

Factor Structure and Reliability of the Japanese Version of the Young Schema Questionnaire Short Form

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ABSTRACT

The Young Schema Questionnaire-Short Form (YSQ-SF) is one of the most widely used measures of individual early maladaptive schemas in schema therapy, and this study examined the factor structure and reliability of its Japanese version (YSQ-SF-J). We created a subsample to ensure the samples' mutual independence ($N=248$, mean age= 19.75; 121 females). Then, Japanese participants ($N=800$) completed the Japanese-translated YSQ-SF. Participants were divided into 2 samples: Sample 1 ($n=700$, mean age= 23.05; 350 females); and Sample 2 ($n=100$, mean age= 20.27; 50 females) for test-retest reliability. Exploratory and confirmatory factor analyses revealed that the YSQ-SF-J's item-factor structure was identical to the English version. Moreover, the scale showed good internal consistency and test-retest reliability. Results revealed the scale's adequate psychometric properties. Thus, this study provided the first examples of empirical support for the YSQ-SF-J.

Key words: YSQ-SF-J, factor structure, schema therapy, early maladaptive schemas.

How to cite this paper: Oshima F, Iwasa K, Nishinaka H, Suzuki T, Umehara S, Fukui I, & Shimizu E (2018) Factor Structure and Reliability of the Japanese Version of the Young Schema Questionnaire Short Form. *International Journal of Psychology & Psychological Therapy*, 18, 99-109.

Novelty and Significance

What is already known about the topic?

- The Young Schema Questionnaire-Short Form (YSQ-SF) is one of the most widely used measures of individual early maladaptive schemas in schema therapy.

What this paper adds?

- This study examined the factor structure and reliability of its Japanese version.
- Exploratory and confirmatory factor analyses revealed that the YSQ-SF-J's item-factor structure was identical to the English version.

Schema therapy (ST) developed by J. Young is one of the third-wave innovative therapies that have been developed specifically for treating personality disorders and other complex, chronic clinical presentations (Skewes, Samson, Simpson, & van Vreeswijk, 2015). ST is an integrative model of psychotherapy for patients with severe, chronic

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psychological problems who have been considered difficult to treat, for instance, borderline personality disorders (Giesen-Bloo, van Dyck, Spinhoven, *et alii*, 2006; van Asselt, Dirksen, Arntz, *et alii*, 2008; Farrell, Shaw, & Webber, 2009; Nadort, Arntz, Smit, *et alii*, 2009; Masley, Gillanders, Simpson, & Taylor, 2011). Nowadays, the efficacy of ST for many psychiatric disorders and problems for interpersonal relationships (e.g., eating disorders, posttraumatic stress disorders, depression, substance-related disorder) has been robustly supported (Carter, McIntosh, Jordan *et alii* 2013; Cockram, 2009; Simpson, Morrow, Vreeswijk, & Reid 2010; Skewes *et alii*, 2015).

In ST, Young proposed the concept of early maladaptive schemas (EMSs), a distinctive set of core beliefs about self and others. He argued that the unique circumstances that an individual experience in childhood contribute to development of these EMSs (Dozois & Martin, 2009; Young, 1990, 1998; Young, Klosko, & Weishaar, 2003). EMSs are currently conceptualized as broad, pervasive themes or pattern-comprising memories, emotions, cognitions, and bodily sensations. These patterns pertain to self and relationships with others and are originally developed during childhood and then elaborated throughout the person's lifetime; furthermore, they are dysfunctional to a significant degree (Young *et alii*, 2003). Therefore, EMSs constitute the deepest level of cognition, such that memories and intense emotions accompany their activation. EMSs commonly develop in children who live in an environment that fails to meet their core emotional needs or in an environment where they experience repeated episodes of abuse, neglect, hostility, and criticism (Young *et alii*, 2003). EMSs are risk factors for various mental disorders, including post-traumatic stress disorder, bipolar II disorder, and eating disorders (Cockram, Drummond, & Lee, 2010; Hawke, Provencher, & Arntz, 2011; Kim, Lee, & Lee, 2014; Nilsson, Nielsen, Straarup, & Halvorsen, 2014; Unoka & Tölgyesa, 2007).

