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Cross-cultural study of conviction subtype Taijin Kyofu: proposal and reliability of Nagoya-Osaka diagnostic criteria for social anxiety disorder

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Abstract

Conviction subtype Taijin-Kyofu (c-TK) is a subgroup of mental disorder characterized by conviction and strong fear of offending others in social situations. Although the concept of c-TK overlaps with that of social anxiety disorder (SAD), patients with c-TK often may not be diagnosed as such within the current DSM-IV criteria. We propose the Nagoya-Osaka Criteria to amend this situation. This study examined the cross-cultural inter-rater reliability of the proposed criteria. 18 case vignettes of patients with a variety of complaints focused around social anxieties were collected from 6 different countries, and diagnosed by 13 independent raters from various nationalities according to the original DSM-IV and the expanded criteria. The average agreement ratio for the most frequent diagnostic category in each case was 61.5% with DSM-IV and 87.6% with the modified DSM-IV with Nagoya-Osaka Criteria ($p < 0.001$). These findings indicate that the Nagoya-Osaka Criteria for SAD can improve inter-rater reliability of SAD.

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Keywords

Social Phobia; Taijin Kyofu; Reliability; Diagnostic and Statistical Manual of Mental Disorders; Cross-Cultural Comparison

INTRODUCTION

The condition roughly corresponding to social anxiety disorder (SAD) in modern operational diagnostic criteria has been widely recognized in Japan since the early 1930s and has been traditionally referred to as “Taijin-Kyofu (TK)” (“Taijin” means “vis-à-vis other people” and “Kyofu” means “fear”). In Western countries TK has often been considered a culture-bound syndrome existing only in East Asia and there had been few reports of TK and related psychiatric disorders up until the publication of DSM-III (Yamashita, 2002).

In the Western literature Isaac Marks first proposed the existence of a phobia subtype related to social scrutiny in 1970 (Marks, 1970) and the diagnostic criteria for “social phobia” first appeared in DSM-III in 1980 (Kirmayer, 1991). The facts that the prevalence of SAD in Western countries is higher than previously thought (Wickramaratne, 1996) and TK per se, especially its so-called tension subtype, is not a culture-bound syndrome have been demonstrated repeatedly since then (Kessler et al, 2005; Weissman et al, 1996). In DSM-IV published in 1994, the name “social anxiety disorder (SAD)” was added to “social phobia” (American Psychiatric Association, 1994).

TK, however, has traditionally been divided into two categories in Japan, namely tension subtype and conviction subtype (Kasahara, 2005; Nakamura et al, 2002). Conviction subtype TK is characterized by both a strong belief and fear that others will be offended by one’s own inadequacies. “Inadequacies” may occur in many ways, including emitting bodily odors; odd gaze or facial expression; blushing; loud bowel sounds and so on. Diagnostic criteria for SAD in DSM-IV or ICD-10 correspond only to tension subtype and many cases of conviction subtype TK would then not be diagnosed as SAD (See Figure 1). Many have therefore considered conviction subtype TK as a culture-bound syndrome up to now.

The conviction subtype of TK roughly corresponds to Taijin-Kyofu-Sho (TKS) (“Sho” means “syndrome”) listed in the appendix to DSM-IV which includes culture bound syndromes. TKS in DSM-IV refers to “intense fear that his or her body, its parts or its functions, displease, embarrass, or are offensive to other people in appearance, odor, facial expressions, or movements.” It is therefore often referred to as “offensive subtype SAD.” Although the concept of TKS, or offensive subtype SAD, is similar to that of conviction subtype TK, they do not completely overlap with each other, because patients with offensive subtype SAD may not always be firmly “convinced” that they are offending others. (See Figure 1)

Some Western authors have recently reported cases of offensive subtype of SAD which also correspond with conviction subtype of TK, suggesting that offensive subtype SAD, including conviction subtype TK, is not culture-bound (Clarvit et al, 1996; Kleinknecht et al, 1997; Suzuki et al, 2003). However, a recent examination of patients from a specialized anxiety disorder clinic failed to identify any who met full criteria for offensive subtype SAD (Kim et al, 2007). It is possible that many clinicians in the West are diagnosing patients with conviction subtype TK as conditions other than SAD, including delusional disorder, body dysmorphic disorder or paranoid disorder, since the diagnostic criteria for SAD in DSM-IV and ICD-10 do not fully cover conviction subtype TK (Kasahara, 2005; Lochner et al, 2003; Tanaka-Matsumi, 1979).

