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## Psychosocial Predictors of Taiwanese Secondary Students' Self-Esteem

*This study investigated the relationships between psychosocial factors and self-esteem for 1,672 Taiwanese senior high school students (779 boys, 893 girls). Students from Kaohsiung City, Taiwan, completed a Chinese version of the Secondary Student Questionnaire (SSQ), which measures self-esteem, depression, anxiety, stereotyped thinking, personality, and satisfaction with nonacademic performance at school. Students were categorized into four groups: (a) high academic achievement/low self-esteem (HALS); (b) high academic achievement/high self-esteem (HAHS); (c) low academic achievement/low-self esteem (LALS); and (d) low academic achievement/high self-esteem (LAHS). Results showed that two variables, personality/satisfaction and anxiety, were predictive of self-esteem for all four groups. Depression was predictive for all groups except low achievement and high self-esteem (LAHS). Research recommendations and educational implications are discussed.*

*Cette étude porte sur les liens entre des facteurs psychosociaux et l'estime de soi de 1 672 élèves taiwanais du secondaire (779 garçons, 893 filles). Des élèves de Kaohsiung City, Taiwan ont complété une version chinoise du Secondary Student Questionnaire (SSQ) qui mesure l'estime de soi, la dépression, l'anxiété, les attitudes stéréotypées, le caractère et la satisfaction quant à la performance nonacadémique à l'école. Quatre catégories d'élèves ont été créées : (a) performance académique élevée/estime de soi pauvre (HALS) ; (b) performance académique élevée/estime de soi élevée (HAHS) ; (c) performance académique pauvre/estime de soi pauvre (LALS) ; et performance académique pauvre/estime de soi élevée (LAHS). Les résultats indiquent que deux variables, caractère/satisfaction et anxiété, étaient prédictives de l'estime de soi pour les quatre groupes. La dépression était une variable prédictive chez tous les élèves sauf pour le groupe caractérisé par une performance académique pauvre/estime de soi élevée. Nous discutons de recommandations de recherche et d'implications pédagogiques.*

Self-esteem has been variously defined as the subjective evaluation of one's self-worth (Baumeister, 1998; Pervin, 2003), as an individual's sense of self-respect (Sheldon, Elliot, Kim, & Kasser, 2001), and as a personal judgment of self-worth expressed in an individual's attitudes about himself or herself (Coopersmith, 1967). Individuals with high self-esteem have strong self-respect

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and consider themselves worthy whereas individuals with low self-esteem report self-rejection, self-dissatisfaction, and self-contempt (Pervin). Research has demonstrated that people regard self-esteem as one of their most important needs with respect to life satisfaction (Sheldon et al.).

Self-esteem is influenced by successes and failures in areas that are of central importance to an individual's self-worth (Crocker & Wolfe, 2001; Harter, 1990). The greater the discrepancy between adequacy in a given domain and the importance of that domain, the greater is the negative effect on self-esteem.

Before age 7 children tend to perceive themselves in global terms; for example, if they have strong self-esteem, they assume that they are good in all performance areas (Harter, 1990; Woolfolk, 1995). However, as children become more mature, their self-views become more differentiated, and their self-esteem tends to be more context-specific (Harter). The role of academic performance in one's self-esteem increases in importance from early childhood through adolescence.

Self-esteem development also is affected by a child's relationships with others. Numerous studies demonstrate that student self-esteem is strongly affected by family relationships (Baumrind, 1991; Chiu, 1989; Coopersmith, 1967, 1981; Ho, Lempers, & Clark-Lempers, 1995; Wu & Smith, 1997) and by school factors that include relationships with peers and teachers (Coopersmith, 1967; Corning, 2002; Marsh, 1987; Moradi & Subich, 2004).

Students with high self-esteem are more likely to be successful academically (Marsh, 1990), have more favorable attitudes toward school, display more positive behavior in the classroom, and are more popular with other students (Cauley & Tyler, 1989; Reynolds, 1980). High self-esteem has also been correlated positively with creativity, resistance to group pressure, willingness to express unpopular opinions, and effective communication with parents (Adair, 1984). Furthermore, self-esteem is a fairly strong predictor of mental health in adolescents and adults (Coopersmith, 1967; Corning, 2002; Higgins, 1991; Hong, McCarthy Veach, & Lawrenz, 2002, 2003; Rosenberg, 1985). For example, Corning found that self-esteem moderated the link between perceived gender discrimination and mental health such that young women with lower levels of self-esteem evidenced a stronger relation between perceived gender inequity and depression than did those with high levels of self-esteem.

Many studies have demonstrated significant positive relationships between academic achievement and self-esteem (Daniel & King, 1995; Jimerson, Egeland, & Teo, 1999; Rothenberg, 1995; Sharar, Heinrich, Blatt, Ryann, & Little, 2003; Teo, Carlson, & Mathieu, 1996). For example, Daniel and King studied 208 high school students in the United States and found positive relationships between self-esteem and academic achievement, academic competence, familial acceptance, and personal security. Sharar et al. studied 860 middle school and grade 9 students and found that self-criticism, a maladaptive sense of self, significantly predicted less positive life events including academics. Some longitudinal research has demonstrated a positive association between self-esteem and later measures of academic achievement for high-risk children (Jimerson et al.; Teo et al.).

