

A Survey on the Current Status of High-School Students' Sense of Self-Esteem

— Correlations between High-School Students' Sense of Self-Esteem and Satisfaction with School Life —

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In this study, a questionnaire survey was conducted using a "sense of self-esteem" scale to clarify the "sense of self-esteem" of Japanese high-school students. Additionally, correlations between their sense of self-esteem and satisfaction with school life were analyzed, because the latter depends greatly on relationships between friends, their sense of self-esteem, and grade/gender differences. Valid responses to the questionnaire were collected from 2,112 students (862 boys and 1,250 girls) of all grades at three public high schools in Japan. Six factors ("introverted personality and human distrust," "pleasure and a feeling of fulfillment," "self-manifestation and motivated personality," "strain from peer criticism," "self-acceptance," and "self-realization") were extracted from a factor analysis of the "sense of self-esteem" scale. For the characteristics of these students, a comparison was performed by grade, revealing that their sense of self-esteem generally decreased with increasing grade. Another comparison, by gender, demonstrated that boys accepted the current self, and were satisfied with themselves, while girls were not, and that boys felt themselves as yet to begin self-realization, while girls saw themselves generally on their way to it. A significant correlation was identified between the "sense of self-esteem" and "level of satisfaction with high-school life" scales. It was clarified that students who were more open-minded, felt more pleasure, and more actively accepted themselves felt a greater sense of having friends, and were more satisfied with their school lives, whereas those more introverted and more anxious about the opinions of others felt less of a sense of having friends, less fulfillment in school activities, and were not as satisfied with their school lives.

Keywords: high-school student, sense of self-esteem, satisfaction with school life, self-acceptance, self-realization

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1. Introduction

It has been pointed out that a sense of self-esteem in young people is closely related to their smoking, drinking, and drug-abusing behaviors (Kawabata, et al., 1999, 2005), which are closely associated with their family relationships as well as friendships (Ogawa, et al., 2006), and that the same is true of their sexual behavior and life skills (Kawabata, et al., 2007). Therefore, relationships with

others, including family members and friends, are important to every adolescent. They are essential in developing one's identity. The importance of the surrounding environment is evident because one's existence can be valued by relationships with others (Nagata, et al., 2005), and because, as an internal factor for developing the self, self-value does not simply depend on the degree of self-esteem, but follows external standards (Ito and Kodama, 2005). Furthermore, it has been demonstrated

that the presence of friends positively affects self-development during adolescence; the more one had experiences with friends in his/her early adolescence, the more he/she desires to enter school (Tanaka, et al., 2005). In view of these studies, high-school students more satisfied with their school environments, where they spend much time with their friends, are expected to have a stronger sense of self-esteem and a greater level of satisfaction with themselves. In contrast, those not satisfied with their school lives may lack a sense of self-esteem, become unsatisfied with themselves, and consequently have trouble organizing their social lives.

However, no research in high-school students has been conducted to clarify the relationship between their sense of self-esteem and satisfaction with school life. Clarification of this relationship may help improve their school lives, and aid in the prevention of smoking, drinking, drug-abusing, and dangerous sexual behaviors.

The present study was intended to clarify the current status of high-school students' school lives and how they saw themselves, using a "sense of self-esteem" scale (Hiraishi, 1993).

Additionally, correlations between a "level of satisfaction with high-school life" scale (Okada, 2005; Okada, et al., 2007), which determines whether high-school students are satisfied with their school lives, and a "sense of self-esteem" scale (Hiraishi, 1993) were explored to understand how high-school students behaved, and saw not only themselves but also their relationships with others in their school lives within the context of these two scales.

2. Methods

2.1. Subjects

A questionnaire was sent to 2,646 students of all grades at three full-time public high schools in A Prefecture. Responses with neither missing nor inappropriate answers were collected from 2,112 students (862 boys and 1,250 girls), including 669 first (280 boys and 389 girls), 722 second (278 boys and 444 girls), and 721 third graders (304 boys and 417 girls), and then subjected to analysis (effective response rate: 79.8%).

2.2. Survey contents

The "sense of self-esteem" scale was designed to estimate high-school students' sense of self-esteem. It consisted of 41 items representing the adolescence-specific disposition, which largely formed two subscales covering the "self-conscious" and "others-conscious" areas. The self-conscious area involved 4 items of "self-acceptance," 7 items of "self-realization," and 8 items of "pleasure and a feeling of fulfillment," while the others-conscious area included 8 items of "introverted personality and human distrust," 7 items of "self-manifestation and motivated personality," and 7 items of "strain from peer criticism."