Importantly, there are some single case reports and case series reports that suggest that selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are more effective for conviction subtype TK than antipsychotics (Clarvit et al, 1996; Matsunaga et al, 2001; Nagata et al, 2003; Nagata et al, 2006; Nagata et al, 2005).

Given the marked overlap between TK and SAD and the suggestions for consistent pharmacologic responsiveness, it may be valuable to expand of the current DSM diagnostic criteria for SAD to incorporate symptoms of conviction subtype TK. This would encourage clinicians to become aware of the relationship between conviction subtype TK and SAD and facilitate appropriate treatment. Such criteria would also make it possible to investigate whether conviction subtype TK is culture-bound or found more broadly across the world. As the first step of this research project, the present article proposed expanded diagnostic criteria for SAD incorporating those for an offensive subtype and tested the cross-cultural reliability of these proposed criteria.

METHODS

An expanded version of diagnostic criteria for SAD

Four authors from Japan (YK, JC, TN and TAF) who had extensive clinical experience with the offensive subtype of SAD and TKS, held several meetings to establish a set of preliminary diagnostic criteria for expanded SAD that would cover its offensive subtype (Table 1). These criteria, referred to as the Nagoya-Osaka Criteria, were based on the authors' own clinical experiences as well as descriptions in the literature in which consensus conceptualisations of SAD, TK, and TKS are provided (Seedat et al, 2004). Seedat and Nagata summarized that TK with delusional beliefs about patients' own inadequacies are characterized by excessive fear and avoidance of social interactions and performances and can therefore be conceptualised on a spectrum of "social anxiety spectrum disorders". Furthermore, it was suggested that c-TK might be categorized as body dysmorphic disorder or delusional disorder (somatic type) in DSM-IV although such delusional beliefs endorsed by patients with c-TK might differ considerably from those of other delusional disorders. We therefore attempted to modify the current diagnostic criteria for SAD so that they can cover the whole spectrum of social fears including offensive fears with conviction, while minimizing their departure from the current ones. They were developed by simply adding item C (2) "The person believes that the fear is commensurate with his/her inadequacies." to the current diagnostic criteria for SAD in DSM-IV. This item was designed to include patients with c-TK, who might have been considered to have delusions due to their conviction of their inadequacies and consequently would have been diagnosed as delusional disorder, paranoid disorder, body dysmorphic disorder, and so on, if DSM-IV or ICD-10 were used for diagnosis. In addition, new criteria for an offensive subtype were introduced.

Case vignettes

A set of 18 case vignettes were developed by asking 8 researchers from various countries to contribute case vignettes describing real cases of a "typical SAD", "offensive type SAD" and one of questionable diagnosis (ie somewhat similar to typical or offensive SAD but may be different; eg body dysmorphic disorder, delusional disorder), if they had seen any such patients. The countries represented by these researchers included Japan, China, Korea, Australia, the Netherlands and the USA. All of the researchers had expressed prior interest in cross-cultural aspects of SAD and in many cases conducted research in this field. The case vignettes were to include: sex, age, age at first visit, chief complaints at first visit, present illness (may include course of treatment), life history and developmental history (including academic history, job history, marital history, if the patient dates his present illness as far back as he can remember, the life history and the developmental history can be merged with the present illness), present

and past physical illnesses, and family history (including family composition and familial hereditary loading). Table 2 gives an example of a case vignette; due to confidentiality concerns, this example represents a hypothetical case which was not used in the present study.

Assessment of inter-rater reliability

In order to assess inter-rater reliability, we asked 13 researchers from various countries (5 from Japan, 2 from the Netherlands and the USA, 1 from Korea, China, Australia and Germany respectively) to assign diagnoses to the 18 case vignettes. Two kinds of diagnoses were to be provided for each case vignette by each rater. One was to be made using current DSM-IV criteria while the other was to be based on DSM-IV criteria that included the modified Nagoya-Osaka criteria for SAD. Subtype(s) of SAD (if that was the diagnosis given) for each case vignette were determined by the 13 raters according to the expanded criteria.

