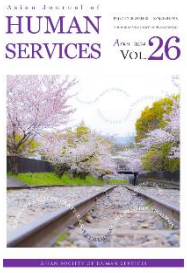

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ORIGINAL ARTICLE

Contingencies of Self-Worth, Contentment of Sources of Self-Worth, and Self-Esteem among Japanese High School Students

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ABSTRACT

This study aimed at developing scales for Japanese high school students to assess their contingencies of self-worth and contentment of sources of self-worth and to clarify the relationship between contingencies of self-worth, contentment of sources of self-worth, and self-esteem among students. A web-based survey of 192 Japanese high school students was conducted. Two scales with sufficient degree of validity and reliability were developed after determining discriminant and convergent validity and internal consistency through alpha coefficients. A single regression analysis was conducted with self-esteem as the objective variable and with each factor of contentment of sources of self-worth as the explanatory variable. The results showed that athletic competence, academic competence, interpersonal relationships, and enthusiastic activity affect self-esteem.

Keywords: Contingencies of self-worth, Contentment of sources of self-worth, Self-esteem, High school students

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1. Introduction

Good mental health is an essential aspect of good health. Unfortunately, a tendency toward mental health challenges has been noted among Japanese high school students. When 338 Japanese high school students were administered the General Health Questionnaire (GHQ), a typical scale for measuring mental health, 47.6% of them were above the cutoff value and had poor mental health[1].

One measure often considered an indicator of mental health is self-esteem[2]. According to Rosenberg[3], self-esteem is a positive or negative attitude toward oneself and can be assigned two different meanings: "very good" and "good enough." "Very good" implies the superiority of the self over others. However, in the case of "good enough," the self feels worthy without comparison to others, which leads to an attitude of self-respect, recognition of one's own limitations, and the expectation that one will overcome one's own shortcomings and engage in personal growth and improvement. Furthermore, Rosenberg[3] developed a scale to measure the latter "good enough" form of self-esteem. This scale has been used worldwide for about half a century.

Using Rosenberg's Scale[3], Orth et al.[4] revealed the lifespan development of self-esteem from ages 16 to 97. They found that self-esteem, which was low in adolescence, increased toward adulthood, peaked around the age of 50, and then declined in old age. A study on the lifespan development of self-esteem among Japanese persons found low self-esteem among high school students[5]. Low self-esteem is associated with higher levels of depression (e.g., Kuroda et al.[6]); self-esteem support may reduce depression and lead to better mental health. Therefore, self-esteem support is recommended, and it can play a role in improving the current situation of Japanese high school students with mental health issues.

A literature review by Orth et al.[7] found the use of multiple models to examine the relationship between self-esteem and depression. For example, Kuster et al.[8] explain the relationship between self-esteem and depression through the mediated vulnerability model. According to the mediated vulnerability model, low self-esteem, mediated by repeated ruminations about threats can lead to depression; conversely, a certain level of self-esteem may prevent depression. Nevertheless, negative aspects of self-esteem have also been noted. These include people with high self-esteem displaying aggressive behavior toward others when their egos are threatened[9]. Scholars have also noted the importance of viewing self-esteem from dimensions other than high and low self-esteem. One such dimension is contingencies of self-worth, which are a measure of how much self-esteem is contingent with domains to which the self-assigns value[10]. Contingencies of self-worth indicate the extent to which self-esteem is contingent with different sources of self-worth, such as academic and athletic competence, for different individuals. Sargent et al.[11] identified two types of contingencies of self-worth: contingencies of self-worth that tend to be associated with depression and contingencies of self-worth that are not. Specifically, higher approval from others, appearance, competition, and academics have been shown to predict higher depression, whereas God's love and virtue are not related to higher depression. Thus, there may be other domains of contingencies of self-worth that have an impact on mental health.

