
Norms and Construct Validity of the Rosenberg Self-Esteem Scale in Canadian High School Populations: Implications for Counselling

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Abstract

A random sample of Alberta high schools yielded data for 1,084 males and 1,024 females. Measures completed included the Rosenberg Self-Esteem Scale. Within each age and sex group a strong, unrotated factor was invariant. There was significant variation of mean scores across age-groups within female students. In each age group females had significantly lower self-esteem than males. Evidence of construct validity is derived from correlations with behaviour problem categories; the McMaster measure of family relationships; and self-completion measures of school climate, and physical and sexual victimization in school. Possible uses for self-esteem measures in school counselling are proposed.

Résumé

Un échantillon prélevé au hasard d'écoles secondaires en Alberta a fourni des données de 1,084 étudiants et de 1,024 étudiantes. Parmi les mesures accomplies figurait l'Echelle du respect de soi Rosenberg. A l'intérieur de chaque groupe établi selon l'âge et le sexe, un facteur solide et non alterné était invariant. Il y avait une variation significative des scores moyens entre les tranches d'âge, à l'intérieur du groupe des étudiantes. Dans chaque tranche d'âge, les jeunes femmes avaient un respect de soi considérablement inférieur à celui des jeunes hommes. La preuve de la validité de construction de l'Echelle Rosenberg vient des corrélations entre les catégories de troubles du comportement; la mesure McMaster des relations familiales; et des mesures que les étudiants ont rempli eux-mêmes au sujet du climat scolaire et de l'intimidation physique et sexuelle à l'école. On propose des utilisations possibles des mesures du respect de soi pour le counseling scolaire.

INTRODUCTION

Self-esteem, the manner in which an individual evaluates self-characteristics relative to the perceived characteristics of peers, is a crucial variable for understanding identity development, and underpins the development of mental health adjustment (Young & Bagley, 1982; Bagley & Young, 1990). Self-esteem and self-concept (salient self characteristics which the individual considers worthy of evaluation) can be measured in global terms (by an affective construct by which many aspects of self-functioning and self-worth are evaluated), or by more specific evaluations of role performance (e.g. performance in reading, mathematics, in sport etc.). By adolescence the young person will have

acquired a stable set of self-evaluations so that it becomes increasingly likely that even specific tasks (e.g. academic learning) will be enhanced or inhibited by pre-existing self-esteem.

Although there are many different measures of self-esteem available for teachers and counsellors, a review of available measures by Blascovich and Tomaka (1991) indicates that eleven measures of the several dozen available have good evidence of reliability and validity and widespread use by researchers. The most frequently used of these measures is the Rosenberg Self-Esteem Scale (RSES) (Blascovich & Tomaka, 1991) followed by the Coopersmith scale (Bagley, 1989), the Piers-Harris Scale (Bagley & Mallick, 1978), and the Tennessee Scale (Roid & Fitts, 1988). These four scales account for 60 percent of the journal citations of self-esteem and self-concept studies. Since the principle measures of global self-esteem usually have intercorrelations of around 0.6 to 0.7 (Blascovich & Tomaka, 1991) the selection of a particular measure may rest on criteria such as the brevity of the scale, and the ease with which individuals with relatively poor reading skills can understand it. The Rosenberg Self-Esteem Scale in its brevity (10 items), and its easy-to-understand format is, in American research, the instrument of choice for use with adolescent populations. In the standard text on psychological measurements, Blascovich and Tomaka (1991) observe:

The Rosenberg SES has enjoyed widespread use and utility as a unidimensional measure of self-esteem. In fact, the SES is the standard against which new measures are evaluated. Its ease of administration, scoring, and brevity underlie our recommendation for the use of the SES as a straightforward estimate of positive or negative feelings about the self. (p. 123)

Rosenberg's SES was developed for use in state-wide U.S. studies of the adaptation of youth (Rosenberg, 1965; Rosenberg & Simmons, 1972), and was used by Kaplan and Pokorney (1976) and Kaplan (1980) in seminal work on the predictive power of self-esteem. In Kaplan's study a cohort of 4,694 children entering junior high schools in Houston, Texas in 1969, completed a 7-item version of the RSES (including the five negatively worded statements, and two positively worded statements in the RSES) to construct a scale of "self-derogation." Follow-up of this cohort into adulthood found that low SES scores were strong predictors of delinquent behaviours, unwed pregnancy, drug use, and suicidal behaviours. The clear implication of these findings is that if negative self-esteem can be diminished in the elementary or junior high school years, many negative behaviours associated with impaired self-esteem might be avoided.

