Life Satisfaction and Subjective Well Being for Residents of Senior Living Communities

A Study Conducted by
The International Longevity Center – USA
for Atria Senior Living

September 2010
“The need to understand the actual residential living needs of older persons is great, but knowledge about this vital concern is limited. That’s why research on all sorts of living options across the later years of life is essential so people know what their options are how they can exercise them to achieve satisfaction—and happiness. This why research supported by Atria and a very few other senior living organizations is so important.”

--Robert N. Butler, June 2010
Introduction

Life Satisfaction and Subjective Well Being

In Transitioning into Senior Living Communities

When older people and their families make the decision to move an older adult from a private residence to an independent or senior living community there is natural apprehension and worry about adjusting and integrating into a new venue—and life experience. Understanding this natural cause of anxiety, the staff of Atria Senior Living Communities have developed a program that is attentive to and supportive of the transition from one’s own home to congregate living. To that end, Atria collaborated with the International Longevity Center-USA to assess the transition process through a study of “subjective well-being,” a scholarly approach to gauging people’s life satisfaction and happiness.

The goal of this partnership was to have an independent and unbiased validation of the measures and markers used to assess the journey of transition of new residents in a select Atria community deemed representative of others in the Atria system. Residents were selected to participate in a transition satisfaction study aimed both at evaluating the instrument used to make the assessment, and to learn from it whether Atria’s current approach to supporting older adults’ transitions promotes high levels of well-being for new residents. The test was administered twice to provide a basis for comparison and to control for any apparent variations.
Just how were the residents adjusting to their new environment? The answer came from questions that probed their overall satisfaction with life, whether there were positive or negative factors in their self-reports, whether they were mastering their new environment, whether they had a sense of purpose in life going forward—and whether they were developing positive relationships. The question for the ILC team was whether the measures used to assess these concerns were in fact measuring those constructs, and measuring them in a reliable fashion.

Did the test measure what it was supposed to and what did it say about the questions asked and the answers elicited? Through this report, Jaclyn Kelly, Ed.M., a social scientist and evaluation specialist, and Dr. Leonard Kelly, a cognitive psychologist, take a hard nosed and rigorous look using the tested empirical methods and conclude that the tests do validate not just the reliability of the instrument used, but also that Atria residents are making a successful transition to their new living environment. As described in the report, the test charts what is working in the transition process—and when. The insight provided by this instrument will be useful in helping Atria and other senior living communities intervene and support residents at crucial times when this will make a difference to their ability to adjust to congregate living and engage in a satisfying life.

This pilot study also identifies operational issues that can be addressed to more effectively chart life satisfaction and transitional issues in the future. This study is an important step toward a more comprehensive approach to life satisfaction and happiness.
issues affecting older people as they decamp homes of long standing for new and unfamiliar residences. For practical reasons, the study was limited to a single facility and to two administrations across several months.

A larger scale effort drawing on this pilot is clearly in order and has the potential of generating even more useful information that can be used in training programs for staff and in reaching new residents as well as better serving new ones.

The need for such study and application is evident, but few businesses in the senior living field have shown the enthusiasm that Atria has for the generation of new and useful knowledge. As Dr. Robert Butler, founder of the ILC-USA said, earlier in 2010, “Atria is remarkably progressive and willing to engage in serious examination of these quality of life issues that are so important to older people who need reassurance that they can have long and healthy lives, with each stage of the life course offering excitement and challenge.”

Our gratitude to Atria for their support of this work and their commitment to independent and unbiased research on aging issues.

Everette E. Dennis, Ph.D.

Executive Director

ILC-USA
Life Satisfaction and Subjective Well Being

In Transitioning into Senior Living Communities

Executive Summary:
This investigation was a collaboration by The International Longevity Center and Atria Senior Living with the purpose of determining the validity of an instrument intended to measure subjective well-being and life satisfaction for use with older adults. Findings demonstrate the strong validity of the six measures that comprised the instrument. Of equal interest, residents who participated in the study exhibited significant improvements between the first and second administrations on four of the six measures, indicating a favorable assimilation into the Atria senior living community.

Recommendations:

1. The validity and reliability findings of this study suggest that future administrations of this instrument can be conducted with a reduced number of scales without jeopardizing the quality of feedback. Specifically, Positive Relationships, Purpose in Life, and Environmental Mastery can be excluded to shorten the length and lessen the burden on respondents.