First we assessed the inter-rater reliability of the primary diagnoses. Primary diagnoses made for the case vignettes by 13 independent raters were categorized into four groups: 1) SAD, 2) any of the psychotic disorders in DSM-IV, paranoid personality disorder, or body dysmorphic disorder, 3) diagnoses for both 1) and 2), and 4) diagnoses with other psychiatric disorders including personality disorders. When comorbid or multiple diagnoses were assigned that included SAD but did not include psychotic or body dysmorphic disorder, the diagnosis of SAD took precedence (e.g., a diagnosis with both SAD and bipolar disorder was put into the category of diagnosis with SAD).

Next we examined the inter-rater reliability of the subtype diagnoses according to the Nagoya-Osaka Criteria. Subgroups determined for the case vignettes by 13 independent raters were categorized into three groups: 1) Generalized subgroup, 2) Offensive subgroup, 3) SAD but its subgroup was not specified, and 4) Diagnoses other than SAD. When both generalized and offensive subtypes were assigned, such cases were categorized into the second group, because we wanted to focus on the reliability of the newly introduced offensive subtype.

Inter-rater reliability was quantified by calculating the agreement ratio of diagnoses for each case. Kappa coefficients were not used in the present study because they give falsely low agreement coefficients when base rates are extremely low or high (Cicchetti et al, 1990; Feinstein et al, 1990), as among our cases, most of whom suffered from SAD and related disorders. The differences in percentage agreements between the original DSM-IV and the modified DSM-IV were evaluated through Wilcoxon signed-rank test. All data were analyzed using Microsoft Office Excel and SPSS statistical package (version 13).

RESULTS

Properties of the case vignettes

Eighteen case vignettes were prepared by 8 researchers from 6 different countries. The cases consisted of 10 women and 8 men, and their mean age (SD) was 28.4 (5.9). Table 3 presents the nationalities and other demographic characteristics of the collected case vignettes.

Inter-rater reliability for diagnosis of SAD

A total of 468 diagnoses (234 with the original DSM-IV and 234 with the modified DSM-IV including the Nagoya-Osaka Criteria for social anxiety disorder) were used to assess inter-rater diagnostic reliability. Table 3 tabulates the diagnoses made for the case vignettes by 13 independent raters into the following four groups: 1) SAD, 2) psychotic disorders, paranoid personality disorder, or body dysmorphic disorder, 3) diagnoses for both 1) and 2), and 4) other psychiatric disorders. By utilizing the original DSM-IV, agreement ratio for diagnoses was lower than 50% for 8 cases (cases 1, 4, 5, 9, 10, 11, 13 and 17). In contrast, by utilizing the

Nagoya-Osaka Criteria, agreement rates for diagnoses were higher than 75% for all cases except for cases 2 and 13. In addition, for all these cases, the most common diagnosis was SAD. The average agreement ratio for diagnostic categories with the highest agreement for each case was 61.5% (SD=19.0%) with DSM-IV and 87.6% (SD=13.0%) with the modified DSM-IV with Nagoya-Osaka Criteria for SAD (Wilcoxon signed rank test, $p<0.001$). The average agreement ratio for diagnostic categories with the highest agreement for each case was significantly less for diagnoses by East Asian raters (57.4%, SD=21.7%) than those by Western raters (69.4%, SD=21.6%) when DSM-IV was used for rating (Wilcoxon signed rank test, $p<0.05$).

Inter-rater reliability for subtypes of SAD according to the Nagoya-Osaka Criteria

Table 4 shows the generalized and/or offensive subtypes determined for the case vignettes by 13 independent raters. The average agreement ratio for diagnostic categories with the highest agreement for each case was 61.5% (SD=17.1%). Western raters (56.5%, SD=14.2%) were as able to diagnose offensive subtypes as were East Asian raters from Japan, Korea and China (67.5%, SD=21.8%) (Wilcoxon signed rank test, $p=0.09$).

DISCUSSION

Development of the expanded diagnostic criteria for SAD

The Nagoya-Osaka diagnostic criteria were developed by simply adding item C (2) “The person believes that the fear is commensurate with his/her inadequacies.” to the current diagnostic criteria for SAD in DSM-IV. This strategy with minimum modification could be quite useful because the criteria could be used without effort by clinicians and researchers who are familiar with DSM-IV. Furthermore, such simplicity can lead to high inter-rater reliability by reducing misinterpretation of the contents of the criteria by raters. At the same time, the proposed criteria were designed carefully to include patients with conviction about their inadequacies who were excluded from the original conceptualization of SAD in DSM-IV. Furthermore, the expanded criteria were designed to categorize SAD into two subgroups of generalized and offensive subtypes. The offensive subtype now includes patients with SAD who present with offensive worries either with conviction or without conviction.