In considering mental health, it is important to examine contentment of sources of self-worth in relation to contingencies of self-worth. Contentment of sources of self-worth is an indicator of how satisfied the sources of self-esteem are[12]. Ito et al.[13] use the term "contentment of sources of self-esteem," but in this study we used the term "contentment with sources of self-worth" to correspond to the term contingencies of self-worth. Furthermore, Ito et al.[12] found that even if the sources of self-worth for the self and others are the same, the meaning of the sources of self-worth may be different whether those sources are fulfilled or not. When self-esteem is dependent on an individual's appearance, those who are satisfied with their

appearance feel a sense of self-worth, while those who are not satisfied with their appearance feel a threat to their self-esteem[12]. For example, for whom academic competence is a source of self-esteem (when contingencies of self-worth in academic competence are high), self-esteem is likely to increase if academic performance is good (i.e., contentment of sources of self-worth in academic competence is high). However, for whom academic competence is not a source of self-esteem (when contingencies of self-worth in academic competence are low), it is unlikely that the person's self-esteem will be enhanced even if the person's academic performance is good (contentment of sources of self-worth in academic competence is high). In other words, even if the same good academic performance is achieved, the effect on self-esteem may differ depending on whether the person has high or low contingencies of self-worth in academic competence.

In the relationship between contingencies of self-worth and contentment of sources of self-worth, higher contingencies of self-worth reportedly correlate with higher contentment of sources of self-worth[12]. Given the demonstrated relationship between contingencies of self-worth and motivation[14], people are more motivated to actively work on objects with high contingencies of self-worth, resulting in higher levels of contentment of sources of self-worth. Therefore, it may be effective to examine contingencies of self-worth and contentment of sources of self-worth.

However, no scales of contingencies of self-worth and contentment of sources of self-worth are available to be used for Japanese high school students who are prone to mental health challenges. It is hoped that clarifying the actual situation and the relationship between contingencies of self-worth, contentment of sources of self-worth, and self-esteem will provide knowledge that can be used in supporting high school students' self-esteem. Self-esteem can be clarified elaborately by clarifying contentment of sources of self-worth and contingencies of self-worth. Overall, the significance of this study lies in its contribution to improving the mental health of a sample of Japanese high school students by accumulating knowledge on self-esteem, especially for those who have been diagnosed with low self-esteem[5]. In this study, the six factors of "athletic competence," "academic competence," "interpersonal relationships," "others' approval," "appearance," and "enthusiastic activity" were assumed for each of the Contingencies of Self-Worth Scale and Contentment of Sources of Self-Worth Scale for high-school students. For "athletic competence," high-school students have many opportunities to engage in physical activities in school classes and extracurricular activities. In fact, a link has been shown between "athletic competence" and self-esteem[15]. With regard to "academic competence," a relevant factor is the intelligence factor, consisting of "being smart" and "being able to do well academically"[16]. Ito[16] showed that higher self-esteem was correlated with a higher level of contentment of the source of intelligence. In terms of "interpersonal relationships" and "others' approval," the term "school caste" related to interpersonal relationships in schools has been gradually recognized in recent years in Japan; according to Mizuno et al.[17], school caste is a status disparity between groups within Japanese school classes, which—like the caste system in India—creates hierarchical relationships with low status variability. School caste is said to occur mainly among junior high school and high school students[18]. Those placed lower in the school caste encounter problems, such as loss of self-esteem and loss of enjoyment of school life; notably, these problems continue even after graduation[19]. With regard to "appearance," previous studies[15,20] have indicated a relationship between "appearance" and self-esteem. As for "enthusiastic activity," in what is similar to the factor of enthusiastic activity, the factor of activities is to be involved in, consisting of content, such as "I am able to work on something I am interested in" and "I have something to devote myself to"[16]. Ito[16] showed that higher self-esteem was correlated with a higher level of contentment of the source of enthusiastic activity to be involved in.

The purpose of this study is twofold: first, to develop the scales of contingencies of self-worth and contentment of

sources of self-worth for Japanese high school students and to confirm the validity and reliability thereof and, second, to clarify the actual situation and relationship between contingencies of self-worth, contentment of sources of self-worth, and self-esteem among Japanese high school students.