2. Atria should expand their use of this instrument to additional facilities and gather data on their clients’ experiences as they transition into Atria residences. An inter-site comparison of findings might reveal some particularly effective strategies that certain sites are using to engage new residents.

3. In addition to looking at resident change over time, Atria should consider administering this survey to all new residents as a tool to identify those most in need of support and scaffolding. An especially low score will indicate to staff that the respondent may have a particularly difficult transition into a new living environment.

4. As resources permit, replicating the study using external evaluation staff to administer the survey and using a large sample to confirm results obtained.
Purpose

This investigation was undertaken with older adults living in an Atria Senior Living residence in order to determine the validity and reliability of three measures of subjective well-being, and three additional related instruments that each measure satisfaction with completion of crucial life tasks. In addition, the study determined whether participant sentiments, as measured by these instruments, tended to change during time in residence, and to this end, the instruments were administered twice, first in November, 2009 and a second time in April, 2010.

Findings indicate the strong validity and reliability of the six instruments that were administered. In addition, the residents who participated in the study exhibited significant improvements in expressed sentiments between the first and second administrations on four of the six measures, and they evinced no indications of a decline in favorable sentiments. Regression analysis suggests that participants who maintain a clear sense of purpose in life are most likely to make improvements in their life satisfaction. For the future, Atria management should consider reducing the number of measures to lessen the time burden on staff and residents, and management should also consider replicating the investigation to confirm that similar results are obtained.

Participants

The study included residents from the Atria Sterling Glen community located in Roslyn, New York. The correlational methods used for analyses in this study require variability among the participants’ responses related to the sentiments being measured. To increase the likelihood of obtaining that desired variability, the Executive Director of the residence, who is personally acquainted with every resident, was asked to identify 30 prospective participants, such that ten were “Thriving in the community”, with a high level of life satisfaction, another ten who were
seen as “Struggling in the community”, with a low level of life satisfaction, and a final ten
considered to be “Adjusting to the community”, with a medium level of life satisfaction. Two of
the 30 original participants failed to respond to many of the items during the first administration,
and they were eliminated from the study, leaving 28 participants with complete data sets, ten in
the Adjusting group and nine in each of the other two. An additional two participants are absent
from the second administration, one having moved inter-state and the other having passed away.
Thus, the bulk of the analyses focuses on a data set that includes the responses of 26 participants.
The following figures display demographic data for the 28 participants who provided complete
data during the first administration. These data indicate that the typical respondent was a
Caucasian woman who was 85 years old at the time of the first survey administration and had
resided at Sterling Glen for the preceding 19 months.

Demographics of Research Sample
The Sample includes 28 residents of Atria Sterling Glen Community. A
brief demographic description appears below.

- The Sample’s ages range from 68 – 96 years. The average age of a study
  participant is 85.
- At baseline, the Sample had lived at Atria between 1 – 29 months. The average
  months lived at Atria was 19.
**Demographics of Research Sample (cont'd)**

**Gender of Research Sample:**
79% Female, 21% Male

**Ethnicity of Research Sample:**
96% Caucasian, 4% Asian

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**Instruments Administered**

**Subjective Well Being Measures**

A general consensus in the field of psychology holds that Subjective Well-Being includes both a cognitive and affective component. In the present study the cognitive component was assessed by the Satisfaction with Life Scale (Diener, 1984), while the affective component was measured by the Positive and Negative Affect Schedule (PANAS; Clark and Watson, 1988).

**The Satisfaction with Life Scale.** This is a five-item instrument consisting of positive statements about one’s life, for example, “The conditions of my life are excellent.” Respondents answer by selecting one of seven Likert scale options ranging from Strongly Disagree to Strongly Agree. These options were assigned the values one through seven, and a total score was obtained by averaging the values for all five items.
The Positive and Negative Affect Schedule. This measure consists of words for ten positive emotions (e.g., inspired, excited, proud) and ten words for negative emotions (e.g., distressed, upset, ashamed). Respondents indicated the extent to which they had felt these emotions in the previous few weeks by selecting one of five responses ranging from Very Slightly/Not at all to Extremely, and these choices were assigned values, one through five. There has been some debate in the literature about whether the frequency of pleasant and unpleasant emotions are highly correlated, although inversely, and thus surrogates for one another. The preponderant position is that they each make an independent contribution to happiness. Thus, the positive and negative items were treated as separate scales, each ten items long. However, for ease of comparison between scales, and to allow calculation of a summative score that included all six scales administered in the study, the values of the negative items were reversed, such that a “5” associated with “Extremely” was recoded as a “1” for “Very Slightly/Not at All”, and vice versa. The values associated with the responses “A little” and “Quite a bit” were also reversed. Thus, the higher the score, the lower the frequency of the negative sentiments. Pairs of scores for each subject were obtained by averaging the values associated with the responses for all positive and negative items respectively.