Reliability of the original DSM-IV criteria and their expanded version for diagnosis of SAD

As expected, current DSM-IV criteria had poor reliability for cases with TK. Indeed, when DSM-IV was utilized, agreement ratios for diagnoses were poor for many of the prepared case vignettes (e.g., cases 1, 4, 5, 9, 10, 11, 13 and 17 with less than half of the raters agreeing on one diagnosis). For these cases, discrimination between SAD and psychotic disorders or body dysmorphic disorder seemed difficult. For instance, for case 13, five of the 13 raters made diagnoses with SAD and another five raters made diagnoses with psychotic disorders or body dysmorphic disorder.

On the other hand, use of the Nagoya-Osaka Criteria for SAD improved the diagnostic agreement among an international group of experts assessing cases of SAD and TK. In fact, in all of the above named cases, the agreement ratios exceeded 60%, and for a few cases there was even unanimous diagnostic agreement. That is apparently because the new criteria for SAD could accommodate patients with conviction of their offensiveness.

Subtyping SAD with the expanded criteria

Although the Nagoya-Osaka Criteria were designed to categorize SAD into generalized and offensive subtypes and the average agreement ratio for subtyping was satisfactory, the agreement ratios were modest in several cases (e.g., cases 4, 5, 10, 13, 16 and 18). The low

agreement in these cases may be due to the true difficulty of diagnosing some cases of social phobia, insufficient information presented in case vignettes, and/or the unreliability of the proposed diagnostic criteria for subtyping. For example, the chief complaints for case 5 included “I am certain that my eyes open up widely when someone looks at me. Then the person notices it and thinks that I am strange and gazing at him/her,” and when asked if he was afraid that his “wide open eyes” would displease others, he was not sure. Hence in this case, it is possible to assume that difficulties in judging if the patient’s condition fulfills the diagnostic criteria for offensive subtype lead to the low agreement ratio for subtyping. In some case summaries there appeared to be insufficient information presented, for example a failure to mention whether the patient feared his/her body parts or postures would displease others or were simply afraid that they were ugly and embarrassing. Finally, in order to overcome the possibility that the diagnostic criteria may lack reliability, it might be promising to develop a structured interview for categorizing SAD according to the new criteria in order to increase reliability. It is noteworthy, moreover, that both Eastern and Western psychiatrists could use the explicit diagnostic criteria for offensive subtype and reach a similar degree of inter-rater reliability. Hence by making the criteria for the offensive type more explicit, this may help to reduce any cultural biases in diagnostic practice.

Conviction subtype TK may not be culture-bound

Case vignettes of Caucasian patients with conviction subtype TK (cases 1 and 17 in Table 2) were provided by Dr Bögels of the Netherlands and by Dr Schneier of New York, respectively, in addition to such cases presented by Japanese (cases 6 and 12), Chinese (case 11) and Korean (case 9) clinicians. It is therefore suggested that conviction subtype TK may not be as culture-bound as previously thought (Clarvit et al, 1996). Unfortunately, prevalence of conviction subtype TK has not been assessed accurately even in Japan, due to lack of validated and reliable diagnostic criteria for it. The Nagoya-Osaka Criteria for SAD might also be useful for comparing the prevalence of conviction subtype TK between Japan and other countries and examine if this type of TK is truly not culture-bound.

