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Investigating self-esteem in individuals with schizophrenia: Relevance of the Self-Esteem Rating Scale-Short Form

Tania Lecomte [a],*, Marc Corbière [b], François Laisné [c]

[a] *Department of Psychiatry, University of British Columbia, 828 West 10th Avenue, Room 214, Vancouver, BC, Canada, V5Z 1L8*
[b] *Institute of Health Promotion Research, University of British Columbia, Vancouver, Canada*
[c] *Department of Psychology, University of Montreal, Montreal, Canada*

Abstract

Studies investigating self-esteem in individuals with severe mental illness, either as a treatment goal, outcome or correlate to other variables, have increased over the past few years. One of the main difficulties in assessing self-esteem is the assessment itself, often measuring global and stable self-esteem as in the Rosenberg Self-Esteem Scale, or requiring extensive training and long interviews. The present article aims at demonstrating the relevance of the French and English versions of the Self-Esteem Rating Scale-Short Form with individuals with severe mental illness. The instrument's reliability and validity were investigated in a sample of 250 French Canadian college students, 247 British college students and three samples of English- or French-speaking individuals with severe mental illness ($N=254$, $N=150$ and $N=171$). Confirmatory factor analysis revealed that a shorter version of the instrument (20 items), with a positive and a negative self-esteem factor, had a great validity for all the samples studied. The Self-Esteem Rating Scale-Short Form, with its positive and negative self-esteem subscales, appears to be a valid and reliable self-esteem measure for individuals with mental health problems. Limitations of this study and future directions are discussed.

1. Introduction

1.1. Self-esteem and severe mental illness

Over the past decade, self-esteem has emerged as an important concept potentially related to the etiology, understanding, and treatment of individuals with severe mental illness (Markowitz, 2001). Schizo-

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* Corresponding author. Tel.: +1 604 875 4553; fax: +1 604 875 4376.

E-mail address: lecomte@interchange.ubc.ca (T. Lecomte).

phrenia studies have found links between self-esteem and social functioning (Bradshaw and Brekke, 1999; Brekke et al., 1993; Roe, 2003), perceived quality of life (Eklund et al., 2003; Sörgaard et al., 2002; Torrey et al., 2000; Van Dongen, 1998), depression (Shahar and Davidson, 2003), and psychotic symptoms (Barrowclough et al., 2003; Shahar and Davidson, 2003; Sörgaard et al., 2002). Moreover, theorists and experimental psychologists have found significant links between low self-esteem and the development of paranoid delusions (Bentall et al., 2001), as well as the maintenance of psychotic symptoms (Garety et al., 2001). Treatment studies have hypothesized — and at times found — improvements in self-esteem following programs such as cognitive remediation (Wykes et al., 2003), supported employment (Bond et al., 2001; Torrey et al., 2000), stress management (Leclerc et al., 2000), and specific self-esteem enhancement interventions (Hall and Tarrier, 2003; Lecomte et al., 1999).

Although many self-esteem definitions exist, it is widely accepted that self-esteem is neither a static 'trait' nor a transient 'state' but rather a self-concept that can fluctuate with social feedback and self-evaluations (Bednar and Peterson, 1995; Crocker and Wolfe, 2001). As such, self-esteem develops — and is at times maintained stable — through the critical evaluation an individual has of his/her reaction to difficult or stressful life events, which is then internalized as a personal characteristic as well as from external feedback (Bednar and Peterson, 1995). Understandably, environmental factors, such as stigma (Link et al., 2001; Thesen, 2001; Wright et al., 2000), institutionalization (Estroff, 1989), and negative family interactions (Barrowclough et al., 2003) have been found to be detrimental to self-esteem in individuals with severe mental illness.

Self-esteem in schizophrenia has also been described as having a paradoxical quality whereby some individuals can simultaneously have high scores on scales measuring both positive and negative self-esteem (Barrowclough et al., 2003), thereby making the use of a global score difficult to interpret. In fact, with the increasing number of studies focusing on self-esteem and schizophrenia, the question of interpretation and generalizability of the results becomes essential, especially since various self-esteem assessments stemming from different conceptual backgrounds — varying in length as well as in methodological rigour — are being used.

