

Provider Expectations for Recovery Scale: Refining a measure of provider attitudes

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Abstract

Objective: The purpose of this study was to refine and test the psychometric properties of a scale to measure provider attitudes about recovery. *Methods:* This was a secondary data analysis that combined survey data from 1,128 mental health providers from 3 state hospitals, 6 community mental health centers, and 1 VA Medical Center. Rasch analyses were used to examine item-level functioning to reduce the scale to a briefer, unidimensional construct. Convergent validity was assessed through correlations with related measures. *Results:* The Provider Expectations for Recovery scale had strong internal consistency, was related to education and setting in expected ways, and was associated with lower levels of burnout and higher levels of job satisfaction. *Conclusions and Implications for Practice:* A 10-item scale of Provider Expectations for Recovery appears to be a useful tool to measure an important construct in recovery-oriented care. The process of refining the measure also highlights potential factors in how providers view recovery.

Key Words: Staff attitudes, recovery, expectations, severe mental illness

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Provider Expectations for Recovery Scale: Refining a measure of provider attitudes

Recovery is increasingly recognized as an important goal in the treatment of people with severe mental illnesses. Recovery is “a process of change through which individuals improve their health and wellness, live a self-directed life, and strive to reach their full potential” (SAMHSA, 2011). Although recovery can happen outside the mental health system, treatment providers can play an important role in facilitating recovery. For example, a strong working alliance with a mental health professional was among the factors identified by Liberman and colleagues (2002) as integral to promoting recovery. Similarly, Ryan and colleagues (1994) found that case manager differences were significantly related to consumer outcome even when controlling for service type and client characteristics.

Provider attitudes, specifically, can play an important role in the recovery process. For example, a recent study drawing on the perspectives of multiple stakeholders demonstrated that providers played a crucial role by employing recovery-oriented strategies and attitudes (Rusinova et al., 2011). In summarizing a large body of research on interpersonal expectancy effects and self-fulfilling prophecy, Rosenthal (2002) demonstrated that expectations held by professionals, including treatment providers, can exert a powerful influence on the behaviors of those they are in a position to influence. Mechanisms underlying the relationship between expectations and outcomes have also been elucidated. In meta-analyses of teacher expectancies, evidence suggests that expectations may be mediated primarily by climate and input -- that with higher expectations of students, teachers interact more warmly and provide more teaching; other mediating paths include giving more opportunities and differential feedback (Harris & Rosenthal, 1985; Rosenthal, 1994).

In the field of mental health, Bledsoe and colleagues (2008) identified provider characteristics that were recovery-facilitating (e.g., being hopeful, positive, and holding a belief that recovery is possible), and recovery-hindering (e.g., having low expectations and negative attitudes). Research also suggests that changing such expectations can change mental health outcomes. One study in nursing homes found that raising caretakers' expectations about individuals they worked with resulted in lower depression levels for residents (Learman, Avorn, Everitt, & Rosenthal, 1990). These studies suggest that staff expectations of consumer recovery are important to measure, particularly in systems striving to be recovery-oriented.

Although there are several scales available to measure general recovery orientation among various stakeholders (Burgess, Pirkis, Coombs, & Rosen, 2011), there are only a handful of scales that specifically measure provider expectations. One such scale is the Case Manager Expectancy Inventory, a 42-item scale assessing the degree to which case managers expect consumers to perform well in three domains: community integration, personal agency, and valued social roles (O'Connell & Stein, 2011). In that study, high case manager expectancies were associated with greater days of consumer employment two years later, but not independent living or goal attainment after controlling for baseline factors. Regarding staff characteristics, case managers with higher expectations had a shorter tenure at the agency and in the mental health field and reported lower emotional exhaustion and depersonalization. The Case Manager Expectancy Inventory is promising, but shorter scales, if psychometrically sound, could provide a more efficient way to assess provider attitudes.

