

Low Vision Program Evaluation

Olmsted Center for Sight

By Thom Marra
January 2, 2013

UB TCIE | School of Engineering & Applied Sciences
1576 Sweet Home Road, Suite 212, Amherst, NY 14228
Tel: 716.645.8800 Fax: 716.636.2568
www.tcie.buffalo.edu



Executive Summary

The Community Health Foundation of Western & Central New York requested that an evaluator assess the impact the Olmsted Center for Sight's effort to expand low vision rehabilitation services for older adults across Western New York. The University at Buffalo through the UB TCIE program was contracted to do this evaluation. Thom Marra was the lead evaluator with contributions from Christine Oddo and Vathsala Stone. The impact was assessed by determining increases in referral rates from ophthalmologists and the impact on the patient's quality of life, functional status and independent living. The people served by this service are from Western New York. Sixty five percent are female with a median age of 81 and thirty five percent are male with a median age of 62.

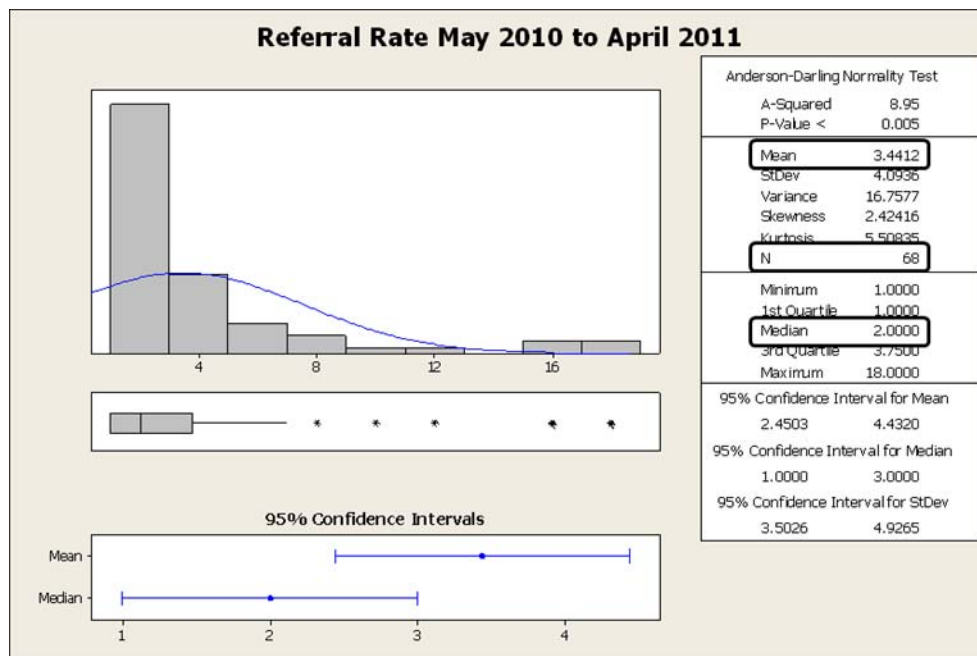
As of the writing of this report the referral rate increased from a median of 2 referrals per provider per year to 10 referrals per provider per year. The number of providers (ophthalmologists) in this study is 68.

The quality of life, functional status and independent living assessments were done through post survey of 87 patients receiving low vision rehabilitation services. Scores were recorded on a Lickert scale from 1 to 5. In general for all three categories top-box scores were in excess of 80%. This means that 80% of the people responded with a favorable response by selecting either a 4 or 5 on the scale for the question being asked. Patients are very pleased with the services they have been provided.

Method, Discussion and Results

Referral Rates

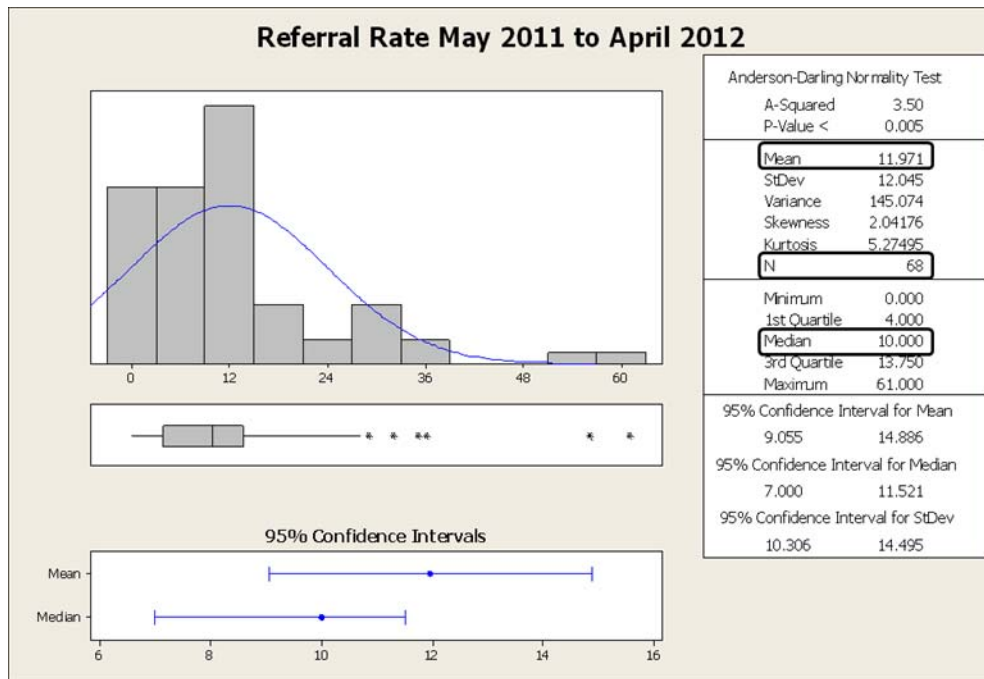
Initial referral rates were taken from the records of the Olmsted Center for Sight. Data was gathered from May 2010 to April 2011, one year prior to the grant being awarded to Olmsted Eye Institute to increase its referral rate from providers. Below is a graph that shows the baseline referral rate.



The total number of providers in the study is 68. From conversations with Linda Wiecek, marketing director for Olmsted, this number reflects her belief that this is almost a complete list of all ophthalmologist's in Western New York. A review of the listings in the 2011-2012 yellow pages from Locledge phone book confirms this number as a reasonable estimate of the population of ophthalmologists in Western New York.

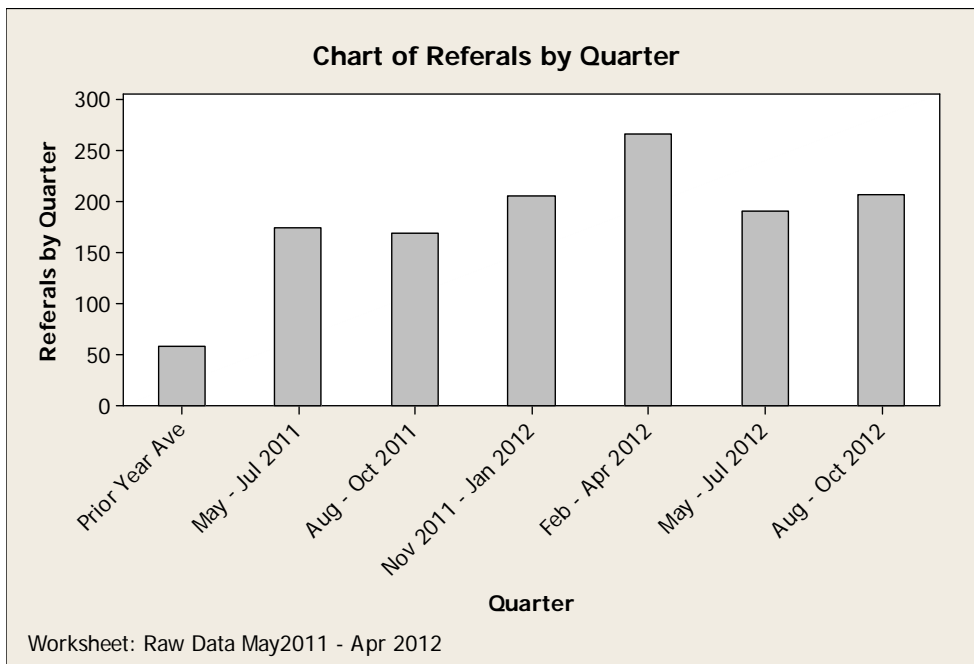
The average number of referrals in this time frame was 3.4. The smallest number of referrals from one provider was 1 and the highest number was 18. As can be seen from the graph the data is highly skewed to the right. This means that the better statistic for measuring the central tendency of the data is to use the median. For the baseline data the median is 2. Of all of the providers 50% (34) referred 2 or less patients.