To apply scales used in previous investigations to this study, it was necessary to validate what each scale was intended to measure, given that the subjects of the present study were high-school students. Thus, the characteristics of high-school students were elucidated based on the structure and the mean of summed scores of each scale. The following 5-point scoring system was used for each item of the scale: "Applicable (5 points)", "Somewhat applicable (4)", "Undetermined (3)", "Generally not applicable (2)", and "Not applicable (1)". For reverse items, reverse scoring (from 1 to 5 points) was performed.

The "level of satisfaction with high-school life" scale (Okada, et al., 2007) is designed to ask individual high-school students whether they are satisfied with their overall school lives, including school events, and how they feel about such lives. The students are expected to select one of the five possible answers (1) Agree, 2) Partially agree, 3) Undetermined, 4) Partially disagree, and 5) Disagree to each of the 20 questions in total, including two items about participation in school activities, one item about frictions at school, two items about familiarity with friends, one item about a sense of satisfaction with school, two items about orderly behavior, one item about academic/intellectual development, four items about the school environment, four items about social relationships, and three items about an overall sense of fulfillment. It consists of four factors, "satisfaction with school life," "presence of friends," "attachment to school," and "a feeling of fulfillment in school activities."

2.3. Survey period and methods

The survey was conducted in late April 2003, with all subjects simultaneously completing the questionnaire on an anonymous basis in their classrooms. Regarding ethical considerations, the subjects were orally explained to that they could anonymously answer the questions, would not be disadvantaged even if they did not answer them, and that the survey results would all be statistically processed and only used for the purpose of this study. Their consent was assumed upon the submission of their answers.

2.4. Statistical analysis

The survey results were processed using the statistical package SPSS 10.0j for Windows to perform factor analysis based on the principal factor method using varimax rotation, and identify factor structures. For the interpretation of factors, 40 items with a factor loading not less than 0.4 for a particular factor were selected. Although items that load multiple factors are usually omitted from the interpretation of factors, this study did use such items with the smaller loads listed in parentheses in the table. To score the results of each factor, the sum of scale scores for items concerned with the factor (sum of scale scores hereafter) was used. The reliability of each factor was evaluated by calculating the reliability coefficient (Cronbach's α). To understand the current status of high-school students' sense of self-esteem, variance analysis of sum scale scores on the "sense of self-esteem" scale was performed with respect to grade (three levels: first to third grades) and gender (two levels: male and female), and Bonferroni's method was used for multiple comparison. The significance level was set to 5% in all cases. In consideration of the presence of gender/grade differences in the index data, partial correlation coefficients were calculated to evaluate the significance of correlations between the scales. For partial correlation coefficients, gender and school year were controlled.

3. Results

3.1. Factor analysis and naming

Table 1 shows the factor structures of the "sense

of self-esteem" scale. There were 9 items markedly loading on the first factor (F1), including "I feel a psychological barrier separating me from others," "I feel human relations are troublesome," "I am not friendly to others," "I have shut my heart to others," "If I am talking with a friend, I feel anxious," "I feel sad somehow even when I am with a friend," "I feel alone," "I don't trust others," and "I never have a pleasant day (an item to be scored inversely, hereinafter marked with an asterisk)." Since these items reflected personal feelings regarding others, F1 was termed "introverted personality and human distrust."

There were also 9 items strongly loading on the second factor (F2), including "I have a feeling of content," "I feel my life is very pleasant," "I don't have vexations and feel good," "I feel mentally at ease," "I can do my favorite things," "I feel alive and free," "I never feel satisfied*," "I feel I can do anything," and "I never have a pleasant day*." Since these items represented a feeling of fulfillment in life, F2 was termed "pleasure and a feeling of fulfillment."

There were 7 items markedly loading on the third factor (F3), including "If I have a question, I ask it without hesitation," "I say what I feel freely in public," "I talk with partners until I am convinced," "I talk with friends earnestly," "I say what I want to say, minding the feelings of others," "I can go out in public," and "I voluntarily talk to friends." Because these items meant manifesting the self to others as well as motivation, F3 was termed "self-manifestation and motivated personality."

There were also 7 items markedly loading on the fourth factor (F4), including "I am afraid that my image will be harmed," "I mind public attention," "I am unable to move, if conscious of public attention," "I care about whether I am superior or inferior to others," "I am too anxious about people, and am tired," "I strain myself to deal with people," and "I always try to impress others favorably." Since these items suggested consideration of others' criticism and mental strain resulting from it, F4 was termed "strain from peer criticism."