The question of the predominant direction of causal influence between self-esteem and academic, intrapersonal, and interpersonal variables is both theoretically important and empirically controversial. The correlational nature of most of this research precludes conclusions about causality. Despite this limitation, earlier research illustrates the importance of self-esteem as a factor in student functioning.

Currently in Taiwan education for elementary and junior high school-aged children is compulsory, which means that a free public education is provided for nine years (six years in elementary and three years in junior high school). After graduating from junior high schools, students are required to take either a senior high school entrance examination or a standard aptitude test. Their scores on these examinations determine the type of senior high school in which they may enroll. Entrance into high academic-level schools is extremely competitive. Only students who score in the top 10% on the exams are eligible to enroll in these schools; those who score above the 50% level are eligible to enroll in moderate academic-level schools; and those who score below the 50% level are eligible to enroll in low academic-level schools. Students in low academic schools generally select a vocational major for their senior high school study.

These annual senior high school entrance examinations constitute a major challenge for junior and senior high school students (Wu & Smith, 1997). Chen (1981) contends that unless children score in the top 20%, they generally perceive themselves as failures (i.e., they have low self-esteem). Although his contentions are consistent with earlier research that indicates a positive relationship between self-esteem and school performance, more research with Taiwanese samples is needed.

Accordingly, one purpose of the present study was to identify predictors of self-esteem for four groups of Taiwanese high school students grouped according to varying levels of achievement and self-esteem: (a) those who have outstanding academic achievement and report low self-esteem (HALS); (b) those who despite their poor academic achievement report high self-esteem (LAHS); (c) those who have outstanding academic achievement and also report high self-esteem (HAHS); and (d) those who have poor academic achievement and also report low self-esteem (LALS). Students at the secondary school level were targeted in the present study because we believe that there are still numerous opportunities for schools and families to develop strategies for strengthening their self-esteem.

Consistent with self-esteem theory and prior research, there probably would be a number of students with both high achievement and high self-esteem (HAHS) and students with both low achievement and low self-esteem (LALS). However, because Taiwan's high school entrance exams (and subsequent college entrance examinations) are highly competitive, there also may be many students with high achievement and low self-esteem (HALS), and these may be at risk for poor psychosocial functioning. We also thought there would be students who despite being low academic achievers would report high self-esteem (LAHS). Possibly such students possess personality and other psychosocial characteristics that act as buffers from the effects of low academic achievement.

Some authors have concluded that one's gender-role perspective moderates the relationship between academic achievement and self-esteem (Backes, 1994; Rothenberg, 1995). For example, the middle grades can be a time of significant decline in self-esteem and academic achievement for girls. Therefore, another purpose of this study was to investigate possible gender differences in student anxiety, depression, stereotyped thinking, and personality across the four achievement/esteem groups (HALS, LAHS, HAHS, and LALS).

There were five major research questions: (a) What factors are significant predictors for a subset of students with high academic achievement and low self-esteem (HALS)? (b) What factors are significant predictors for a subset of students with low academic achievement and high self-esteem (LAHS)? (c) What factors are significant predictors for a subset of students with high academic achievement and high self-esteem (HAHS)? (d) What factors are significant predictors for a subset of students with low academic achievement and low self-esteem (LALS)? and (e) Are there gender differences in student anxiety, depression, stereotyped thinking, and personality scores across the four achievement/esteem groups?

### *Methods*

#### *Setting*

This study was conducted in 10 senior high schools located in one of four districts (east, west, north, south) in Kaohsiung City in southern Taiwan. Taiwan is an island country located in the Far East. It is separated from Mainland China by the Strait of Taiwan and, therefore, Taiwan's culture is deeply influenced by ancient China. Kaohsiung is a newly developed industrial and technical city that includes a large geographic area. Most of its residents moved to Kaohsiung from other cities in Taiwan. Schools in Southern Taiwan were selected because of their proximity to the primary investigator's place of employment and because of their representativeness of the total student population in Taiwan.

#### *Participants and Procedures*

The sample consisted of 1,672 students (813 grade 10 students, and 859 grade 11 students) from 10 senior high schools. A stratified random sampling strategy was used to select high schools at three academic levels: schools with high academic achievement ( $n=2$ ), schools with moderate academic achievement ( $n=4$ ), and schools with low academic achievement ( $n=4$ ). Because there are only two high academic-achievement schools in Kaohsiung city, both were included. There were 779 boys and 893 girls. The boys had a mean age of 16.8 ( $SD=.71$ ), and the girls had a mean age of 16.7 ( $SD=.67$ ). Grade point averages (GPA) for boys ranged from  $\geq 3.5$  (15.3%), to 2.0–3.4 (53.4%), to 1.5–1.9 (31.1%). Girls' GPAs ranged from  $\geq 3.5$  (22.2%), to 2.0–3.4 (58.6%), to 1.5–1.9 (19.4%).