For the past four quarters (ending in October 2012) the referral rate has a median number of 10 referrals per ophthalmologist per year



While there were 5 providers who did not refer anyone, one provider referred 61 patients. The overall percent increase in referral rates is 400%.

Below is the graph showing the total number of referrals by quarter.





Quality of life, functional status and independent living

To determine the impact of receiving low vision rehabilitation services it was decided that surveying the patients after their visit to Olmsted was an effective measure of impact. A number of national surveys were considered, e.g. Ferrans and Powers Quality of Life Index – Generic version III; National Eye Institute’s NEI-VFQ-25; IADL/ADL scales. Each of these has their own advantages. However it was determined that to survey this group of people, that tend to be elderly, using multiple tools to measure quality of life, functional status and independent living, was impractical. Therefore a survey was created by the authors of this report that generated questions that would address all three goals (see appendix). A random sample of 100 patients was taken. As stated in the Executive Summary the overall results show that patients are well satisfied with the results of their evaluation, treatment and resources provided to aid them in living life more abundantly. Below is the detailed analysis of each question.

The graphs are called Individual Value Plots. Each red dot represents the response of one individual. All scales were arranged so that the highest score (5) indicated a positive response. The circle with the + sign is the average and the circle with the x and number next to it is the median. The Top Box Score is the percentage of the number of people answering either 4 or 5 out of the total number of people responding to that question.

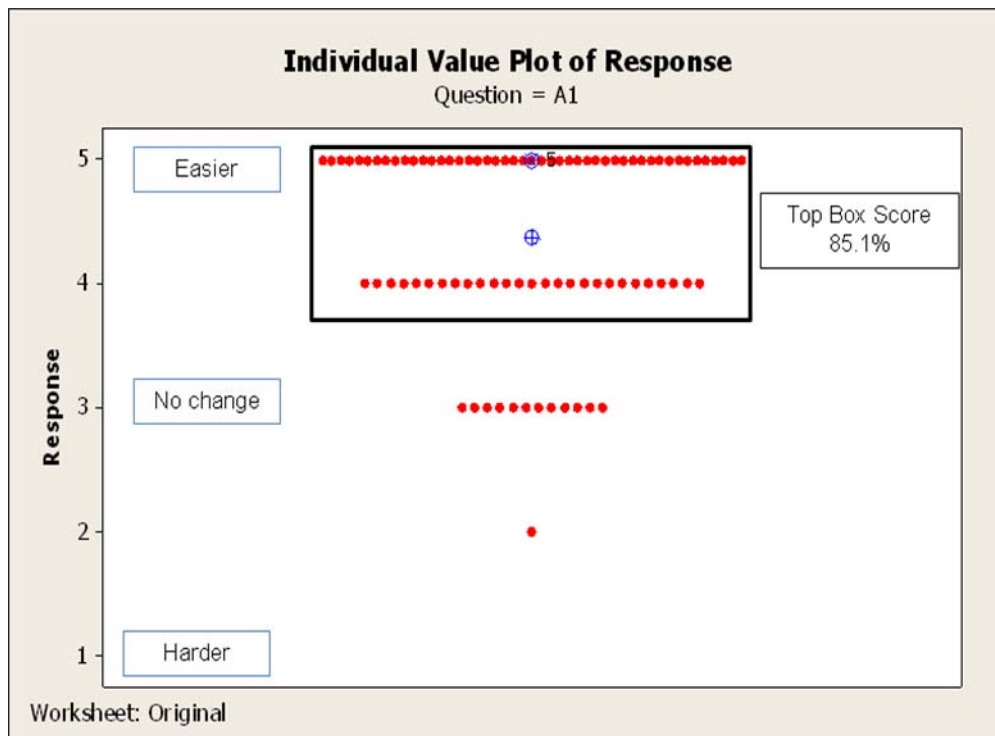
Questions A1, A2 and A3

One of the main aspects of the Olmsted Center is to provide patients with adaptive tools such as illuminated hand held magnifiers, illuminated stand magnifiers, distance magnifiers, talking time pieces, writing guides, locator dots, liquid level indicator, large print calendars, adaptive medication dispensers, talking calculators, and others. Questions A1, A2 and A3 were designed to see if patients perceived that their functionality in everyday tasks was enhanced. The strong top box scores indicate that patients found these tasks significantly easier than before their treatment with Olmsted.

A. In your judgment, how have the following changed as a result of the services/devices you received from us?

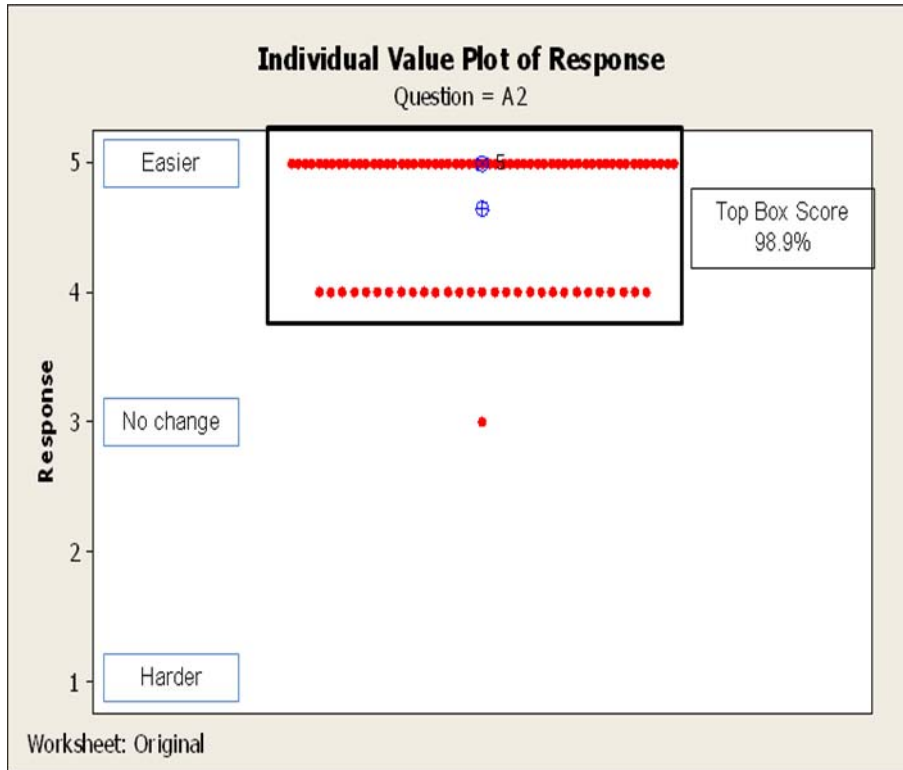
1. Your ability to see large print materials (such as labels, newspapers, mail, etc.) and/or television:

Easier No change Harder
5 4 3 2 1

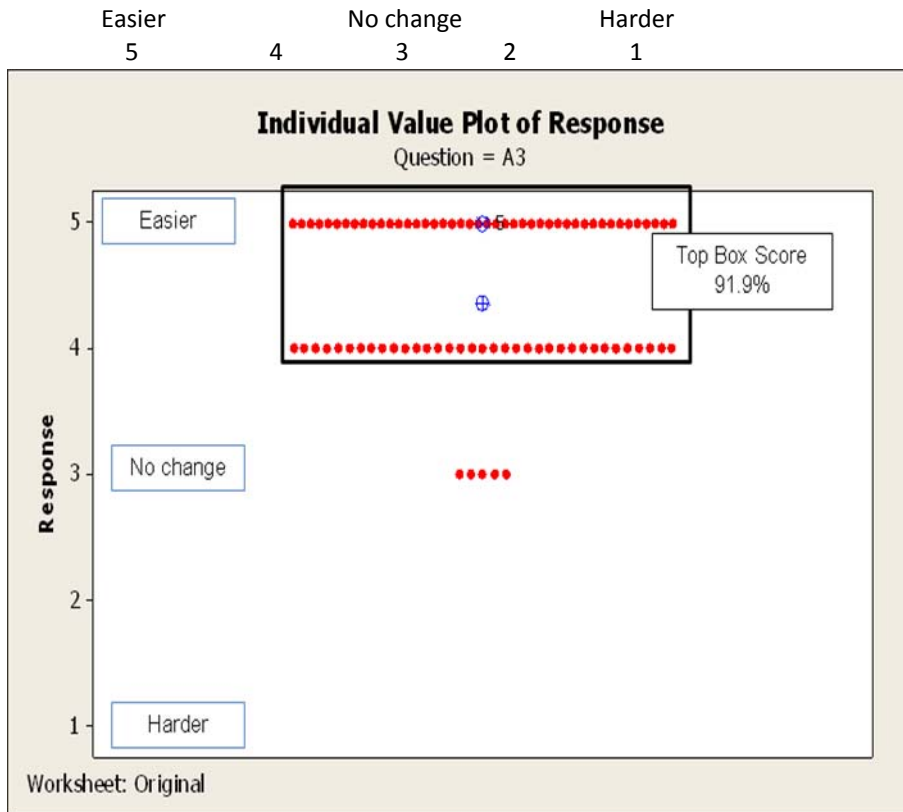


2. Your ability to do everyday activities using adaptive aids:

Easier No change Harder
5 4 3 2 1



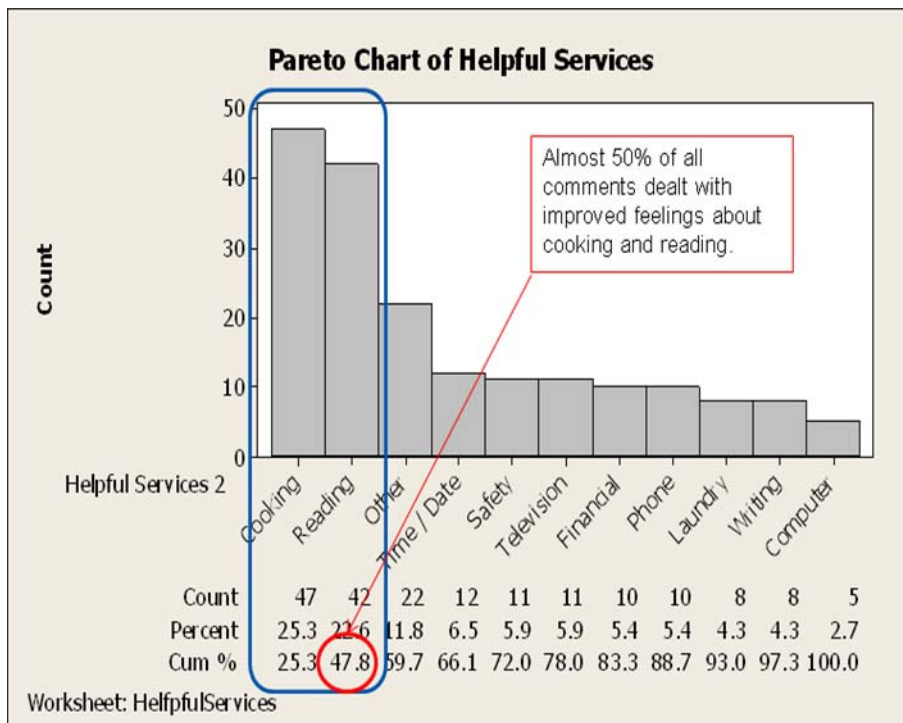
3. Overall, the way you do things is:



Questions B

Each individual response was recorded and coded against standard categories. The categories were chosen using Affinity Diagram logic to group like items. The categories are Cooking, Reading, Time / Date, Safety, Television, Financial, Phone, Laundry, Writing and Computer. Other represents a combination of various items. Below is a Pareto Chart of those categories. (The individual responses are displayed in the appendix under Helpful Services). The Pareto Chart shows the frequency (count) of number of times a respondent wrote down one of the categories. The chart shows that approximately 25% of the responses given had to do with cooking and another 23% had to do with reading.

- B. How exactly have the services been helpful to you? Name some of your activities or tasks that the services you received have helped you to do (that you had difficulty doing before):



Question C

This question was added to the survey at about midway through the survey process. Fifty seven people were asked the question. Only 9 people responded with any type of difficulty. Here is the complete list of comments. (Remember these are tasks the clients still feel are difficult to do.) Based on the low percentage of responses to this question, it appears that clients feel that the services they received had a direct and positive result on their activities and tasks.

- C. Are there any activities or tasks that you had difficulty doing before, for which the services you received have not been helpful. Please comment or make suggestions in each case.

blood test
crossword puzzles
distance glasses did not help
glare in stores- has sunfilters(4 different shades)
one of the vending machines is still hard to read
seeing tv
still struggles with her hair using mag mirror
thread needle
use stove
was able to do before and now he is having trouble
watch tv
would like cctv

Question D1, D2, D3

The questions in this grouping were designed to evaluate the perception of the clients as to their ability to maintain some semblance of independent living. Question D1 addresses the client's perception of ability whereas question D3 speaks to their confidence in that ability. The top box scores for these two questions were 88.5% and 83.9% respectively. A proper conclusion is that clients feel more confident in doing daily activities because they are easier to do.

Question D2 becomes a reality check. While the clients do more with more confidence they still rely on others. Fifty nine percent decreased their reliance on others. However 40% felt there were no changes in their need to have others assist them. An explanation for this is that improving activities related to vision is only one aspect of living independently. In addition to vision when people's

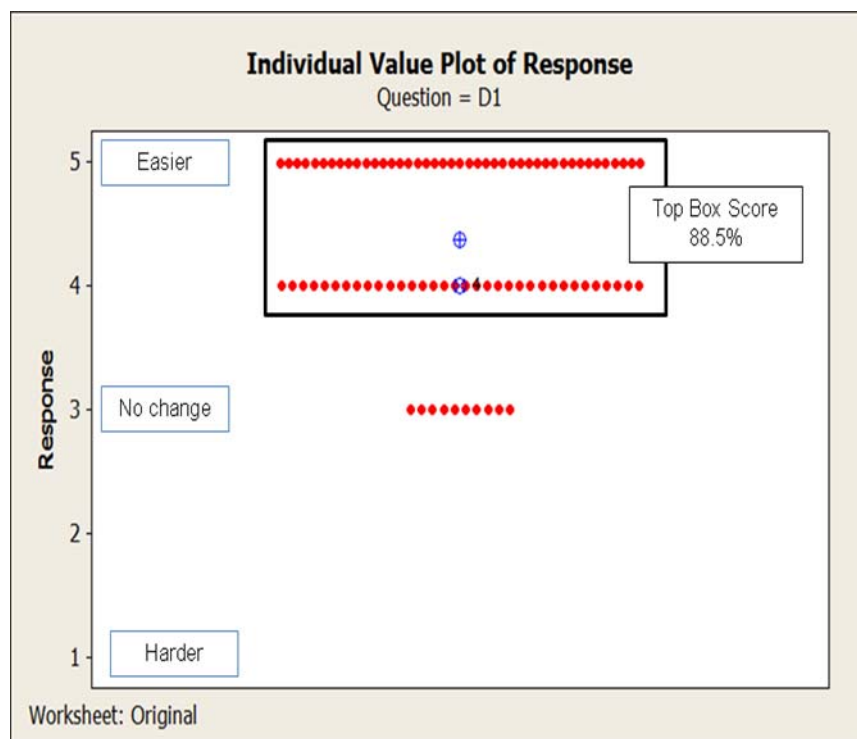
motor and mental skills also decline, their reliance on others goes up. The population of this study had a median age of 68 years.

Question D3 offered the clients an opportunity to list those activities that they were more confident in. This question is highly correlated to question B and therefore the responses are very similar. Doing activities and confidence in doing them however are two different concepts. The Pareto chart shows the same percentage of responses as did question B. Approximate 50% of all activities where confidence was increased deal with cooking and reading. Obviously these activities have a high reliance on sight. (The individual responses are displayed in the appendix under Safety).