Validation Instruments

A common approach to instrument validation, and the one used in the present investigation, is to determine whether the instruments being validated exhibit strong correlations with separate criterion measures chosen because they share theoretical components with the measures being examined. In this case, three criterion measures were drawn from the six scales that constitute The Scales of Psychological Well-Being developed by Ryff (1988.) The three scales of well-being each focus on important life tasks: environmental mastery, maintaining
purpose in life, and maintaining positive relations with others. In their original form, each of the scales includes seven positive and seven negative statements about one of the life tasks. Respondents indicate their answers by choosing from among six Likert scale responses ranging from Strongly Disagree to Strongly Agree and each of these are assigned the numerical values, one through six, respectively. Prior to the analysis, responses to negative items were recoded in a manner to make them consistent with the positive items. For example, the value, one, assigned to the response, Strongly Disagree, was recoded as a six, and Strongly Agree was recoded as the value, one. The values associated with the other four response options were recoded in a similar manner for the negatively worded items.

Results

Reliability Analysis

Table 1 displays the results of the reliability analyses, as well as the mean values for each measure on both administrations of the instruments. Reliability was assessed using Coefficient Alpha (Cronbach, 1951), which is an internal consistency approach. Coefficient Alpha provides an unbiased estimate of the true reliability of a test if one assumes that the items were randomly selected from a larger pool of items designed to measure the same construct. Coefficient Alpha can be further understood as related to another commonly used method for calculating instrument reliability, the split-half method. Split-half reliability is obtained by dividing a test into two, calculating the correlation between the scores from each half, and then making a correction for test length. In essence, Coefficient Alpha is the average of all possible “split-half” combinations for an instrument.
Table 1. Results from analysis of reliability and changes in responses between first and second administrations of instruments.

<table>
<thead>
<tr>
<th>Scale</th>
<th>Reliability 1&lt;sup&gt;st&lt;/sup&gt; Admin</th>
<th>Mean 1&lt;sup&gt;st&lt;/sup&gt; Admin</th>
<th>Mean 2&lt;sup&gt;nd&lt;/sup&gt; Admin</th>
<th>t-value</th>
<th>Prob.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Satisfaction with life</td>
<td>.867</td>
<td>4.7</td>
<td>5.4</td>
<td>2.303</td>
<td>.03</td>
</tr>
<tr>
<td>Positive Affect</td>
<td>.903</td>
<td>3.3</td>
<td>3.3</td>
<td>.128</td>
<td>.899</td>
</tr>
<tr>
<td>Negative Affect</td>
<td>.899</td>
<td>3.7</td>
<td>4.2</td>
<td>2.663</td>
<td>.014</td>
</tr>
<tr>
<td>Mastery of Environment</td>
<td>.842</td>
<td>4.4</td>
<td>4.7</td>
<td>1.32</td>
<td>.199</td>
</tr>
<tr>
<td>Purpose in Life</td>
<td>.843</td>
<td>4.1</td>
<td>4.7</td>
<td>3.228</td>
<td>.003</td>
</tr>
<tr>
<td>Positive Relationships</td>
<td>.825</td>
<td>4.4</td>
<td>4.8</td>
<td>2.446</td>
<td>.022</td>
</tr>
<tr>
<td>All Scales</td>
<td>N/A</td>
<td>24.1</td>
<td>26.7</td>
<td>2.74</td>
<td>.012</td>
</tr>
</tbody>
</table>