The primary researcher and counselors at each school went to each of the classrooms to explain the significance of the survey and to encourage participants to respond as thoroughly as possible to the Secondary Students' Questionnaire (SSQ). Only 52 students declined to participate, which resulted in a 97% participation rate. These 52 students were allowed to complete their personal work in their classrooms during data collection. In addition, the primary researcher conducted individual 30-minute follow-up interviews with

six students (2 boys, 4 girls) to verify their SSQ responses. Two students from each academic level school (i.e., high-, moderate-, and low-achievement schools) were randomly selected and interviewed.

The first author assumed major responsibility for administering the questionnaire and conducting the interviews. Development and validation of the instruments, construction of the interview questions, and data analyses were completed collaboratively by all three of us.

#### *Instrumentation*

*Secondary Student Questionnaire (SSQ)*. As part of a larger study (Hong, 2002), we developed the SSQ, a 114-item questionnaire in six sections. The first section elicits demographic (age, gender, academic achievement [defined as GPA]), parents' educational level, the degree level students hope to attain, the degree level their parents hope they will attain, monthly family income, parents' occupation (e.g., housekeeper, farmer, worker, lawyer, doctor), and parenting practices: (a) permissive parenting, defined as warm, supportive, thoughtful; (b) authoritarian/punitive parenting, defined as strict, rigid; and (c) unresponsive to children's behaviors.

The second section of the SSQ is a measure of student self-esteem containing 58 items from the Coopersmith Self-Esteem Inventory School Form (CSEI, Coopersmith, 1967). The CSEI is a well-researched, well-documented, and widely used measure of self-esteem (Adair, 1984). Sample items are: *I always do the right things; and I'm pretty sure of myself; and My parents and I have a lot of fun together*. Each item is answered on a 2-point scale (1=Like me; 2=Unlike me). Responses are summed, with negative items being reverse-scored, for example, *I spend a lot of time daydreaming*. Higher scores indicate more favorable self-esteem.

Sections three and four of the SSQ consist of the short version of the Hopkins Symptom Checklist (HSCL-25, Derogatis, Lopman, Rickels, Uhlenhuth, & Covi, 1974), which measures anxiety (10 items) and depression (15 items). The HSCL-25 has good demonstrated internal consistency (Cronbach's alpha of 0.84 for anxiety and 0.88 for depression), and test-retest reliability coefficients over a one-week interval were 0.75 for the anxiety scale and 0.81 for the depression scale (Derogatis et al.). Sample anxiety items are: *Suddenly scared for no reason, Feeling fearful, Nervousness or shakiness inside*. Sample depression items are: *Feeling low in energy, Slowed down, Crying easily, Feeling hopeless about the future*. Items are responded to on a 4-point, Likert-type scale where respondents indicate the extent to which a given statement characterizes themselves (0 = *Not at all*, 1 = *A little*, 2 = *Quite a bit*, and 3 = *Extremely*). Scores for each scale are obtained by summing responses for each item, with higher scores indicating greater anxiety and depression.

The fifth section of the SSQ is author-generated and contains 15 items that assess students' stereotyped thinking about gender differences and similarities. Sample items are: *Logical reasoning is better in ...;* and *When children grow up, who needs to go to college in order to take care of the family?* Items are rated on a 3-point Likert-type scale (1=Boys, 2=Girls, 3=Both or Neither). Higher scores indicate a lower degree of stereotypic thinking. Thus a response of *Both or Neither* indicates the lowest stereotypic thinking.

The sixth section of the SSQ consists of five author-generated items designed broadly to assess five personality characteristics associated with the Big Five factor of agreeableness (i.e., passivity, cooperativeness, self-direction, independence, and self-confidence, Laursen, Pilkkinen, & Adams, 2002) and one item that assesses satisfaction with nonacademic performance at school. Personality items are responded to on a 4-point, Likert-type scale (1 = *Always like me*, 4 = *Always unlike me*). A sample item is: *I am a cooperative person*. Higher scores indicate greater agreeableness. The satisfaction item is *How satisfied are you with your nonacademic performance at school?* This item is responded to on a 4-point, Likert-type scale (1 = *Very dissatisfied*, 4 = *Very satisfied*).

The first author translated the SSQ into Chinese. In order to verify that the translation was accurate and clear, both the initial draft of the Chinese version and the original English version were reviewed by two educational psychology faculty members and one English professor who were fluent in Chinese and English. A second English professor translated the Chinese version back into English. Revisions were made to the SSQ based on their feedback.

The SSQ was piloted with 79 Taiwanese senior high students (53 boys, 26 girls; 36 sophomores and 43 juniors) from one moderate academic-level school in Kaohsiung City. Their responses were used to determine if the Chinese version of the SSQ items functioned like the English version. Student feedback regarding the ambiguity of questions was taken into consideration in preparing the final version of the SSQ for use in the study.