Young originally outlined taxonomy for 18 EMSs, differing in content and grouped into five schema domains. The first domain is Disconnection and Rejection. It refers to unsatisfied needs of acceptance, security, safety, stability, and nurturing. This domain includes schemas of Abandonment/Instability, Mistrust/Abuse, Emotional Deprivation, Defectiveness, and Social Isolation. The second domain of Impaired Autonomy and Performance refers to unsatisfied needs of separating and functioning independently. This domain involves schemas of Dependency, Vulnerability to Harm or Illness, Enmeshment/Undeveloped Self, and Failure. The third domain of Impaired Limits refers to characteristics of people who have trouble fulfilling responsibilities toward others and in respecting others' rights since internal limits concerning reciprocity and self-discipline have not developed. This domain comprises schemas of Entitlement/Grandiosity and Insufficient Self-Control. The fourth domain of Other Directedness refers to characteristics of people giving top priority to meeting others' needs at the expense of sacrificing their own needs. This domain consists of schemas of Subjugation, Self-Sacrifice, and Approval Seeking. The fifth and last domain is Over-Vigilance and Inhibition, which refers to characteristics of people who suppress their spontaneous feelings and impulses. This domain consists of schemas of Negativity/Pessimism, Emotional Inhibition, Unrelenting Standards/Hypercriticalness.

To evaluate the patient's EMS, Young and Brown (1994) originally developed the Young Schema-Questionnaire (YSQ), a self-report assessment instrument of 205 items, to assess the 16 early maladaptive schemas and five domains. The schemas were Abandonment, Mistrust/Abuse, Emotional Deprivation, Dependence/Incompetence, Vulnerability to Harm/Illness, Enmeshment, Defectiveness/Shame, Social Undesirability,

Failure to Achieve, Subjugation, Emotional Inhibition, Unrelenting Standards, Entitlement, Insufficient Self-Control, Social Isolation/Alienation, and Self-Sacrifice.

Recently, 75 items of the Young Schema Questionnaire-Short Form (YSQ-SF) have been developed (Young, 1998) with 5 domains including 15 schemas (Table 1). Relative to the original 205-item version, the 75-item version clearly has practical advantages for the clinician or researcher who wishes to investigate core beliefs of individuals with psychological disorders (Atalay, Akbaş, Zahmacioğlu, *et alii*, 2013). Now, the YSQ-SF is mainly used for most clinical interventions for ST (Atalay *et alii*, 2013; Atalay, Atalay, & Bağdaççek, 2011; Baranoff, Oei, Cho, & Kwon, 2006; Renner, van Goor, Huibers, *et alii*, 2013; Roelofs, Onckels, & Muris, 2013).

To date, several studies on the YSQ-SF's reliability and validity have been conducted. For example, Baranoff *et alii* (2006) revealed that the YSQ-SF with 13 factors has good psychometric properties and reliability for South Korean and Australian University students. Hoffart, Sexton, Hedley, *et alii* (2012) revealed that the four factors or schema domains were Disconnection, Impaired Autonomy, Exaggerated Standards, and Impaired Limits in the 75-item Young Schema Questionnaire-SF. However, in spite of YSQ-SF's popularity all over the world, its factors and domains differ depending on countries and YSQ version.

Based on study results, Behay and Young (2014) finally proposed that EMS should be 15 factors and four domains: Emotional Deprivation, Mistrust/Abuse, Emotional Inhibition, Defectiveness/Shame and Social Isolation/Alienation in the Disconnection and Rejection domain. Dependence/Incompetence, Abandonment/Instability, Vulnerability to Harm or Illness, Enmeshment/Undeveloped Self, Failure, and Subjection/Invalidation are in the Impaired Autonomy and Performance. Entitlement/Grandiosity, Insufficient Self-Control/Self-Discipline are in the Impaired Limits Domain. Self-Sacrifice, Unrelenting Standards/Hypercriticalness are in the Excessive Responsibility and Standards domain. The last domain is the new category. As mentioned, YSQ factors vary depending on the version -one reason there are too many, very similar factors (EMSs). The existence of many similar EMSs may be very important for understanding features of each patient's EMS. However, which factor structure is most appropriate for the Japanese version