The importance of the RSES in predicting delinquency and depression has been replicated in studies of large, national cohorts of adolescents by Rosenberg and Rosenberg (1978) and Rosenberg, Schooler and Schoenbach (1989). The model of delinquency causation using self-

esteem as a key, predictive variable has been replicated with Hong Kong adolescents (Leung & Lau, 1989), suggesting that the model has strong, cross-cultural validity.

The RSES was devised as a unitary scale, and American work has consistently found alpha values in excess of 0.85 for the scale. However, Kaplan and Pokorney (1976) found that while there was a strong general factor in the scale, rotation of factors did demonstrate a two-factor solution with positively worded items (e.g. "I take a positive attitude towards myself") loading on the first component, and negatively worded items (e.g. "I certainly feel useless at times") loading on the second. The two components were described by Kaplan and Pokorney (1976) as "defense of individual self-worth" and "self-derogation." Shahani, Dipboye and Phillips (1990) in a study of 1,762 U.S. adults confirmed this two-factor structure in the scale, but also argue that the scale can be regarded psychometrically as having a coherent, unified structure. Vallieres and Vallerand (1990) using confirmatory factor analysis through LISREL with data from Quebec students completing a French version of the RSES, also found that the RSES had a unified factor structure, with all items having high loadings on a general factor.

CANADIAN STUDIES OF HIGH SCHOOL POPULATIONS USING THE ROSENBERG SES

A computerized literature search indicated that over 1,000 American studies have used the Rosenberg SES with high school and junior college populations. Published Canadian studies using this scale, however, are remarkably few. The following studies are all those that can be located: Lazure and Persinger, 1992; Beales and Brook, 1990; Vallieres and Vallerand, 1990; Byrne, 1983 and 1990; Byrne and Shavelson, 1986 and 1987). A somewhat larger number of Canadian studies have studied older college student and adult populations.

The most comprehensive of the Canadian studies of Adolescents are those of Ontario high school populations (grades 9 to 13) carried out by Byrne and colleagues (1983, 1986, 1987, 1990). This work has explored, using complex statistical modelling techniques, the reliability of some measures of general self-esteem (including the Rosenberg SES), the relationship of these scales with measures of academic self-concept, and the degree to which the complex factor structure of several self-esteem and self-concept measures are comparable across sex groupings. Byrne (1983) showed that the RSES had adequate internal reliability, and test-retest correlation of 0.61 over a 7-month period in 929 Ontario high school students in grades 9 to 12. Byrne and Shavelson (1986, 1987) also used the RSES scale total in principal component analysis which included other measures of self-esteem. The only available Canadian study

which carried out a factor analysis of the scale *items* is that of Vallieres and Vallerand (1990), using a French-language version of the RSES.

BACKGROUND OF THE PRESENT STUDY

The measures reported in the present research were collected as part of a 1993 study of substance use by Alberta adolescents (Bertrand, Smith, Bolitho & Hornick, 1994). Stratified random sampling identified nine school districts with schools in the public and denominational sectors, representative of urban, small town and rural areas in all parts of the Province of Alberta, yielding a sample of 1,084 male and 1,024 female students. Besides the Rosenberg SES, students completed the McMaster measure of family relationships; a description of school climate, and personal victimization (physical and sexual) in school; and measures of personal adjustment. The adjustment scales were those with established reliability and validity in the Ontario Child Health Study (Sanford, Offord, Boyle & Pearce, 1992).