There were 5 items strongly loading on the fifth factor (F5), including "I accept my individuality," "I develop my strengths," "I value my individuality," "I accept my good and bad points," and "I have my own life." Because these items were related to the acceptance of self, F5 was referred to as "self-acceptance."

Table 1 Factor-loading of the "Sense of Self-esteem" Scale

		(n=2,112)						
Items	F 1	F 2	F 3	F 4	F 5	F 6	F7	communality
17 I feel a psychological barrier separating me from others.	.671	-.142	-.179	.138	-.007	-.081	-.284	.608
18 I feel human relations are troublesome.	.666	-.133	-.148	.139	-.035	-.130	-.120	.535
24 I am not friendly to others.	.657	-.131	-.130	.054	-.152	-.098	.164	.528
19 I have shut my heart to others.	.653	-.119	-.121	.142	-.039	-.015	-.159	.503
23 If I am talking with a friend, I feel anxious.	.637	-.090	-.026	.103	-.142	-.026	.324	.550
22 I feel sad somehow even when I am with a friend.	.580	-.175	-.029	.188	-.079	-.041	.174	.442
25 I feel alone.	.572	-.169	.027	.217	-.120	-.026	.060	.422
14 I don't trust others.	.571	-.116	-.050	.010	-.067	-.124	-.037	.363
13 I have a feeling of content.	-.182	.724	.190	-.006	.149	.212	.044	.662
11 I feel my life is very pleasant.	-.242	.719	.182	.023	.187	.160	-.028	.671
12 I don't have vexations and feel good.	-.181	.717	.183	-.101	.123	.040	.074	.613
21 I feel mentally at ease.	-.121	.611	.086	-.089	.102	.034	.048	.417
20 I can do my favorite things.	-.094	.545	.165	-.054	.184	.262	-.106	.450
16 I feel alive freely.	-.113	.544	.210	-.109	.232	.009	-.082	.425
39 I never feel satisfied. ●	-.359	.527	.049	-.237	.039	.233	-.187	.555
8 I feel I can do anything.	-.150	.495	.191	.059	.257	.378	.058	.520
40 I never have a pleasant day. ●	(-.454)	.461	.045	-.076	.104	.175	-.264	.538
27 If I have a question, I ask it without hesitation.	.033	.090	.720	-.137	.104	.078	-.018	.564
29 I say what I feel freely in public.	.002	.140	.698	-.149	.133	.060	.055	.553
26 I talk with partners until I am convinced.	-.055	.130	.588	-.055	.148	.116	-.019	.404
28 I talk with friends earnestly.	-.165	.129	.565	-.010	.156	.105	-.105	.409
30 I say what I want to say, minding the feeling of others.	-.128	.138	.530	.054	.250	.052	-.073	.390
35 I can go out in public.	-.196	.234	.514	-.187	.190	.017	.145	.449
31 I voluntarily talk to friends.	-.317	.203	.457	.087	.174	.034	.133	.408
33 I am afraid that my image will be harmed.	.037	-.040	-.067	.824	-.071	-.060	-.134	.713
32 I mind attention.	.030	-.038	-.066	.765	-.066	-.063	-.181	.633
34 I am unable to move, if conscious of the public attention.	.240	-.053	-.112	.637	-.107	-.008	-.004	.490
37 I care about whether I am superior or inferior to others.	.176	-.088	.001	.500	-.054	.005	.146	.313
38 I am too anxious about people, and am tired.	.295	-.201	-.059	.498	.019	.014	.211	.424
36 I strain myself to deal with people.	.347	-.161	-.146	.491	-.031	.013	.220	.458
5 I always try to impress others favorably.	.020	.053	-.013	.469	.069	-.020	-.002	.229
4 I accept my individuality.	-.098	.223	.217	-.139	.659	.072	-.031	.567
2 I develop my strengths.	-.149	.225	.237	.058	.615	.276	.080	.593
1 I value my individuality.	-.093	.171	.301	-.056	.585	.163	-.031	.502
3 I accept my good and bad points.	-.034	.213	.207	-.127	.524	.033	.037	.382
7 I have my own life.	-.145	.088	.140	.036	.404	.109	-.137	.244
15 I don't have an aim. ●	-.214	.077	.048	-.044	.094	.723	-.041	.590
10 I am highly motivated to fulfill my dream.	.014	.232	.162	.042	.234	.642	.060	.553
9 I don't know what I want to do. ●	-.077	.121	.054	-.159	.022	.605	.024	.416
6 I have passion and tackle challenges.	-.092	.291	.146	.086	.305	.445	-.015	.413
41 I will take a positive attitude toward the problem.	-.200	.346	.225	.000	.306	.325	.035	.410
Sum of squares on the principal loading of factors	4.313	4.128	3.142	3.05	2.369	2.194	.683	
Percentage of contribution of factors (%)	10.5	10.1	7.7	7.4	5.8	5.4	1.7	
Percentage of cumulative contribution of factors (%)	10.5	20.6	28.3	35.7	41.6	46.9	48.6	