D. What is your judgment about the following?

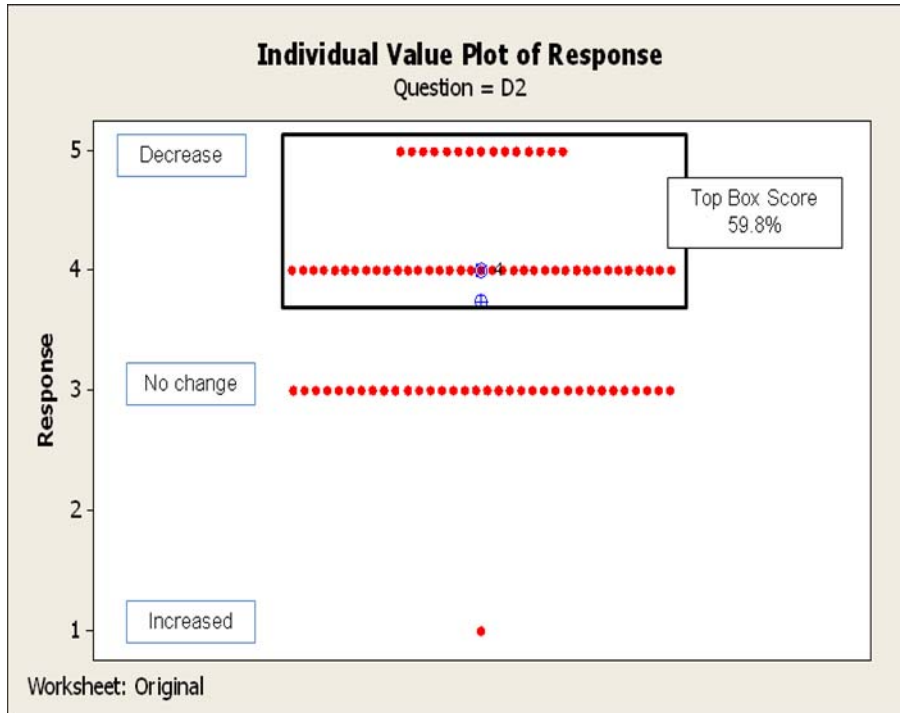
1. Ability to do your daily activities by yourself is:

Easier No change Harder
5 4 3 2 1



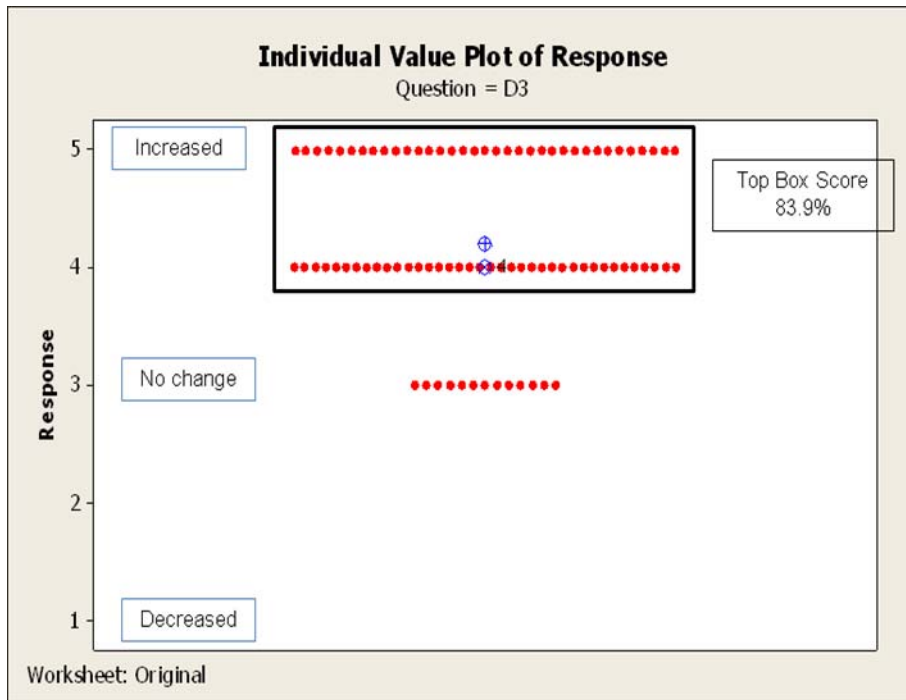
2. Your reliance on others to help you do things has:

Decreased No change Increased
5 4 3 2 1

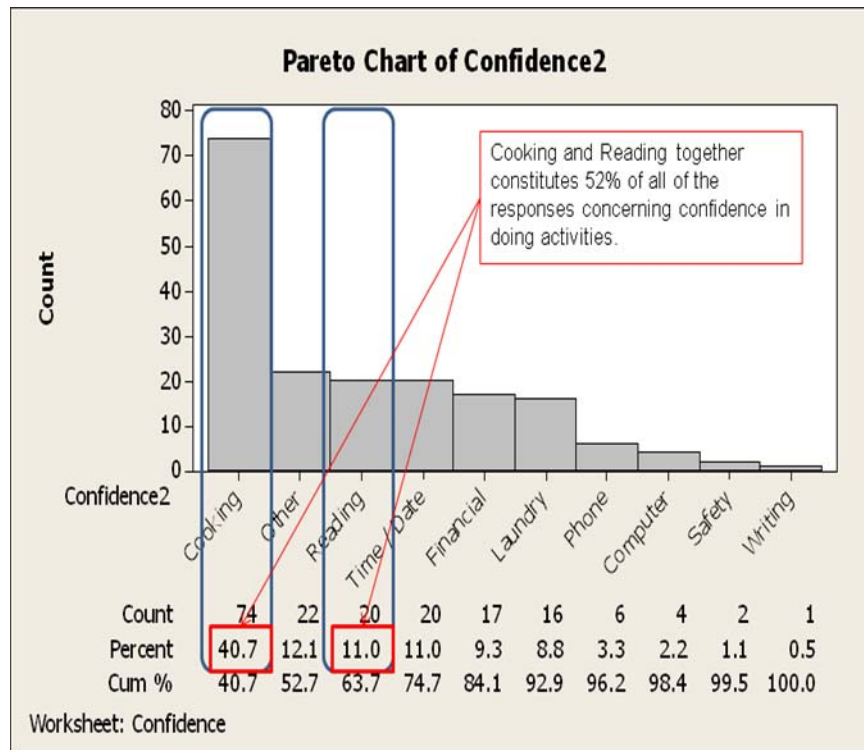


3. Your confidence in doing things by yourself has:

Increased No change Decreased
 5 4 3 2 1



List some examples: (if decreased, explain why?)