Table 1. YSQ-SF Scales' Domains and Schemas with Descriptions

Disconnection and Rejection Domain	
Emotional Deprivation	The expectation that one's need for nurturance, empathy, and protection will not be met by others
Abandonment	The belief that significant others providing support are unstable, unreliable, or unpredictable
Mistrust	The expectation that others will intentionally hurt, abuse, cheat, or take advantage
Social Isolation	The feeling that one is fundamentally different from other people, isolated, and not part of a community
Defectiveness	The belief that one is inherently flawed, defective, and unlovable
Impaired Autonomy and Performance Domain	
Failure	The belief that one is fundamentally inadequate when it comes to performance and achievement
Dependence	The belief that one is dependent on others to handle everyday life.
Vulnerability	The fear that an imminent and unpreventable catastrophe will strike at any time
Enmeshment	The belief that that one is superior to other people and entitled to special rights and privileges
Other-Directedness Domain	
Subjugation	Excessive surrendering of control to others and subjugation of needs and emotions to avoid anger, retaliation, or abandonment
Self-Sacrifice	Excessive focus on voluntarily meeting the needs of others in daily situations at the expense of one's own gratification
Overvigilance and Inhibition Domain	
Emotional Inhibition	Excessive inhibition of spontaneous action, feeling, or communication, usually to avoid disapproval by others, feelings of shame, or losing control of one's impulses
Unrelenting Standards	The underlying belief that one must strive to meet very high internalized standards of behavior and performance
Impaired Limits Domain	
Entitlement	The belief that that one is superior to other people and entitled to special rights and privileges
Insufficient Self-Control	Pervasive difficulty with exercising or refusal to exercise sufficient self-control and frustration tolerance to achieve one's personal goals or to control expression of one's emotions

remains unclear. Therefore, to develop a Japanese version of the YSQ (YSQ-SF-J), we need to investigate the factor structure's model fitness based on results of exploratory factor analysis.

This study's primary purpose is to specify a factor structure for the YSQ-SF-J, which we translated by both exploratory and confirmatory factor analyses. The secondary purpose is to test the YSQ-SF-J's reliability.

STUDY 1

The purpose of this study was to investigate a factor structure of the YSQ-SF-J using exploratory factor analysis. Results of factor analyses in previous studies have not always been consistent (Baranoff *et alii*, 2006; Hoffart *et alii*, 2012; Soygüt, Karaosmanoğlu, & Cakir, 2009). Therefore, what factor structure is appropriate for the Japanese version of the YSQ is still unclear. Furthermore, the number of schemas and domains has been revised along with theoretical development for early maladaptive schemas (Behay & Young, 2014). According to Behay and Young (2014), the four-domain model of early maladaptive schemas is theoretically appropriate; however, the five-domain model had previously been recognized. From this information, we see the need to explore the YSQ-SF-J's factor structure, so in study 1, we used exploratory factor analysis.

METHOD

Participants

Participants were recruited from university classes of general psychology in Tokyo. Japanese undergraduate students ($N = 248$; mean age = 19.75, $SD = 1.53$, 121 females) completed the YSQ-SF-J in a university class without any monetary rewards. Before administering a survey, one of the authors explained the study's purpose and addressed any ethical issues. We also distributed documents describing the study's purpose and related ethical issues before distributing questionnaires. A completed and submitted questionnaire was collected after obtaining written informed consent. Participation was voluntary, and participants could cease their participation anytime they like. This study was approved by our ethics committee and was performed in accordance with the Declaration of Helsinki. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

