

Chapter 5

Personality and Quality of Life

Although most of our efforts to find person-level predictors of resident's quality of life (QOL) focus on the resident's health status and social circumstances, we also considered that a given resident's personality might influence his or her QOL. For example, in a qualitative study of how residents perceive quality in general, Gubrium interviewed residents in several facilities where the quality of care seemed largely constant. He found that the residents' personalities and ways of looking at the world were related to whether they viewed the care as good or poor (Gubrium, 1993)

Though not in the scope of the original contract, the second wave of the QOL study afforded an opportunity to study how, if at all, personality traits affect resident's appraisals of their QOL. Although nursing homes are accountable for their residents achieving a reasonably good QOL regardless of their personality traits, a systematic study of the relationship between personality and perceived QOL might offer clues as to those at greatest risk for poor QOL outcomes.

A review of existing personality measures revealed that the measures that were currently available were not appropriate for nursing home residents. First, almost all the existing measures rely on self-completed questionnaires, which would be difficult for residents with visual, motor, or cognitive difficulties. Some interview-based assessments of personality have been developed, but the length of these measures, such as a 120-item battery by Trull et al., which even if suitable in content would be too long to complete within the context of the larger QOL interview (Trull et al., 1998). Further, relatively little work has been done to measure personality in seniors, the most noteworthy exception being the self-completed NEO by Costa and McCrae (Costa & McCrae, 1988, 1990, 1999). Almost no work has been done with nursing-home

residents. Given these considerations, we undertook the task of developing a short measure of personality that could be administered near the end of the QOL interview in Wave 2. This chapter reports on both the development of the measures and our findings.

Development of the Measures

Approach

In our approach to personality assessment, we were guided by the Five Factor Model of personality, which holds that five global personality traits are sufficient to describe individual differences at the broadest level (John, 1990). These “Big Five” traits are Extraversion (E), Neuroticism (N), Agreeableness (A), Conscientiousness (C), and Openness to Experience (O), which are also the traits modeled by many others. Our review of the literature on personality measurement led us to use, as a starting point for our interview-based assessment, the Big Five Inventory (BFI). We chose this measure because the instrument itself was relatively short, and the items were concise and simple. For example, the items in the NEO are much more complicated for oral administration. The 44-item BFI has been shown to have adequate, psychometric properties (John, & Sirvastava, 1999).

Our efforts at developing an interview-based assessment of personality in nursing facility (NF) residents proceeded in two phases. In the first phase, a pilot study, we administered the original 44 items of the BFI in a sample of NF residents. The goal of this exercise was to shorten the scale and to determine whether the items worked in an interview administration mode, with a nursing home population. Analyses of the results of this pilot study indicated that the measure could be shortened to 27 items. In the second phase, this 27-item scale was administered at the end of the QOL interview in Wave 2 of data collection. Analyses of the Wave 2 data indicated that 2 of the 27 items did not perform as well in Wave 2 as they did in the pilot study. Thus, the

final personality assessment consisted of 25 items. Specifics of these analyses are presented below.

Pilot Study.

In the pilot study, we used a convenience sample of 14 nursing facilities in Minnesota, Florida and New Jersey. Six interviewers who had served as data collectors in Wave 1 collected the data for this pilot study. A convenience sample of 200 residents from these nursing homes participated in the study (46 males and 154 females). The interview for the pilot study included 56 questions that were asked of each participant. (Twelve of those items were related to the refinement of the individuality scale as reported in Chapter 5). The last 44 items of the protocol were adapted from the BFI and are presented in Table 5.1 (John & Srivastava, 1999). In the pilot, interviewers were instructed to approach alert residents because at this stage we used only the five-level response format mirroring that of the original test, and because we intended to seek feedback from respondents on the items and procedure itself.