Therapeutic implications of expanding diagnostic criteria for SAD

In this study, one possibility was suggested that the conceptualization of SAD within the DSM-IV could be expanded to include patients with conviction subtype TK. Alternatively, the diagnostic criteria for psychotic disorders and/or body dysmorphic disorder in the DSM-IV could be modified to diagnose such patients with high reliability. Nevertheless, there are some case reports and case series reports that suggest that selective serotonin reuptake inhibitors (SSRIs) and serotonin-norepinephrine reuptake inhibitors (SNRIs) are more effective for conviction subtype TK than antipsychotics (Clarvit et al, 1996; Matsunaga et al, 2001; Nagata et al, 2003; Nagata et al, 2006; Nagata et al, 2005). Our own experiences with six cases of offensive subtype SAD also suggest that they respond to the CBT program as well as those without offensive fears (Chen et al, submitted, Group cognitive-behavior therapy for Japanese patients with social anxiety disorder: Outcomes and their predictors). Although these do not constitute as robust evidence as randomized controlled trials and there is a report which mentions that cognitive behavioral group therapy is less effective for offensive type symptoms than it is for general social anxiety symptoms (Rector et al, 2006), our attempt to expand the diagnostic criteria for SAD might be worthwhile because it points to new avenues for their effective treatments. This discrepancy in outcomes of group CBT might have occurred due to difference in procedures of the treatment and/or low reliability in diagnoses of offensive subtype SAD. Definitive controlled trials of SSRIs or SNRIs, and of CBT for patients with offensive subtype SAD, diagnosed with our Nagoya-Osaka Criteria, will therefore be welcome. Furthermore, these new criteria could facilitate studies to explore the relationship between TK and SAD in terms of their aetiology and clinical characteristics, and results of such studies would in turn be useful for validating the criteria.

Limitations

Insufficiency in information presented in the case vignettes might have affected the agreement ratio for diagnoses. Moreover, all the raters were experts in cultural aspects of SAD/TK and could be familiar with diagnosing patients with SAD or TK. Hence it might be supposed that the agreement ratio for diagnoses could reduce if raters included practicing psychiatrists or psychologists who were not familiar with diagnosing patients with SAD/TK. On the other hand, the raters' expertise in the disorder might bias their judgment for diagnoses and reduce inter-rater reliability. That is to say, each expert rater would have his/her own idea of diagnostic criteria for SAD/TK for which no consensus have yet been given and such idea might prevent him/her from following the proposed criteria.

Second, cases of the collected case vignettes were limited to conditions around SAD/TK. This means that the prevalence of each disorder in the 18 case vignettes was completely different from the psychiatric clinical settings or the general population. The agreement ratio for diagnoses might change if the expanded criteria would be applied to patients of psychiatric clinics or to subjects from the general population.

CONCLUSIONS

This study examined inter-rater reliability among a panel of international experts using newly developed diagnostic criteria for SAD that include patients with conviction subtype TK. There was a high agreement ratio for diagnoses of SAD with the new criteria. The inter-rater reliability for SAD subtypes according to the proposed criteria was satisfactory but warranted further refinement.

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Patients with conviction of offensiveness or negative evaluation may be diagnosed with delusional disorder in addition to the diagnosis of SAD (of expanded conceptualization).

c-TK: conviction subtype TK
t-TK: tension subtype TK
TKS: Taijin-kyofu-sho
o-SAD: offensive subtype SAD

Figure 1.
SAD, TK, TKS and offensive subtype SAD

Table 1**Nagoya-Osaka Criteria for expanded SAD diagnoses including its offensive subtype**

-
- A.** A marked and persistent fear of one or more social or performance situations in which the person is exposed to unfamiliar people or to possible scrutiny by others. The individual fears that he or she will act in a way (or show anxiety symptoms) that will be humiliating or embarrassing.
- Note: In children, there must be evidence of the capacity for age-appropriate social relationships with familiar people and the anxiety must occur in peer settings, not just in interactions with adults.
- B.** Exposure to the feared social situation almost invariably provokes anxiety, which may take the form of a situationally bound or situationally predisposed Panic Attack. Note: In children, the anxiety may be expressed by crying, tantrums, freezing, or shrinking from social situations with unfamiliar people.
- C.** Either (1) or (2).
- 1.** The person recognizes that the fear is excessive or unreasonable.
 - 2.** The person believes that the fear is commensurate with his/her inadequacies.
- D.** The feared social or performance situations are avoided or else are endured with intense anxiety or distress.
- E.** The avoidance, anxious anticipation, or distress in the feared social or performance situation(s) interferes significantly with the person's normal routine, occupational (academic) functioning, or social activities or relationships, or there is marked distress about having the phobia.
- F.** In individuals under age 18 years, the duration is at least 6 months.
- G.** The fear or avoidance is not due to the direct physiological effects of a substance (e.g., a drug of abuse, a medication) or a general medical condition and is not better accounted for by another mental disorder (e.g., Panic Disorder With or Without Agoraphobia, Separation Anxiety Disorder, Body Dysmorphic Disorder, a Pervasive Developmental Disorder, or Schizoid Personality Disorder).
- H.** If a general medical condition or another mental disorder is present, the fear in Criterion A is unrelated to it, e.g., the fear is not of Stuttering, trembling in Parkinson's disease, or exhibiting abnormal eating behavior in Anorexia Nervosa or Bulimia Nervosa.
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Specify if: **Generalized subtype:** if the fears include most social situations (also consider the additional diagnosis of Avoidant Personality Disorder)

Offensive subtype: if the person has strong fear of displeasing or offending others by his/her own inadequacies (i.e. emitting odd bodily odors; odd gaze or facial expression; blushing; loud bowel sound, etc.).