Measurement

The *Young Schema Questionnaire Short Form-Japanese version* (YSQ-SF-J) has a 75-item self-report inventory developed by Young (1998) and was translated by our research team. For each item, participants chose the response that best described them on a six-point Likert scale (1 = completely untrue, 6 = this describes me perfectly). Subs-

cale scores were calculated by summing responses to items for each specific EMS. The total YSQ-SF-J score was obtained by summing scores for all subscales. Development of the YSQ-SF-J was permitted by J. Young who has a copyright of the original YSQ-SF in 2010. A forward/backward translation procedure was used to ensure equivalence between the original English version and the Japanese translated version. We obtained the right to translate the YSQ-S-J from Young in 2012. After that, two native Japanese clinical psychologists, fluent in both Japanese and English, independently translated the original YSQ-S into Japanese. After comparing these two forward translations, we developed the first version of the YSQ-SF-J. Second, other translators, who had no knowledge of the original YSQ-SF, then back translated the forward translation into English. These translators were native English speakers proficient in Japanese. Third, along with a bilingual English-Japanese speaker with a master's degree in clinical psychology, we compared the English back translation and the original English version to ensure that there were no differences in the questions' meanings. After making minor adjustments, we developed a provisional version of the YSQ-SF-J. Consequently, we concluded that the YSQ-SF-J's translation accuracy was acceptable and decided to use this version in this study.

RESULTS AND DISCUSSION

Of the 18600 responses, the dataset revealed only 26 missing values (0.01%), which were completed by the multiple imputation method using the "mi" package for R (Gelman, 2015). The Kaiser-Meyer-Olkin measure of sampling adequacy was .89, and measures of sampling adequacy for each item ranged from .56 to .95. In addition, Bartlett's test of sphericity was significant at $p < .001$. These measures indicated that the dataset was appropriate for factor analysis.

To specify the YSQ-SF-J's underlying factor structure, we conducted an exploratory factor analysis (maximum likelihood estimation, oblimin rotation) using correlational matrices for the 75 original items. Based on the screen test (first six eigenvalues: 20.505, 4.656, 3.730, 2.693, 2.251, and 2.221), parallel analysis, and Bayesian information criterion (BIC), four factors were established that accounted for 37.66% of the total variance. Table 2 shows the YSQ-SF-J's factor loadings. Items 6, 7, 37, 40, 63, and 65 were discarded because their factor loadings were lower than .30. Furthermore, items 46, 48, 49, 61, 62, 64, and 67 were also discarded due to cross-loadings for multiple factors. Finally, the factor structure involved 62 items and four factors. These factors showed acceptable internal consistency (Cronbach's $\alpha = .72$ to $.96$). The matrix of inter-factor correlations in Table 2 shows that factor 1 correlated to factors 2 and 3 moderately; factor 2 correlated to factor 3 moderately; factor 4 correlated to other factors weakly.

The first factor included 33 items representing the following schemas: Emotional Deprivation, Mistrust/Abuse, Social Isolation/Alienation, Defectiveness/Shame, Emotional Inhibition, Abandonment/Instability, Vulnerability to Harm or Illness, and Subjection/Invalidation. The first five schemas here originally belonged to the Disconnection and Rejection domain, and those remaining belonged to the Impaired Autonomy and Performance domain (Young & Behay, 2014). The second factor included 15 items representing the schemas of Failure Dependence/Incompetence, Enmeshment/Undeveloped Self, Entitlement/Grandiosity, and Insufficient Self-Control/Self-Discipline. The first three schemas here originally belonged to the Impaired Autonomy and Performance domain,

Table 2. Exploratory Factor Analysis Results for the YSQ-J (Factor loadings in bold denote meeting the criterion >.30).

