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Functional Milestones and Clinician Ratings of Everyday Functioning in People with Schizophrenia: Overlap Between Milestones and Specificity of Ratings

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Abstract

Everyday functioning is known to be impaired in people with schizophrenia, across multiple functional domains. It is not clear, however, how impairments across social, vocational, and residential domains overlap with each other. Further, although there are multiple ratings scales available to rate everyday functioning, it is also not clear how scores on these scales, particularly total scores, relate to milestone achievement. This is important, because efforts to reduce disability with pharmacological or rehabilitative interventions are ultimately evaluated in terms of their impact on everyday functioning, which is often indexed with total scores on rating scales. In this paper from the VALERO study, we report on 195 people with schizophrenia who were rated with a comprehensive process on 6 different functional status rating scales. Milestone achievements in social (ever married or equivalent), vocational (ever employed, currently employed), and residential (living independently, financially responsible) domains were examined for their overlap with each other and with ratings on the rating scales. Total scores on the 6 rating scales were minimally related to milestone achievements and milestone achievements were quite independent of each other. Subscales from two of the rating scales, specifically examining vocational and residential functioning, were specifically related to milestone achievements in their functional domains, but not other milestones. These data suggest that global scores on everyday functioning measures may not capture functional milestones and highlight the fact that functional milestones have multiple determinants other than the ability variables that these rating scales attempt to capture.

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Introduction

Despite innovations in therapeutic and psychosocial interventions, schizophrenia remains a highly disabling illness. The World Health Organization previously estimated schizophrenia and schizoaffective disorder to be the fifth-leading cause of disability in the world (Murray & Lopez, 1997), even after successful treatment of clinical symptoms of the illness. Patients with schizophrenia have disability that spans across multiple functional domains, including social (Wiersma et al., 2000), residential (Auslander et al, 2001), and occupational (Ho et al., 1997) domains, even when their psychotic symptoms are in remission (Leung et al., 2008). Multiple factors may lead to failure in everyday functioning, including aspects of the illness such as negative symptoms (Leifker et al., 2009), cognitive impairment (Green et al., 2000), motivational/hedonic deficits (Choi et al., 2010), and limited opportunities or personal resources (Rosenheck et al., 2006).

Assessment of functional outcomes can be conceptualized in terms of capacity (performance under optimal conditions: what the person can do) versus performance (real-world outcomes: what the person actually does; Harvey 2010). Capacity is usually assessed in a controlled setting, often using performance-based tasks. Measurements of real-world functional performance may be acquired through reports from the patient or caregiver, by direct observation of the patient, from reports by high-contact clinicians.

Measurement of everyday functioning can be accomplished through two general approaches: examination of functional achievements (e.g., marriage, competitive employment, independent living), to which we refer as milestones, and ratings of real-world functioning using structured assessments. Even though milestones are important to patients and their families, milestone assessment in schizophrenia is affected by low rates of milestone achievements and changing milestones is impractical as a treatment goal in short term studies due to low rates of change. Thus, rating scales have been widely used. Rating scales can be directed at “sub-threshold” milestones, such as ratings of readiness to work (in the absence of employment) or the ability to perform certain activities that are critical components of independent living, such as shopping or financial management. Rating scales can be unreliable if they are based on patient self-reports, and reports by friends or relatives are often unreliable as well. McKibbin et al. (2004) found that two patient self-report measures of outcome (a subjective illness burden scale and a disability assessment) were well correlated with each other, but uncorrelated with either neuropsychological performance or performance-based measures of functional skills. Similar results regarding self reports of either everyday functioning or cognitive performance in different samples of people with schizophrenia were reported by Bowie et al. (2007), Nuechterlein et al. (2008), Green et al. (2011), and Sabbag et al. (2011). However, reports of high-contact clinicians are suitably related to performance-based functional measures (Bowie et al., 2008, 2010; Sabbag et al., 2011). Further, a comprehensive study of six different rating scales found that, when interviewers rendered comprehensive judgments about functioning, on the basis of the reports of friends, relatives, or high-contact clinicians, there was substantial overlap with performance-based measures of cognition and functional capacity (Harvey et al., 2011). Thus, everyday functioning can be rated reliably by certain informants, and evidence of convergent validity with performance-based measures has been demonstrated repeatedly.