### Results

#### *Validation of the SSQ*

In order to determine whether students' paper-and-pencil answers were consistent with their perceptions, individual interviews with two students from each of three levels of academic schools (high, moderate, and low) were conducted. The interviewer asked 15 questions from the SSQ: five self-esteem items, two anxiety items, three depression items, three stereotypic thinking items, and two personality and satisfaction with nonacademic performance items. Students' answers to 14 of these questions were consistent with their paper-and-pencil responses, indicating 93% agreement. Therefore, it was assumed that paper-and-pencil answers were consistent with actual perceptions.

#### *Significant Predictors of Self-Esteem for HALS, LAHS, HAHS, and LALS Groups*

The mean self-esteem score for the total sample was 78, and it was used as a cutoff for high and low self-esteem students. Students who had scores >78 were categorized as high self-esteem, whereas students who had scores ≤78 were categorized as low self-esteem. Students who had GPAs consisting of mostly As or about half As and half Bs were categorized as having high academic achievement, whereas students who had GPAs of half Cs and half Ds, or mostly below Ds were categorized as having low academic achievement. One hundred, thirteen students (41 boys, 72 girls) had high achievement and low self-esteem (HALS); 139 students (87 boys, 52 girls) had low achievement and high self-esteem (LAHS); 185 students (73 boys, 112 girls) had high achievement and high self-esteem (HAHS); and 255 students (142 boys, 113 girls) had low achievement and low self-esteem (LALS).

There were 16 possible predictor variables (i.e., age, gender, academic school level, GPA, mother's education, father's education, students' expected degree level, parental expectation for child's degree level, monthly income, mother's occupation, father's occupation, parenting practices, anxiety, depression, stereotyped thinking, and personality/satisfaction with nonacademic performance at school). Of these, eight variables were selected for a stepwise regression analysis. Age was excluded because of the lack of variability in senior high students' ages. Seven variables measured various aspects of socioeconomic status (i.e., SES, mother's education, father's education, students' expected degree levels, parental expectation for children's degree level, monthly income, and mother's and father's occupations). Zero-order correlations of these variables with each other and with self-esteem were calculated and used to determine the best SES variables to include in the regression. Mother's occupation and monthly income were selected for inclusion. GPA was excluded from the regression model because it was used to classify students into the four achievement/esteem groups. Thus the variables entered into the regression analysis were gender, monthly income, mother's occupation, parenting practices, anxiety, depression, stereotyped thinking, and personality/satisfaction with nonacademic performance at school.

Separate regression analyses were conducted for each of the four achievement/esteem groups. The results of these analyses are reported below.

*HALS students' self-esteem.* Table 1 presents a summary of the stepwise regression results. Three variables were significant predictors of HALS students' self-esteem: depression, anxiety, and personality/satisfaction with nonacademic performance at school. The strongest predictor was depression, which accounted for 17.4% of the variance, followed by anxiety, which explained 11.7% of the variance, and personality and satisfaction with nonacademic performance at school, which accounted for an additional 6.2% of the variance. Together these three significant predictors accounted for 35.3% of the variance in HALS students' self-esteem.

*LAHS students' self-esteem.* A summary of the stepwise regression results is presented in Table 2. Three variables were significant predictors for LAHS student self-esteem: parenting practices, personality/satisfaction with nonacademic performance at school, and anxiety. The strongest significant predic-

**Table 1**  
**Summary of Stepwise Regression Analysis for High Academic Achievement/Low Self-Esteem (HALS) Students' Self-Esteem Scores (n=113)**

<i>Model</i>	<i>Multiple R</i>	<i>R<sup>2</sup></i>	<i>R<sup>2</sup> Change</i>	<i>F Change</i>	<i>Beta</i>	<i>p</i>
1	.341 <sup>a</sup>	.117	.117	8.57	.03	.005**
2	.539 <sup>b</sup>	.290	.174	15.66	-.53	.000***
3	.594 <sup>c</sup>	.353	.062	6.08	-.25	.016*

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ .

<sup>a</sup>Predictor: (constant) anxiety;

<sup>b</sup>Predictors: (constant) anxiety, depression;

<sup>c</sup>Predictors: (constant) anxiety, depression, personality/satisfaction with nonacademic performance at school.

Table 2  
Summary of Stepwise Regression Analysis for Low Achievement/High Self-Esteem (LAHS) Students' Self-Esteem Scores ( $n=139$ )

Model	Multiple R	R <sup>2</sup>	F <sup>2</sup> Change	F Change	Beta	p
1	.369 <sup>a</sup>	.136	.136	12.74	-.39	.001***
2	.431 <sup>b</sup>	.186	.050	4.94	-.19	.029*
3	.541 <sup>c</sup>	.293	.107	11.92	-.33	.001***

Note. \* $p < .05$ ; \*\*\* $p < .001$ ;

<sup>a</sup>Predictor: (constant) parenting practices;

<sup>b</sup>Predictors: (constant) parenting practices, anxiety;

<sup>c</sup>Predictors: (constant) parenting practices, anxiety, personality/satisfaction with nonacademic performance at school.

tor, parenting practices, explained 13.6% of the variance; personality/ satisfaction with nonacademic performance at school explained 10.7%; and anxiety explained another 5.0%. Together these three predictors accounted for 29.3% of the variance in LAHS students' self-esteem scores.