Based on a small pretest before the pilot, we made a few modifications to the instrument. Importantly, the framing question was changed from the original: “I see myself as someone who...” to “As you look back on your whole life, do you see yourself as someone who...” The reason for this change was that without being anchored by a lifetime perspective, residents tended to focus on their current experience in the nursing home. Comments made by the residents revealed the need for this modification. A number of the items refer to the respondent’s stance towards work tasks, and the original wording invited a statement that he or she no longer did any work. Second, the wording for some of the items was modified slightly. For example, in some cases a more difficult wording was replaced by a simpler wording (e.g., “perseveres” was replaced with “sticks with”).

Table 5.1 Descriptive Statistics and Factor Analysis Results for the Original BFI Items

Item	EFA Factor Loadings						
	Mean	SD	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1. Is talkative (e)	3.39	1.20	-.058	.121	-.063	.202	.592
2. <i>Tends to find fault with others (-a)</i>	2.51	1.23	-.074	-.024	.255	.233	.040
3. Does a thorough job (c)	4.31	.80	.524	.035	.046	.129	-.136
4. <i>Is depressed, blue (n)</i>	2.29	1.17	-.085	.009	-.322	-.212	-.119
5. Is original, comes up with new ideas (o)	3.41	1.11	.069	.582	-.180	.195	.059
6. Is reserved or slow to express an opinion (-e)	2.95	1.26	-.053	.157	.093	-.026	.563
7. <i>Is helpful and unselfish with others (a)</i>	4.24	.68	.239	-.032	-.045	.391	-.152
8. Can be somewhat careless (-c)	2.18	1.10	.525	.109	.001	.017	-.116
9. Is relaxed, handles stress well (-n)	3.59	1.16	.036	.033	-.327	-.345	.041
10. Is curious about many different things (o)	3.82	1.07	-.067	.633	-.089	.073	.048
11. <i>Is full of energy (e)</i>	4.06	.99	.485	.220	-.124	.186	.101
12. Starts quarrels with others (-a)	1.63	.78	.098	-.037	.112	.469	-.025
13. Is a reliable worker (c)	4.43	.64	.505	.037	-.105	.258	-.001
14. Can be tense or anxious (n)	3.06	1.15	-.001	.012	-.551	-.062	.084
15. Is ingenious, a deep thinker (o)	3.60	1.11	.128	.445	-.100	.192	-.119
16. <i>Is enthusiastic (e)</i>	3.95	.92	.070	.452	-.032	.176	.201
17. Has a forgiving nature (a)	4.23	.77	-.132	-.119	.174	.684	.006
18. <i>Tends to be disorganized (-c)</i>	2.34	1.15	.508	.008	.145	-.179	.007
19. Worries a lot (n)	3.02	1.27	.267	.050	-.711	-.096	-.071
20. Has an active imagination (o)	3.59	1.11	.114	.532	-.135	-.061	.150
21. Tends to be quiet (-e)	3.42	1.17	-.105	-.045	.096	-.121	.767
22. Is generally trusting (a)	4.16	.74	-.129	.123	-.036	.704	.084
23. Tends to be lazy (-c)	1.93	1.04	.901	-.103	-.116	-.074	.002
24. <i>Is emotionally stable, not easily upset (-n)</i>	3.55	1.06	-.111	-.185	-.334	-.226	.107
25. Is inventive (o)	3.02	1.22	-.056	.660	.066	-.185	-.112
26. <i>Has an assertive personality (e)</i>	3.47	1.13	.325	.203	.191	-.171	.154
27. <i>Can be cold and aloof (-a)</i>	2.40	1.17	.128	-.156	.161	.422	.134
28. Sticks with a task until it is finished (c)	4.18	.81	.672	-.087	-.014	.018	-.085
29. Can be moody (n)	2.62	1.18	-.245	.049	-.451	.041	-.082
30. <i>Values artistic, aesthetic experiences (o)</i>	3.59	1.07	-.163	.578	.105	-.013	-.018
31. Is sometimes shy, inhibited (-e)	2.91	1.25	.145	.042	.436	-.107	.402
32. Is considerate and kind to almost every one (a)	4.31	.63	.293	-.080	.052	.616	-.056
33. Does things efficiently (c)	4.16	.65	.581	.048	-.117	.125	-.087
34. <i>Remains calm in tense situations (-n)</i>	3.70	1.01	.231	-.240	-.325	-.431	.343
35. <i>Prefers work that is routine (-o)</i>	3.23	1.15	-.098	.306	.178	-.099	.000
36. Is outgoing, sociable (e)	3.90	.96	-.005	.200	.148	.375	.381
37. <i>Is sometimes rude to others (-a)</i>	2.00	1.05	.201	.050	.101	.265	-.337
38. <i>Makes plans and follows through with them (c)</i>	3.91	.94	.320	.245	.087	.012	.052
39. Gets nervous easily (n)	2.71	1.17	.045	.161	-.742	.037	-.047
40. Likes to reflect, play with ideas (o)	3.46	1.09	.014	.647	-.134	.070	.106
41. <i>Has few artistic interests (-o)</i>	2.91	1.22	.043	.473	-.034	-.023	-.038
42. Likes to cooperate with others (a)	4.21	.69	.093	.061	-.230	.645	.029
43. <i>Is easily distracted (-c)</i>	2.44	1.06	.390	-.074	.306	-.069	.117
44. <i>Is sophisticated in art, music or literature (o)</i>	2.87	1.25	-.085	.502	.156	-.274	-.150