Although there is considerable available information about the overlap between aspects of disability, cognition, and functional capacity, there is relatively little information in the literature referring to the consistency of impairments across different functional milestones in people with schizophrenia. It is not well understood whether individuals with low rates of lifetime social achievement, for instance, also have low rates of lifetime vocational and residential milestones. This has important implications for the treatment of disability, in

terms of whether interventions should be targeted at and expected to improve multiple outcome domains or just a specific domain. As some evidence has suggested that clinician ratings of social, vocational, and residential functioning have very different symptomatic, cognitive, and functional capacity determinants (Ventura et al., 2009, Bowie et al., 2008; Leifker et al., 2009), it might be expected that these milestones might not be fully overlapping.

Further, there have been few studies that examined the relationship between various functional outcome rating scales and achievement of different milestones. Direct comparisons across rating scales have been very rare, leading to little information as to which scales, if any, are superior in sensitivity to milestone achievements. Finally, the validity of total scores on functional outcomes versus subscale scores, for the prediction of specific functional milestones, has not been addressed in substantial detail overall or across rating scales at all. As total scores on these scales have been used as correlational variables in multiple studies described above and reviewed in Leifker et al., (2011), and may be used as outcome measures in treatment trials, it seems important to understand the relationship between these total scores and milestone achievements. In addition, the construct validity of subscales in hybrid scales (those that measure multiple functional domains) in reference to specific milestones has not been compared across different rating scales.

The current paper presents the results of analyses from the VALERO study, phase I (Leifker et al., 2011; Harvey et al., 2011). In these analyses, we used our comprehensive baseline assessment of patients to identify the achievement of several different functional milestones in domains of everyday functioning, social outcomes, and productive activities. First, we examined the overlap of achievement of different functional milestones in different domains. We then compared the total scores from six different functional outcome rating scales (previously shown as a group to be correlated with cognition and functional capacity) across those patients who had and had not achieved the functional milestones of interest. Finally, we examined the specificity of relationships between subscale scores (social, vocational and residential) and real world milestones for two of our rating scales. These two scales, the Specific Levels of Functioning (SLOF; Schneider & Stuenkel, 1981) and the Quality of Life Scale (QLS; Heinrichs et al., 1994), are hybrid scales rating multiple functional domains. Total scores generated by high contact clinicians on both of these scales were found in this dataset to be correlated with performance-based assessments of cognition and functional capacity (Sabbag et al., 2011). Our hypotheses were that subscales targeted at social, vocational, and residential outcomes would be highly related to achievement of these domain-specific milestones.

Methods

Subjects

The study participants were patients with schizophrenia who were receiving treatment at one of three different outpatient service delivery systems, two in Atlanta and one in San Diego. In addition, informants were interviewed for each of the patients, with these informants either being a high-contact clinician (case manager, psychiatrist, therapist, or residential facility manager) or a friend or relative. All research participants (including informants) provided signed, informed consent, and this research study was approved by local IRBs. In Atlanta, patients were either recruited at an intensive psychiatric rehabilitation program (Skyland Trail) or from the general outpatient population of the Atlanta VA Medical Center. The San Diego patients were recruited from the UCSD Outpatient Psychiatric Services clinic, which is a large public mental health clinic, from other local community clinics and by word of mouth.