2. Method

2.1. Procedure

We conducted an online survey in March 2021, commissioning Cross Marketing Inc., a Japanese web-based research company. 300 Japanese high school students (96 males and 204 females) responded to the survey, and 192 subjects (96 males and 96 females) out of them were analyzed, with the average age being 16.9 years and the ages ranging from 15–18. Moreover, 192 high school students were distributed as follows: 73 freshmen (36 males and 37 females), 55 sophomores (27 males and 28 females), and 64 juniors (33 males and 31 females).

2.2. Structure of the questionnaire

2.2.1. Personal characteristics

The gender, age, occupation, grade, and area of residence of the respondents were ascertained.

2.2.2. Measurement of contingencies of self-worth and contentment of sources of self-worth

To develop the Contingencies of Self-Worth Scale and Contentment of Sources of Self-Worth Scale for high school students, we developed 48 items that were considered to be appropriate for the categories contingencies of self-worth and contentment of sources of self-worth for high school students, with reference to previous studies[12,21,22]. Consequently, there were 24 in each scale, and the two scales were created to correspond with each other. For example, the question “When I am good at my studies, I feel satisfied with myself” in the Contingencies of Self-Worth Scale corresponds to “I think I am good at studying” in the Contentment of Sources of Self-Worth Scale. The responses were based on a 5-point rating scale method ranging from “very true (5 points)” to “not true at all (1 point).”

2.2.3. Measurement of self-esteem

A 10-item scale modified from Rosenberg’s[3] Self-Esteem Scale[23] was used. The scale[23] is a plain-language scale that can be applied to high school students, including those with developmental disabilities, and both its content validity and reliability have been demonstrated. The responses were based on a 4-point rating scale from “very much” to “not at all.”

SPSS (Ver. 28) was used for statistical analysis.

2.2.4. Statistical analysis

First, an exploratory factor analysis was performed to examine the factor structures of the Contingencies of Self-Worth Scale and Contentment of Sources of Self-Worth Scale. Second, to validate both scales, a correlation analysis was conducted between these scales and Rosenberg’s Self-Esteem Scale[3]. Specifically, discriminant validity was assessed by calculating the correlations between the Contingencies of Self-Worth Scale and the Self-Esteem Scale[23]. Furthermore, convergent validity was tested by calculating the correlations between the Contentment of Sources of Self-Worth Scale and the Self-Esteem Scale[23]. A two-factor analysis of variance was conducted to examine the differences according to the high

school students' gender and grade level. Finally, a single regression analysis was performed to determine the relationship between contingencies of self-worth, contentment of sources of self-worth, and self-esteem. After classifying the groups into high and low contingencies of self-worth groups, the extent to which contentment of sources of self-worth influences self-esteem was examined.

2.2.5. Ethical considerations

The consent of the high school students themselves was obtained for the implementation of this study. At the time of implementation, we explained that the survey was conducted based on the free will of the survey subjects, that the survey subjects would not be disadvantaged even if they did not respond, and that privacy would be protected. In addition, this study was conducted with the consent of the Research Ethics Committee of the University of Tsukuba (2020-198A).

3. Results

3.1. Examination of the factor structure of the scale

The ceiling effect (Mean+1SD) and floor effect (Mean−1SD) were checked. When the descriptive statistics of the Contentment of Sources of Self-Worth Scale were checked, a ceiling effect was found for one item. Therefore, one item of the Contentment of Sources of Self-Worth Scale and one item of the Contingencies of Self-Worth Scale, which corresponded to that question, were deleted. Next, the descriptive statistics of the Contingencies of Self-Worth Scale were checked, and the ceiling effect was found in six items. However, although the ceiling effect was observed for the item, "It is important for me to work on things that interest me," we decided not to delete the item because we judged them to be particularly important in considering support. As a result, the five items of the Contingencies of Self-Worth Scale and the question items of the Contentment of Sources of Self-Worth Scale corresponding to those five items were deleted.