The measure of family relationships is the "general functioning subscale" from the McMaster family assessment device (Epstein, Baldwin & Bishop, 1983). This 12-item scale contains items such as "There are a lot of bad feelings in our family" and "In times of crisis we can turn to each other for support." This scale has been used in a number of previous studies to measure the health/pathology of families with regard to parenting styles, communication, parental affection, and cohesiveness. The alpha value for this scale in the Alberta sample was .90. The measure of school climate was specially devised for this study, and contains items such as "Teachers in my school care about students' work" and "There is a lot of fighting between students in or around the school." Scoring of some items was reversed, so that a high score on this scale indicates perception of a positive school environment; alpha for this scale is 0.78, indicating satisfactory internal reliability. The brief measures of physical and sexual harassment in school were specially devised for this study, and include items such as "Has someone slapped or hit you in anger?" and "Has someone touched the private parts of your body when you didn't want them to?"

Given the theoretical and substantive importance of the American work on the Rosenberg SES and the dearth of studies using this scale in Canada, we present the means, standard deviations and alpha reliabilities for the scale by age and sex groups in our Alberta high school samples. Principal component analysis has been employed in order to examine the structure and internal reliability of the scale. Correlation of the scale with measures of family relationships, and school environment have been used as cross-validators on the assumption that quality of family life and school environment are important antecedents of self-esteem (Coopersmith, 1967; Bagley, Verma, Mallick & Young, 1979).

TABLE 1
*General Factor of Rosenberg Self-Esteem Scale Items
 Within Age Groups: Males*

Scale Item*	General Factor (loadings of 1st unrotated factor)				
	12-19	18-19	16-17	14-15	12-13
1. Satisfied with self	.69	.71	.65	.69	.73
2. I'm no good at all	.67	.59	.65	.67	.72
3. Have good qualities	.65	.73	.63	.65	.64
4. I can do things as well as others	.59	.61	.58	.63	.50
5. I don't have much to be proud of	.71	.65	.70	.72	.72
6. I feel useless	.66	.63	.61	.68	.73
7. I am a person of worth	.55	.52	.62	.56	.48
8. I don't respect myself	.64	.50	.70	.60	.67
9. I'm a failure	.75	.73	.74	.74	.76
10. I have a positive self- attitude	.75	.73	.77	.76	.73
% of variance	44.7%	41.8%	44.7%	45.2%	45.6%
No. of respondents	1084	98	338	428	220
Scale mean	31.36	31.59	30.88	31.60	31.50
Standard deviation	5.13	4.65	5.14	5.14	5.36
Alpha	.86	.85	.90	.86	.85
% with very poor self- esteem (score < 21)	2.7%	1.0%	3.0%	2.1%	4.1%

* Scale items have been paraphrased and shortened. Since higher scores on total scale indicate better self-esteem, negatively worded items (2, 5, 6, 8, 9) are scored in a reverse direction. Minimum score on scale is 10, maximum is 40.

Research using various tests of self-esteem and self-evaluation have consistently shown that females are more likely to be self-critical than males (e.g. McDonald & McKinney, 1994). Rather than indicating poorer self-esteem, however, this may reflect a feminine response style of being less self-declaratory on the "powerful" aspects of self, placing more emphasis on interpersonal aspects of self-appraisal (Gilligan, 1982, 1990). We hypothesized, therefore, that females would have significantly lower self-esteem scores than males.

RESULTS

Principal component analysis for each age and sex group identified a powerful general factor, accounting for between 40 and 50 percent of the

TABLE 2
*General Factor of Rosenberg Self-Esteem Scale Items
 Within Age Groups: Females*

Scale Item*	General Factor (loadings of 1st unrotated factor)				
	12-19	18-19	16-17	14-15	12-13
1. Satisfied with self	.76	.66	.78	.75	.80
2. I'm no good at all	.64	.70	.59	.67	.60
3. Have good qualities	.73	.73	.75	.69	.77
4. I can do things as well as others	.65	.60	.63	.67	.69
5. I don't have much to be proud of	.74	.72	.72	.75	.72
6. I feel useless at times	.63	.65	.60	.65	.64
7. I am a person of worth	.67	.54	.73	.67	.61
8. I don't respect myself	.66	.56	.67	.65	.69
9. I'm a failure	.77	.72	.77	.75	.81
10. I have a positive self- attitude	.80	.78	.79	.80	.79
% of variance	50.2%	44.6%	51.1%	50.0%	51.9%
No. of students	1024	69	322	410	223
Scale mean	28.32	29.04	28.04	28.00	29.08
Standard deviation	5.49	5.11	5.42	5.48	5.81
Alpha	.89	.87	.89	.88	.89
% with very poor self- esteem (score < 21)	7.5%	4.3%	7.1%	7.6%	8.5%