A 7-item Optimism Scale was developed by Grusky and colleagues (1989) to measure treatment providers' optimism regarding consumers. In one study, the 7-item Optimism Scale had moderately low internal consistency (Cronbach's $\alpha=0.62$) and was not related to case

manager-reported activities (Young, Grusky, Sullivan, Webster, & Podus, 1998). In another study, Chinman and colleagues (2003) found adequate internal consistency ($\alpha=0.77$) and test-retest reliability over two weeks ($r=.73$)

Salyers et al. (2007) expanded the original scale to a 16-item “Consumer Optimism Scale,” including medication use, drug and alcohol use, housing, and competitive employment. Internal consistency was stronger ($\alpha=0.91$, compared to $\alpha=0.83$ for the original 7-item version) as was test-retest reliability over a 2-week period ($r=0.92$, compared to $r=0.81$). In addition, scores were significantly related to staff ratings of agency recovery orientation and personal optimism.

Additional studies have used the 16-item scale in various settings. Tsai and Salyers (2010) assessed recovery orientation, consumer optimism, and personal optimism in three state hospitals ($n=729$) and four community mental health centers ($n=181$). Staff at state hospitals scored significantly lower on all three measures even after controlling for background differences. In a subset of hospital staff who completed a follow-up survey a year later, optimism was positively correlated with the number of recovery-related trainings attended (Tsai, Salyers, & Lobb, 2010). Similarly, optimism was associated with attending recovery-oriented trainings in community mental health center staff (Tsai, Salyers, & McGuire, 2011). Salyers and colleagues (Salyers, Hudson, et al., 2011) used the 16-item scale in evaluating a burnout reduction program for mental health professionals. Eighty-four providers participated in the day-long program, with follow-up data available for 74. Participants showed significant decreases in emotional exhaustion and depersonalization, and significant increases in optimism about consumers, six-weeks post-intervention.

Overall, the 16-item optimism scale appears to perform better than the original 7-item scale in terms of internal consistency, stability, sensitivity to training, and correlations with related constructs. Although the expanded optimism scale shows promise, we were interested in assessing whether we could refine the scale to a concise measure of provider expectations of clients' recovery without sacrificing reliability. By pooling data from several studies using the scale, we were able to create a large sample with diverse settings (hospitals, community mental health, and VA medical center) to better test the internal structure of the scale and the ability of the items to differentiate provider expectations. To this end, we used a Rasch measurement model from the family of Item Response Theory models.

Item Response Theory (IRT), also known as latent trait theory or modern test theory, comprises an increasingly used set of methods to develop or refine measures of latent traits (e.g., attitudes, cognitive abilities). IRT holds several advantages over Classical Test Theory (Shultz & Whitney, 2005), including sample independence and interval-level measurement. Rasch models estimate latent traits as a function of person ability (the degree to which persons are differentiated by the likelihood of endorsing items or "person separation") and item difficulty (the degree to which items are differentiated by their endorsement). They are useful for transforming ordinal scores--of the kind often seen in psychological self-report measures--into linear, interval-level variables. In addition to refining the measure to a more concise scale, we also examined convergent validity. We hypothesized that: (1) staff expectations of consumers would be higher in outpatient settings and in staff with higher levels of education, but would not be related to age, gender and race; and (2) more positive expectations would be associated with higher levels of job satisfaction and lower levels of burnout.

Methods

Participants

Data from three separate studies were combined. Study 1 included 729 staff at three state hospitals and 181 staff at four community mental health centers in 2008 (Tsai & Salyers, 2010). Study 2 tested an intervention to reduce staff burnout among community mental health providers in 2009 (Salyers, Hudson, et al., 2011); baseline data, prior to intervention were used. Study 3 compared burnout, job satisfaction and attitudes of 66 VA staff and 86 community mental health center staff in the same city (Salyers, Rollins, Kelly, Lysaker, & Williams, 2011). Overall, participants included 1128 mental health providers, from 3 state hospitals, 6 community mental health centers, and 1 VA Medical Center. As shown in Table 1, the majority of participants were female (71%), white (88%), and between the ages of 45 and 64 (48%). Participants had been in their current jobs for a mean of 6.6 years ($SD=7.5$) and in the mental health field for 12.6 years ($SD=10.0$).

Measures

Provider expectations were measured with the 16-item Consumer Optimism scale, renamed the *Provider Expectations for Recovery Scale* to better capture the construct. Participants were asked to think about consumers they currently work with and to answer questions about how many consumers they expect to have recovery-related outcomes (e.g., in housing, employment) on a 5-point scale ranging from 1=None to 5=Almost all. Four of the 16 items are reverse-scored so that total scores reflect greater optimism about consumers.