All patients with schizophrenia were administered either the Structured Clinical Interview for the DSM-IV (SCID; First et al., 1995: Atlanta sites) or the MINI International Neuropsychiatric Interview (MINI; Sheehan et al., 1998: San Diego) by a trained interviewer. All diagnoses were subjected to a consensus procedure at the local site. Patients were excluded for a history of traumatic brain injury with unconsciousness >10 minutes, brain disease such as seizure disorder or neurodegenerative condition, or the presence of another DSM-IV-TR diagnosis that would exclude the diagnosis of schizophrenia. None of the patients were experiencing their first psychotic episode. Substance abuse was not an exclusion criterion, in order to capture a broad array of patients, but patients who appeared intoxicated were rescheduled. Inpatients were not recruited, but patients resided in a wide array of unsupported, supported, or supervised residential locations. Informants were not screened for psychopathology or substance abuse. Descriptive information on patients is presented in Table 1.

Procedure

All patients were examined with a performance-based assessment of neurocognitive abilities and functional capacity which has been reported on previously (Harvey et al., 2011). They also provided self-reports of social, residential, and vocational functioning on six different functional outcome scales, which were either administered to them as interviews by a trained rater or completed in a questionnaire format depending on the instructions of the scales. Note that the ILSS has two separate forms for patient and informant self report, where patients report whether they perform certain adaptive tasks and informants rated the adequacy of their performance in so doing. Informants independently completed the same six outcomes scales and reported on the functioning of the patients. Informants were compensated \$25.00 for their time and effort. Patients received \$50.00. After interviewing patients and informants, the interviewer generated best-estimate ratings on each of the items in the scale. These ratings were selected because they had previously been shown to have the highest correlation with performance-based assessments of cognitive performance and functional capacity (Harvey et al., 2011).

Clinical Symptom Ratings—Clinical ratings of symptoms were collected with the Positive and Negative Syndrome Scale (PANSS; Kay, 1991) and the Beck Depression Inventory-Second edition (BDI-II; Beck et al., 1996), and are presented in Table 1 along with demographic information. Patients were also tested on a modified version of the MATRICS Consensus Cognitive Battery (MCCB; Harvey et al., 2011), global scores for which are presented in Table 1 as well.

Real-World Functional Outcomes—The initial phase of the VALERO study included a RAND panel that selected 6 functional outcome scales from a much larger group of candidate scales, as most suitable for current use at the time of the panel (see Leifker et al., 2011 for detailed descriptions of these instruments). These six scales were the Heinrichs-Carpenter Quality of Life Scale (QLS; Heinrichs et al., 1994), Specific Levels of Functioning (SLOF; Schneider & Struening, 1983), Social-Behavior Schedule (SBS; Wykes & Stuart, 1986), Social Functioning Scale: (SFS; Birchwood et al., 1990), Life Skills Profile (LSP; Rosen et al., 1989) and the Independent Living Skills Survey (ILSS; Wallace et al., 2000).

There are several important features of these functional outcome scales. Two (SBS, SFS) were pure social functioning scales, while two others examined only community functioning (LSP; ILSS). The others (QLS; SLOF) were “hybrid” scales examining social, residential, and vocational outcomes. Of the six scales, 2 were administered as self-report questionnaires to informants (ILSS and SLOF) and the others (as well as the patient ILSS assessment) were

administered as interviews using the standard instructions for the scale. All of these rating scales have multiple individual subscales and, for the purposes of this report, we examined summary scores for all six scales and the vocational, social, and everyday living skills subscales on the two hybrid scales. Some of these instruments were modified by deletion of some of their subscales following the suggestions of the RAND panel. For instance, the social acceptability and personal care subscales of the SLOF were not used in calculation of the total SLOF scores and, for the QLS, the intrapsychic foundations subscale was not included in the analyses of the data because it measures deficit (i.e., negative) symptoms. The SLOF has three subscales that we examined: interpersonal relations work skills, and everyday activities. The QLS had three scales: intrapersonal relationships instrumental role functioning, and objects and activities.

