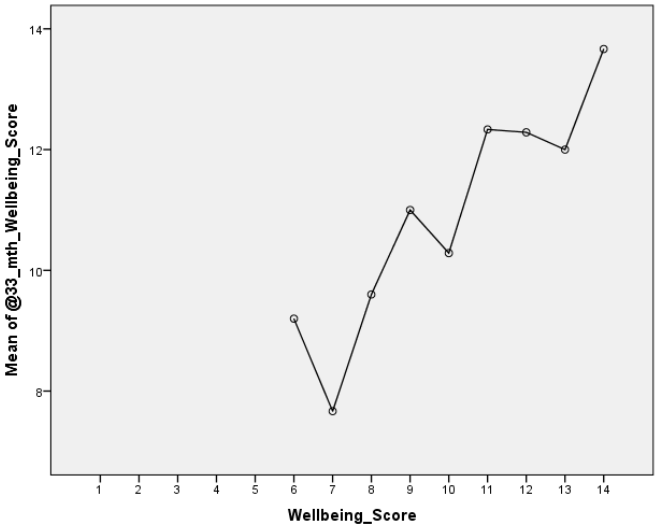
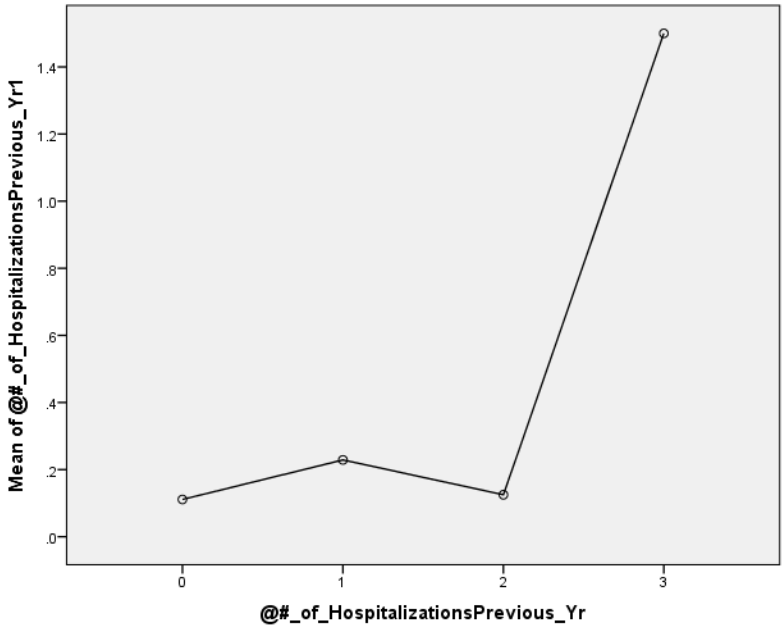


Figure 9c.



The second one way ANOVA was conducted to evaluate the effects between the number of hospitalizations at the beginning of the 2009-2010 fiscal period and throughout the 2011-2012 fiscal year. For this factor there was a significant difference found throughout the first year (see figure 10). What this means is when a clients reported of hospitalization at initial intake reported a likelihood to report hospitalizations at 1 year. However, it had no bearing on whether they were to be hospitalized at 2 years or 33 months.

Figure 10.



The third one way ANOVA was conducted to evaluate the relationships between the length of hospital stay at the beginning of the 2009-2010 fiscal period and throughout the 2011-2012 fiscal year. For this factor there was no significant difference found. What this means is when a clients reported of length of hospitalization at initial intake it had no bearing on the length of hospitalization at 3, 6, 9, or at 12 months.

The fourth one-way ANOVA A was conducted to evaluate the effects between the weight score at the beginning of the 2009-2010 fiscal period and throughout the 2011-2012 fiscal year. Significance was found and 1 year, 2 years, and 33 months because the probability (or p level) is less than .01 we can reject the null hypothesis and therefore note that there are significant differences between all groups that are not related to chance. What this means, is that if a client reported a higher weight at the initial intake they tended to have a higher weights for the entire period (see figure 11a, 11b, 11c)

Figure 11a.