Factor analysis (unweighted least squares method and Promax rotation) was conducted on the 18 items of the Contentment of Sources of Self-Worth Scale. Items with factor loadings of .40 or less were excluded, and factor analysis was repeated. As a result, 16 items with four factors were extracted (Table 1), and the percentage of total variance explained by the four factors was 63.58%.

Because the first factor of the Contentment of Sources of Self-Worth Scale consisted of questions about competence to perform academic activities, such as "I think I have good grades in school," the factor was named "academic competence." The second factor was named "athletic competence" because it consisted of questions related to physical competence, such as "I think I have good motor skills." The third factor was named "enthusiastic activity" because it consisted of questions about participation in various activities, such as "I think I am working on something I am interested in." The fourth factor was named "interpersonal relationships" because it consisted of questions about interpersonal relationships, such as "I have friends with whom I can talk about anything."

Next, 16 items of the Contingencies of Self-Worth Scale corresponding to the 16 items extracted in the Contentment of Sources of Self-Worth Scale were extracted, and factor analysis (unweighted least squares method and Promax rotation) was conducted. As a result, no items had factor loadings below .40, and no items were deleted. Similar to the results of the Contentment of Sources of Self-Worth Scale, 16 items with four factors were extracted as the Contingencies of Self-Worth Scale (Table 2). The percentage of the total variance that can be explained by the four factors was 55.61%.

Table 1. Factor analysis of the Contentment of Sources of Self-Worth Scale

	F1	F2	F3	F4
Factor 1: Academic competence				
24 I think I have good grades in school	**.94**	.01	-.09	-.01
14 I think I am good at studying	**.90**	.02	-.11	-.07
4 I think I achieve good scores on school tests	**.84**	.01	-.01	.02
19 I think I can understand the content of the class	**.70**	-.11	.14	.03
Factor 2: Athletic competence				
6 I think I have good motor skills	.07	**.89**	.05	-.05
21 I think I achieve good results in sports	.02	**.88**	.06	-.03
18 I think I get good grades in physical education	.06	**.85**	-.01	-.08
8 I think I am not good at sports*	-.20	**.73**	-.14	.13
Factor 3: Enthusiastic activity				
9 I think I am working on something I am interested in	-.02	-.04	**.92**	-.06
13 I think I am enthusiastic about what I like	-.09	-.02	**.89**	.04
5 I think I have something to devote myself to	.01	.02	**.85**	-.04
Factor 4: Interpersonal relationships				
10 I don't think I have any good friends*	-.17	-.03	-.22	**.76**
15 I have friends with whom I can talk about anything	.05	-.07	.05	**.72**
23 I think my friends like me	.10	.13	.07	**.59**
16 I think others are dependent on me	.18	.08	.20	**.55**
20 I don't think I am accepted by others*	-.01	-.03	.01	**.42**
Cronbach's alpha coefficient (α)	.90	.89	.89	.79
% of Variance	34.77	12.90	8.16	7.75
Factor correlations				
F2	.40			
F3	.54	.30		
F4	.39	.42	.35	

*Item was reversed scoring.

Table 2. Factor analysis of the Contingencies of Self-Worth Scale (unweighted least squares method, Promax rotation)