Inspection of Table 1 reveals that all measures used in the study have very high reliabilities, indicating that if these residents were to respond to these measures again without a significant delay, they would be expected to obtain similar scores. Particularly strong were the reliabilities of the three measures under investigation. The lowest of these was a Coefficient Alpha of .867 for the Satisfaction with Life Scale, indicating very stable measurement. It should be noted that test reliability is partly a function of instrument length. This makes the latter reliability particularly noteworthy because the scale includes only five items. Taken together, these results indicate that the instruments have a high degree of reliability.
Differences Between Administrations

Table 1 also provides an examination of the differences between mean responses for the first and second administrations of the scales, and the magnitude of the differences between these means was examined with a series of paired sample t-tests. This procedure evaluates the size of the difference between the mean values of the two survey administrations in light of the composite variation in response values that occurred separately within each of the two administrations. The t-values for each comparison are reported as well as their associated probabilities. The customary threshold for statistical significance is a probability .05, and any t-value with a probability less than .05 is considered a relatively rare occurrence and thus, statistically significant.

The Satisfaction with Life scale results show a mean of 4.7 on the first administration, indicating that the average response to the five positive statements constituting the scale was slightly less than Slightly Agree. This increased to 5.4 on the second administration, a jump that generated a t-value with a probability of .03, indicating statistical significance. On the Negative Affect scale, taking into account the recoding procedure described above, the mean response of 3.7 indicates that on average the respondents experienced the unfavorable sentiments to a degree slightly more than "a little." The 4.2 mean for the second administration indicates that on average the participants expressed experiencing these negative sentiments even less frequently, and that difference was also statistically significant (prob. .014). Further inspection of Table 1 indicates that expressed sentiments improved to a statistically significant degree between the 1st and 2nd administrations for four of the six scales as well as an All Scales measure, which is a sum of the scores from the individual scales.
A regression analysis was conducted to determine which if any sentiments at the outset of the testing period in November, 2009 were associated with overall improvement in April, as indicated by the All Scales score. Regression results indicated that only scores on the Purpose in Life scale predicted overall improvement in sentiments approximately five months later.

Validity Analysis.

As stated earlier, a set of measures is considered valid if it demonstrates a high correlation with other established criterion measures that share theoretical elements with the instruments being examined. Consistent with this reasoning, if the Satisfaction with Life Scale and Positive and Negative Affect Scales are valid for measuring the well-being of older adults, then they should correlate highly with the three scales that measure success on life tasks known to contribute to well-being. Again, the three tasks are environmental mastery, maintaining a purpose in life, and maintaining positive relationships. A strong correlation will result if people who score high on the Satisfaction with Life Scale and the two Affect Scales also score high on the three criterion scales, combined with a tendency for those who score low on the three scales being examined to also score low on the three criterion scales.

Calculation of correlations among the different scales was accomplished by the method, stepwise multiple regression. This procedure determines the linear combination of the multiple independent variables, in this case the Satisfaction scale and two Affect scales, that has the highest correlation, Multiple R, with a single criterion variable. A separate multiple regression procedure was completed for each of the three criterion measures. It is worth noting here that the relationships between the combination of Life Satisfaction and Positive and Negative Affect scales, on the one hand, and a sense of well being about these three important life tasks, on the
other, may be reciprocal in nature. That is, the two sets of sentiments may influence one another at different points in time. Thus, the analyses also included regressions that used the three criterion measures as the independent variables, and Life Satisfaction, Positive Affect and Negative Affect as the dependent variables in three separate procedures.

One advantage of the multiple regression procedure is that it makes use of the entire three-scale battery at once, simultaneously leveraging the explanatory power of all three measures. Another advantage is that it does not make duplicate use of the variation in the dependent measure, which could easily occur if three separate correlations were calculated corresponding to each combination of dependent and independent variables. The independent variables in a sense are pitted against one another in a competition to demonstrate the best co-variation with the dependent measures, which are each of the three criterion variables. Independent measures that do not explain significant variation in the dependent measure are excluded from the linear combination. An additional practical advantage of this winnowing process is that it can suggest to a reduction in the size of an assessment battery to a more parsimonious set of measures, thereby lessening the burden both on survey administrators and respondents in the future.