1.2. Self-esteem measures in schizophrenia research

The Rosenberg Self-Esteem Scale (RSES; Rosenberg, 1965) is by far the most frequently used self-report self-esteem instrument in the literature. It has been validated with many population samples, including individuals with schizophrenia, and is available in multiple languages. However, certain authors report multiple problems with the RSES, which limit its use in psychopathology research, especially in regards to comparing individuals and detecting changes over time (Lecomte et al., 1999; Nugent and Thomas, 1993; Torrey et al., 2000). As described by Nugent and Thomas (1993), the RSES is considered a Guttman scale, which assumes that the scale is unidimensional and has no errors of measurement, whereas the RSES has been found to have two distinct factors (positive and negative self-esteem) along with typical measurement errors. Furthermore, Guttman scales such as the RSES are known to be quite poor at distinguishing between persons or groups (Nugent and Thomas, 1993). Lastly, the 10 items of the RSES were designed to measure a core and stable trait, namely global self-esteem, and are therefore quite insensitive to life changes, all of which make the RSES of little clinical relevance (Lecomte et al., 1999; Nugent and Thomas, 1993; Torrey et al., 2000). These psychometrical facts help explain the paucity of significant results with the RSES in severe mental illness intervention studies.

The Index of Self-Esteem (ISE; Hudson, 1982) is a highly reliable and valid measure of self-esteem. This 25-item self-report measure has been designed to assess self-esteem problems regarding subjective evaluations of the self or perceptions of other's evaluations of oneself. The ISE has mostly been used in cross-sectional studies in schizophrenia research investigating correlates of self-esteem and quality of life or cognitive functioning (Bradshaw and Brekke, 1999; Brekke et al., 2001, 1993), but it is not recommended for assessing non-problematic levels of self-esteem or positive changes over time because of its floor effect (Nugent and Thomas, 1993).

Few other self-esteem measures are reported in the schizophrenia literature. Attempts to assess self-

esteem often rely upon selected items of a larger scale assessing quality of life, for instance, or have very little reported reliability and validity (e.g. the Robson scale; Robson, 1989). A recent suggested method of assessing self-esteem is through the use of a comprehensive semi-structured interview such as the modified Self-Evaluation and Social Support interview-schizophrenia version (SESS-sv; Humphreys et al., 2001). This 45-min interview taps into the individual's perceived competence and commitment in multiple life domains as well as self-evaluations of traits, attributes and overall self-acceptance. The SESS-sv is reported to have good psychometric properties and considered quite useful in addressing in-depth self-evaluations, including the co-existence of positive and negative self-esteem and in distinguishing self-esteem from mood variations (Barrowclough et al., 2003). The most salient problem with the SESS-sv is its complexity and demands in terms of interview time, training and audiotape ratings, which limit its relevance for studies involving many other assessed variables.

Many researchers would argue that there is a need for a self-esteem instrument that is validated with individuals with schizophrenia, easy and brief to administer, and useful clinically as well as empirically. Such an assessment would allow studies to include self-esteem as a potential predictor, outcome or covariate, there by furthering our understanding of interactions between self-esteem and other variables without overtaxing the participants with lengthy interviews. Theorists, on the other hand, might challenge the true usefulness of a brief measure that favours rapidity of administration over a multi-faceted assessment that truly reflects the complexities of a concept like self-esteem. Though in-depth measures, such as the SESS-sv (Humphreys et al., 2001), are warranted for studies thoroughly investigating self-esteem, studies including larger assessment batteries would benefit from using a brief, though multi-faceted, well-validated self-esteem measure as well. One instrument that appears to meet most of these criteria is the Self-Esteem Rating Scale (SERS; Nugent and Thomas, 1993). The SERS includes statements that are linked to social contacts, such as friends, as well as achievements and competency (Nugent and Thomas, 1993). Therefore, improvements in any of those areas could, if internalized in a positive way, result in positive increases in self-esteem. The SERS is also appealing because it consists of two scales, positive and negative self-esteem, which have been documented as being relevant for individuals with schizophrenia (Barrowclough et al., 2003). However, only 25 of the 353 subjects included in the validation studies (Nugent, 1994; Nugent and Thomas, 1993) were reported as suffering from psychiatric problems, necessitating further validation in individuals with severe mental illness before recommending its use in schizophrenia research. Therefore, the following study aims at validating the SERS in people with severe mental illness, using factor analyses with various samples.