*HAHS students' self-esteem.* Table 3 presents a summary of the stepwise regression results. Four variables were significant predictors of HAHS students' self-esteem: personality/satisfaction with nonacademic performance at school, depression, anxiety, and parenting practice. The strongest predictor, personality/satisfaction, explained 13.0% of the variance, depression explained 9.1%, anxiety explained 5.5%, and parenting practices explained an additional 3.3% of the variance. Together these four significant predictors accounted for 30.9% of the variance in HAHS students' self-esteem.

*LALS students' self-esteem.* A summary of the stepwise regression results is presented in Table 4. Three variables were significant predictors of LALS students' self-esteem: depression, personality/satisfaction with nonacademic performance at school, and anxiety. The strongest significant predictor, depres-

Table 3  
Summary of Stepwise Regression Analysis for High Academic Achievement/High Self-Esteem (HAHS) Students' Self-Esteem Scores ( $n=185$ )

Model	Multiple R	R <sup>2</sup>	F <sup>2</sup> Change	F Change	Beta	p
1	.183 <sup>a</sup>	.033	.033	3.95	-.13	.049*
2	.298 <sup>b</sup>	.089	.055	6.84	-.04	.010**
3	.424 <sup>c</sup>	.180	.091	12.43	-.27	.001***
4	.556 <sup>d</sup>	.309	.130	20.82	-.37	.000***

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ;

<sup>a</sup>Predictor: (constant) parenting practices;

<sup>b</sup>Predictors: (constant) parenting practices, anxiety;

<sup>c</sup>Predictors: (constant) parenting practices, anxiety, depression;

<sup>d</sup>Predictors: (constant) parenting practices, anxiety, depression, personality/satisfaction with nonacademic performance at school.

**Table 4**  
**Summary of Stepwise Regression Analysis for Low Academic Achievement/Low Self-Esteem (LALS) Students' Self-Esteem Scores (n=255)**

<i>Model</i>	<i>Multiple R</i>	<i>R<sup>2</sup></i>	<i>R<sup>2</sup> Change</i>	<i>F Change</i>	<i>Beta</i>	<i>p</i>
1	.299 <sup>a</sup>	.090	.090	14.77	.010	.000***
2	.492 <sup>b</sup>	.242	.152	29.96	-.44	.000***
3	.585 <sup>c</sup>	.342	.100	22.52	-.32	.000***

Note. \*\*\**p*<.001;

<sup>a</sup>Predictor: (constant) anxiety;

<sup>b</sup>Predictors: (constant) anxiety, depression;

<sup>c</sup>Predictors: (constant) anxiety, depression, personality/satisfaction with nonacademic performance at school.

sion, explained 15.2% of the variance, personality /satisfaction explained 10.0% of the variance, and anxiety explained another 9.0% of the variance. Together these three predictors accounted for 34.2% of the variance in LALS students' self-esteem scores.

*Summary of Significant Predictors*

Table 5 presents a summary of the amount of variance accounted for by the significant predictor variables for each of the four regressions HALS, LAHS, HAHS, and LALS. Table 5 highlights the consistent predictive power of anxiety and personality /satisfaction with nonacademic performance at school and the differential predictive power of depression and parenting practices. The regression for the HAHS students contained all four variables as significant predictors. The HALS and LALS regressions had the same three significant predictors (personality/satisfaction, anxiety and depression). The LAHS regression yielded two of the same significant predictors (personality/satisfac-

**Table 5**  
**Comparisons of Percentage of Variance Accounted for in Regression Analysis for Explained Variance for HALS, LAHS, HAHS, and LALS Students' Self-Esteem Scores**

<i>Significant Predictors</i>	<i>HALS<sup>b</sup></i> <i>n=113</i>	<i>LAHS<sup>c</sup></i> <i>n=139</i>	<i>HAHS<sup>d</sup></i> <i>n=188</i>	<i>LALS<sup>e</sup></i> <i>n=256</i>
Personality/Satisfaction	6.2% <sup>a</sup>	10.7% <sup>a</sup>	13.0% <sup>a</sup>	10.0% <sup>a</sup>
Anxiety	11.7%	5.0%	5.5%	9.0%
Depression	17.4%	—	9.1%	15.2%
Parenting Practices	—	13.6%	3.3%	—
<b>Total Variance</b>	<b>35.3%</b>	<b>29.3%</b>	<b>30.9%</b>	<b>34.2%</b>

Note. <sup>a</sup> R Square Change;

<sup>b</sup> Students who had high GPA and low self-esteem;

<sup>c</sup> Students who had low GPA and high self-esteem;

<sup>d</sup> Students who had high GPA and high self-esteem;

<sup>e</sup> Students who had low GPA and low self-esteem.