	F1	F2	F3	F4
Factor 1: Athletic competence				
18 I feel more confident when I do well in physical education	**.84**	.05	-.05	-.03
6 Being good at sports is important to me	**.81**	-.09	-.01	.05
8 I feel satisfied with myself when I can play sports well	**.76**	-.14	.13	.15
21 I get depressed when I don't do well in sports	**.68**	.17	-.01	-.05
Factor 2: Academic competence				
4 I lose self-confidence when I get a bad score on a school test	-.08	**.75**	.02	-.03
19 I get depressed when I don't understand something in class	-.04	**.74**	.00	-.11
24 Good grades in school are important to me	.10	**.72**	-.03	.01
14 When I am good at my studies, I feel satisfied with myself	.06	**.57**	.06	.09
Factor 3: Enthusiastic activity				
13 I feel confident when I am enthusiastic about something I like	-.02	.02	**.90**	-.21
5 I am satisfied with myself because I have something to devote myself to	.22	.02	**.71**	-.17
9 It is important for me to work on things that interest me	-.05	-.02	**.67**	-.04
Factor 4: Interpersonal relationships				
23 Being liked by my friends makes me feel good about myself	.08	.04	.03	**.78**
15 If I don't have friends I can talk to about anything, I don't feel confident about myself	.03	.20	-.24	**.67**
20 It is important for me to be accepted by others	-.15	-.02	.36	**.66**
10 I don't mind if I don't have good friends*	.05	-.14	-.21	**.59**
16 I am satisfied with myself when people depend on me	-.02	.03	.41	**.48**
Cronbach's alpha coefficient (α)	.87	.79	.75	.80
% of Variance	35.37	8.66	6.69	4.90
Factor correlations				
F2	.42			
F3	.51	.46		
F4	.47	.58	.62	

*Item was reversed scoring.

3.2. Internal consistency of each scale

To check the internal consistency of the Contentment of Sources of Self-Worth Scale, Cronbach's alpha coefficient was calculated. The results were as follows: athletic competence was .89; academic competence was .90; enthusiastic activity was .89; and interpersonal relationships was .79. Similarly, the Cronbach's alpha coefficient of the Contingencies of Self-Worth Scale was calculated. Athletic competence was .87; academic competence was .79; enthusiastic activity was .75; and interpersonal relationships was.80. The Cronbach's alpha coefficient of the self-esteem scale was calculated as .87. However, in Kojima et al.[23], it was noted that deleting item 8 would increase internal consistency. Therefore, Cronbach's

alpha coefficient was calculated as .90 by deleting item 8. Accordingly, in this study, we decided to conduct the analysis after deleting item 8.

3.3. Correlation coefficients between the Contentment of Sources of Self-Worth Scale, the Scale of Contingencies of Self-Worth, and the Self-Esteem Scale

To verify the convergent validity of the Contentment of Sources of Self-Worth Scale, the correlation coefficients between each factor score of the Contentment of Sources of Self-Worth Scale and the self-esteem score were calculated (Table 3). As a result, the correlation coefficients between self-esteem scores and the subfactors of the Contentment of Sources of Self-Worth Scale, “athletic competence” (r = .45, p < .01), “academic competence” (r = .50, p < .01), “interpersonal relationships” (r = .61, p < .01), and “enthusiastic activity” (r = .46, p < .01), showed a moderately significant positive correlation.

To verify the discriminant validity of the Contingencies of Self-Worth Scale, the correlation coefficients between each factor score of the Contingencies of Self-Worth Scale and the self-esteem score were calculated (Table 3). As a result, the correlation coefficients between self-esteem scores and the subfactors of the Contingencies of Self-Worth Scale, such as “athletic competence” (r = .28, p < .01) and “enthusiastic activity” (r = .35, p < .01), were weakly and significantly positively correlated. However, little correlation was found between self-esteem scores on the one hand and “academic competence” and “interpersonal relationships” on the other.

Table 3. Correlation coefficients between the scores of each sub-factor of contingencies of self-worth scores, contentment of sources of self-worth scores, and self-esteem scores

	Contingencies of self-worth				Self-esteem
	Athletic competence	Academic competence	Interpersonal relationships	Enthusiastic activity	
Contentment of sources of self-worth					
Athletic competence	.51**	.10	.19**	.20**	**.45****
Academic competence	.25**	.25**	.01	.27**	**.50****
Interpersonal relationships	.28**	.04	.32**	.29**	**.61****
Enthusiastic activity	.18**	.04	.06	.45**	**.46****
Self-esteem	**.28****	**.02**	**.10**	**.35****	

**p < .01

3.4. Basic statistics of each scale and grade and sex differences

The basic statistics of each scale and the grade and gender differences are shown in Table 4. A two-factor analysis of variance was conducted with the subfactor scores of the Contentment of Sources of Self-Worth Scale and the Contingencies of Self-Worth Scale and Self-Esteem Scale scores as the dependent variables, and the gender and grade of the high school students as the independent variables, and no interaction and main effect were found.