2. Methods

The overall objective of this study was to determine the validity of the SERS in individuals with severe mental illness. To do so, three studies were needed. *Study 1*: Translation and validation of the SERS with a French-speaking sample. Since the study was conducted in Canada and many participating subjects would be French speaking, we initially had to translate the SERS and ensure its equivalence to the original English version of the SERS, as well as validate the French version with a non-psychiatric sample (students from *Université de Montréal*). *Study 2*: Confirmatory factor analysis with an English-speaking sample. A new factor structure was obtained with the French student sample so we opted to verify it with an English sample (students from University of Liverpool). Since a similar factorial structure was obtained for both student samples, it was now possible to verify the factorial solution in individuals with severe mental illness. *Study 3*: Confirmatory factor analysis of the SERS in individuals with severe mental illness. Three samples of individuals with severe mental illness were used to verify the factorial solution; each sample allowed us to ascertain the replication of the results in individuals with different levels of functioning and severity of psychopathology.

2.1. Measures

The Self-Esteem Rating Scale (SERS; Nugent and Thomas, 1993) was designed by a professor in social

work and a psychometrician specialized in self-anchored scales, as a clinically oriented self-report measure of self-esteem capable of grasping problematic as well as positive levels of self-esteem in adults. The SERS consists of 40 items rated on a 7-point Likert scale, 20 scored positively and 20 negatively, with total scores ranging from −120 to +120. The SERS taps into multiple aspects of self-evaluation such as overall self-worth, social competence, problem-solving ability, intellectual ability, self-competence, and worth compared with others. It was originally validated in two different studies, with samples of 246 and 107 subjects, and demonstrated evidence of convergent and concurrent validities as well as internal consistency with a unidimensional factor structure (see Nugent, 1994; Nugent and Thomas, 1993).

The Rosenberg Self-Esteem Scale (RSES, Rosenberg, 1965), as described earlier, yields a global self-esteem score and consists of 10 items, rated on a 4-point Likert scale. French-speaking college students in Study 1 also completed the RSES, which had previously been validated in French with different samples, including people with schizophrenia (Vallières and Vallerand, 1990). Only age and gender were obtained as demographic information from the college student samples whereas diagnosis was determined in the severe mental illness samples.

2.2. Data analyses

2.2.1. Study 1

Principal Components Analyses (PCA) with Varimax rotation were used to verify the factorial structure of the SERS and compare it to the original validation studies (Nugent and Thomas, 1993). Pearson's correlations were carried out on the RSES and the SERS to assess the SERS's convergent validity, and similar correlations were also conducted on the test–retest data for temporal stability assessment. Internal consistency was determined with Cronbach's alpha coefficients for each factor resulting from the PCA.

2.2.2. Studies 2 and 3

Based on the results of Study 1, and on previous validation studies of the SERS, Confirmatory Factor Analyses (CFA) were carried out on the SERS to verify which model best fit the data: the first model being Nugent and Thomas' original one-factor model with 40 items, the second being a two-factor model (positive and negative self-esteem) but retaining 40 items, and the third model being a new two-factor model (positive and negative self-esteem) but retaining only 20 items. The CFA procedure used in conjuncture with the Wald test and the Lagrangian Multiplier test (Bentler, 1995) favors a more parsimonious model from the data. We used the EQS Software (Bentler, 1995), specifically the estimation method Maximum Likelihood-Robust, to evaluate each model. This type of method controls for the violation of the assumption of multivariate normality; the Satorra–Bentler scaled Chi-square index integrates a scale that corrects Chi-square statistics. Concurrent validity of the SERS was also verified with the MANOVA procedure, and post hoc Scheffé test, comparing the self-esteem levels of the student samples to those of the three clinical samples.