**Table 6**  
**Summary of Significant Gender Differences in Anxiety, Depression, Stereotyped Thinking, and Personality/Satisfaction Among Total Students**

<i>Dependent Variables</i>	<i>Gender</i>	<i>N</i>	$\bar{x}$	<i>SD</i>	<i>t</i>	<i>p</i>
Depression	Boy	768	12.13	7.75	-7.34	.000***
	Girl	868	14.90	7.50		
Anxiety	Boy	760	7.99	5.37	-7.11	.000***
	Girl	866	9.92	5.56		
Stereotyped Thinking	Boy	768	21.23	5.52	-9.20	.000***
	Girl	871	23.61	4.873		
Personality/Satisfaction	Boy	774	13.54	2.76	2.59	.01**
	Girl	877	13.17	3.02		

Note. \*\*  $p < .01$ ; \*\*\*  $p < .001$ .

tion and anxiety), but also yielded parenting practices. There are also differences in the percentages of variance accounted for by anxiety (high for HALS and low for LAHS) and personality/satisfaction with nonacademic performance at school (high for HAHS and low for HALS).

#### *Gender Differences Among the Four Groups of Students*

Two types of analyses were conducted in order to examine gender differences among the total sample and four student groups for anxiety, depression, stereotyped thinking, and personality scores. *T*-tests were conducted between boys and girls in each group and for the entire group of students. In addition, multiple analyses of variance (MANOVA) and Bonferroni post hoc comparisons were conducted across groups by variable. Summaries of the significant *t*-test results are presented in Tables 6 and 7, which show a number of significances due to gender. Across the sample, girls reported greater anxiety and depression than boys, whereas boys reported significantly higher stereotyped thinking and personality/satisfaction. Girls reported significantly greater depression in all four achievement/esteem groups and greater anxiety in two groups (LAHS, LALS). Boys reported significantly greater stereotyped thinking in three groups (LAHS, HAHS, and LALS) and significantly higher personality/satisfaction in all four groups. The data presented in Table 8 show that total scores of anxiety, depression, and personality are significantly different among the four groups. All Bonferroni post hoc multiple comparisons with groups for student anxiety, depression, and personality/satisfaction were significant at .000.

#### *Discussion*

This study investigated psychosocial variables that predict self-esteem in a sample of 1,672 Taiwanese senior high school students. Consistent with earlier research that primarily studied Western samples, the present findings indicate

**Table 7**  
**Summary of Significant Gender Differences in Anxiety, Depression,**  
**Stereotyped Thinking and Personality/ Satisfaction Across Four**  
**Achievement/Esteem Groups**

<i>Groups</i>	<i>Dependent Variables</i>	<i>Gender</i>	<i>n</i>	$\bar{x}$	<i>SD</i>	<i>t</i>	<i>p</i>
HALS <sup>a</sup>	Depression	Boy	40	14.15	8.75	-3.59	.001***
		Girl	71	19.77	7.43		
LAHS <sup>b</sup>	Anxiety	Boy	86	6.10	4.59	-2.59	.011*
		Girl	51	8.35	5.41		
	Depression	Boy	83	7.71	5.69	-4.24	.000***
		Girl	51	12.08	5.94		
	Stereotyped Thinking	Boy	86	31.52	5.91	-3.85	.000***
		Girl	51	35.63	6.23		
HAHS <sup>c</sup>	Depression	Boy	73	8.62	5.31	-2.18	.031*
		Girl	108	10.39	5.41		
	Stereotyped Thinking	Boy	71	31.44	5.71	-3.22	.002**
		Girl	106	34.13	5.29		
LA LS <sup>d</sup>	Anxiety	Boy	139	9.36	5.55	-3.00	.003**
		Girl	111	11.51	5.76		
	Depression	Boy	140	16.15	7.50	-2.73	.007**
		Girl	109	18.72	7.26		
	Stereotyped Thinking	Boy	138	31.56	5.87	-3.48	.001***
		Girl	112	34.01	5.10		

Note. \* $p < .05$ ; \*\* $p < .01$ ; \*\*\* $p < .001$ ;

<sup>a</sup>Students who had high GPA and low self-esteem;

<sup>b</sup>Students who had low GPA & high self-esteem;

<sup>c</sup>Students who had high GPA and high self-esteem;

<sup>d</sup>Students who had low GPA and low self-esteem.

that self-esteem is significantly related to depression, anxiety, personality and satisfaction with nonacademic performance, parenting practices, and GPA. The data suggest that students with high self-esteem tend to have low levels of depression and anxiety, to be more agreeable/cooperative and to report greater satisfaction with their nonacademic performance, to come from homes with more permissive parenting practices, and to have higher GPAs. Conversely, the profile of a student with low self-esteem suggests an individual who is depressed and anxious, less agreeable/cooperative, less satisfied with non-academic performance, comes from a home with more authoritarian/punitive parenting, and has a lower GPA.