● Indicates item scored inversely.

Shaded scores, such as **.671**, indicate factor loading not less than 0.4.

There were 4 items markedly loading on the sixth factor (F6), including "I don't have an aim*", "I am highly motivated to fulfill my dream," "I don't know what I want to do*," and "I have passion and tackle challenges." Because these items are related to the realization of self, F6 was termed "self-realization."

Although a total of seven factors were extracted from factor analysis, the seventh factor was not used

in the analysis because it had a sum of squares on the principal loading of factors not greater than 1.0 and a percentage contribution of factors not greater than 5.0%, and showed no item consistent with the criterion that a factor loading for interpretation must be 0.4 or greater.

Table 2 The result of ANOVAs of the "Sense of Self-Esteem" scale

	Introverted personality and human distrust				Pleasure and a feeling of fulfillment				Self-manifestation and motivated personality				Strain from peer criticism				Self-acceptance				Self-realization				
	n	Mean	SD	F value	†	Mean	SD	F value	†	Mean	SD	F value	†	Mean	SD	F value	†	Mean	SD	F value	†	Mean	SD	F value	†
1st graders	669	22.3	6.0			29.7	7.6			22.1	5.5			22.7	5.3			19.5	3.6			13.1	3.9		
2nd graders	722	23.0	5.9	3.310 *	*	28.4	7.0	11.371 ***	***	22.0	5.2	0.296 n.s.	n.s.	23.0	5.2	1.251 n.s.	n.s.	18.9	3.5	4.075 *	*	12.6	3.5	4.275 *	*
3rd graders	721	23.1	5.9			27.8	7.3			22.0	5.4			22.7	5.3			19.2	3.6			13.2	3.8		
Boys	862	23.0	5.9	0.557 n.s.		28.4	7.1	0.845 n.s.		21.8	5.1	2.955 n.s.		22.8	5.2	0.012 n.s.		19.4	3.6	4.282 *	*	12.7	3.7	5.001 *	*
Girls	1,250	22.8	6.0			28.7	7.5			22.2	5.5			22.8	5.3			19.0	3.6			13.1	3.8		
grade×gender				0.030 n.s.				0.753 n.s.				0.174 n.s.				0.949 n.s.				0.248 n.s.				3.947 *	

† Bonferroni's multiple comparisons

p*<.05 *p*<.01 ****p*<.001

Table 3 Mean and standard deviation of each score of the "Sense of Self-Esteem" scale for graders and gender

		Introverted personality and human distrust		Pleasure and a feeling of fulfillment		Self-manifestation and motivated personality		Strain from peer criticism		Self-acceptance		Self-realization		
		n	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
1st graders	Boys	280	22.5	6.0	29.3	7.6	22.0	5.1	22.5	5.3	19.7	3.6	13.2	4.0
	Girls	389	22.2	6.1	29.9	7.6	22.2	5.7	22.9	5.4	19.3	3.6	13.0	3.8
2nd graders	Boys	278	23.1	6.0	28.6	6.9	21.7	4.8	23.3	4.9	19.2	3.4	12.4	3.4
	Girls	444	23.0	5.9	28.3	7.0	22.1	5.4	22.9	5.4	18.7	3.6	12.7	3.7
3rd graders	Boys	304	23.3	5.9	27.4	6.8	21.7	5.3	22.6	5.4	19.3	3.9	12.6	3.8
	Girls	417	23.0	6.0	28.0	7.6	22.2	5.5	22.8	5.2	19.1	3.5	13.6	3.9

3.2. Examination of reliability

The reliability of internal consistency (coefficient α) for each factor was as follows: coefficient $\alpha = 0.75$ for F1 (introverted personality and human distrust), 0.89 for F2 (pleasure and a feeling of fulfillment), 0.83 for F3 (self-manifestation and motivated personality), 0.82 for F4 (strain from peer criticism), 0.78 for F5 (self-acceptance), and 0.75 for F6 (self-realization).