* Scale items have been paraphrased and shortened. Since higher scores on total scale indicate better self-esteem, negatively worded items (2, 5, 6, 8, 9) are scored in a reverse direction. Minimum score on scale is 10, maximum is 40.

total variance, and a second factor accounting for some 12 percent of variance in scale items. No other principal component had an Eigenvalue greater than unity. Varimax rotation of the scale items does identify the two factors described by Kaplan and Pokorny (1969); however, given the strength of the general factor we present loadings for this unrotated, general factor in Tables 1 and 2. Alpha values for the RSES range from 0.85 to 0.90. This is explicable in light of the fact that RSES was constructed as a unidimensional scale. Mean values of the SES are similar across the male age groupings.

There are, however, some significant variations in mean RSES scores across the female age groups, with those aged 14 to 17 having significantly lower self-esteem than those aged 12 to 13, and those aged 18 to 19

TABLE 3
Correlations of Rosenberg Self-Esteem Scale in Males

<i>Variable</i>	<i>18-19</i>	<i>16-17</i>	<i>14-15</i>	<i>12-13</i>
<i>Ontario CHS Scales</i>				
Somatic problems	-.29	-.44	-.42	-.43
Hyperactivity	-.39	-.27	-.26	-.40
Conduct disorder	-.26	-.29	-.20	-.26
Emotional disorder	-.60	-.58	-.50	-.54
<i>Other Scales</i>				
McMaster family relationships scale	-.49	-.38	-.49	-.47
Positive school climate scale	.32	.21	(.09)	.32
Physical victimization in school	-.28	-.12*	-.19	-.32
Sexual victimization in school	(-.07)	(-.01)	-.12*	(-.08)
No. of respondents	98	338	428	220

(Correlations in brackets, not significant) * $p < .05 > .01$. All other correlations $p < .01$.

TABLE 4
Correlations of Rosenberg Self-Esteem Scale in Females

<i>Variable</i>	<i>18-19</i>	<i>16-17</i>	<i>14-15</i>	<i>12-13</i>
<i>Ontario CHS Scales</i>				
Somatic problems	-.37	-.36	-.44	-.49
Hyperactivity	(-.09)	-.37	-.41	-.34
Conduct disorder	(-.20)	-.27	-.38	-.34
Emotional disorder	-.58	-.65	-.64	-.66
<i>Other Scales</i>				
McMaster family relationships scale	-.51	-.45	-.54	-.48
Positive school climate scale	(.12)	.18	.31	.45
Physical victimization in school	(-.04)	-.20	-.22	-.35
Sexual victimization in school	(.03)	-.21	-.17	-.27
No. of respondents	69	322	410	223

(Correlations in brackets, not significant) * $p < .05 > .01$. All other correlations $p < .01$.

(t-tests, $p < .05$). The reasons for these variations are not clear. Within each age group females have significantly lower self-esteem than males of similar age (all t-tests $p < .01$). Females were at least twice as likely as males to have "very poor self-esteem": this indicated responses of "agree" or

“strongly agree” in a direction implying low self-esteem on seven or more of the items in the 10-item scale.

Tables 3 and 4 present correlations giving evidence of construct validity for the RSES. For both males and females of all ages, good self-esteem is negatively correlated with the four sub-scales of emotional and behaviour disorders (somatic problems, conduct disorder, and emotional disorder), with one exception, that of female students aged 18 and 19 for whom hyperactivity and conduct disorder did not correlate significantly with the RSES. For all groups the emotional disorder scale has correlations in excess of -0.50 ($p < .001$). The emotional disorder scale includes items measuring depression, anxiety and suicidal feelings.