Functional Milestone Achievements

We collected information from patients, informants, and medical records on the achievement of various functional milestones. In cases of uncertainty, a consensus was obtained through discussion with the principal investigators and the interviewer. We recorded details about achievements (e.g., first job, most recent job, best job) in order to increase accuracy of reporting. These milestones included social outcomes such as marriage or an equivalent long-term relationship, which we categorized into current relationship or former relationship (divorced or separated), versus never achieved. For employment, we collected current and lifetime history of supported or competitively obtained employment (either part or full time) regardless of duration or reason for termination. For residential status, we determined whether the individuals were living without supervision and whether they were financially responsible for their housing (even if they used disability compensation to pay their bills) using the methods we previously employed (Leung et al., 2008). These two housing outcomes were examined separately in order to maintain similar sample sizes and to be able to dichotomize the outcome measures.

Data Analyses

We dichotomized the three different domains of functional milestones, separating the patients into those who had achieved a long-term relationship or not, were currently employed or not, were ever employed or not, were currently living independently or not, and were financially responsible for their dwelling or not. We examined the overlap between these nominal variables with phi coefficients to examine their correlations. After that, we examined the prevalence of achievement of multiple milestones, such as achieving a long-term relationship and a lifetime history of employment. We then used t-tests to compare the total interviewer scores for all 6 functional outcome measures across the milestone achievements. Finally, we compared the three subscales measuring social functioning, vocational potential and everyday activities for the hybrid scales SLOF and QLS across the samples of patients who did and did not achieve the milestones. Note that both the employment and residential milestones variables can overlap and they are not independent from each other. For these analyses we performed the Bonferroni correction, dividing the criterion for significance by 6 (for the overall analyses of the six functional outcomes scales and for the product of the 2 scales $\times$ 3 subscales) for a significance criterion of .009.

Results

Prevalence and Overlap of Real World Milestones

Out of 195 participants, 105 (54%) had ever experienced marriage or a similarly stable relationship, 158 (81%) had ever worked for pay either part-time or full-time (supported or unsupported), and only 24 (12%) were currently competitively employed. 119 (61%) participants were living independently at the time of assessment and 86 (44%) were

financially responsible for their residence. When we examined the phi correlations between history of ever being married and the other outcomes, there was a small but significant correlation between a lifetime history of marriage or equivalent and being currently financially responsible for their residence ($\phi=.15$, $p=.046$). There was no overlap between history of marriage and currently living independently ($\phi=.09$, $p=.21$), or current ($\phi=.05$, $p=.46$) or lifetime ($\phi=.05$, $p=.46$) employment status. When lifetime employment was related to current residential outcomes, there was no correlation with living independently ($\phi=.10$, $p=.16$), or being financially responsible ($\phi=.01$, $p=.93$). Current employment was not associated with being financially responsible for their residence ($\phi=.09$, $p=.17$), but did correlate with living independently ($\phi=.18$, $p=.01$). The overlap in lifetime milestone achievements, examining all combinations of milestones other than current employment (because of its rarity), is presented in Table 2. As seen in the table, the proportion of participants meeting more than one milestone ranges from 49% (ever employed and ever married) to a low of 19% (ever married, ever employed, and currently financially responsible). Thus, achievement of multiple milestones is much rarer than achievement of individual ones, consistent with the idea that milestone achievements are not overlapping with each other. Note that we did not even consider current employment in these analyses, because of its rarity in our sample.

Rating Scales and Milestones

Tables 3, 4, and 5 present the associations between achievement of social, vocational, and residential milestones, and total scores on the 6 global rating scales and the subscales for the SLOF and QLS. For a lifetime history of marriage or equivalent (Table 3), none of the 6 total functional scale scores differed as a function of this milestone. Interestingly, none of the subscales did either, including interviewer ratings of social functioning across the two scales.

For vocational outcomes (Table 4), none of the total functional scale scores was associated with a lifetime history of employment or current employment. In contrast, current employment was associated with significantly better scores on the QLS instrumental role subscale and the SLOF work skills scale at $p<.05$, (but not Bonferroni corrected). Current employment was also associated with better scores on these same two variables (with the same differential levels of significance), as well as better scores on the QLS objects and activities subscale.