3. Results

3.1. Study 1 — Translation and validation of the SERS with a French-speaking sample

3.1.1. Translation

The three authors (M.C., F.L and T.L.), all bilingual, individually translated the SERS from English into French and then compared their translations. Any inconsistencies were resolved by back-translating the items into English and only retaining the translated items that perfectly matched the original SERS. A professional translator was then given the English and French versions, and asked to correct any grammatical errors and remaining inconsistencies.

3.1.2. Participants

A sample of 250 occupational therapy and psychology undergraduate students from the University of Montreal completed the French SERS along with the French version of the RSES (Vallières and Vallerand, 1990). The average age was 24 (S.D.: 7.4), with 81% ($N=202$) of the sample being female. Of these, 38 subjects were re-contacted 2 weeks later and re-administered the SERS to determine the instrument's test–retest reliability.

3.1.3. Results

The SERS's authors presented an exploratory factor analysis suggesting a unidimensional scale with an eigenvalue of 21.8, explaining 54.4% of the variance (Nugent and Thomas, 1993), whereas our PCA results using Varimax rotation showed the first eigenvalue was 14.1 and explained 35.2% of the variance. A closer look at the scree plot and at the rotated sum of squared loadings revealed that the instrument in fact held two equal-weight factors, one consisting of positive and one of negative self-esteem items. After repeating the factor analysis but forcing the number of factors to two, the same number of items loaded on each factor, though some items loaded poorly on either factor or had double-loadings and only added 'noise' to the instrument. A step-by-step elimination of items was undertaken that resulted in a 20 item version of the SERS, with 10 positive and 10 negative items (see Table 1). The final positive scale had an internal consistency alpha coefficient of 0.91, and the negative scale of 0.87. The test–retest reliability of the positive and negative scales demonstrated adequate stability (respectively: $r=0.90$ and $r=0.91$, $P<0.001$) and both scales were highly correlated with the RSES global score ($r=0.72$ and $r=-0.79$, $P<0.001$), suggesting adequate convergent validity of the SERS-Short Form (SERS-SF). Since this factorial solution was quite different from the one proposed by the instrument's developers and could be an artifact of the translation of the instrument, a confirmatory factor analysis with an English-speaking sample of college students was deemed necessary.

3.2. Study 2 — Confirmatory factor analysis of SERS with an English-speaking sample

3.2.1. Participants

A sample of 247 undergraduate students attending the University of Liverpool completed the SERS as part of a web-based study investigating links between

Table 1
Factor structure of the SERS-Short Form ($N=250$)

Dimensions and items from the SERS	Factors	
	1	2
Positive dimension[a]		
8 — When I am with other people, I feel that they are glad I am with them	0.79	
6 — I feel that people really like to talk with me	0.78	
18 — I feel that my friends find me interesting	0.75	
36 — I feel that people have a good time when they are with me	0.73	
26 — My friends value me a lot	0.70	
4 — I feel confident in my ability to deal with people	0.67	
9 — I feel that I make a good impression on others	0.66	0.43
19 — I feel that I have a good sense of humor	0.65	
7 — I feel that I am a very competent person	0.54	
10 — I feel confident that I can begin new relationships if I want to	0.54	
Negative dimension		
40 — I wish that I were someone else		0.74
17 — I feel inferior to other people		0.73
27 — I am afraid I will appear stupid to others		0.69
20 — I get angry at myself over the way I am		0.68
2 — I feel that others do things much better than I do		0.68
16 — I feel ashamed about myself		0.66
33 — I feel that if I could be more like other people, then I would feel better about myself		0.62
30 — I wish I could just disappear when I am around other people	0.44	0.53
5 — I feel that I am likely to fail at things I do		0.47
34 — I feel that I get pushed around more than others		0.43
Eigenvalues	8.6	1.7
Variance after rotation	27.5	24.2

[a] Item numbers are from the original 40-item SERS. N.B. Saturation rates below 0.40 were excluded from the table. Cumulative variance=52%.