Table 4. Basic statistics of each scale and differences in year and gender

	Male			Female			Main effect				Interaction	
	First-year	Second-year	Third-year	First-year	Second-year	Third-year	Year		Gender		Year×Gender	
	N=36 (*SD*)	*N*=27 (*SD*)	*N*=33 (*SD*)	*N*=36 (*SD*)	*N*=27 (*SD*)	*N*=33 (*SD*)	*F*	η_p^2	*F*	η_p^2	*F*	η_p^2
Contingencies of self-worth												
Athletic competence	3.26 (1.20)	3.39 (1.05)	3.33 (0.93)	3.44 (1.00)	3.30 (1.17)	3.32 (1.06)	0.02	0.00	0.03	0.00	0.28	0.00
Academic competence	3.48 (0.94)	3.71 (0.75)	3.24 (1.13)	3.67 (0.80)	3.65 (1.10)	3.62 (0.88)	1.06	0.01	1.53	0.01	0.83	0.01
Interpersonal relationships	3.54 (1.00)	3.85 (0.73)	3.64 (0.97)	3.83 (0.84)	3.47 (0.98)	3.89 (0.82)	0.22	0.00	0.19	0.00	2.58	0.03
Enthusiastic activity	4.29 (0.70)	4.10 (0.60)	4.08 (0.87)	4.06 (0.75)	3.96 (0.90)	4.10 (0.75)	0.57	0.01	1.02	0.01	0.44	0.01
Contentment of sources of self-worth												
Athletic competence	2.49 (1.15)	2.74 (1.23)	2.30 (1.05)	2.52 (1.07)	2.56 (1.22)	2.05 (1.12)	2.83	0.03	0.70	0.00	0.29	0.00
Academic competence	2.85 (1.13)	3.14 (1.07)	2.95 (1.11)	3.23 (1.07)	2.76 (1.02)	2.95 (1.03)	0.16	0.00	0.00	0.00	1.91	0.02
Interpersonal relationships	3.02 (1.09)	3.18 (0.80)	3.10 (1.02)	3.17 (0.81)	3.12 (0.99)	3.14 (0.80)	0.05	0.00	0.11	0.00	0.20	0.00
Enthusiastic activity	3.90 (1.22)	3.78 (0.72)	3.55 (1.21)	3.56 (1.06)	3.57 (1.20)	3.62 (1.05)	0.33	0.00	0.97	0.01	0.60	0.01
Self-esteem	2.48 (0.78)	2.64 (0.40)	2.50 (0.71)	2.54 (0.80)	2.45 (0.73)	2.22 (0.64)	1.20	0.01	1.79	0.01	1.11	0.01

3.5. Relationship between contentment of sources of self-worth and self-esteem in high and low contingencies of self-worth groups

To examine the relationship between self-esteem and contentment of sources of self-worth in the high- and low-contingency groups, the participants were grouped based on the mean of each factor of the Scale of Contingencies of Self-Worth. A single regression analysis was conducted with self-esteem as the objective variable and each factor of the Scale of Contentment of Sources of Self-Worth as the explanatory variable (Table 5). Significant association with self-esteem was found in the high contingency group in athletic competence ($F(1, 98) = 28.06$, $p < .01$, $R^2 = .22$), low contingency group in athletic competence ($F(1, 90) = 9.92$, $p < .01$, $R^2 = .10$), high contingency group in academic competence ($F(1, 94) = 51.03$, $p < .01$, $R^2 = .35$), low contingency group in academic competence ($F(1, 94) = 18.67$, $p < .01$, $R^2 = .17$), high contingency group in interpersonal relationships ($F(1, 111) = 63.69$, $p < .01$, $R^2 = .37$), low contingency group in interpersonal relationships ($F(1, 77) = 24.80$, $p < .01$, $R^2 = .24$), high contingency group in enthusiastic activity ($F(1, 93) = 19.48$, $p < .01$, $R^2 = .17$), and low contingency group in enthusiastic activity ($F(1, 95) = 20.36$, $p < .01$, $R^2 = .18$).