Residential outcomes (Table 5) were also not associated with total scores on the rating scales, with no total scores found to be better in patients who had independence in residence and financial responsibility. Among the subscales, the SLOF everyday activities scale was associated with both independence in current residence and financial responsibility. Among the QLS subscales, both the objects and activities subscale and instrumental role functioning scales were associated with living independently and being financially responsible for the dwelling.

Discussion

Our study found that achievement of functional milestones by people with schizophrenia was common for broadly defined lifetime milestones but that achievements in different functional domains, such as having a stable relationship, competitive employment, or self-supported living, were mostly independent from each other. A small correlation (less than 2% variance shared) was found between those with a history of marriage - or its equivalent - and being financially responsible for their residence. For the rest, the correlations between milestone achievements were not significant. These low correlations were not due to a

complete failure to achieve milestones, as more than half of the subjects had been involved in a stable relationship or had been employed to some extent during their lives.

When achievement of multiple milestones was examined, the rates of achievement were considerably lower. These findings suggest that achievement (or lack thereof) of individual milestones, such as stable relationships or employment, does not generalize across functional domains. The more domains of functioning examined, the lower the rates of achievement across milestones. Further, these low levels of achievement did not even consider current employment, which was quite rare. These data suggest that failures to achieve these different milestones is not likely due to some global factor shared across patients, such as reductions in motivation, or to some global ability factor affecting all milestones equally.

A second finding of potential importance is the relative lack of sensitivity of total scores on functional rating scales to current and lifetime milestone achievement. Further, there was evidence of specificity and sensitivity of the relationship between subscale scores and achievement of milestones in everyday living and vocational domains. There was a notable lack of sensitivity of all of these rating scales to lifetime achievement of a stable relationship, in contrast to the other two functional domains.

This research design and the associated data set has some limitations. Sampling did not consider milestones when we recruited our research participants. Thus, there was no attempt to collect samples that were representative of the population of people with schizophrenia in the population as a whole. Although we sampled across three different treatment sites, we did not stratify our recruitment as a function of functional milestones. Further, as we reported in the past (Harvey et al., 2011), there were differences across the samples in performance on neuropsychological and functional capacity measures.

These data raise the question as to whether total scores on functional outcome measures would provide outcome measures for treatment studies that would be as suitable as subscale scores. The subscales were clearly more strongly related to achievement of milestones in individual functional domains, with ratings of better performance found to be related to more likelihood of achievement. Further, the lack of overlap of milestone achievement also raises questions about the scaling of certain functional outcome scales, such as the SOFAs, where failures to achieve milestones in social, residential, and vocational outcomes are considered to be equivalent and receive similar weighting in terms of the overall disability score. These data suggest that achievement of multiple functional goals is rare. When compared to previous models of recovery (Harvey & Bellack, 2009), it appears that our sample falls quite short, largely because the rate of current employment was very small. When even a lifetime history of employment is considered as a defining factor for functional recovery, only about one fifth of our sample meets milestone achievements across the three different functional domains on a lifetime (but not necessarily current) basis.

Previous work in several different samples has begun to suggest that there are different determinants of disability across functional domains. Several studies on different samples (Bowie et al., 2008; 2010) have suggested that there are different sets of symptomatic and ability based predictors for impairments in different domains of everyday functioning (social, vocational, and residential). Studies of the predictors of real-world milestones have found similar results. For instance, deficits in functional capacity, measured by the UCSD Performance-based Skills Assessment (Patterson et al., 2001), have been shown to predict independence in residential status more efficiently than vocational outcomes (Mausbach et al., 2011). In that study, failure to sustain any employment at all was better predicted than was the distinction between the ability to sustain part-time versus full-time work. Similar to

our study, that study also found that achievement across multiple milestones was considerably reduced compared to individual milestones. For instance, in a high-functioning sample of 367 patients with schizophrenia, 67% were residing independently, but only 20% were residing independently and employed for more than 20 hours per week. This minimal level of overlap of vocational and residential attainment and low levels of achievement across functional domains is convergent with the data presented in this paper.