Table 2
Results from the confirmatory factoral analysis of the SERS with different samples

Models	Adjustment fit indices[a]							
	df	χ^2	χ^2/df	NNFI	CFI	CFI robust	IFI	RMSE A
Students from Liverpool (*N*=247)								
M1. One factor (40 items)	740	1836.8	2.5	0.69	0.71	0.76	0.71	0.10
M2. Two factors (40 items)	739	1575.9	2.1	0.74	0.76	0.82	0.76	0.09
M3. Two factors (20 items)	169	318.6	1.9	0.89	0.90	0.93	0.90	0.08
M4. Two factors (20 items) — errors correlation items 40 and 33	168	296.3	1.8	0.90	0.91	0.94	0.91	0.08
Prevocational Programs (*N*=254)								
M1. One factor (40 items)	740	1892.5	2.6	0.69	0.71	0.71	0.71	0.09
M2. Two factors (40 items)	739	1472.2	2.00	0.79	0.80	0.82	0.81	0.08
M3. Two factors (20 items)	169	328.3	1.94	0.90	0.91	0.92	0.91	0.08
M4. Two factors (20 items) — errors correlation items 26 and 18	168	300.8	1.79	0.91	0.92	0.94		
IPS (*N*=150)								
M1. One factor (40 items)	740	13.63	1.8	0.61	0.63	0.72	0.63	0.10
M2. Two factors (40 items)	739	1112.5	1.51	0.73	0.75	0.83	0.75	0.08
M3. Two factors (20 items)	169	201.9	1.19	0.89	0.90	0.96	0.91	0.07
M4. Two factors (20 items) — errors correlation items 26 and 18	168	192.2	1.14	0.91	0.92	0.97	0.92	0.06
CASIG (*N*=171)								
M1. One factor (40 items)	740	1366.3	1.8	0.53	0.55	0.64	0.56	0.09
M2. Two factors (40 items)	739	1028.5	1.4	0.73	0.74	0.83	0.75	0.07
M3. Two factors (20 items)	169	205.7	1.2	0.88	0.89	0.95	0.89	0.06
M4. Two factors (20 items) — errors correlation items 26 and 18	168	198.2	1.2	0.89	0.90	0.96	0.90	0.06

[a] NNFI=NonNormed Fit Index; CFI=Comparative Fit Index; CFI Robust=Comparative Fit Index Robust; IFI=Bollen Incremental Fit Index; RMSEA=Root Mean Square Error of Approximation. The correlations between the 2 dimensions were: r=0.66, 0.59, 0.45, and 0.27 respectively for each sample.

attributions, paranoia and self-esteem.[1] The mean age was 26.8 (S.D.=9.9) with 71% (*N*=175) of the sample being female.

3.2.2. Results

Three Confirmatory Factor Analyses using EQS (Bentler, 1995) were conducted to verify: 1) the author's original one-factor model with 40 items; 2) a two-factor model but keeping the authors' 40 items; and 3) the new two-factor model with 20 items. As can be observed in Table 2, only the two-factor model with 20 items showed appropriate adjustment fit indices, whereas the other factorial models had indexes (i.e. NNFI, CFI, CFI robust and IFI) all below the recommended threshold of 0.90 (Joreskög and Sörbom, 1993; Mueller, 1996). The two-factor model with 20 items had a correlation error on items 33 and 40, suggesting that these two items were linked, but once this correlation was included in the CFA, the adjustment fit indices were increased and the

RMSEA (0.08) and Chi-square/dl (1.8) values were also satisfactory (Byrne, 1989; Hofmann, 1995). These results confirm that two-factor 20-item SERS-Short Form (SERS-SF) model is valid and not a translation artifact. The next step is to verify if the SERS is similarly valid, i.e. if the same factorial model emerges in individuals with severe mental illness.

3.3. Study 3 — Confirmatory factor analysis of SERS in individuals with severe mental illness

3.3.1. Participants

Three clinical samples from three different studies that took place in Montreal were used in order to confirm the validity of the SERS in individuals with severe mental illness. The first sample consisted of 254 individuals taking part in a study on predictors of outcomes in *Prevocational Programs* in Montreal.[2]

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[1] Investigators: Bentall RP, Kinderman P and Lecomte T.