For a subsample of participants (Studies 2 and 3), we also assessed burnout, job satisfaction, and intentions to turnover.

Burnout was assessed with the Maslach Burnout Inventory (Maslach, 1996), a widely-used measure of three components of burnout: emotional exhaustion, depersonalization, and personal accomplishment. The three subscales have shown good internal consistency, test-retest reliability, and convergent validity with related constructs (Maslach, 1996).

Job Satisfaction was assessed with a 5-item subscale from the Job Diagnostic Survey (Hackman & Oldham, 1975). These items are rated on a 7-point scale (1=strongly disagree to 7=strongly agree). Two items are reverse scored so that higher total scores suggest higher job satisfaction. The scale has good internal consistency (Hackman & Oldham, 1975) and convergent and divergent validity (Fried, 1991).

Intentions to turnover were assessed by two individual items: “How often have you seriously considered leaving your job in the past six months?” (1=never to 6=several times a week) and “How likely are you to leave your job in the next six months?” (1=not likely at all to 4=very likely).

Data Analyses

The data were analyzed iteratively using Masters’ Partial Credit Rasch Model as implemented in WINSTEPS version 3.72.3. Prior to merging the data from the different studies, item structure, anchors, and variable labels were also checked and recoded for consistency. Item response models assume unidimensionality, monotonicity, and locally independent items. These assumptions were evaluated within Rasch model calibrations to allow for simultaneous consideration of these indicators with item response indicators such as person separation, reliability, and item fit. Unidimensionality was evaluated by principal components analysis (PCA) of item residuals after the Rasch dimension (i.e., first factor) had been extracted. Secondary components with Eigenvalues > 2.0 indicate substantive subdimensions.

Monotonicity was evaluated by examining whether or not the average measure of provider expectations increased with increasing ratings for each item. Local independence was evaluated by correlating item residuals following the Rasch calibration. Common variance exceeding 15% indicated local dependence.

The fit of the data to the model was evaluated using Rasch outfit statistics and point biserial correlations. Outfit statistics have a chi-square distribution and an expected value of 1.0. The outfit criterion in the present study ($1.0 \pm .4$) allowed for no more than 40% variation from the Rasch model. Point biserial correlations were calculated between the item score and the total (marginal) scores, excluding the item of interest. Rasch reliability statistics indicate the reproducibility of relative measure location on the modeled linear latent variable; Rasch separation is an expression of reliability on a scale from 0 to infinity and indicates the number of statistically unique performance levels that can be distinguished by the measure. Reliability and separation criteria of 0.8 and 2.0, respectively, were utilized, which allow for the detection of three statistically distinct performance strata. Targeting of the measure was evaluated by comparing the mean of items and the mean of persons. Finally, item category probability curves were evaluated to assure that each response category was most probable at some point on the latent continuum, indicating meaningfulness of distinctions imposed by the item response structure.

To examine convergent validity, we used the refined Provider Expectations for Recovery Scale and examined correlations with demographics variables. For a subsample with additional job-related variables (participants from Studies 2 and 3, $n = 231$), we also were able to examine correlations with burnout, job satisfaction, and intentions to turnover.

Results

Rasch model calibrations

All 16 items were included in the first iteration (see Table 2). First, data were fit to the Rasch model and item residuals were computed to identify local dependence between items. Two pairs of item residuals had a high degree of common variance: 50% of the variance in item residuals was shared for items 13 and 14, and 36% of the variance in item residuals was shared for items 6 and 10. The common variance between item residuals for all other items was less than 15%.

Examination of the two pairs of locally dependent items suggested that semantic redundancy best explained dependence between items 6 and 10 (i.e., economic self-sufficiency and competitive employment). We removed item 6 because self-sufficiency may go beyond the issues of psychiatric disability (e.g., economic factors). The reason for local dependence between items 13 (leisure, hobbies, and recreation activities) and 14 (spiritual and religious activities) was less clear. Although, both refer to meaningful activities, they appeared less redundant. We merged items 13 and 14 by taking the mean of the items, rounded to the nearest whole.