A further issue is the general failure of these ratings scales to predict long-term relationships. Although social outcomes have proven to be difficult to predict with neurocognitive measures (Leung et al., 2008), this may be because social cognitive deficits (Fett et al., 2011) and negative symptoms are most strongly associated with social deficits (Leifker et al., 2009; Ventura et al., in press). The rating scales themselves may lack critical item content that is directly relevant. For instance, the SLOF does not have a single social functioning item that addresses long-term relationships and the QLS has only one item directly relevant to long-term relationships with a spouse or partner. Thus, social functioning is rated in both of these scales with a focus on acquaintances, friends, and non-spousal relatives. This approach may reduce the validity of these scales in higher functioning people, but seems less likely to reduce validity in early course younger patients and lower functioning samples. Finally, the focus on these “subthreshold” functional achievements (i.e., socializing in groups, performing subsets of household tasks) may increase the correlation with ability measures such as functional capacity assessments, which target discrete skills and not cumulative achievements.

This study shows that disability in everyday functioning, defined in terms of achievement of functional milestones, is most pervasive when examined across milestones. Achievement of these functional milestones seems to be largely independent across the domains, with little intercorrelation. These findings are consistent with earlier research suggesting different predictors of real-world outcomes across different functional domains. Total scores on validated functional outcome rating scales are not particularly sensitive to milestone achievement, but subscales targeted at vocational and residential outcomes show good construct validity. These data suggest that treatment outcome studies should consider using subscales targeted at domains of outcome (i.e., social, residential, and vocational) rather than using total scores.

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Table 1

Demographic Information on Patient participants

N	195		
	M	SD	
Age	44.03	11.73	
Patient Education	12.97	2.52	
Mother's Education	12.85	3.74	
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Race/Ethnicity	%		
Caucasian	54		
African American	38		
Latino	8		
	M	SD	Possible Range
Modified MCCB	37.90	6.94	10–140
BDI-II	15.80	12.03	0–84
PANSS total	63.60	14.10	30–210

Table 2

Overlap between Milestones

	% of cases
Ever Married and Ever Employed	36
Ever Married and Independent	29
Ever Married and Responsible	23
Ever Employed and Independent	49
Ever Employed and Responsible	36
Ever Married and Ever Employed and Independent	23
Ever Married and Ever Employed and Responsible	19

Table 3

Interviewer scores on Functional scales as Related to Social Outcomes

	Ever Married					
	No			Yes		
	M	SD	t	M	SD	p
Total Scores						
Quality of Life Scale (QLS)	3.15	0.95	3.26	0.30	0.72	.45
Specific Levels of Functioning (SLOF)	4.23	0.44	4.12	0.47	0.54	.56
Social-Behavior Schedule (SBS)	0.37	0.34	0.37	0.32	0.03	.98
Social Functioning Scale (SFS)	1.67	0.73	1.62	0.38	0.57	.57
Life Skills Profile (LSP)	3.41	0.28	3.40	0.33	0.30	.76
Independent Living Skills Survey (ILSS)	2.74	0.49	2.69	0.51	0.76	.47
Subscale Scores						
	Ever Married					
	No			Yes		
	M	SD	t	M	SD	p
QLS						
Objects and Activities	7.89	1.83	8.01	1.90	0.78	.44
Intrapersonal Relationships	25.34	11.76	26.79	11.16	0.82	.41
Instrumental Role	14.67	4.96	15.50	5.38	0.67	.51
SLOF						
Work Skills	24.66	5.71	24.18	5.10	0.66	.51
Interpersonal Relations	25.69	5.90	25.26	6.34	0.48	.63
Everyday Activities	51.52	4.23	50.85	6.56	1.18	.24

Table 4
Interviewer scores on Functional scales as Related to Vocational Outcomes