These values are large enough to ensure the reliability of the "sense of self-esteem" scale, which consists of the six factors F1 to F6.

3.3. The current status of high-school students' sense of self-esteem

Tables 2 and 3 show the results. In comparison by grade, a major effect of each grade was identified at the 5% level for the factors "introverted personality and human distrust," "pleasure and a feeling of fulfillment," "self-acceptance," and "self-realization." No significant difference was observed for "self-manifestation and motivated personality" and "strain from peer criticism." According to Bonferroni's multiple comparison, the mean of the sum scale scores for "introverted personality and

human distrust" was significantly higher in third than in first graders, and showed no significant differences between first and second graders and between second and third graders. The mean of the sum scale scores for "pleasure and a feeling of fulfillment" was significantly higher in first than in second and third graders, and showed no significant differences between second and third graders. The mean of the sum scale scores for "self-acceptance" was significantly higher in first than in second graders, and revealed no significant differences between first and third and between second and third graders. The mean of the sum scale scores for "self-realization" was significantly higher in third than in second graders, and showed no significant differences between first and second and between first and third graders.

In a separate comparison by gender, a major effect of gender was observed at the 5% level for the factors "self-acceptance" and "self-realization." No significant difference was found for "introverted personality and human distrust," "pleasure and a feeling of fulfillment," "self-manifestation and motivated personality," and "strain from peer criticism." The mean of the sum scale scores for "self-acceptance" was significantly higher in boys than in girls, whereas that for "self-realization" was

Table 4 Partial Correlation coefficients between the "Level of Satisfaction with High School Life" and the "Sense of Self-Esteem" scales

(n=2,112)

	Satisfaction with school life	Presence of friends	Attachment to school	A feeling of fulfillment in school activities	Introverted personality and human distrust	Pleasure and a feeling of fulfillment	Self-manifestation and motivated personality	Strain from peer criticism	Self-acceptance	Self-realization
Satisfaction with school life										
Presence of friends	.589 **									
Attachment to school	.824 **	.477 **								
A feeling of fulfillment in school activities	.681 **	.646 **	.453 **							
Introverted personality and human distrust	-.408 **	-.426 **	-.283 **	-.472 **						
Pleasure and a feeling of fulfillment	.690 **	.505 **	.533 **	.509 **	-.401 **					
Self-manifestation and motivated personality	.379 **	.445 **	.264 **	.490 **	-.312 **	.467 **				
Strain from peer criticism	-.124 **	-.093 **	-.067 *	-.173 **	.387 **	-.282 **	-.227 **			
Self-acceptance	.419 **	.419 **	.336 **	.448 **	-.283 **	.516 **	.532 **	-.193 **		
Self-realization	.327 **	.310 **	.289 **	.272 **	-.236 **	.487 **	.308 **	-.129 **	.427 **	

* $p < .01$ ** $p < .001$

significantly higher in girls than in boys.

Interactions between grade and gender only showed a significant difference in terms of "self-realization." That is, the mean of the sum scale scores for "self-realization" was significantly higher in third-grade girls than in second-grade boys ($p < .001$), second-grade girls ($p < .05$), and third-grade boys ($p < .05$).

3.4. Correlations between the "level of satisfaction with high-school life" and the "sense of self-esteem" scales

High-school students' levels of satisfaction with their school lives may differ depending on their sense of self-esteem. Thus, partial correlation coefficients adjusted for grade/gender differences were calculated to examine correlations between four factors extracted from a factor analysis of the "level of satisfaction with high-school life" scale and the six subscales of the "sense of self-esteem" scale (Table 4). The resulting coefficients indicated significant correlations between both scales. More specifically, "satisfaction with school life," "presence of friends," "attachment to school," and "a feeling of fulfillment in school activities" were positively correlated with "pleasure and a feeling of fulfillment," "self-acceptance," and "self-realization," and negatively correlated with "introverted personality and human distrust" and "strain from peer criticism."

4. Discussion

This study on the current status of high-school students' sense of self-esteem revealed that this sense generally decreased with grade, with first graders most often accepting themselves, and third graders most often feeling self-realization. The study also demonstrated that boys accepted the current self in their own way, but girls did not, while boys felt themselves as not yet being realized, but girls saw themselves generally on their way to self-realization, with third-grade girls showing a significantly stronger tendency toward self-realization.