With item 6 removed and items 13 and 14 averaged, the second calibration included 14 items. Person separation and reliability (2.68, 0.88) exceeded the specified cutoffs of 2.0 and 0.80 respectively. Common variance between item residuals in this reduced set of items remained below 15% for all item pairs. PCA of item residuals indicated a substantive subdimension (3.0 Eigenvalue units) characterized primarily by a contrast between items 1, 4, 5, and 10 and the rest of the items of the measure. The contrast was considered along with outfit statistics to evaluate the potential contribution of misfitting items to the subdimension. Two items fell both outside the acceptable range for item fit (1.0 ± 0.4) and below the critical

threshold for point biserial correlation (0.5): item 1 (1.86, 0.28) and item 15 (1.57, 0.25).

Additionally, item 15 failed to exhibit monotonic increases in average ability across the rating scale. Consequently, items 1 and 15 were removed and the measure was recalibrated.

The third calibration included the 12 remaining items. Person separation and reliability improved to 2.95 and 0.90, respectively. Common variance between item residuals remained at less than 15% for all item pairs. PCA of item residuals again revealed a subtle secondary dimension (2.4 Eigenvalue units) characterized by a contrast that included item 4 as misfitting (1.52, 0.42). This item was removed and the measure recalibrated, resulting in a slight improvement in person separation and reliability (2.98, 0.90). However, in this calibration item 5 emerged as misfitting (1.45, 0.49). Item 5 was then also removed and the measure was recalibrated.

The final calibration included 10 items. The sample was well targeted by the measure, as means of persons and items differed by only 0.02 logits. Person separation and reliability remained at 2.98 and 0.90, respectively. Common variance between item residuals in this reduced set of items remained at less than 15% for all item pairs except items 7 and 10, which was 16.4%. Point biserial correlations exceeded 0.50 for all items, indicating adequate fit of the items to the model; outfit value for item 10 (1.44) fell slightly outside the specified cutoff. The Rasch dimension accounted for 55.7% of the variance in the set of 10 items. PCA of item residuals suggested a subtle secondary dimension (2.2 Eigenvalue units) characterized by items 7 and 10 as potentially distinct from the remainder of the items. We checked item fit if we had removed each item, but found that eliminating item 7 compromised person separation/reliability (2.86/0.89) and eliminating item 10 failed to improve person separation/reliability. Therefore we retained the 10 items; together these items demonstrated strong internal consistency ($\alpha = .91$). A

conversion chart to translate observed scores (the sum of the 10 items) into scaled scores is available from the first author.

Convergent Validity

We examined differences in staff expectations across demographic variables (see Table 3). Consistent with hypotheses, there were no significant differences in provider optimism as a result of age, gender, race, and job tenure. As expected, significant differences did emerge based on education level and setting. Although not predicted, tenure in the mental health field was also related.

As shown in Table 4, staff with greater levels of education endorsed higher expectations. Post-hoc analyses showed that staff members with graduate degrees were significantly more optimistic about consumers' recovery than were staff with a Bachelor's degree or less ($p < .001$); however, the latter two groups were not significantly different from each other. Education, though significant, accounted for a low overall amount of variance ($R^2 = .03$). Regarding setting, groups differed significantly; staff at the veterans' hospital showed the greatest optimism for consumers' recovery followed by those at CMHC's. Staff in state psychiatric hospitals had the lowest expectations. The variance accounted for by setting was stronger than for education ($R^2 = .08$). We attempted an ANCOVA to determine whether education contributed to staff expectations scores over and above setting; however, the test failed the homogeneity of regression assumption (i.e., there was a significant interaction between setting and education). Finally, staff with longer tenure in the mental health field were more optimistic about consumers' recovery, though the correlation was small ($r = .06, p = .034$).

For the subset of participants with burnout, job satisfaction, and turnover intention data, we examined correlations with provider expectations. Positive provider expectations were associated with higher job satisfaction ($r = .24, p < .001$) and lower intention to leave the job in the next 6 months ($-.19, p < .01$), but were not related to thoughts of leaving the job in the past 6 months ($.11, p = .10$). Positive provider expectations were significantly correlated with lower levels of emotional exhaustion ($-.27, p < .001$) and depersonalization ($-.29, p < .001$), and with a greater sense of personal accomplishment ($.37, p < .001$).