Note: $n = 182$. The letters in parentheses after each item indicate which trait the item is intended to measure; a negative sign before the letter indicates an item that is reverse coded: (e) extraversion, (a) agreeableness, (c) conscientiousness, (n) neuroticism, (o) openness. Items in italics were eliminated to create the 27-item version of the BFI. Factor loadings greater, in absolute value, than .4 are in bold. Italicized items are the ones that were dropped after the pilot study.

The analyses of the pilot study data proceeded in three stages. First, we examined how well the 44 BFI items measured the big five traits, by testing the reliability of the trait subscales using the scoring recommended by John and Srivastava (1999). Second, to shorten the measure, we conducted an exploratory factor analysis (EFA). Using the EFA results, combined with separate analyses of internal reliability for each trait, we identified a subset of items that had reasonable psychometric properties. Third, the 27-item scale was subjected to a confirmatory factor analysis (CFA) to determine whether the hypothesized five-factor structure provided a good fit to the data.

The means and standard deviations for the 44 BFI items are presented in Table 5.1. At the level of traits, the BFI performed reasonably well in our sample, with alpha coefficients ranging from .65 to .73. Next, we conducted an exploratory factor analysis of the correlations among the items, followed by promax rotation. Five correlated factors were extracted, and the factor loadings from this EFA are presented in Table 5.1.

The goal of the procedures used to generate a short version of the BFI was to create a version of the scale that included 5 or 6 items per trait. Two sources of information were used to shorten the measure. First, we used the loadings from the EFA, identifying items with the highest loadings on the factors. Second, we examined the internal reliability of the 5 highest loading items on each factor. Then, by running a series of internal reliability calculations, we checked to see if any of the items with a lower factor loading contributed to a higher level of internal reliability at the level of the trait. This iterative process resulted in a 27-item BFI scale. The 17 items that were eliminated are in italics in Table 5.1.

Table 5.2 presents the number of items per trait in the 27-item scale, as well as the reliabilities of these shorter scales. The shorter BFI scales were significantly (all $p < .001$) correlated with the longer parent scales. The correlation between the shorter and original BFI scales for the five traits were .93 for Neuroticism, .91 for Extraversion, .89 for Openness, .84 for Agreeableness, and .92 for Conscientiousness.

Table 5.2. Scale Qualities for 27-item Version of the BFI

Trait	<u>27-Item BFI</u>	
	# of items	Reliability
Neuroticism	5	0.67
Extroversion	5	0.66
Openness	6	0.73
Agreeableness	5	0.64
Conscientiousness	6	0.67

Finally, we conducted a CFA to test whether the hypothesized five-factor structure could explain the correlations among the items. The CFA confirmed the five-factor structure of the data, chi-square = 424.78, $df=314$. The RMSEA of the model (.044) was below the .05 threshold, indicating a good fit to the data.