Table 8  
The Results of MANOVA Across Four Groups (HALS, LAHS, HAHS,  
and LALS)

<i>Dependent Variables</i>	<i>SV</i>	<i>SS</i>	<i>df</i>	<i>MS</i>	<i>F</i>	<i>Sig.</i>
Anxiety	Between groups	2,423.446	4	605.861	20.568	.000***
	Within groups	47,895.549	1,626	29.456		
	Total	50,318.994	1,630			
Depression	Between groups	10,549.620	4	2,637.405	49.251	.000***
	Within groups	87,608.411	1,636	53.550		
	Total	98,158.030	1,640			
Stereotyped Thinking	Between groups	167.071	4	41.768	1.120	.345
	Within groups	60,688.855	1,627	37.301		
	Total	60,855.926	1,631			
Personality	Between groups	1,096.360	4	274.090	38.559	.000***
	Within groups	11,742.804	1,652	7.108		
	Total	12,839.164	1,656			

Note. \*\*\* $p < .001$ .

The variables of anxiety and personality/satisfaction were consistent significant predictors for all four achievement/esteem groups. Numerous studies (Banks, 1997; Cheng & Page, 1989; Metz, 1993) have demonstrated that anxiety negatively affects several factors related to student self-esteem including academic achievement. In this study, personality was defined as agreeableness, which includes passivity, cooperativeness, self-direction, independence, and self-confidence. Research (Laursen et al., 2002) has shown that higher levels of agreeableness are related to greater psychosocial adjustment in children, adolescents, and adults. Our findings are consistent with those of earlier studies (Holland & Andre, 1994; Leonardson, 1986; Marsh, 1987), which demonstrated that students who had healthier personalities and/or had successful extracurricular activity performance also had high self-esteem.

In the present study, anxiety explained 11.7% in the variance of HALS students' self-esteem scores versus 9.0% of the variance for LALS students and only 5.5% and 5.0% of the variance in HAHS and LAHS students' self-esteem scores respectively; personality/satisfaction explained 13.0% of the variance in self-esteem scores for HAHS students, 10.7% of the variance for LAHS students, 10.0% for LALS students, and only 6.2% for HALS students.

There is no doubt that our sample of HALS students had successful academic performance. However, perhaps they worried more about maintaining their academic performance and/or they had to expend greater effort to

sustain their GPA, consequently having less time to participate in extracurricular school activities. If the latter was the case, these HALS students might be unpopular at school and dissatisfied with their academic performance. Indeed, only a small number of HALS students in the present study (16) had both high academic achievement and high levels of satisfaction with their nonacademic performance.

Depression respectively explained 17.4%, 15.2%, and 9.1% of the variance in HALS, LALS, and HAHS students' self-esteem scores. However, it was not a significant predictor of the LAHS students' self-esteem scores. This result suggests that depression may be problematic for a significant number of senior high school students, particularly for some students with high GPAs. In addition to its negative relationship to self-esteem, extreme levels of depression can lead to suicide. About one third of the students in the HALS ( $n=37$ ) and 27% of the students in the LALS group ( $n=68$ ) reported clinically high levels of depression. In contrast, only 3.7% ( $n=5$ ) of the students in the LAHS and 2.7% ( $n=5$ ) in the HAHS group reported high levels. Although not tested in the present study, perhaps high self-esteem protected students from depression. The prevalence of high levels of depression warrants further attention to adolescent psychological well-being by educators, policymakers, and parents in Taiwan.

The variable parenting practices explained 13.6% of the variance in self-esteem scores for LAHS students' and 3.3% of the variance for HAHS; it was not a significant predictor of self-esteem for either the HALS or the LALS. These results partly support those of Baumrind's (1991) parenting practices study, which demonstrated that children and adolescents from authoritarian families tend to have poorer social skills, lower self-esteem, and higher levels of depression; adolescents from authoritarian-directive homes tend to be less optimistic and to manifest more internalizing behavioral problems than those from non-authoritarian-directive homes. In contrast, children and adolescents from permissive families tend to have better social skills, higher self-esteem, and lower levels of depression. Furthermore, children and adolescents from permissive families are more likely to engage in problematic behaviors and to perform less well at school, but they have higher self-esteem, better social skills, and lower levels of depression. Similarly, Hauser et al. (1984) demonstrated that authoritarian parenting (e.g., withholding, indifferent, devaluing) was related to lower self-esteem in adolescents, whereas authoritative and democratic parenting practices were related to higher self-esteem. Permissive parenting may serve as a buffer for low-achieving students.

In general, the two groups of students who had low self-esteem (i.e., HALS and LALS) also tended to have less positive personality characteristics, to report more depression, and to be less satisfied with their nonacademic performance. In contrast, the students who had high self-esteem (LAHS and HAHS) tended to report low or no depression, greater satisfaction with their nonacademic performance, more favorable personality characteristics, and to come from homes with permissive parenting practices.