Item	F1	F2	F3	F4	h^2	Item	F1	F2	F3	F4	h^2
4	.865	-.068	-.114	-.096	.776	17	.387	-.095	.277	.066	.240
2	.847	-.169	-.057	-.002	.750	11	.338	.221	-.099	.228	.225
24	.833	.010	.026	-.065	.699	29	.249	.741	-.140	-.080	.636
1	.814	-.230	-.062	-.083	.726	30	.190	.667	-.057	-.059	.488
5	.798	-.179	-.022	-.044	.671	28	.171	.661	-.139	.070	.490
19	.780	.040	.067	.055	.618	32	-.205	.587	.174	.191	.454
20	.685	.065	.163	-.099	.510	26	.232	.577	.094	-.094	.405
18	.659	-.189	.182	.013	.503	34	.272	.561	.050	.030	.393
3	.643	.107	-.141	-.085	.451	75	.076	.506	.069	.080	.273
23	.630	.295	-.142	-.066	.508	31	.023	.505	.169	-.035	.285
13	.621	.125	.112	-.031	.414	35	.252	.501	.115	.118	.341
50	.605	-.064	-.028	.293	.456	27	.296	.499	.123	-.063	.362
22	.593	.125	.181	-.108	.412	41	-.142	.457	.266	-.016	.300
12	.584	.147	.045	.142	.384	42	-.188	.423	-.047	.228	.269
25	.570	.287	.012	-.059	.479	33	.073	.423	.140	-.072	.209
15	.567	-.088	.234	.154	.407	72	.058	.305	.297	.023	.185
21	.566	.145	.063	-.149	.368	70	.109	-.456	.232	.296	.362
58	.542	.141	.070	.071	.324	71	-.083	.083	.577	-.002	.346
16	.515	.134	.124	-.231	.352	68	-.021	.011	.573	-.033	.330
47	.505	.217	-.073	.199	.347	74	.147	.209	.462	-.198	.318
10	.502	.234	.188	.051	.344	73	-.047	.299	.400	-.053	.263
8	.479	.183	.157	.094	.296	66	.087	.049	.378	.201	.193
59	.462	-.008	-.146	.233	.289	69	.173	-.036	.333	-.128	.159
14	.459	.056	.245	.101	.284	55	.151	-.029	-.044	.586	.368
56	.446	.125	-.076	-.071	.225	52	.058	-.148	-.098	.574	.365
39	.437	.123	.055	.178	.241	53	.032	.030	.127	.566	.338
38	.422	.073	-.094	.267	.263	45	-.149	.293	.079	.553	.420
36	.410	.198	.152	.121	.245	44	-.026	.178	-.073	.483	.271
60	.409	-.017	-.195	.246	.266	43	-.175	.222	.038	.449	.283
57	.396	.287	-.149	.106	.273	51	.248	-.282	-.073	.393	.301
9	.390	.067	.295	.160	.269	54	.116	-.061	-.035	.391	.171
Inter-factor correlations											
		F2	F3	F4							
F1		.510	.342	.185							
F2		—	.342	.018							
F3		.342	—	.003							
F4		.018	.003	—							

and those remaining belonged to the Impaired Limits domain (Young & Behay, 2014). The third factor included six items represented by the schemas of Entitlement/Grandiosity, and Insufficient Self-Control/Self-Discipline. These schemas originally belonged to the Impaired Limits domain (Behay & Young, 2014). The fourth factor included eight items representing the schemas of Enmeshment/Undeveloped Self, and Self-Sacrifice. The former originally belonged to the Impaired Autonomy and Performance domain, and the latter originally belonged to the Excessive Responsibility and Standards domain (Behay & Young, 2014). As a result, the Unrelenting Standards/Hypercriticalness schema was omitted from the factor structure, because the EFA discarded all items representing this schema.

STUDY 2

The purpose of this study was to examine the statistical fitness of the YSQ factor structure models. As mentioned previously, YSQ factor structures reported in previous studies were not always consistent. Thus, there is a need to compare the statistical fitness of these factor structures, including the one identified in Study 1, to determine the most appropriate factor structure for the YSQ-SF-J by confirmatory factor analysis (CFA). In addition, we examined the YSQ-SF-J's reliability in Study 2. For this additional purpose, we estimated Cronbach's alpha coefficients for examining internal consistency and intraclass correlation coefficients for examining test-retest.

METHOD

Participants

Japanese adults were recruited as participants via website ($N= 800$; mean age= 44.2, $SD= 13.6$, 400 females), and they completed the YSQ-SF-J online without any monetary reward. Participants were divided into two samples: Sample 1 ($n= 700$; mean age= 23.05; $SD= XX.X$; 350 females); and Sample 2 ($n= 100$; mean age= 44.3; $SD= 14.4$; 50 females) for test-retest reliability. The 100 Sample 2 participants completed the YSQ-SF-J again via website after a 4-week interval for reliability. Before administering a survey, one of the authors explained the study's purpose and addressed any ethical issues. We also distributed documents describing the study's purpose and related ethical issues before distributing questionnaires. All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards. Informed consent was obtained from all individual participants included in the study.