Discussion

Administrators interested in supporting a recovery-oriented culture need efficient tools for assessing staff attitudes, and the Provider Expectations for Recovery Scale could be useful in that regard. The revised scale is brief – only 10 items, which is important in the current environment of increased productivity expectations (Wells, 2011). The newly revised measure accounted for 56% of the variance in responses and had a high level of internal consistency. Importantly, overall scores did not appear to differ on the basis of age, race, and gender, but did differ according to education and setting in expected ways. Further, for the subset of participants with additional job-related information, expectations about consumer recovery were associated with job satisfaction, turnover intention, and burnout. Taken together, these findings support the utility of the refined scale.

The process of refining the scale itself also sheds light on important aspects of how mental health providers view recovery. Two sets of items from the original scale had a high degree of overlap statistically. Finding work to be economically self-sufficient and being competitively employed are clearly redundant, with competitive employment being a route to

economic sufficiency. Of the two, we chose to keep competitive employment as a more direct indicator of functional recovery because economic self-sufficiency may reflect broader structural issues, like poverty and educational access in addition to recovery from severe mental illness. The overlap in the other set of items – leisure/recreation and spiritual/religious activities may be less clear. While they are clearly related (e.g., as “activities” that bring meaning and interest to our lives), they are not redundant. Because both have been described as important in recovery (Deegan, 2007; Falot, 2001; Fukui, Starnino, & Nelson-Becker, 2012), we opted to merge them into one item based on their presumably shared function rather than delete one from the scale.

The remaining items that were removed from the scale were negatively worded items. It is possible that the items’ poor functioning reflected a response set (i.e., the way the items are worded). A close examination of the items, however, suggests a feasible alternative explanation: that these items are viewed by providers as less central to the core expectations of recovery. For example, recovery may be achieved independently of staying out of the hospital or exiting the mental health system altogether. This notion is consistent with formulations that recovery can occur even in the presence of ongoing psychiatric symptoms (Anthony, 1993; Mead & Copeland, 2000).

Two items that showed marginal departures from a unidimensional scale were retained in the final scale: competitive employment and intimate relationships. The exclusion of competitive employment would not have impacted fit indices; and had we excluded intimate relationships, the quality indicators of the scale for person separation and reliability would have worsened. The subtle dimensionality of both of these items may reflect more personally challenging domains distinguishing them from the remainder of the items, which might be more readily accessible (e.g., participation in leisure/recreation, having friendships). However,

because employment and intimate relationships are often mentioned as important recovery goals (Onken, Craig, Ridgway, Ralph, & Cook, 2007), we retained them in the final scale.

The finding that providers differ on expectations based on setting is consistent with a subset of this data showing higher expectations in community settings than in state hospital settings (Tsai & Salyers, 2010). The state hospital setting is appropriate when consumers are having the most difficulty, and lower expectations may reflect the status of the population served. The current study expands the number of community settings, and also includes one VA Medical Center (which includes inpatient and outpatient staff). The finding that the VA site had the highest staff expectations deserves further study. The VA, like other health systems, has placed a great emphasis on recovery orientation (Goldberg & Resnick, 2010), including the addition of specific positions (local recovery coordinators) and training and resources to support recovery. In addition, the population served may differ in important ways. For example, Veterans have had military experiences, and may have higher role functioning (e.g., employment history, marital status) and access to other resources not available in community settings. Further research is needed to understand the reasons for differences in these settings, and the extent to which recovery-promoting expectations can be increased with training and supports. For example, staff who participated in a burnout intervention reported increased expectations (as well as decreased burnout) (Salyers, Hudson, et al., 2011). Others have found that exposure to recovery-related training is associated with better staff attitudes (Crowe, Deane, Oades, Caputi, & Morland, 2006; Gudjonsson, Webster, & Green, 2010).

One limitation of the study was homogeneity. Despite capitalizing on a large sample of data from different settings, all of the settings were in one state, with predominantly white female participants. This study is also limited by the use of only one attitudinal scale. When the

original studies were conducted, the Case Manager Expectancy Inventory (O'Connell & Stein, 2011) was not yet published. That scale is longer, and includes three subscales, one of which appears closely linked to the dimension being assessed in the current Provider Expectations for Recovery Scale (i.e., role functioning). Future research could compare the two scales to examine incremental validity and value added relative to perceived burden and time/cost of assessment.