The McMaster measure of family relationships also indicates evidence of construct validity for the RSES: correlations (all $p < .001$) range from $-.38$ to $-.51$ across the age and sex groups. Perceptions of positive school climate provide less consistent evidence of construct validity; nevertheless, in six of the eight age and sex groups school climate is significantly related to RSES ($p < .001$ in the six groups). For boys, physical victimization is linked to poor self-esteem, while for girls both sexual and physical victimization is linked to poor self-esteem, with the exception of students aged 18 and 19.

DISCUSSION AND CONCLUSION

These findings indicate that the RSES is a reliable and potentially valid scale for use with Canadian high school students of all ages. The RSES means are close to those obtained by Byrne (1990) with older high school students in Ontario; similar to those obtained by Vallieres and Vallerand (1990) in Quebec, using a French-language version of the RSES; and similar to those obtained in American studies of high school students (McDonald & McKinney, 1994). Like American researchers, we found that males have higher scores on the RSES than females, in each of the four age-group comparisons. We hesitate, however, before concluding that females have “poorer” self-esteem than males, since the response style of females to self-esteem questions may be less egoistic, and more self-deprecating in ways which imply that relationship styles rather than self-aggrandizement are more important¹. What is salient is that some females have very poor self-esteem *relative to* other females. The apparent decline in self-esteem in females in mid-adolescence in our Alberta sample is interesting, and possible reasons for this (such as changes in sex role identification, or psychosocial development) should be explored in further research. It is of note that the finding of declining self-esteem in females in the middle years of high school has also been reported by Abernathy, Massad and Romano-Dwyer (1995) in a Toronto study of several thousand students in grades 6 through 9, using the self-esteem scale developed for the Canada Health Attitudes and Behaviour Survey.

Abernathy et al. (1995) imply that this may be linked to the increase in the proportion of females who begin to smoke in the middle years of high school: females with low self-esteem in grades 6 to 8 were about three times as likely to smoke as those with high self-esteem. However, other psychosocial processes may underlie both beginning to smoke, and developing poorer self-esteem in girls in mid-adolescence.

Our findings have implications for school counsellors, in terms of the models proposed in our previous research (Bagley, 1976; Bagley et al., 1979; Bagley, 1992). In an English study, we conducted a controlled intervention, randomly allocating high school students who indicated both suicidal ideation and devastated self-esteem (scores in the lowest 5% compared with scores on the Coopersmith scale scores for the entire cohort of 14 and 15-year olds). Intensive social interventions (Rogerian counselling; tuition for those with poor scholastic achievement; task-linkage of sociometrically isolated students with highly popular students; and social work assistance for families of students experiencing poverty, family disruption and divorce) was reflected a year later in significant improvements in self-esteem, and eclipse of suicidal feelings in focus students, in comparison with controls.

In a partial replication of this British work in Alberta, students completed a measure of stressful events, self-esteem, depression and suicidal ideas and behaviour (Bagley, 1992). Results indicated that the strongest predictors of poor self-esteem, depression and suicidality were family physical, sexual and emotional abuse, family disruption, and parental alcoholism. Students were encouraged to contact school counsellors, and a significant number did so following the anonymous completion of the questionnaires. This design (ensuring student anonymity) did not permit a controlled evaluation of counselling. However, the results of that study, and the data presented in the present study strongly support the idea that in every high school there is a group of very distressed students, with devastated self-esteem and various psychological problems, who might benefit from counselling.

Note

¹ Males who carry their "macho" sense of self into adulthood may fail, in Maslow's (1954) term, to self-actualize. The macho male is aggressive and competitive, rejecting intimacy and bonding relationships, seeking to express power over women, avoiding intimate bonds with both men and women. Women by contrast may experience a more complete self-actualization through intimate bonds of social support with the sisterhood of women (Bagley & Young, 1990). Excessively high levels of self-esteem in males may in some respects represent the narcissism of "false self-esteem" which Hwang (1995) categorizes as one of the factors in "the failure of American schools." As counsellors attempting to enhance self-esteem in adolescents we should avoid strategies which might result in what Hauser (1971) describes as "identity foreclosure." All counselling should attempt not only to enhance self-esteem, but also to aid self-actualization (Bagley & Young, 1990).

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