RESULTS AND DISCUSSION

We conducted confirmatory factor analysis (CFA) with a maximum likelihood estimation to investigate the model fitness of the factor structure resulting from EFA and to choose the best fitting factor structure by comparing the following models: the original 15 first-order factors model (including 15 schemas) (Young, 1998); the five second-order factors model (including 5 domains and 15 schemas) (Young, 1990); and the newer theoretical four second-order factors model (including 4 domains and 15 schemas) (Behay & Young, 2014). Goodness-of-fit indices including the standardized root-mean residual (SRMR), the root mean square error of approximation (RMSEA), the Comparative Fit Index (CFI), and the Tucker-Lewis Index (TLI) were examined to determine how well the model fit the data. Following existing recommendations (Brown, 2015; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999; Watson, Clark, & Tellegen, 1988), indices such as SRMR <0.08, RMSEA <0.08, CFI >.95, and TLI >.95 were used.

With CFA, we estimated and compared possible models of the YSQ-SF factor structure. As shown in Table 3, CFA revealed that fitness indices of the factor structure resulting from EFA were statistically acceptable (CFI= .86, TLI= .83, RMSEA= .06, and SRMR= .06). In fact, compared to other factor structures, most indices indicated

the model derived from this study's EFA was better fitted. Nonetheless, differences between this model's values of fitness indices and those of other models were small. As a result of our EFA process, 13 items were discarded due to their low factor loadings or cross loadings for multiple factors. Consequently, this model's factor structure differed extremely from the original (Young, 1998). Thus, for consistency with previous work (Baranoff *et alii*, 2006; Hoffa *et alii*, 2012), we decided to adopt the 15 first-order factors model (i.e., original model) as the Japanese version of YSQ-SF. Fitness indices of the original 15 first-order factors model were best fitted among the three existing models and statistically acceptable (CFI= .85, TLI= .83, RMSEA= .06, and SRMR= .05).

Table 3. Goodness-of-fit for YSQ models

	CFI	TLI	RMSEA	SRMR
1. 15 first-order factors model (including 75 items and 15 schemas) (Young, 1998)	.85	.83	.06	.06
2. 5 second-order factors model (including 75 items, 15 schemas, and 5 domains) (Young, 1990)	.83	.82	.06	.06
3. 4 second-order factors model (including 75 items, 15 schemas, and 4 domains) (Young, 2014)	.83	.82	.06	.06
4. Model identified in the EFA (including 62 items and 4 factors)	.86	.84	.06	.05

Notes: CFI: Comparative Fit Index; TLI: Tucker-Lewis Index; RMSEA: Root Mean Square Error of Approximation; SRMR: Standardized Root-Mean Residual.

We computed Cronbach's alpha coefficients to estimate the internal consistency of YSQ scores, which were statistically acceptable (Table 4). Test-retest intraclass correlation coefficients with a 4-week interval were not adequate to support the test-retest reliability of YSQ-SF-J (ICCs= .39 to .60). Through careful examination of the dataset, we found that some participants showed large amounts of change on YSQ scores from time 1 to time 2. Thus, we supposed these outliers debased the coefficients. According to a previous study (Nyitray *et alii*, 2009), we removed from the analyses four participants regarded as outliers. Criteria for removal were as follows: the absolute value of change amount on each YSQ score (from time 1 to time 2) was higher than its average +3SD; if even one score exceeded this criterion, we removed the participant from the entire analysis. After removal, test-retest interclass correlation coefficients were improved, as shown in Table 4. These coefficients showed that the YSQ scores' test-retest reliability was statistically acceptable.

GENERAL DISCUSSION

This study's purpose was to develop a Japanese version of the Young Schema Questionnaire short form (YSQ-SF-J) using a sample from the Japanese population. To achieve this, we specified factors of the YSQ-SF-J and evaluated its reliability.