Furthermore, correlations between the "level of satisfaction with high-school life" and the "sense of self-esteem" scales suggest that students who are more open-minded, feel a greater sense of pleasure, and more actively accept themselves feel a greater sense of having friends, and are more satisfied with their school lives, whereas those more introverted and more anxious about the opinions of others feel less of a sense of having friends, less fulfillment in school activities, and are not so satisfied with their school lives.

Thus, it was clarified that high-school students' sense of self-esteem and satisfaction with school life were closely correlated. The contents and magnitude of the psychological impact of someone's evaluation seem to vary depending on the general sense of self-esteem of the affected person. Those with a lower sense of self-esteem are more likely to become hesitant about communicating with others and put up a barrier around them, which makes them unable to open up to others. It is not uncommon for them

to feel a much stronger sense of inferiority hidden behind their self-esteem issues (Maekawa, 2005), and possibly lose friends as a result. They might even maladapt to others. Today, it is said that friendships among young people tend to be superficial, and seem to be maintained with a focus on "relief" (Mizuno, 2004). A study on the relationship between juvenile delinquency and depression revealed the strong involvement of the closeness of friendship (Obokata, et al., 2005). Boden (2007) also reported that there are strong relationships between self-esteem in adolescents and future violence and hostility.

A persecutory delusion-based notion is positively correlated with a fear of other people and a depressive feeling (Kaneko, et al., 2003). Moreover, a study on the relationship between family functions and the development of pubertal problems (Yoshino, et al., 2005) demonstrated that antisocial behavior, a manifestation of internal maladaptation to society, could not be accounted for by family functions alone, but were influenced by other factors such as friendships and the situation in school. In adolescence, people start to become mentally independent of their parents, and more influenced by friends in terms of valuing things and choosing behavior. Since the level of self-esteem regarding family relations determines the types of friendships they can have, the importance of introducing an educational program at an earlier stage to enhance self-esteem has been emphasized (Ogawa, et al., 2006). Another study demonstrated that a decrease in self-esteem had a strong impact on eating disorders (Ikeda, et al., 2006). Furthermore, a study on the environment and adaptation in adolescents (Okubo, et al., 2005) reported that addressing problems with adaptation as issues between individuals and the environment could expand the possibility for teachers and schools to actively participate in solving such problems. In reducing a fear of other people, on the other hand, the importance of establishing close friendships, appropriate adjustment of self-love, and autonomous stabilization of emotion has also been pointed out (Shimizu, et al., 2005). Given the significant impacts of grade/gender differences on high-school students' levels of satisfaction with their overall school lives, adolescents may need friends of the same age with whom they can talk about anything, not only because of their rapid physical and mental changes associated with the development of secondary sexual characteristics, but also because of

their worries and fears specific to this period of life.

In modern society, or the 'mental era,' mental health management is essential in treating people showing a depressive tendency while more frequently thinking negatively. A program to reduce/prevent a depressive feeling in university students with a depressive tendency (Shiraishi, et al., 2005) as well as cognitive-behavioral treatment (Clarke, et al., 1999) and peer support activities (Okada, 2005, 2006) have been developed. Brent, et al., (1997) also mentioned that cognitive behavior therapy, as we refer to it, was effective, and resulted in a more rapid and complete treatment response.

Classroom activities to prevent a decrease in self-efficacy and self-esteem have also been designed for elementary-school children (Kawai, et al., 2006). A study that confirmed a causal relationship between the concept of the psychosocial environment and subjective symptoms has demonstrated that the improvement of this environment in the school is an effective strategy for promoting children's health (Takakura, et al., 2006).

It is important for high-school students to develop a personality integrated with empathy and sociality, both of which are nurtured through interactions with others, to enhance their sense of self-esteem and feel satisfied with their school lives. Therefore, effective psychological interventions such as peer support are necessary to nurture empathy and sociality, and enhance a sense of self-esteem in high-school students.

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- Investigation on the rate and state of self-reported depressive symptoms in high school samples of Japanese adolescents: Using the Birleson Depression Self-Rating Scale for Children (DSRS-C). *Japanese Journal of Child and Adolescent Psychiatry*. Vol.50, 57-68. (2009)

Membership in Learned Societies:

- Japanese Association of School Health
- Japanese Society for Hygiene
- Japanese Society of Public Health
- Association of Japanese Clinical Psychology
- Japanese Society for Child and Adolescent Psychiatry