Table 2**A hypothetical case vignette example**

Sex	Female	Age at first visit	33
Chief complaints at first visit			
<p>"I always feel tense when I am talking with others whom I see for the first time or when I am doing my job."</p> <p>"I am afraid that I am displeasing others strongly."</p> <p>"I am afraid that my gaze, attitude, and contents of my talk make others feel unpleasant."</p>			
Present illness (including any comorbidities, if any. This section may also include course of treatment)			
<p>The patient presented to the Anxiety Disorders Clinic after seeing a newspaper ad for a research study of social anxiety. She immigrated to this country three years ago from Europe where she grew up.</p> <p>When she was an elementary school student, she was an active girl, did well at school and she was confident with herself. But just before she graduated from elementary school (age 12), she had a traffic accident (she ran into a car by bicycle) and a scar was made on her forehead. In the 1st year of junior high school, a classmate was upset by looking at her and said, "Wow, you look terrible" in front of other classmates, though she did not care so much about the scar on her face. Since then she was afraid that she displeased others. She grew her front hair longer to hide her scar. When she was in junior high school, she underwent operations of plastic surgery for three times and the scar became less conspicuous and is no longer noticeable.</p> <p>She was admitted to the high school of her first choice. It was still very difficult for her to talk especially with boys. She did well academically and entered the university of her first choice. She could make many boy and girl friends and enjoyed her life as a student. Ever since her high school days, though, she has experienced palpitation, light flushes, stiffness of her shoulder and body when she is among other people.</p> <p>After graduation from the university she joined an international trading company, and she was transferred outside of Europe and lived there for two years. At that moment she was confident with herself and enjoyed her life. Then she was again transferred to the head office in a big city in her own country. She could not get along with her superior there. Her boss made her rewrite papers repeatedly. And so, she lost confidence and again she came to feel tense when she talked with others whom she saw for the first time or when she discussed her task with others. After she began to work in the branch office in the same foreign country again following her request, she experienced a major depressive episode at the age of 31. Though her depressive symptoms remitted in 1 or 2 months without any medical treatment, she continued to feel tense with others.</p> <p>She is afraid that she makes others feel gloomy and coerced because she thinks that her strain "spreads over" to other members with whom she is working, and she cannot concentrate on her task. She is in the second position in her team of 6 members. She notices that the other 5 members feel distant from her. She thinks that her colleagues consider that it is difficult to know what she is thinking of. She is often distressed to feel distant from the other members. She is afraid that her gaze, attitude, and contents of her talk make others feel unpleasant.</p> <p>She sometimes goes out from her office to work with other companies. She is comfortable with this, because she has only to care just about her task and she feels relaxed to go out from her office.</p>			
Life history and developmental history (if the patient dates his present illness as far back as he can remember, the life history can be merged with the present illness)			
Academic history: Graduated from a university.			
Job history: Worked in a trading company after she graduated from the university.			
Marital history: Married at the age of 28.			
Present and past physical illnesses			
At the age of 2, the patient was diagnosed with Kawasaki disease.			

Sex	Female	Age at first visit	33
At the age of 12, she had a traffic accident (she ran into a car by bicycle) and a scar was made on her face.			
Family history (including family composition and familial hereditary loading)			
Her father died when she was 21. She has a mother, who is healthy. She has an elder brother and a younger sister. Now she lives with her husband and their two sons.			