Wave 2 Large-Scale Application

In the next phase of our research, we administered the 27-item BFI instrument in the Wave 2 data collection. The 27-item BFI was included at the end of the interview protocol, after 66 items that assess QOL (See Volume 2, Appendix P, p. 9). The introductory comments were: “Here are some ways of describing personalities. We would like to know how much you agree or disagree with these statements as they apply to you. There are no right or wrong answers to these questions.” Then, we used the anchoring phrase, “Thinking of yourself during your whole life, do you see yourself as someone who . . .” The responses offered were “disagree strongly, disagree, neutral/don’t know, agree, strongly agree.” The original form worded the categories as “strongly disagree, disagree” and at the other end, “agree, agree strongly,” which made the

choices hard to distinguish when read aloud. We also used a large-print response card to assist those residents who had impaired vision.

At this point, we also offered respondents the same possibility of using a reduced response set if they had difficulty using 5 choices. We reverted to “agree/disagree.” Although we did not read “don’t know” as a choice, residents who said they did not know were recorded at the mid-point of a 3-point scale. Of the 1,271 participants with valid responses to all 27 items, 818 exclusively used the Likert-type response options (64.4%), 225 exclusively used the trichotomous responses (17.7%), and the remaining 228 participants used some combination of Likert-type and trichotomous responses (17.9%).

A question of interest was whether cognitive status influenced a resident’s choice of using the Likert-type responses or the simpler trichotomous responses. Table 5.3 shows the percentage of respondents at each level of our 6-point cognitive functioning scale (0=highest cognitive functioning and 5=lowest cognitive functioning) who chose the Likert-type responses for each of the 27 items in the analysis.

To be included in the analysis sample, a resident had to provide a valid response to all 27 of the personality items. The majority of the residents in the analysis sample were women (71.9%). The sample ranged in age from 56.8 to 106.0, with an average age of 83.2 (SD = 8.1.). Approximately one-fifth of the analysis sample (19.9%) had been residing in the NF for less than three months.

Table 5.3 Percentage of Respondents Choosing Likert-type Responses by Cognition

Item	Cognitive Score					
	0	1	2	3	4	5
1. Is talkative (e)	77	71	72	63	56	57
2. Starts quarrels with others (-a)	77	70	69	58	55	52
3. Does a thorough job (c)	77	69	67	60	54	49
4. Is relaxed, handles stress well (-n)	77	68	69	61	54	46
5. Is original, comes up with new ideas (o)	72	67	67	60	53	43
6. Is reserved or slow to express an opinion (-e)	74	67	69	58	53	45
7. Has a forgiving nature (a)	74	69	68	57	54	42
8. Can be somewhat careless (-c)	73	69	67	56	52	40
9. Can be tense or anxious (n)	73	67	68	56	52	43
10. Is curious about many different things (o)	72	67	67	56	52	40
11. Tends to be quiet (-e)	75	66	67	57	52	41
12. Is generally trusting (a)	73	66	67	55	52	40
13. Is a reliable worker (c)	74	67	66	56	52	43
14. Worries a lot (n)	74	67	67	56	50	42
15. Is a deep thinker (o)	70	65	65	57	50	41
16. Is sometimes shy, inhibited (-e)	71	66	68	56	50	44
17. Is considerate and kind to almost everyone (a)	73	68	67	56	50	41
18. Tends to be lazy (-c)	73	66	67	57	51	44
19. Can be moody (n)	73	66	65	55	51	43
20. Has an active imagination (o)	71	66	67	55	49	43
21. Is outgoing, sociable (e)	73	67	65	55	50	43
22. Likes to cooperate with others (a)	73	66	65	55	50	43
23. Sticks with a task until it is finished (c)	72	64	68	55	50	40
24. Gets nervous easily (n)	73	66	66	55	49	41
25. Likes to reflect, play with ideas (o)	70	65	65	54	49	42
26. Does things efficiently (c)	70	65	65	54	48	42
27. Is inventive (o)	68	66	65	54	48	39
Number of respondents (total 1668)	362	235	256	238	462	115