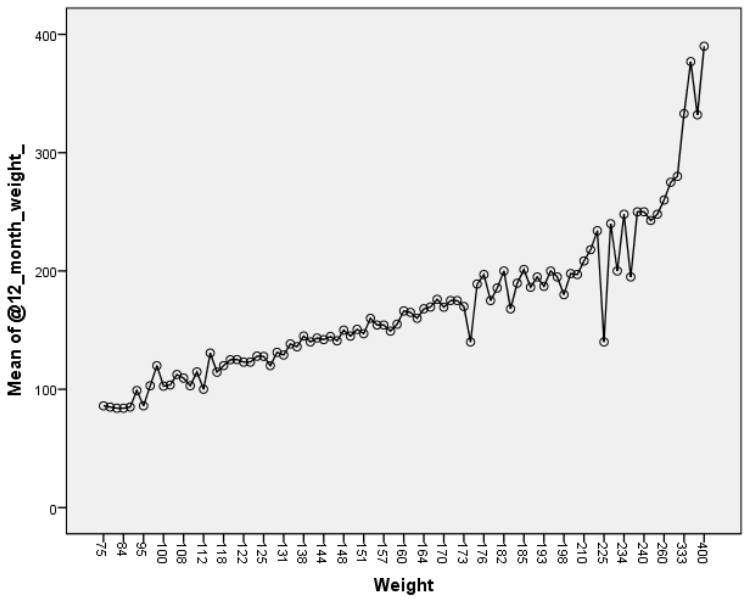


Figure 11b.

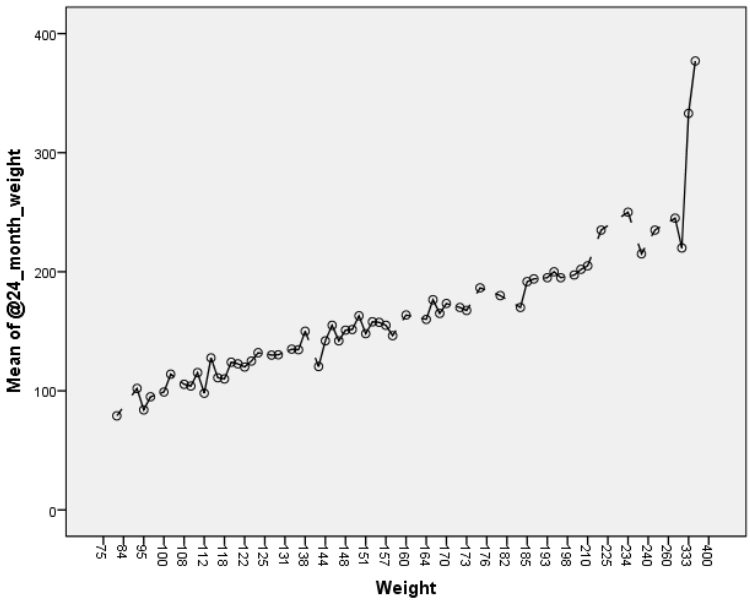
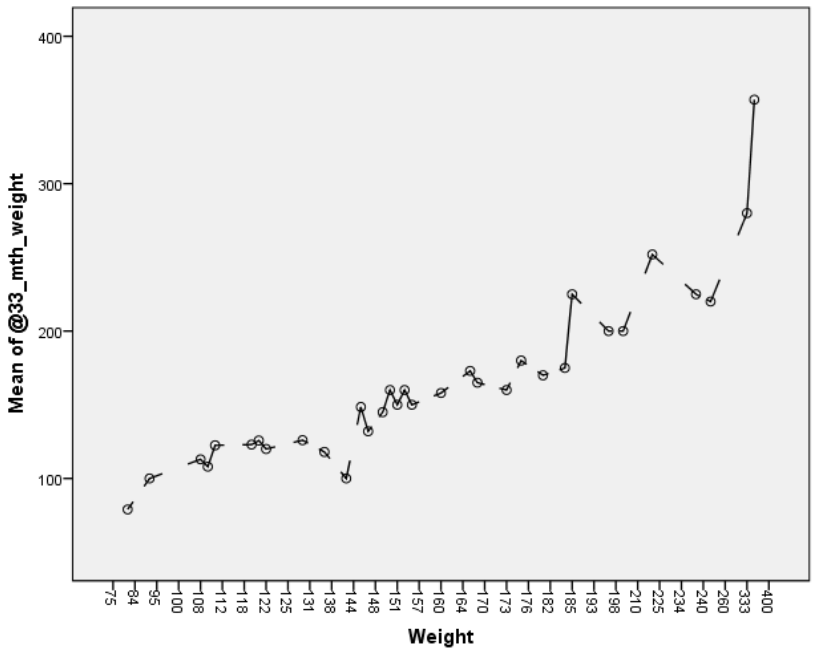