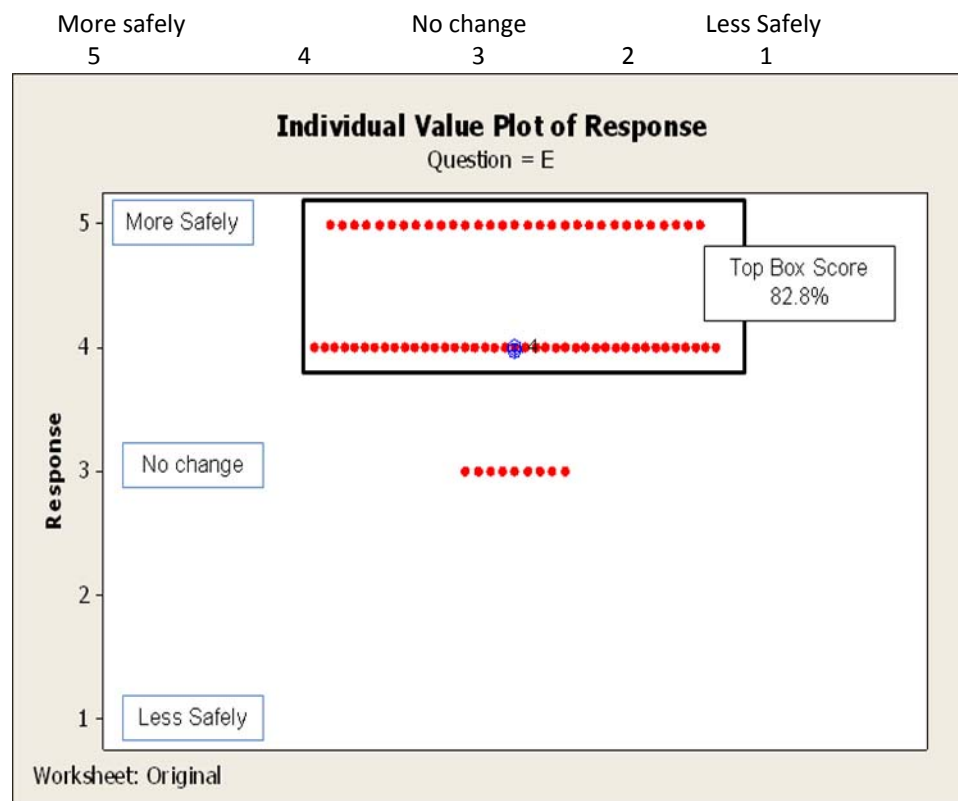


Question E

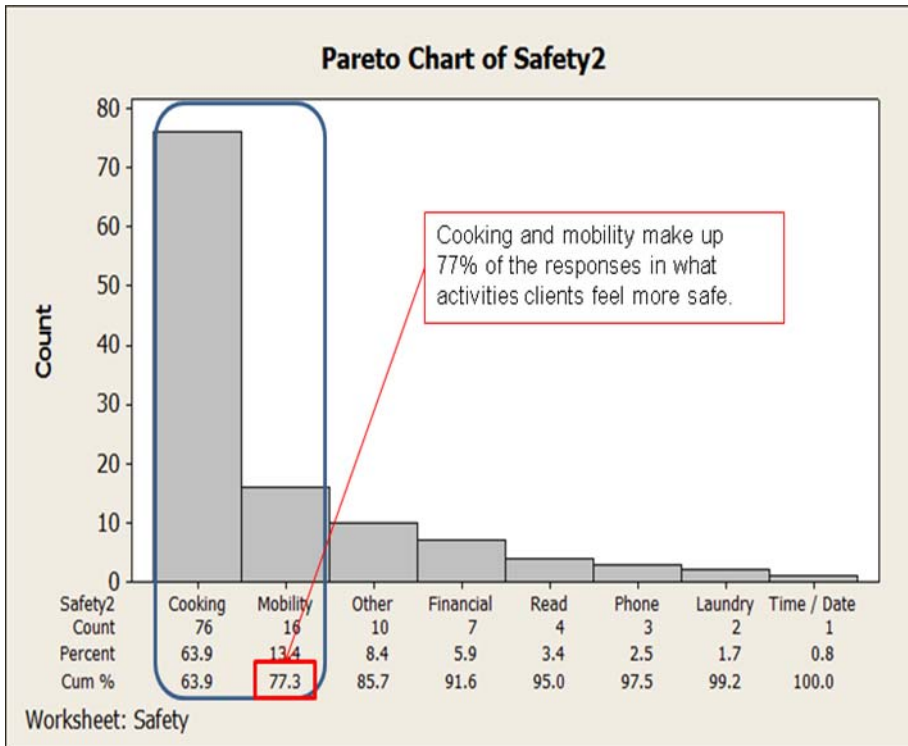
As ability to do things and confidence in doing them is highly correlated, so too is how safe one feels in performing these tasks. These correlations come from the fact that at least one of the common predictors in ability, confidence and safety is the ability to see. Improve sight and all improve. Eighty three percent of the respondents feel safer as a result of the services they received.

The Pareto Chart shows that cooking is the main area where people feel safer. The second category is mobility. Walking, travel and use of a cane are some of the components of this group.

E. Overall, how safely do you feel you are doing things now?



List some examples: (if less, explain why?)





Question F

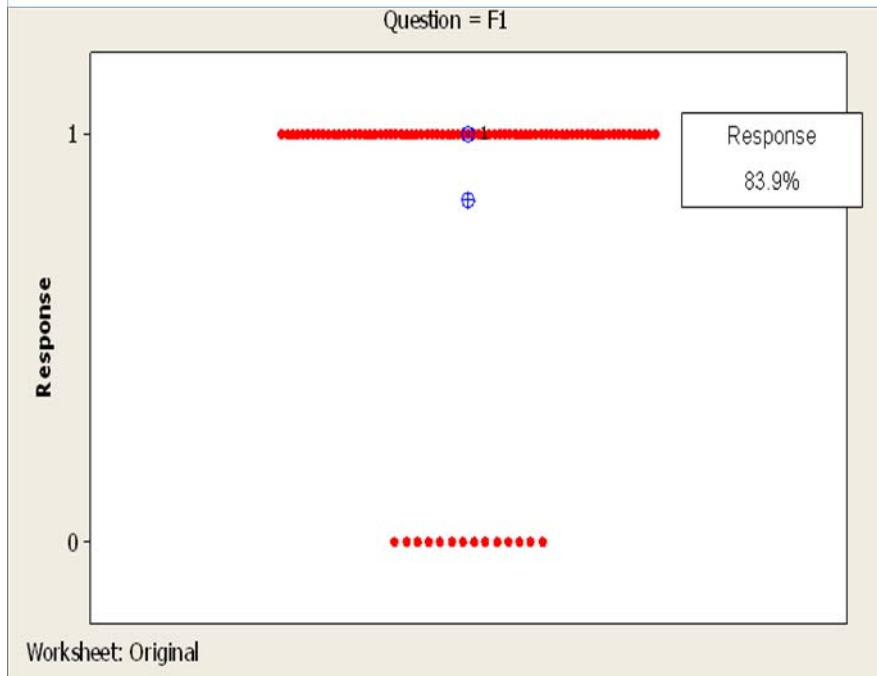
The check list below was designed to reinforce whether respondents were truly becoming more independent, improving their quality of life and functional status. The response is either checked or not checked and therefore is a binary response. The percentages of checked or not checked were calculated for each of the six areas. Except for “accomplishing things in less time”, all of the areas showed at least a 70% response rate. In-other-words the overwhelming response of the people is that the services and devices have contributed to an improvement in their lives.

The area of “accomplishing things in less time” showed a response rate of 48%. This indicates that approximately half of the people achieve tasks in less time, while the other half perceive they did not. Getting everyday jobs done quicker is not likely to be a high priority for people that are likely to have sufficient time to accomplish what they want and therefore does not affect their positive response to the service they received.

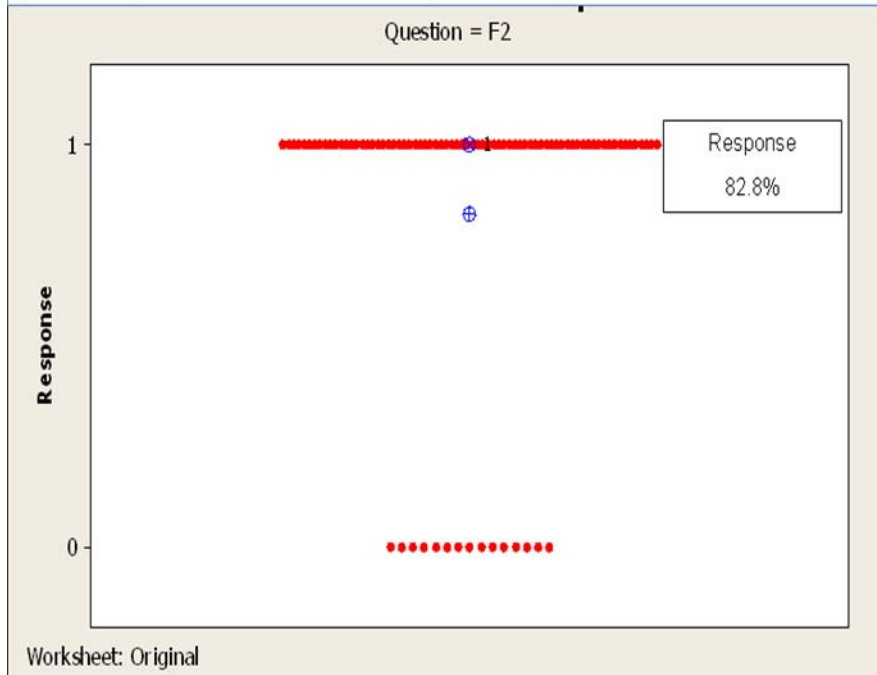
F. Please check all that apply as a result of receiving services and or devices:

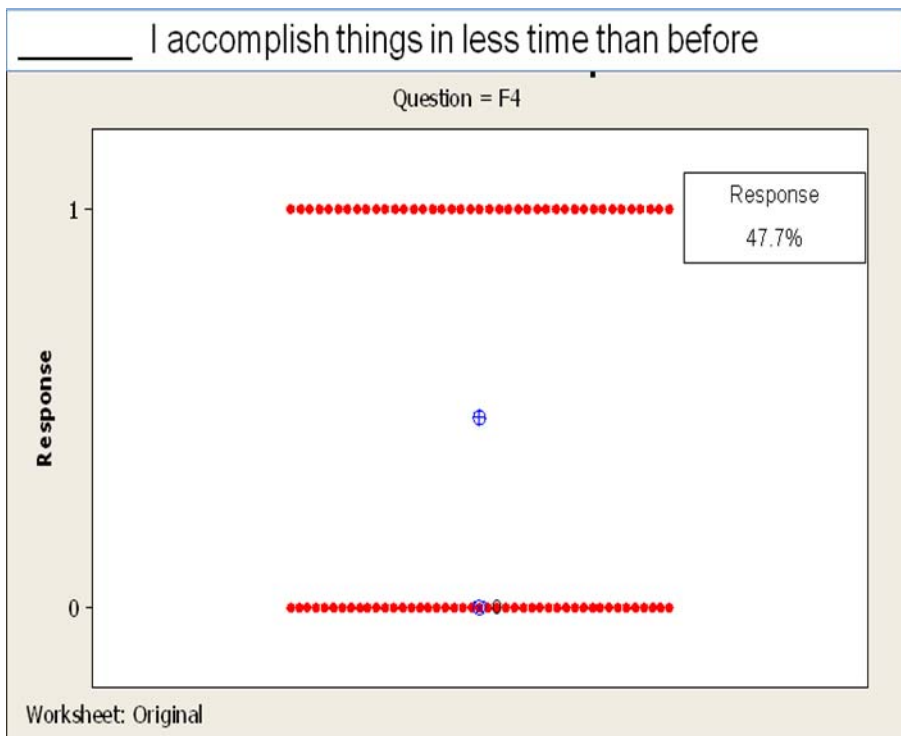
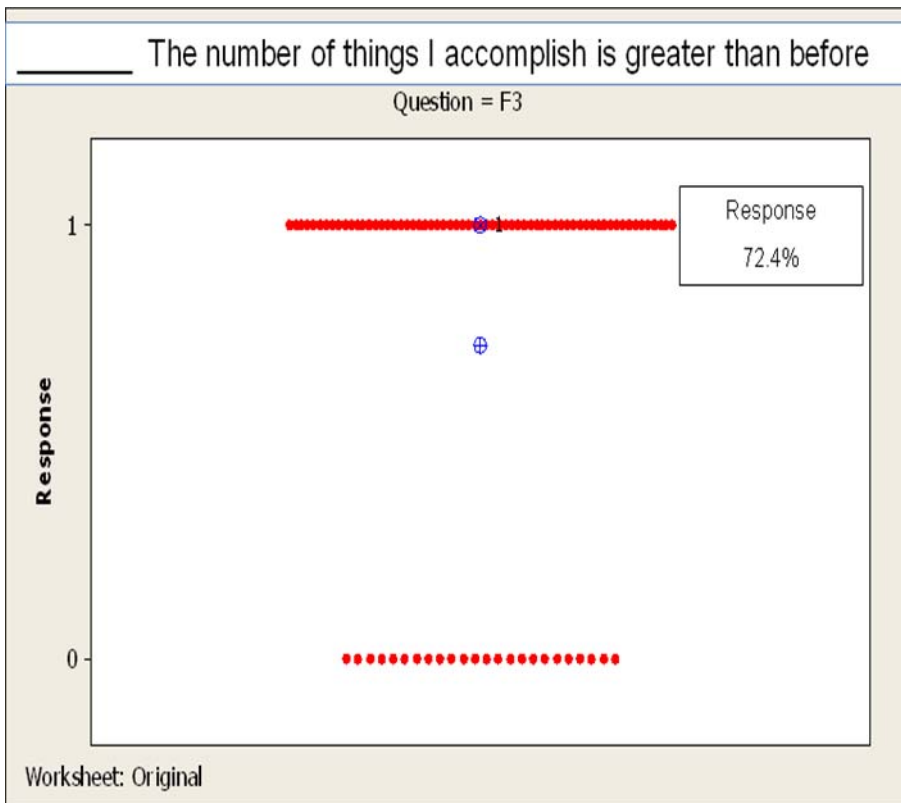
- ☐ I am now able to accomplish the things that I want to do that I could not do before
- ☐ It is easier to accomplish things now than before
- ☐ The number of things I accomplish is greater than before
- ☐ I accomplish things in less time than before
- ☐ Performing my daily activities is less stressful than before
- ☐ I am feeling better

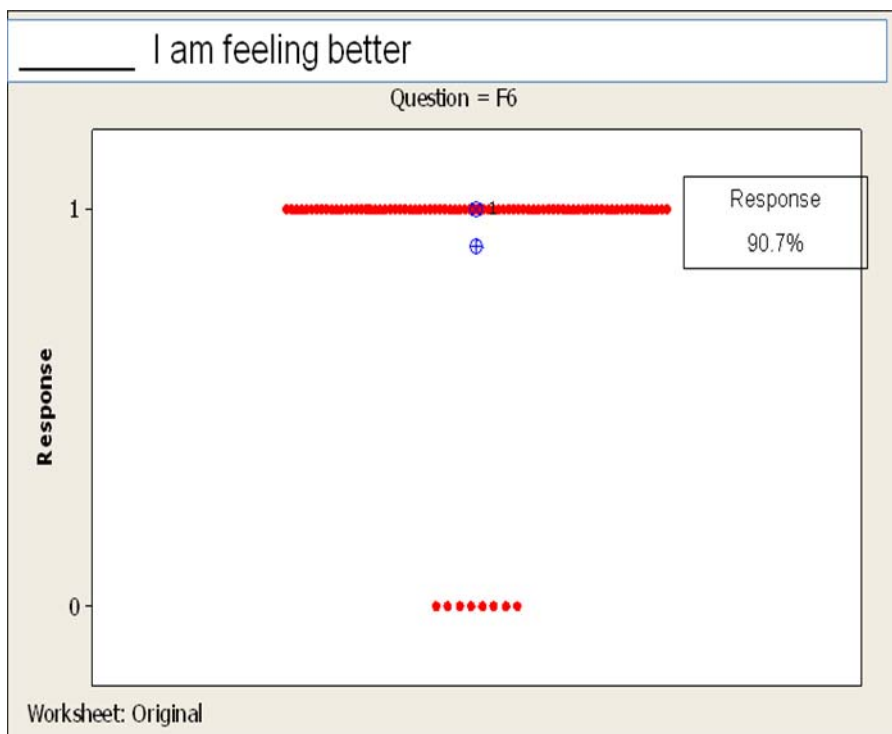
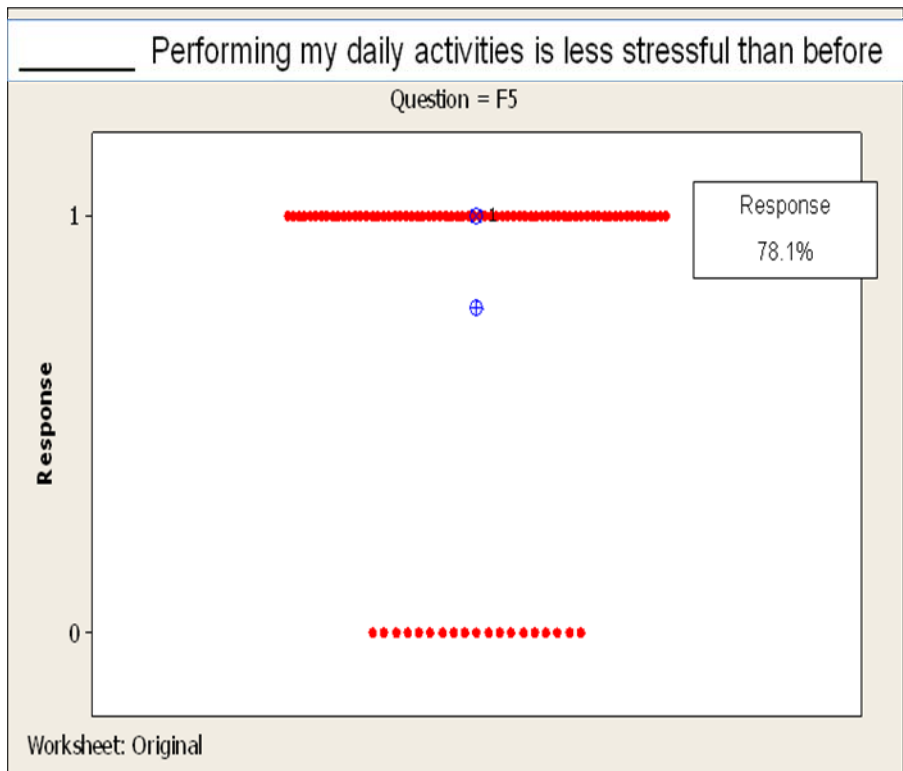
_____ I am now able to accomplish the things that I want to do that I could not do before