The average age was 38 (S.D. = 8.7), with 53% (N = 135) of the sample being female, and most being French Canadian (76%). Although everyone taking part in the prevocational programs had mental health problems, only 18% mentioned suffering from schizophrenia or other psychotic disorders, whereas 37% described suffering from a mood disorder, 13% from anxiety, and 32% other diagnoses such as personality disorders (diagnoses were based on self-disclosure). This sample as a whole also appeared to have a fairly good functioning level, with many admitting being able, for example, to write their resumés themselves.

For the second sample, the SERS was administered to 150 individuals with severe mental health problems that were part of a randomized controlled trial on the supported employment program called *Individual Placement and Support*[3] *(IPS)*. The average age was 43 (S.D. = 10), with 37% (N = 55) female. Everyone in the study had to express a desire to work and had a severe and persistent mental illness. The diagnoses were confirmed with the SCID checklist and revealed that 74% had a diagnosis of schizophrenia, and 24% of bipolar disorder. This sample was considered more severe than the former in terms of psychopathology and psychosocial functioning, but less than the following on the same criteria.

The third sample also consisted of individuals with severe mental illness, but taking part in a study on the assessment of their rehabilitation goals and needs (*Client Assessment of Strengths, Interests and Goals — CASIG*).[4] Of the 171 participants, the average age was 43 (S.D. = 11.7) and 37% (N = 64) were female. For 78% of the sample, the primary diagnosis was schizophrenia or schizoaffective disorder, and for 11% affective disorder. In this sample, 55% completed the SERS in English, whereas the rest used the French version. Most participants were outpatients receiving psychiatric rehabilitation in the form of day treatment or assertive community treatment. This sample was considered more impaired than the other two in terms of functioning level and psychopathology severity.

3.3.2. Results

As with the Liverpool sample, three confirmatory factorial models were investigated: 1) the authors' original single factor model with 40 items; 2) a two-factor model with 40 items; and 3) the SERS-SF two-factor 20-item model. Table 2 illustrates the adjustment fit indices for each sample. Again, the SERS-SF appears the strongest and most parsimonious factorial solution with all the NNFI, CFI, CFI robust and IFI indices close to or superior to 0.90, particularly when error correlations for two items are included in the CFA. It is interesting to note that the error correlations are similar for the *Prevocational Program* and *IPS* samples, but that the *CASIG* sample and the *Liverpool* student sample had similar errors. For each sample, the addition of an error correlation between two items (items 18 and 26 for *Prevocational Programs* and *IPS*, and items 33 and 40 for *CASIG* and *Liverpool*) boosts the fit indices significantly. These 'error correlations' could, for instance, suggest that the meanings of the linked items are perceived in a similar way by the questionnaire respondents.

Finally, MANOVA, comparing the students as a whole (the means and standard deviations were practically identical for the Montreal and Liverpool students) with the clinical samples, revealed a significant difference between groups for both the positive self-esteem factor and the negative self-esteem factor of the SERS-SF (respectively: $F(3, 1067) = 14.03$, $F(3, 1067) = 32.1$; $P < 0.001$). The post hoc Scheffé test shows that students have significantly higher positive self-esteem scores than all the clinical samples (all at $P < 0.001$), but that the clinical samples do not differ between one another. However, the most significant differences in terms of negative self-esteem are found in the *Prevocational Program*, where the

Table 3
Means and standard deviations for the student and clinical samples

Sample	Positive self-esteem[a]	Negative self-esteem[b]
	Mean (S.D.)	Mean (S.D.)
Students (N = 497)	51.3 (8.7)	−27.8 (9.8)
Prevocational Program (N = 254)	47.1 (11)	−35.9 (12.5)
IPS (N = 150)	47.4 (11.3)	−29.7 (10.3)
CASIG (N = 171)	47.6 (10.4)	−30.6 (10.9)

[a] Scale range: 10 to 70.
[b] Scale range: −70 to −10.

mean is much higher (i.e. more negative) than in all the other groups at the $P < 0.001$ level (see Table 3 for means and standard deviations).