Figure 11c.



LIMITATIONS

It is important to emphasize that while correlations show the degree to which two numerical variables co-relate, they cannot measure other types of relationships. Because two variables are correlated does not necessarily mean that one variable causes the other to occur.

The program utilizes numerous Case Managers to cover the client caseloads. These individuals are responsible for collecting all of the data utilized by the agency. While several trainings were conducted to insure all staff were utilizing the forms in the same way, there is always the possibility of some staff being more conscientious than others in doing their paperwork.

There were some organizational leadership changes during the latter part of this period as a result of a key management employee departing. Additionally, some of the clients experienced new Case Managers when caseloads were adjusted.

While the data was evaluated by consultants independently from program management and staff, program staff did correlate all responses onto a spreadsheet and code the data. While steps were taken to limit this, there is always the possibility of minor data entry and coding errors being made. Overall, this data evaluation has a respectable sample size and can generally be regarded to be an accurate indicator of the measured items.

SUMMARY

DoctorS Nonprofit Consulting (DNC) was hired by Community Senior Serv (CSS) to provide outcome measurement evaluations for the agency. The goal was to apply the evaluation protocol created by DNC and utilized by CSS in the previous years under a United Way grant to the larger agency. CSS provides home delivered meals and critical support services to low-income,

homebound, isolated, frail elderly persons in North and Central Orange County. The meals and services provided are designed to ensure survival and capabilities of the elderly to live independently in their home as well as to reduce premature institutionalization.

The information collected by program staff and management for this data set consists of responses by 401 individuals who received CSS services between the period of July 2009 and September 2012. Data sets of this size (n=401) are generally regarded to be an accurate indicator of the measured items.

For this data set, Caucasians made up 69 percent of program clients and Hispanics made up another 15 percent. Thirty-six percent of program clients were at the Poverty Level (0-$903 individual/0-$1215 couple per month). The majority (88.8%) of CSS clients were below the Moderate Level of income (less than $2714-4342 individual/$3101-$4958 couple per month). Thirty-one percent of the household income level was between $6001 and $12,000. Sixty-nine percent of program clients were women. Nineteen percent of clients did not graduate high school. Forty-five percent of program clients were currently renting their home. Eight percent of program clients do not speak English in the home.

Thirty-five percent of program clients lived in Anaheim, 18 percent lived in Santa Ana, 13 percent lived in Westminster, and 11% in Garden Grove. Twenty five percent of clients who discontinued program services did so because they both improved and no longer needed services (13%) or they moved in with family members (12.2%). Sixteen percent of clients discontinued program services because they deceased. Only 6.9% reported discontinuing the program because they disliked the meals.

References

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Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality And Social Psychology*, *57*(6), 1069-1081. doi:10.1037/0022-3514.57.6.1069

Appendix A