_____ It is easier to accomplish things now than before



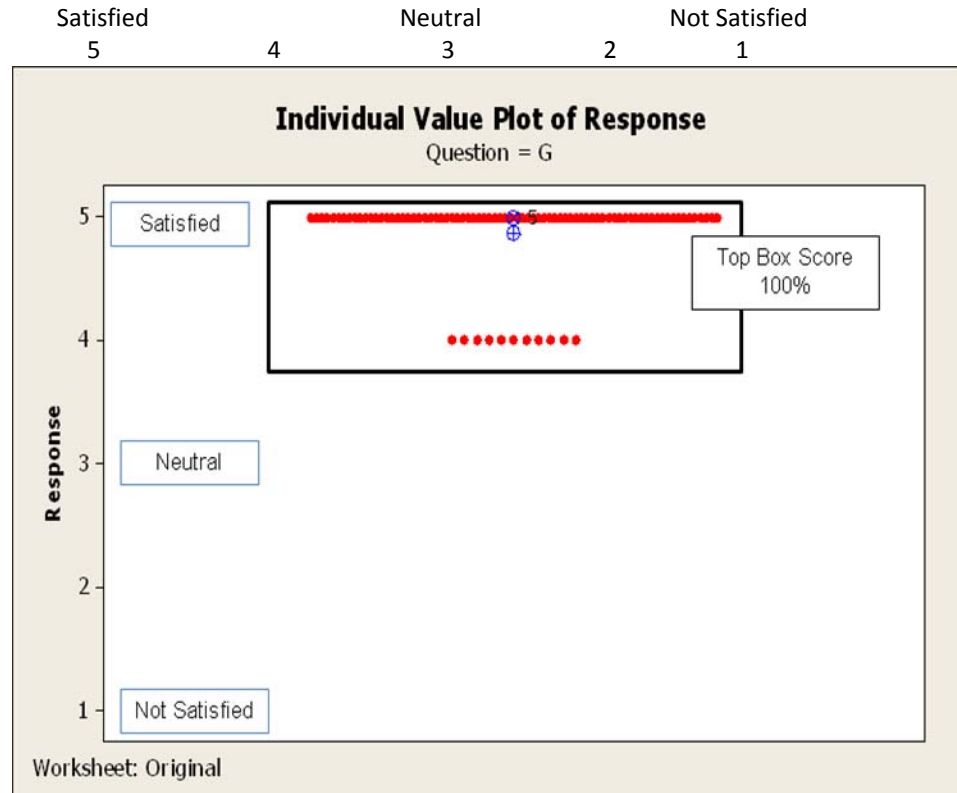




Question G

This question now speaks to the satisfaction that the clients had with the services they received from the Olmsted Center for Sight. One hundred percent of the people are satisfied. Eighty seven percent responded with the highest category of five.

G. How satisfied are you with the vision services you have received?



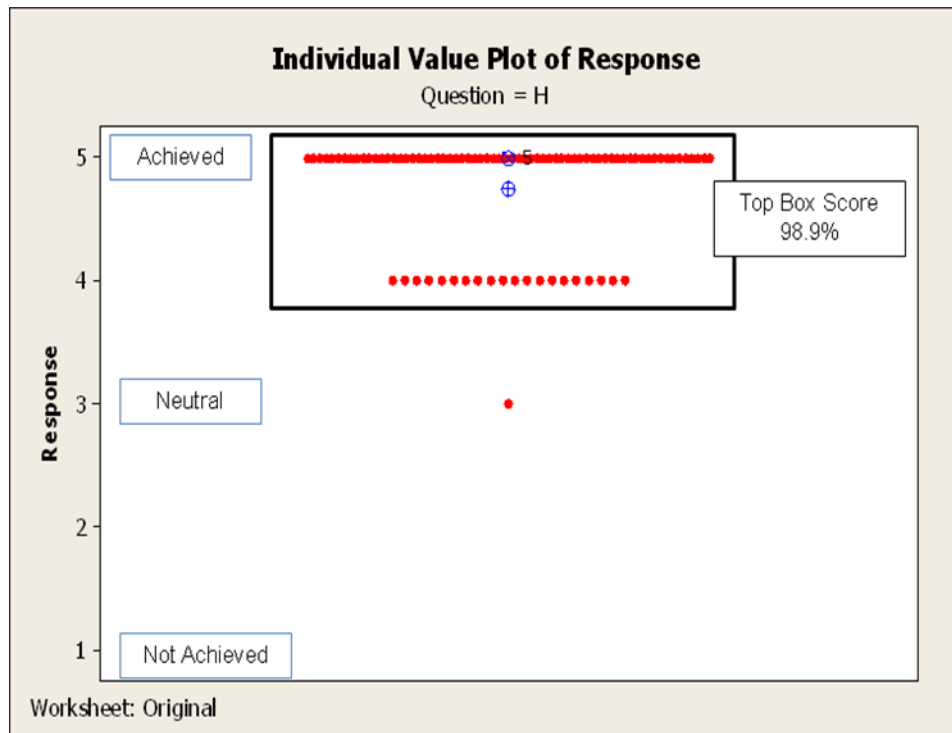
Question H

Whatever the perception was that the clients had of the service that they were to received, this perception was overwhelmingly met. Only one person responded with a neutral response.

H. Were your goals achieved by the vision services you received?

Achieved Neutral Not Achieved

5 4 3 2 1

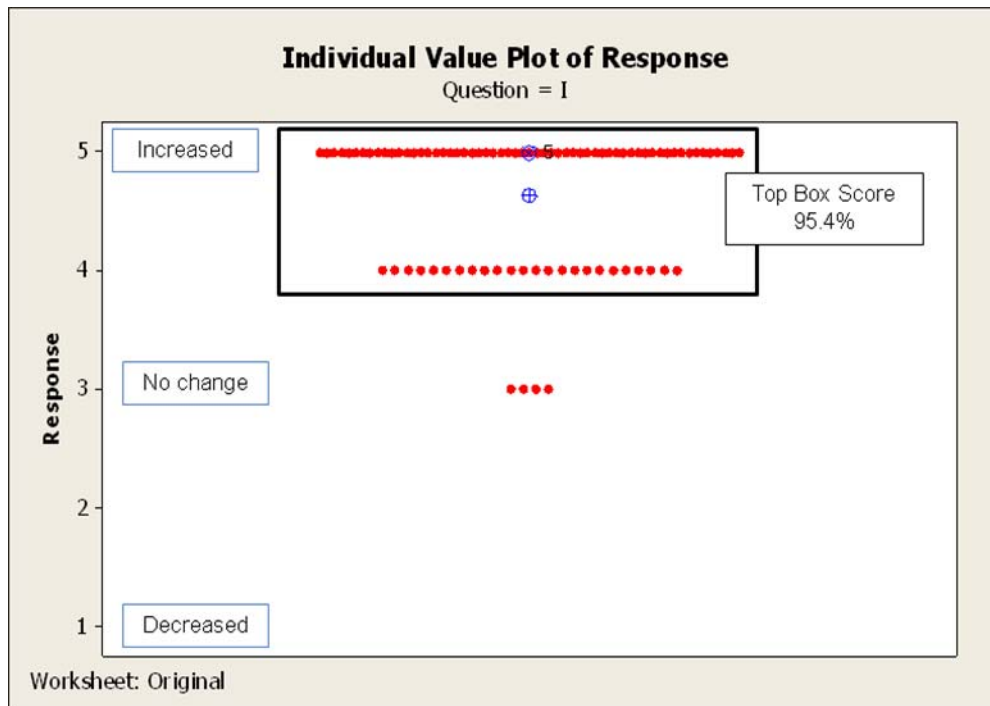


Question I

The final question readdresses the issue of “Quality of Life.” And as in all of the previous questions, there is a very positive response. Happiness has increase with 95% of the people.

- I. Has your happiness changed as a result of the services and devices that you received?

Increased		No change		Decreased
5	4	3	2	1



Conclusions

Almost all of the ophthalmologists in Western New York are referring more patients to the Olmsted Center for Sight for low vision program. The referral rate is up from 2 referrals per year to 10.