Table 3
Cases and their diagnoses according to DSM-IV and modified DSM-IV including the Nagoya-Osaka Criteria (%)

	Country	Sex	Age	DSM-IV				Modified DSM-IV including the Nagoya-Osaka Criteria			
				SAD	Psychotic disorders	Both SAD and psychotic disorders	Other diagnoses	SAD	Psychotic disorders	Both SAD and psychotic disorders	Other diagnoses
CASE 1	Holland	F	25	6 (46.2)	5 (38.5)	0 (0)	2 (15.4)	13 (100)	0 (0)	0 (0)	0 (0)
CASE 2	Holland	F	26	7 (53.8)	3 (23.1)	1 (7.7)	2 (15.4)	8 (61.5)	3 (23.1)	1 (7.7)	1 (7.7)
CASE 3	Japan	F	16	8 (61.5)	2 (15.4)	1 (7.7)	2 (15.4)	10 (76.9)	2 (15.4)	0 (0)	1 (7.7)
CASE 4	Japan	M	24	6 (46.2)	1 (7.7)	2 (15.4)	4 (30.8)	10 (76.9)	0 (0)	0 (0)	3 (23.1)
CASE 5	Japan	M	19	5 (38.5)	3 (23.1)	1 (7.7)	4 (30.8)	10 (76.9)	1 (7.7)	0 (0)	2 (15.4)
CASE 6	Japan	M	33	10 (84.6)	1 (7.7)	0 (0)	2 (15.4)	13 (100)	0 (0)	0 (0)	0 (0)
CASE 7	Japan	F	40	11 (84.6)	0 (0)	1 (7.7)	1 (7.7)	12 (92.3)	0 (0)	1 (7.7)	0 (0)
CASE 8	Korea	M	33	10 (76.9)	1 (7.7)	0 (0)	2 (15.4)	12 (92.3)	0 (0)	0 (0)	1 (7.7)
CASE 9	Korea	M	31	6 (46.2)	5 (38.5)	0 (0)	2 (15.4)	13 (100)	0 (0)	0 (0)	0 (0)
CASE 10	China	M	28	6 (46.2)	5 (38.5)	0 (0)	2 (15.4)	11 (84.6)	2 (15.4)	0 (0)	0 (0)
CASE 11	China	F	32	5 (38.5)	6 (46.2)	0 (0)	2 (15.4)	13 (100)	0 (0)	0 (0)	0 (0)
CASE 12	Japan	F	31	7 (53.8)	3 (23.1)	1 (7.7)	2 (15.4)	12 (92.3)	1 (7.7)	0 (0)	0 (0)
CASE 13	Japan	M	38	5 (38.5)	5 (38.5)	2 (15.4)	1 (7.7)	8 (61.5)	5 (38.5)	0 (0)	0 (0)
CASE 14	Japan	F	24	12 (92.3)	0 (0)	0 (0)	1 (7.7)	13 (100)	0 (0)	0 (0)	0 (0)
CASE 15	Australia	F	28	11 (84.6)	0 (0)	0 (0)	2 (15.4)	12 (92.3)	0 (0)	0 (0)	1 (7.7)
CASE 16	USA	F	29	10 (76.9)	1 (7.7)	1 (7.7)	1 (7.7)	13 (100)	0 (0)	0 (0)	0 (0)
CASE 17	USA	M	28	4 (30.8)	6 (46.2)	1 (7.7)	2 (15.4)	10 (76.9)	2 (15.4)	1 (7.7)	0 (0)
CASE 18	USA	F	26	11 (84.6)	0 (0)	0 (0)	2 (15.4)	12 (92.3)	0 (0)	0 (0)	1 (7.7)

The category 'Psychotic disorder or BDD' includes schizophrenia, delusional disorder, body dysmorphic disorder, and paranoid personality disorder.

Table 4

Cases and their subtype diagnoses according to the Nagoya-Osaka Criteria (%)

	SAD, Generalized subtype	SAD, Offensive subtype	SAD but not otherwise specified	Diagnoses other than SAD
CASE 1	0	11 (84.6)	2	0
CASE 2	8 (61.5)	1	0	4
CASE 3	7 (53.8)	1	2	3
CASE 4	6 (46.2)	1	3	3
CASE 5	2	5 (38.5)	3	3
CASE 6	2	9 (69.2)	2	0
CASE 7	9 (69.2)	1	3	0
CASE 8	8 (61.5)	2	2	1
CASE 9	1	10 (76.9)	2	0
CASE 10	5 (38.5)	4	2	2
CASE 11	0	13 (100)	0	0
CASE 12	2	8 (61.5)	2	1
CASE 13	6 (46.2)	1	1	5
CASE 14	8 (61.5)	0	5	0
CASE 15	9 (69.2)	0	3	1
CASE 16	6 (46.2)	3	4	0
CASE 17	1	9 (69.2)	1	2
CASE 18	2	4	6 (46.2)	1