Table 2 presents the results of the validity analyses. Displayed are the findings for six separate regressions, each one represented by a different row in the table. Each row displays the independent and dependent variables, and the correlation between them. When squared, the Multiple R indicates the proportion of the variation in the dependent variable that is explained by the linear combination of the independent variables. Also shown for each procedure are any independent variables that were excluded from the regression equation because they did not explain a sufficient amount of the variation in the dependent variable. Each row also displays the
F-value for each analysis, which can be interpreted as the ratio of the proportion of variance in the dependent variable that is explained by the independent variables compared to the variation that they do not explain. Finally, a decimal number reflects the p-value, indicating the statistical significance of each obtained F-value; again, any p-value that is less than .05, indicating a somewhat rare finding, is considered statistically significant.

Inspection of the results indicates that the linear combination of the Satisfaction with Life Scale and the two Affect scales explains a significant amount of the variation in each of the three criterion measures. The strongest result occurred for the procedure in which Purpose in Life was the dependent variable, which generated a Multiple R of .758 (indicating that the independent variables remaining in the equation explained 57% of the Purpose in Life variation) with a p-value easily surpassing the significance threshold of .05 (p=.000.) In all three analyses, the Satisfaction with Life scale was excluded by the stepwise procedure because it did not contribute significant explanation when competing with the other candidate variables.

Taken in combination, all of these results indicate that the three measures being examined, Satisfaction with Life, Positive Affect, and Negative Affect are valid measures of the well-being of the older adults residing at this facility. Inspection of the results in the bottom half of the table, which also show some strong relationships among the variables, are consistent with a conclusion that there may be a reciprocal relationship among the sentiments tapped by the two sets of measures. In other words, a sense of well being may contribute to the completion of important life tasks, and completion of important life tasks may foster a sense of overall well-being.
Table 2. Results of stepwise multiple regressions among target and criterion measures

<table>
<thead>
<tr>
<th>Initial Predictors</th>
<th>Criterion</th>
<th>Multiple R</th>
<th>Excluded Variables</th>
<th>F Value</th>
<th>Significance</th>
</tr>
</thead>
<tbody>
<tr>
<td>PA, NA, LS</td>
<td>EM</td>
<td>.641</td>
<td>LS</td>
<td>8.35</td>
<td>.002</td>
</tr>
<tr>
<td>PA, NA, LS</td>
<td>PiL</td>
<td>.758</td>
<td>LS</td>
<td>16.2</td>
<td>.000</td>
</tr>
<tr>
<td>PA, NA, LS</td>
<td>PR</td>
<td>.411</td>
<td>LS, PA</td>
<td>5.09</td>
<td>.033</td>
</tr>
<tr>
<td>PiL, PR, EM</td>
<td>LS</td>
<td>.462</td>
<td>None</td>
<td>2.175</td>
<td>.117</td>
</tr>
<tr>
<td>PiL, PR, EM</td>
<td>PA</td>
<td>.583</td>
<td>PiL, PR</td>
<td>13.4</td>
<td>.001</td>
</tr>
<tr>
<td>PiL, PR, EM</td>
<td>NA</td>
<td>.531</td>
<td>EM, PR</td>
<td>9.79</td>
<td>.004</td>
</tr>
</tbody>
</table>

Variable Codes

PiL= Purpose in Life          PA= Positive Affect
PR= Positive Relations with Others NA= Negative Affect
EM= Environmental Mastery    LS= Life Satisfaction

Conclusion

The findings from this Atria-ILC study indicate that the well-being of older adults can be measured with validity and reliability, and they also indicate that well-being can improve during an older adult’s tenure in a congregate living setting, even over a relatively brief period of time. When combined with extant demographic research, these findings underscore the need to deploy such measures of well-being, particularly at the time of life transitions by older adults. One clear demographic trend is the increasingly larger proportion of the population constituted by older adults, and as the Baby Boomer generation ages, this trend will become even more pronounced. Moreover, greater longevity is routinely accompanied by a high risk of encountering various kinds of loss, each with potentially dire psychological consequences. These include the loss of health, friends, home, spouse, and independence. In short, with each passing year, we are
becoming a concentration of people facing a potentially daunting concentration of problems. It is imperative that psychological well-being be monitored regularly, so that, where necessary, either preemptive or corrective interventions can be introduced.

Though the present research did demonstrate improvements in the study sample’s well-being over a relatively brief period of time, it did not explore the processes that resulted in that augmented well-being. Thus future research should systematically identify the conditions and interventions conducive to engendering or maintaining well-being in older adults, and it should test the efficacy of that programming through empirical evaluation research.