Table 5. Relationship between contentment of sources of self-worth and self-esteem in the high and low contingencies of self-worth groups in the single regression analysis

Group	Objective variable	Explanatory variable	β	t	R^2	F
High contingency group in athletic competence	Self-esteem	Contentment of athletic competence	0.47	5.30**	0.22	28.06**
Low contingency group in athletic competence			0.32	3.15**	0.10	9.92**
High contingency group in academic competence	Self-esteem	Contentment of academic competence	0.59	7.14**	0.35	51.03**
Low contingency group in academic competence			0.41	4.32**	0.17	18.67**
High contingency group in interpersonal relationships	Self-esteem	Contentment of interpersonal relationships	0.60	7.98**	0.37	63.69**
Low contingency group in interpersonal relationships			0.49	4.98**	0.24	24.80**
High contingency group in enthusiastic activity	Self-esteem	Contentment of enthusiastic activity	0.42	4.41**	0.17	19.48**
Low contingency group in enthusiastic activity			0.42	4.51**	0.18	20.36**

**$p < .01$

4. Discussion

4.1. Validation and reliability of the scale

As a result of factor analysis, a scale consisting of four factors, athletic competence, academic competence, interpersonal relationships, and enthusiastic activity, was developed in the Scale of Contentment of Sources of Self-Worth and the Scale of Contingencies of Self-Worth.

To examine the convergent validity, the correlation coefficients between the subfactor scores for contentment of sources of self-worth and the scores for self-esteem were calculated, and a moderately positive correlation was found. The results were similar to those seen in previous studies[13]. To examine the discriminant validity, the correlation coefficients between the subfactor scores for contingencies of self-worth and the scores of self-esteem were calculated, and no correlation or a weak correlation was found. The correlation between the scores for contingencies of self-worth and self-esteem was also non-existent or weak in Ohtani et al.[21]. Positive correlations were found between the Scale of Contentment of Sources of Self-Worth, and no or weak correlations were found between the Scale of Contingencies of Self-Worth and self-esteem scales, similar to previous studies[13][21]. Therefore, it is thought that a certain degree of the validity was demonstrated for the Scale of Contentment of Sources of Self-Worth and the Scale of Contingencies of Self-Worth developed in this study.

To verify the reliability of the scale, it was examined from the viewpoint of internal consistency. The results showed that the alpha coefficients of the subfactors of the Contentment of Sources of Self-Worth Scale ranged from .79 to .90, and the alpha coefficients for the subfactors of the Scale of Contingencies of Self-Worth ranged from .75 to .87. This indicates a certain level of reliability.

4.2. Relationship between contentment of sources of self-worth and self-esteem in the high and low contingencies of self-worth groups

In both the high and low contingencies of self-worth groups in the category of athletic competence, self-esteem was affected by contentment of sources of self-worth in athletic competence to a certain extent. The explanatory rate of the high athletic competence group was 22%. However, the explanatory rate of the low athletic competence group was 10%, which was the lowest explanatory rate among the other groups. Oba[24] applied the achievement motivation process model in physical education for 752 Japanese junior and senior high school students. The results indicated that high motor ability competence predicted high self-esteem. Specifically, one reason for such competence was the expectation for improving one's motor ability competence due to praise and support from friends. Being good at sports or getting good grades in physical education can give them a sense of self-worth, which in turn can lead to higher self-esteem, as they are valued by their friends.