We explored the current 15-factor model for Japanese samples. It was hypothesized that disparities between Western and non-Western cultures would appear with respect to development of maladaptive schemas. After removal of redundant items that did not load explicitly on any factor, results revealed a better fit for a 62-item, 15-factor model than our explanatory factor analysis. This version is one of the reasons that Young (2003) explained for using YSQ clinically. We consider that YSQ is developing as a psychological questionnaire for personality which is under cultural differences because

Table 4. Internal consistency and test-retest reliability of the YSQ-J

YSQ-J variables	Internal Consistency (n= 700)			Test-Retest Reliability (n= 96)		
	α	95% CI		ICC	95% IC	
		Lower	Upper		Lower	Upper
Emotional Deprivation	.87	.83	.90	.78	.69	.85
Abandonment	.86	.82	.89	.72	.61	.84
Mistrust/Abuse	.85	.82	.89	.84	.77	.89
Social Isolation	.82	.77	.86	.76	.65	.83
Defectiveness/Shame	.89	.86	.92	.81	.73	.87
Failure	.91	.87	.95	.81	.73	.87
Dependence/Incompetence	.86	.82	.89	.79	.71	.86
Vulnerability to Harm or Illness	.84	.80	.88	.78	.68	.85
Enmeshment/Underdeveloped Self	.75	.71	.80	.70	.59	.79
Subjugation	.78	.73	.82	.75	.65	.83
Self-Sacrifice	.77	.73	.82	.71	.60	.80
Emotional Inhibition	.78	.73	.82	.80	.71	.86
Unrelenting Standards/Hypercriticalness	.75	.73	.77	.74	.64	.82
Entitlement/Grandiosity	.75	.71	.80	.70	.59	.79
Insufficient Self-Control/Self-Discipline	.78	.73	.82	.70	.58	.79
YSQ total score	.98	.97	.98	.80	.71	.86

there are several forms of YSQs. In this study, we developed the Japanese version, but we need to integrate this questionnaire with others.

The original YSQ was designed for borderline personality disorders (Young, 2003), but some cultural differences exist for EMS in borderline personality disorders between Asian and Western countries. However, no between-cultures studies have been conducted on EMS until now. These relationships will be revealed when YSQ samples have been obtained from other countries.

Confirmatory factor analysis indicated that YSQ-SF-J subscales had acceptable convergent and discriminant validity. Furthermore, the YSQ-SF-J was found to have good internal consistency and acceptable test-retest reliability. We examined the reliability of YSQ-SF-J subscales to estimate Cronbach's alpha coefficient as a parameter of internal consistency, and intra-class correlation coefficient as a parameter of test-retest reliability. Results showed that reliability of YSQ-SF-J is comparable to the original YSQ-SF.

This study has several limitations. First, it did not include psychiatric patient samples, but only non-clinical samples of university students. Considering the relationship between EMS and psychopathology, the YSQ-SF-J's psychometric properties should be investigated in clinical samples with medical diseases.

Second, the selection of participants contained some biases. As mentioned above, age distribution is a biased limitation. Furthermore, we did not control for participants' socioeconomic status. In addition, we did not conduct formal assessments of psychopathology and merely relied on participants' self-reported history of mental illnesses. This limitation affects the generalizability of our findings.

Third, our study has no validity although previous studies have consistently been found valid (Baranoff *et alii*, 2006; Hoffart *et alii*, 2012). This study's results do not allow us to form a definite conclusion concerning this issue; therefore, it should be addressed in future research.

Here, we examined the YSQ-SF-J's factor structure and validity, finding the item-factor structure identical to that of the original English version (YSQ-SF). The YSQ-SF-J comprised 15 EMSs; Emotional Deprivation, Abandonment, Mistrust, Social Isolation, Defectiveness, Failure, Dependence, Vulnerability, Enmeshment, Subjugation, Self-Sacrifice, Emotional Inhibition, Unrelenting Standards, Entitlement, and Insufficient Self-Control. These subscales had adequate test-retest reliability. Despite some limitations, this study provided the first examples of empirical support for the YSQ-SF-J.

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Received, May 1, 2017
Final Acceptance, December 23, 2017