4. Discussion

The purpose of this study was to propose and validate a self-esteem instrument that could be useful in schizophrenia research and clinical practice. To verify the SERS's psychometric properties in individuals with severe mental illness, such as schizophrenia, many steps are needed to be taken from translating, to verifying the original factorial structure in French, re-verifying it in English to make sure the different factorial solution was not due to language, and finally to determining the instrument's internal consistency, its test–retest reliability, and its convergent and concurrent validities. The English and French versions appeared identical in terms of content and resulting factor structure. The item wording also seemed appropriate for individuals with severe mental illness, some of whom suffered from important cognitive deficits. Both the exploratory (PCA) and confirmatory factor analyses (CFA) indicated that the 20-item SERS-SF was highly valid, and in fact superior in terms of construct validity and parsimony to the original 40-item SERS. The SERS-SF showed good indices of fit (all equal or exceed the recommended 0.90, and the RMSEA indices are equal to or lower than 0.08). The Cronbach's alpha results suggested good internal consistency, whereas Pearson correlations demonstrated adequate test–retest validity as well as satisfactory convergent validity with the Rosenberg Self-Esteem Scale. The MANOVA and subsequent Scheffé test revealed that the SERS-SF could distinguish the positive self-esteem levels of 'healthy' students from those of individuals struggling with mental health problems, such as schizophrenia and depression. The fact that the *Prevocational Program* sample scored lower than the other samples on the SERS-SF negative scale further supports the instrument's concurrent validity since the sample had a higher rate of mood disorders, not to mention that many individuals might experience fluctuations in self-esteem due to the challenges of reintegrating into the workplace. Mood disorders, particularly depression, are recognized in the literature as strongly linked

to lower negative self-esteem levels (Andrews and Brown, 1993; Shahar and Davidson, 2003), whereas self-esteem levels in schizophrenia are not necessarily always low (Van Dongen, 1998).

One of the limits and strengths of this study concerns the number and heterogeneity of samples — both clinically and demographically. For instance, the gender distributions varied greatly from the student to the clinical samples, and it is unclear if this affected the results in any way. This study was not independently funded, but we were able to gather sufficient data by piggy-backing it on multiple studies, which explains the variety of samples. However, the fact that a similar factorial model was supported by all five samples underscores the validity of the SERS-SF. In fact, it appears that for the students, as well as for people with mental health problems, it is important to consider a positive as well as a negative component of self-esteem. This further supports the suggestion that positive and negative self-evaluations might be internalized in different ways by most people, instead of simply being considered two sides of the same coin (Andrews and Brown, 1993). According to Crocker and Wolfe (2001), self-esteem levels can be explained in terms of an individual's contingencies of self-worth and are therefore more likely to vary when those contingencies are unstable. We could hypothesize that depending on the individual, positive and negative self-evaluations are not equally affected by the same contingencies, and/or could be influenced by different types of contingencies (e.g., competence, approval, competition, virtue, and appearance; Crocker and Wolfe, 2001).

Another caveat of this study is the absence of longitudinal data that would enable us to determine if the SERS-SF is sensitive to positive, or negative, changes overtime. Although the items of the SERS-SF appear to tap into aspects that are malleable such as social relations, competence, and perceived self-worth, we do not yet have data suggesting that this instrument can detect subtle changes in self-esteem following a clinical intervention, for instance. Two studies using the SERS-SF (the *IPS* study described earlier and a CBT for first episode psychosis trial) are currently underway and should enable us to verify the instrument's sensitivity to change, particularly in individuals for whom self-worth is contingent on aspects covered in the treatment or program evaluated.

5. Conclusion

Self-esteem is likely going to continue to be an important focus of schizophrenia research, both in terms of etiology and treatment. The SERS-SF is an interesting instrument for studies addressing self-esteem and severe mental illness because it includes both a positive and a negative self-esteem scale; it is easily understandable by individuals with different functioning and psychopathology levels; it takes only a few minutes to complete; and it has adequate psychometric properties, which have been verified in five different samples. The instrument also consists of items that appear to be sensitive to positive clinical changes, although this has not yet been verified empirically.

Acknowledgments

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