In both the high and low contingencies of self-worth groups, contentment of source of academic competence influenced self-esteem to a certain extent. This suggests that academic competence has a certain influence on self-esteem among both Japanese high school students whose self-esteem is strongly and not so strongly based on academic competence. Contingencies of self-worth have also been shown to be related to motivation. For example, students with high academic contingency of self-worth tend to be motivated to increase their academic achievement[14]. In this regard, such students may perform academically better than those with low academic contingency of self-worth. Furthermore, self-esteem is higher in the high academic competence group because it is easier to get good scores and grades on tests when one's academic competence is high, which may lead to a feeling of self-worth and praise from others, which in turn may lead to higher self-esteem. According to the Parent–Child Survey on Children's Life and Learning 2019[25], 39.0% of high school students answered, "I like studying"; 84.9% answered, "I care about test scores"; and 76.2% answered, "I like studying because I want to pursue a career in the future." Though the majority of high school students dislike studying, a high percentage study with a sense of purpose and are interested in test scores. Many high school students feel a certain value in their schoolwork, and achieving results in their schoolwork, which they feel is valuable, is thought to lead to an increase in their self-esteem. However, even in the low-self-worth group, a sense of contentment of source of academic competence affected self-esteem to a certain extent because their classmates or parents may place a high value on academic success even if the student does not. High academic competence results in praise from classmates and parents, but if academic competence is low, a student will not be praised by classmates and parents and may even be criticized. Therefore, it is thought that the degree of academic competence affects self-esteem even if the individual does not value academic competence.

In both the high and low contingencies of self-worth groups, contentment of source of interpersonal relationships affected self-esteem to a certain extent. The explanatory rate was 37% in the high interpersonal relationships group and 24% in the low interpersonal relationships group, which was the highest among the explanatory rates in the other groups. These results indicate that interpersonal relationships influence self-esteem not only in the high-contingency group of individuals of interpersonal relationships but also in the low-contingency group. Okada[26] showed that adolescents, including high school students, have a process for acceptance and non-rejection by their friends. They take care to ensure that both they and their friends do not hurt each other's feelings, thereby raising and maintaining the level of their self-esteem.

However, some risks are also associated with an excessive source of self-worth in interpersonal relationships. If students at the bottom of the school caste have excessive sources of self-esteem in their interpersonal relationships, they will likely

have lower self-esteem. The lower self-esteem may lead to negative behaviors and a vicious cycle that perpetuates their low caste[19]. Therefore, it may be necessary to consider psychological support for those who are at the lower end of the school caste when the source of their excessively low self-esteem is their interpersonal relationships.

In both the high and low contingencies of self-worth groups, contentment of source of enthusiastic activity affected self-esteem to some extent. In light of the questionnaire on contentment of source of enthusiastic activity, it can be speculated that being enthusiastic about one's favorite activities or working on something one is interested in can lead to self-confidence and self-satisfaction, which in turn can improve self-esteem. Enthusiastic activity has been shown to be associated with temporal perspective[12]. A typical definition of temporal perspective is "the totality of the individual's views of his psychological future and psychological past existing at a given time"[27]. This definition defines temporal perspective from the cognitive aspect[28], and it shows that the way humans view past and future time and their current behavior are closely related, as they adjust their current behavior by looking into the past and future, and predict the past and future from their current behavior[29]. Ito et al[12]. noted that contentment might lead people to have goals and hopes for the future and to accept the past. In the present study, it is assumed that a high level of enthusiastic activity promotes positive evaluation of the self by making it easier to have hopes for the future and accept the past and that this is among the factors that increase self-esteem.

Finally, based on Mizumoto's effect size criterion[30], the R^2 of the single regression analysis ranged from .10 to 37, indicating that there is a moderate to strong relationship between contentment of sources of self-worth and self-esteem.

5. Limitations

In this study, we clarified the relationship between contingencies of self-worth, contentment of sources of self-worth and, self-esteem among high school students. According to Orth et al.[4], self-esteem is not constant throughout life; it increases from adolescence to adulthood and then declines in old age. Similar to self-esteem, contingencies of self-worth and contentment of sources of self-worth may also develop throughout life, from adolescence to adulthood. It is expected that future studies will shed light on the lifelong development of contingencies of self-worth and contentment of sources of self-worth by conducting examinations of adults and seniors.

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