	Ever employed				Current Employment							
	No		Yes		No				Yes			
	M	SD	M	SD	t	p	M	SD	M	SD	t	p
Total Scores												
Quality of Life Scale (QLS)	3.16	0.90	3.48	0.98	1.67	.10	3.14	0.98	3.60	0.94	2.18	.03
Specific Levels of Functioning (SLOF)	4.21	0.58	4.22	0.45	0.15	.88	4.21	0.46	4.33	0.39	1.29	.20
Social-Behavior Schedule (SBS)	0.48	0.38	0.34	0.30	2.54	.12	0.36	0.32	0.43	0.35	1.07	.29
Social Functioning Scale (SFS)	1.83	0.99	1.62	0.53	1.11	.27	1.63	0.52	1.93	0.96	2.41	.02
Life Skills Profile (LSP)	3.40	0.35	3.42	0.30	1.59	.11	3.41	0.26	3.41	0.33	0.08	.94
Independent Living Skills Survey (ILSS)	2.74	0.75	2.75	0.48	0.06	.91	2.71	0.49	2.83	0.51	1.19	.24
Subscale Scores												
	Ever employed				Current Employment							
	No		Yes		No				Yes			
	M	SD	M	SD	t	p	M	SD	M	SD	t	p
QLS												
Objects and Activities	7.83	1.89	8.23	1.84	1.01	.32	7.80	1.89	8.58	1.87	1.99	.048
Intrapersonal Relationships	25.00	9.00	26.53	11.52	0.59	.58	26.34	11.51	24.02	10.98	0.88	.37
Instrumental Role	12.57	5.45	16.26	4.23	3.04	.004	12.56	5.41	16.63	3.93	3.78	.001
SLOF												
Work Skills	24.23	5.01	26.22	4.00	2.12	.04	24.26	5.01	26.15	3.55	2.27	.028
Interpersonal Relations	26.58	5.55	25.53	6.22	0.88	.39	25.73	6.23	24.88	4.90	0.66	.51
Everyday Activities	50.91	4.49	51.27	5.51	0.34	.74	51.21	5.44	50.89	4.99	0.28	.78

Table 5

Interviewer scores on Functional scales as Related to Residential Outcomes

	Independent Resident				Financially responsible							
	No		Yes		No		Yes					
	M	SD	M	SD	t	p	M	SD	M	SD	t	p
Total Scores												
Quality of Life Scale (QLS)	3.21	0.93	3.20	1.02	0.10	.92	3.24	0.93	3.16	1.05	0.58	.56
Specific Levels of Functioning (SLOF)	4.23	0.44	4.21	0.46	0.24	.81	4.21	0.47	4.24	0.43	0.43	.67
Social-Behavior Schedule (SBS)	0.39	0.35	0.35	0.31	0.88	.38	0.40	0.35	0.32	0.29	1.73	.09
Social Functioning Scale (SFS)	1.53	0.29	1.74	0.72	2.38	.02	1.57	0.35	1.79	0.81	2.42	.02
Life Skills Profile (LSP)	3.44	0.27	3.39	0.32	1.10	.28	3.44	0.29	3.39	0.32	1.12	.24
Independent Living Skills Survey (ILSS)	2.79	0.42	2.69	0.53	1.40	.14	2.76	0.48	2.68	0.51	1.19	.23
Subscale Scores												
	Independent Resident				Financially responsible							
	No		Yes		No		Yes					
	M	SD	M	SD	t	p	M	SD	M	SD	t	p
QLS												
Objects and Activities	7.15	1.73	8.36	1.81	4.26	.001	7.50	1.86	8.40	1.77	3.44	.001
Intrapersonal Relationships	26.94	11.43	25.53	11.47	0.78	.43	27.18	11.46	24.64	11.33	1.47	.14
Instrumental Role	11.72	4.93	16.07	4.82	4.00	.001	12.09	4.90	17.31	8.40	4.61	.001
SLOF												
Work Skills	24.96	11.43	24.23	5.21	1.00	.32	24.55	4.87	24.46	4.94	0.13	.89
Interpersonal Relations	26.02	6.17	25.34	6.00	0.73	.19	26.10	5.98	25.03	5.13	1.21	.23
Everyday Activities	46.22	6.19	54.13	5.85	4.24	.001	48.59	6.38	53.72	5.34	3.91	.001