To make the analysis most comparable to the Pilot Study, we conducted an exploratory factor analysis of the 27 BFI items using the 818 respondents who provided Likert-type responses for all 27 of the personality items. Unexpectedly, a few items did not load on the expected factor in the analysis. An examination of the EFA results from the 27 items (not presented here) suggested that 2 of the items needed to be eliminated from the analysis. Thus, the final scale that emerged from the Wave 2 analysis consisted of 25 items. The means of these items, as well as their factor loadings from a different exploratory factor analysis that was conducted on this revised collection of 25 items are presented in Table 5.4. In general, the factor

loadings reveal that Conscientiousness and Agreeableness were not as distinct from each other as they were in the Pilot Study. In particular, item #3, which is intended to measure Conscientiousness, loaded more highly on the Agreeableness factor. Despite this high loading we elected to maintain item #3 in the Conscientiousness scale. Without item #3, the Conscientiousness scale drops to an unacceptably low alpha reliability. Table 5.5 characterizes this 25-item version of the BFI, including the alpha reliabilities.

A CFA was conducted to test whether the hypothesized five-factor structure could explain the correlations among the 25 items. Although the fit was not as good in Wave 2 as it was in the pilot study, the CFA generally confirmed the five-factor structure of the data, chi-square = 777, df=265. The RMSEA of the model (.049) was just below the .05 threshold, indicating a good fit to the data.

Table 5.4 Descriptive Statistics and Factor Analysis Results for the 25-item BFI in Wave 2

Item	Mean	SD	EFA Factor Loadings				
			Factor 1	Factor 2	Factor 3	Factor 4	Factor 5
1. Is talkative (e)	3.28	1.18	.160	-.052	.489	.130	-.069
2. Starts quarrels with others (-a)	.97	.78	.500	.051	-.056	-.251	.085
3. Does a thorough job (c)	3.97	.80	.410	-.078	.047	.130	.271
4. Is relaxed, handles stress well (-n)	2.58	.99	-.207	-.412	.113	-.259	-.015
5. Is original, comes up with new ideas (o)	3.39	1.03	-.074	.087	.045	.689	.199
6. Is reserved or slow to express an opinion (-e)	2.09	1.07	-.102	-.004	.489	.058	-.084
7. Has a forgiving nature (a)	3.98	.81	.525	.087	-.072	-.012	.068
8. Can be tense or anxious (n)	3.19	1.07	.089	-.620	-.052	.040	.000
9. Is curious about many different things (o)	3.75	.91	.273	-.045	-.069	.429	-.111
10. Tends to be quiet (-e)	2.49	1.04	-.103	-.066	.752	-.042	-.021
11. Is generally trusting (a)	4.01	.71	.767	.049	-.028	-.046	-.131
12. Worries a lot (n)	3.14	1.16	.093	-.760	.037	-.065	.076
13. Is a deep thinker (o)	3.55	.99	.190	-.089	-.072	.419	.050
14. Is sometimes shy, inhibited (-e)	2.00	1.10	.071	.136	.587	-.080	.061
15. Is considerate & kind to almost everyone (a)	4.09	.65	.694	-.004	-.009	-.088	.080
16. Tends to be lazy (-c)	1.20	.98	.142	.167	.026	.010	.400
17. Can be moody (n)	2.85	1.09	-.103	-.437	-.012	.154	-.201
18. Has an active imagination (o)	3.51	1.07	-.030	.033	-.051	.713	-.154
19. Is outgoing, sociable (e)	3.68	.94	.375	.048	.347	.195	.026
20. Likes to cooperate with others (a)	4.02	.62	.654	-.096	.058	.043	.218
21. Sticks with a task until it is finished (c)	4.05	.71	.341	-.077	-.019	.191	.520
22. Gets nervous easily (n)	2.90	1.13	-.023	-.790	.003	-.056	.078
23. Likes to reflect, play with ideas (o)	3.48	.99	.021	-.025	.035	.624	.119
24. Does things efficiently (c)	3.94	.72	.303	-.158	-.075	.251	.490
25. Is inventive (o)	3.13	1.10	-.197	.073	.012	.694	.270

Note: N=818. Loadings with an absolute value above .4 are in bold.