Overall, the Provider Expectations for Recovery Scale could be useful in helping to encourage and support recovery-oriented care in a variety of practice settings. It is a brief, unidimensional scale that is associated with other constructs in meaningful ways. Administrators, program planners, and researchers could use the scale as a quick assessment of current staff attitudes – for program evaluation purposes as well as for outcome studies implementing recovery-oriented care. The scale could also be useful as a staff development tool. For example, an assessment revealing low scores could be followed by additional training or recovery-promoting activities. The exercise of refining the scale was also informative in highlighting ways in which providers may view the recovery process.

Table 1

Demographic Characteristics (N=1128)

Variable	N/Mean	%/SD
Age (n = 984)		
18 - 24	52	5
25 - 34	223	23
35 - 44	222	23
45 - 64	471	48
65+	16	2
Gender (n = 1099) Female	775	71
Race (n = 1044)		
White	918	88
Black	76	7
Asian	14	1
Native American	15	1
Other	21	2
Education (n = 1082)		
Less than bachelors degree	603	56
Bachelors	240	22
Graduate Degree	239	22
Setting (n = 1128)		
CMHC	349	31
State Hospital	715	63
VA	64	6

Job Tenure (n = 1109)	6.6	7.5
Tenure in the mental health	12.6	10.0

Table 2

Item Content and Descriptive Statistics for the Original 16-Item Consumer Optimism Scale, and Fit Statistics for the Final Items Retained

Item	Content	M	SD	Measure ^a	Outfit ^b	Point biserial ^c
1*	Will remain in the mental health system for the rest of their lives.	2.87	1.04			
2	<i>Will be able to greatly increase their involvement in the community.</i>	3.10	.81	0.06	0.95	0.68
3	<i>Will be able to function very well in the community.</i>	3.10	.79	-0.07	0.87	0.70
4*	Will need to be hospitalized again in the future.	3.09	.81			
5*	Will remain pretty much as they are now.	3.00	.83			
6	Will find work that enables them to be economically self-sufficient.	3.03	.86			
7	<i>Will be able to have satisfying intimate relationships.</i>	3.05	.82	0.31	1.06	0.66
8	<i>Will be able to have satisfying friendships</i>	3.05	.82	0.15	0.89	0.71
9	<i>Will be able to achieve personal goals.</i>	3.13	.81	-0.05	0.71	0.76
10	<i>Will be able to work in a competitive job (in the community for real wages).</i>	3.02	.89	0.36	1.44	0.55
11	<i>Will be able to cope successfully with persistent symptoms.</i>	3.13	.79	-0.04	0.79	0.74
12	<i>Will be able to take medications independently.</i>	3.18	.87	-0.19	0.87	0.70
13	<i>Will be able to participate in leisure, hobbies, and recreational</i>	3.16	.95	-0.40	1.33	0.57

activities.

14	<i>Will be able to pursue spiritual/religious activities.</i>	3.16	.94			
15*	Will continue to be dependent on alcohol or drugs.	3.04	.77			
16	<i>Will be able to live in their own apartment or home.</i>	3.21	.97	-0.15	0.99	0.69

Note: * Items recoded; higher scores reflects greater optimism. Items in ***bold italics*** were retained on the bases of Rasch analyses (taking the mean of items 13 and 14).

^aThe calibrated item difficulty, in logits.

^bAn outlier-sensitive statistic of the mismatch between observed and model-expected performance.

^cPearson product-moment correlation between the scored responses and the corresponding total (marginal) scores, excluding the item of interest.

Table 3

Comparison Across Demographic Variables on Provider Expectations for Recovery Scale

Variable	Subgroup	M	SD	Test of significance
Age	18 - 24	46.7	11.1	F (4,979) = 1.90
	25 - 34	51.2	12.4	
	35 - 44	51.2	12.2	
	45 - 64	51.5	12.3	
	65+	49.6	9.2	
Gender	Female	51.5	12.6	F (1, 1096) = 0.39
	Male	52.1	12.0	
Race	White	50.9	12.3	F (4, 1038) = 1.19
	Black	52.6	12.1	
	Asian	52.8	9.8	

	Native American	46.7	12.1	
	Other	48.0	15.4	
Education	< BA	50.5	12.0	F (2, 1078) = 14.11***
	Bachelors	51.0	12.1	
	Graduate Degree	55.4	13.0	
Setting	CMHC	54.1	12.7	F (2, 1124) = 45.87***
	State Hospital	49.6	11.8	
	VA	62.9	11.2	

*** p < .001

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