These results suggest several gender differences in anxiety, depression, and stereotyped thinking for the four student groups. Across the total sample, girls reported significantly higher levels of depression and anxiety and lower levels of stereotyped thinking and personality/satisfaction than boys. Girls reported

greater depression and lower personality/satisfaction than boys in all four achievement/esteem groups, and they reported greater anxiety in both low-achievement groups. These findings are consistent with those of earlier studies (Cheng & Page, 1989; Debold, 1995). For example, Cheng and Page studied female Taiwanese students and found that girls who had lower or middle academic performance appeared to be under greater academic pressures and reported higher anxiety. Hong et al. (2003) found that Taiwanese secondary school girls were less likely than boys to think stereotypically. Traditional Chinese culture is male-oriented; this culture has existed for many centuries, and it persists in contemporary Taiwan. It is possible that girls who reported lower levels of stereotyped thinking faced opposition to their views. They also have more limited options in their society. One consequence may be higher levels of depression and anxiety.

#### *Limitations*

These results should be interpreted with caution because they are based exclusively on student self-report, and no test-retest reliability data were obtained. Triangulation using other data sources (e.g., parents' ratings, teachers' ratings, students' ratings, and behavioral observation) is strongly recommended. Furthermore, although the interviews support the validity of the SSQ, only six students were interviewed. Individual interviews with additional student subgroups would bolster internal and external validity, particularly because several of the variables investigated were based on inventories validated with US samples. Despite these limitations, the self-report method elicited a large number of students' responses and may be an effective method for future cross-sectional studies designed to determine developmental differences in self-esteem for elementary, junior high, and senior high school students. Finally, given the correlational nature of this study, causal connections cannot be made from the data.

#### *Research Recommendations*

More research is needed to determine if the validity of the present findings varied for HAHS, HALS, LAHS, and LALS students. Research that includes more standardized personality measures will further clarify the relationships between self-esteem and personality characteristics. Future research might include investigations of cross-sections of students (i.e., elementary, junior high, and senior high school students) in order to study age-related differences. Replications of our findings using other instruments that measure self-esteem should be attempted. Cross-validating the scales contained in the SSQ with ratings by parents, teachers, and peers might provide a more comprehensive assessment of the effect of factors related to the development and maintenance of self-esteem during adolescence. The finding that various factors accounted for the variance in self-esteem for LAHS and HALS indicates a need for longitudinal research. Although self-esteem may be positively related to academic performance in young students, results of our study suggest that its precise relationship for college students remains unclear. Longitudinal research would help to determine the developmental trajectory of self-esteem.

Given the limited number of high academic school students in this study, nationwide research with sufficient samples from each academic level school

should be undertaken. Finally, variables related to self-esteem varied by gender. Therefore, it is important to study gender differences in the development and maintenance of self-esteem.

#### *Implications for Practice*

These results suggest that self-esteem is an important factor in the psychosocial development of Taiwanese adolescents. Educators, parents, and society should help students broaden the domains on which they determine their self-worth. An overemphasis on academic achievement places many students at risk for low self-esteem. Desbitt (1993) suggests that in addition to academic abilities and attainments, students' self-esteem should be based on virtues such as generosity and kindness. Although the range of one's academic ability may be restricted by innate intelligence, other domains such as kindness can be cultivated by students with varying academic abilities.

Interventions should be developed to target various student groups. For example, HALS students' self-esteem might be related more to intrapersonal factors (e.g., feelings of depression and personality and performance satisfaction), and thus HALS students might benefit more from interventions targeted at the individual. Conversely, LAHS students' self-esteem may be related more to socialization factors (e.g., parenting practices), and these factors might be a particularly important area for intervention.

Although the present study reveals a connection between self-esteem and psychosocial factors (i.e., personality and satisfaction with nonacademic performance at school, anxiety, depression, parenting practices, GPA), the thorny issue of reciprocal causation remains unresolved (Kahle & Berman, 1979). Although causal connections cannot be made, the findings nevertheless suggest that educators and administrators in Taiwan should develop programs that indirectly promote student self-esteem by addressing their depression and reinforcing their positive personality characteristics. Schools, teachers, parents, and society should address both self-esteem and its related predictors as integral parts of the student learning experience. For example, schools and communities might provide enrichment programs that focus on the affective domains (e.g., self-esteem, family values, career exploration). Such programs could involve peer tutoring, adult mentors, training in leadership and communication skills, support groups, health promotion, college experiences for senior high school students, and parent-child communication training. These interventions might particularly target students with low self-esteem and low income in order to provide role models who help to build and maintain positive self-worth.

Finally, interventions should be developed to reduce the stereotyped thinking of Taiwanese students. These include gender-equitable curricula, formalized recognition of the academic and nonacademic accomplishments of both girls and boys, and pedagogical techniques that promote cooperation between the sexes (Hong, Lawrenz, & McCarthy Veach, in press).

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