Table 5.5 Scale Qualities for 25-item Version of the BFI

25-Item BFI		
Trait	# of items	Reliability
Neuroticism	5	0.68
Extraversion	5	0.61
Openness	6	0.73
Agreeableness	5	0.62
Conscientiousness	4	0.62

Relationship Between QOL and Personality

We have conducted some preliminary analyses linking personality and QOL. Specifically, separate regressions were run for each QOL outcome measure, and the independent variables that were entered included: a brief cognitive functioning scale (derived from the MDS), a measure of physical functioning (derived from the MDS), and the five personality traits. The results of these regressions are presented in Table 5.6.

Table 5.6 Regression Results Predicting QOL Using Cognitive and Physical functioning and Personality.

QOL Domain	R ² Due to Cognition & Function	BFI R ² Change	Total R ²	% of Explained Variance Attributable to BFI
Spiritual Well Being	.002	.056	.058	97
Security	.013	.067	.080	84
Individuality	.008	.034	.042	81
Comfort	.022	.077	.099	78
Relationships	.015	.024	.039	62
Dignity	.039	.049	.088	57
Meaningful Activities	.047	.027	.074	36
Privacy	.033	.014	.047	30
Enjoyment	.034	.013	.047	28
Autonomy	.069	.017	.086	20
Functional Competency	.223	.014	.237	6

Table 5.6 should be read going across the rows. For example, the first line presents the results for the regression for Spiritual Well-being. The first number (.002) indicates the amount of variance explained by the cognitive and physical functioning measures, when both were entered in the first step of the regression. The second number (.056) indicates the amount of variance explained by all 5 traits, when entered in the second step. The third number indicates the total amount of variance explained by the first two steps of the regression, and the final column presents the percentage of explained variance that can be attributed to personality. An examination of the final column suggests that the QOL subscales differ in the extent to which they are related to personality. Measures of Spiritual Well-being and Security are most closely linked with personality, whereas measures such as Autonomy and Functional Capacity show much smaller relationships with personality.

Table 5.6 shows the amount of variance in each trait that can be explained by all five traits when entered simultaneously. When looking at the specific pattern of results at the trait level, two broad patterns emerged. First, high levels of Agreeableness were associated with higher levels of QOL (e.g., comfort, relationships, dignity, meaningful activities, spiritual well-being). Second, Neuroticism was associated with lower scores on many of the QOL domains, including comfort, meaningful activities, security, and autonomy.

Areas for Continued Investigation

Our work on personality and QOL is ongoing. A number of general questions are guiding our next research efforts. For example, the results related to quality have been done on the Likert-type responses only. We are currently conducting further analyses to determine the extent to which we can add trichotomous responses without adversely affecting our ability to measure personality; we will begin by exploring the characteristics of residents who use the trichotomous

responses sometimes or all the time to those who use only Likert. Finally, as mentioned above, the preliminary analyses linking personality and QOL need to be finalized and expanded.

Concluding Comments

We believe that our efforts to assess personality in a nursing home population have yielded a brief interview measure that will be useful in understanding the many processes that culminate in a given individual's level of QOL. Though we would have preferred that the reliabilities for all of the scales meet the generally recommended level of .70 or higher, there are a number of reasons to expect lower reliability in our data. These include the small number of items used to measure each trait, possible resident fatigue experienced by the end of a long interview, and modifications made to the original scale. Thus, on the whole, we are encouraged by our analyses using the personality measure to date, and are pursuing multiple follow-up analyses.

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