The overwhelming response for the surveyed patients is that the Olmsted Center through its low vision program is meeting their needs. The main impact has been in their ability to cook, read and stay more mobile. When these three aspects of life are maintained or improved **quality of life goes up**.



Appendix

Olmsted Center for Sight Customer Satisfaction Questionnaire

Revision 20120303

Date: _____

Surveyor name: _____

Patient name (optional): _____

We are interested in knowing in what way the vision services (i.e., vision devices, consultation, assistive devices, training, etc.) that you received at the Olmsted Center for Sight have helped you. Please answer the following questions and help us in the ongoing improvement of our services. Thank you.

J. In your judgment, how have the following changed as a result of the services/devices you received from us?

4. Your ability to see large print materials (such as labels, newspapers, mail, etc.) and/or television:

Easier		No change		Harder
5	4	3	2	1

5. Your ability to do everyday activities using adaptive aids:

Easier		No change		Harder
5	4	3	2	1

6. Overall, the way you do things is:

Easier		No change		Harder
5	4	3	2	1

K. How exactly have the services been helpful to you? Name some of your activities or tasks that the services you received have helped you to do (that you had difficulty doing before):

- L. Are there any activities or tasks that you had difficulty doing before, for which the services you received have not been helpful. Please comment or make suggestions in each case.

- M. What is your judgment about the following?

4. Ability to do your daily activities by yourself is:

Easier		No change		Harder
5	4	3	2	1

5. Your reliance on others to help you do things has:

Decreased		No change		Increased
5	4	3	2	1

6. Your confidence in doing things by yourself has:

Increased		No change		Decreased
5	4	3	2	1

List some examples: (if decreased, explain why?)

- N. Overall, how safely do you feel you are doing things now?

More safely		No change		Less Safely
5	4	3	2	1

List some examples: (if less, explain why?)

O. Please check all that apply as a result of receiving services and or devices:

- _____ I am now able to accomplish the things that I want to do that I could not do before
- _____ It is easier to accomplish things now than before
- _____ The number of things I accomplish is greater than before
- _____ I accomplish things in less time than before
- _____ Performing my daily activities is less stressful than before
- _____ I am feeling better

P. How satisfied are you with the vision services you have received?

Satisfied		Neutral		Not Satisfied
5	4	3	2	1

Q. Were your goals achieved by the vision services you received?

Achieved		Neutral		Not Achieved
5	4	3	2	1

R. Has your happiness changed as a result of the services and devices that you received?

Increased		No change		Decreased
5	4	3	2	1



Helpful Services

Helpful Services

computer
computer use
key board
use computer
using keyboard
appliacnce
baking
boil water
coffee pots
cook
cooking
cut meat
cutting meat
deep fryer
kitchen items
make coffee
marked micro
marking appliances
markings of appliances
meal prep
measuring
micro
microwave
oven
oven dial
pour drink
pour safely
pouring
safety in kitchen
set oven
set stove dial
setting dials
setting micro
simple meal prep
slicing
stone
stove
talking scale
time food

Helpful Services Category

[illegible]



Helpful Services

time foods
timer
timing foods
use appliances like microwave& dial telephone
use micro
use microwave
use of appliances
use of stove
use stove, microwave, washer, dryer
using dishwasher
using micro
using microwave
using stove oven
crafts
calculate
check writing
doing checks
finances
handling checking account
paying bills
talking calculator
write check
write checks
writing checks
do laundry
doing laundry
dryer
find clothing
ID clothing
use laundry machine
using washer dryer
washer
books on tape music
easier to weigh self
everything done for me has helped
feels less sad
go back to work
intellectual support
involved with men's group
lighting for tasks
mini recorder
mirror

Helpful Services Category

Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Crafts
Financial
Financial
Financial
Financial
Financial
Financial
Financial
Financial
Financial
Financial
Laundry
Laundry
Laundry
Laundry
Laundry
Laundry
Laundry
Laundry
Listening
Other
Other
Other
Other
Other
Other
Other
Other
Other



Helpful Services

paratransit buses
 provided emotional support
 sew
 shaving
 solar shields
 starts classes next month
 the den friend is so great it has helped me to locate items
 typing teacher is wonderful
 using recorder
 walking
 walking in neighborhood
 dialing phone
 LB phone
 make a call
 phone
 seeing phone numbers
 telephone
 telephone-make a call
 use phone
 use telephone
 using phone
 floor lamp
 able to see using lamp provided & clip board
 big eye lamp
 bold line paper and pens
 can print more easily
 lamp
 lighting and glasses have helped me to read
 lights help him to read
 magnifier
 magnifier improved my ability to read
 magnifier to read
 magnifiers
 magnifiers have helped me to read and do cross stitch
 magnifiers very helpful
 newspaper
 read
 read a few things
 read better
 read bible
 read Bible, calendar
 read catalogs for shopping

Helpful Services Category

[illegible]



Helpful Services

read mail
 read paper
 read print
 read things better
 reader
 reading
 reading finances
 reading glasses
 reading labels
 reading mail
 reading mail
 reading paper
 reading using mag
 spot read mail
 talking book
 talking books
 to read and see at a distance
 use of talking books
 using lamp Big Eye for reading
 using talking books
 zoom text
 travel safer
 basic knowledge she has gained
 confidence in self
 monitoring temperatures
 plugging in items
 safer travel
 see thermostat
 set thermostat
 setting thermostat
 support cane
 taking meds
 cctv has been a blessing
 enjoying TV
 portable cc tv
 portable cctw excellent
 see t.v.
 see TV
 TV
 TV glasses
 use T.V.
 using TV MAX

Helpful Services Category

[illegible]

Helpful Services

watching TV
 alarm clock
 calculator
 calendar
 calendar clock
 clock
 know the date time
 LP calendar
 talking clock
 tell time
 telling time
 watch
 watch is very helpful
 LP paper
 Pen Friend
 sign name
 taking messages
 taking notes
 writing
 writing
 writing with line paper and 20/20's

Helpful Services Category

Television
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Time / Date
 Writing
 Writing
 Writing
 Writing
 Writing
 Writing
 Writing

Safety

Safety

always been cautious
 always been safe
 baking
 cain has helped a lot
 cook
 cooking
 cooking
 cooking
 cooking
 cooking
 cooking
 cooking
 cooking
 cooking
 cooking
 cooking
 cooks easier
 cooks using crockpot

Safety Category

Other
 Other
 Cooking
 Mobility
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking
 Cooking

Safety

cut meat
cutting
cutting
cutting
cutting
cutting
cutting foods
dialing phone numbers
dishwasher use
feel safe with microwave
feels safer
getting around the house with a flashlight
guide cane
handling finances
has recently had a vision change
kitchen safety
laundry
locating items in fridge
making a phone call
manages meds on own
meal prep
meal prep
measuring
microwave
microwave
microwave
microwave
mobility training
more comfortable
needle
outlets
oven
paying bills
paying bills
phone
pour
pouring
pouring
pouring
pouring
pouring
pouring

Safety Category

Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Phone
Cooking
Cooking
Other
Mobility
Mobility
Financial
Other
Cooking
Laundry
Cooking
Phone
Other
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Mobility
Other
Other
Other
Cooking
Financial
Financial
Phone
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking

Safety

pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
pouring
read important papers before signing
read mail
reading finances
reading mail
safer meal prep
safer travel
safer using support cane
see small fine print
see to pay bills
setting micro
setting micro
setting micro
sewing
simple meal prep
simple meal prep
slicing
slicing
taking meds
tell money apart
telling time
thread needle
timing foods
travel
travel safer
traveling with cane
travels on own
use micro
use microwave

Safety Category

Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Cooking
Read
Read
Financial
Read
Cooking
Mobility
Mobility
Read
Financial
Cooking
Cooking
Cooking
Other
Cooking
Cooking
Cooking
Cooking
Cooking
Financial
Time / Date
Other
Cooking
Mobility
Mobility
Mobility
Mobility
Cooking
Cooking

**Safety**

use microwave
use microwave
use of sunfilters for outdoor safer travel
use oven
use stove, appliances
uses cane to get mail
uses cain now
uses cain to get mail
uses micro
using calculator
using micro & stove
using oven
using oven mitts
using stove oven
using stove oven micro
using stove, oven, microwave
walking
walking outside with cane
washer

Safety Category

Cooking
Cooking
Mobility
Cooking
Cooking
Mobility
Mobility
Mobility
Cooking
Financial
Cooking
Cooking
Cooking
Cooking
Cooking
Mobility
Mobility
Laundry