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What is This?
**Comorbid social withdrawal (hikikomori) in outpatients with social anxiety disorder: Clinical characteristics and treatment response in a case series**

**Toshihiko Nagata,¹ Hisashi Yamada,¹ Alan R. Teo,²,³ Chiho Yoshimura,¹ Takenori Nakajima¹ and Irene van Vliet⁴**

**Abstract**

**Background:** Severe social withdrawal (called hikikomori, and defined as isolation lasting more than six months and not due to an apparent mental disorder) has drawn increasing public attention in Japan. It is unclear whether hikikomori is merely a symptom or syndrome of social withdrawal.

**Aim:** To evaluate this phenomenon in relationship to social anxiety disorder (SAD), as few previous studies have.

**Methods:** One hundred and forty-one consecutive patients with SAD diagnosed according to DSM-IV criteria by a semi-structured interview were treated with a combination of psychotherapy, pharmacotherapy and group activity.

**Results:** Twenty-seven (19%) SAD patients fulfilled the criteria for hikikomori, and these patients had earlier onset, more symptoms and less education than non-hikikomori SAD patients. Only 33% of hikikomori SAD patients spontaneously complained of SAD symptoms at first visit. There were no diagnostic differences between hikikomori and non-hikikomori SAD patients, except that comorbid obsessive–compulsive disorder was more frequent in hikikomori SAD patients. Functional impairment in 10 (37%) hikikomori SAD patients improved after several years of combination therapy.

**Conclusion:** Hikikomori may serve as a proxy for a severe form of SAD. Patients with comorbid SAD and hikikomori have lower treatment response rates than those with SAD alone.

**Keywords**

Hikikomori, social withdrawal, social anxiety disorder

**Introduction**

Recently, hikikomori (severe social withdrawal for more than six months not due to obvious psychosis, mental retardation or other mental disorders) has drawn increasing public attention, especially by the media in Japan. Major Japanese newspapers have increased their reporting of hikikomori-related articles since 1999 (Furlong, 2008; Saito, 1998). The most reliable data on prevalence come from a recent epidemiologic study in Japan, which estimated a lifetime prevalence of 1.2% among Japanese adults (Koyama, Miyake, Kawakami, Tsuchiya, Tachimori, & Takeshima, 2010).

However, very few careful studies on hikikomori exist, and thus clear information on diagnosis, clinical features and treatment are lacking. As some have argued (Kondo, Iwazaki, Kobayashi, & Miyazawa, 2007; Koyama, et al., 2010; Teo & Gaw, 2010), hikikomori might be a Japanese culture-bound syndrome. Moreover, some clinicians have noted that hikikomori show unique symptoms such as hypersensitivity towards criticism from others, and these symptoms cannot be classified in the current diagnostic system. On the other hand, some psychiatrists have reported that most hikikomori cases can be diagnosed using current official diagnostic systems (Kondo et al., 2007; Koyama et al., 2010; Teo & Gaw, 2010).

The relationship between hikikomori and social anxiety disorder (SAD) has not been explored in depth. On the surface, hikikomori would appear to resemble SAD because its core

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feature is social withdrawal. Rates of SAD in clinical samples of *hikikomori* have varied from 3% (Watabe et al., 2008) to 15% (Koyama et al., 2010). However, because SAD is the most under-recognized and under-treated anxiety disorder (Zimmerman & Chelminski, 2003), actual rates could be higher.

The aim of this study was to clarify the relationship between SAD and *hikikomori* and provide preliminary evidence for the treatment of comorbid SAD and *hikikomori*. We hypothesized that a subset of SAD patients in Japan have an immediate history of *hikikomori* and that SAD with *hikikomori* show a higher comorbidity of anxiety, mood and Axis II disorders.

**Methods**

**Subjects**

Retrospectively pooled data were analysed in terms of *hikikomori*. Subjects consisted of a consecutive series of patients with a primary diagnosis of SAD according to DSM-IV criteria (American Psychiatric Association, 2000) who sought treatment in our outpatient clinic during the period from 2000 to 2007. Subjects were initially diagnosed with SAD based on clinical assessment during that period. For this study, diagnosis was subsequently confirmed on two to three assessment visits by semi-structured interview (Stein & Hazen, 1995), which included the Structured Clinical Interview for DSM Disorders (SCID-I and SCID-II). Interviews were conducted by T. N. or H. Y. who each have more than 10 years’ experience treating SAD. Inclusion criterion included: (1) a diagnosis of SAD; and (2) onset of SAD before any other psychiatric diagnosis or comorbidity. Exclusion criteria were: (1) any developmental delays found at routine medical examination by local health care centres for one-and-a-half and three year olds; and (2) possibility of learning disability pointed out by teachers during elementary and junior high schools. All patients provided written informed consent before entering the study. This study was approved by the institutional review committee of the Osaka City University Graduate School of Medicine.

The definition of ‘*hikikomori*’ was based on a proposal of an expert study group organized by the Japanese government (Ministry of Health Labour and Welfare, 2003). Only one modification was made to clarify that *hikikomori* was not due to classic psychiatric diseases such as schizophrenia, bipolar disorder or mental retardation. The presence of a history of *hikikomori* was assessed by direct questioning as per the following criteria for *hikikomori*:

1. Spending most of the time at home.
2. No interest in going to school or working.
3. Persistence of withdrawal for more than six months.
4. Exclusion of schizophrenia, mental retardation and bipolar disorder.
5. Exclusion of those who maintain personal relationships (e.g. friendships).

**Measurements**

All subjects underwent a direct (face-to-face) two- to three-hour assessment conducted by T. N. or H. Y. on the second or third consultation. This assessment included a modified version of the anxiety section of the Structured Clinical Interview for DSM-IV (SCID-p) (Stein & Hazen, 1995), mood disorder and substance use disorder sections of the SCID-p DSM-III-R (Spitzer, Williams, Gibbon, & First, 1990a; Takahashi, Hanada, & Ono, 1992) and the Structured Clinical Interview for DSM-III-R Personality Disorders (SDID-II) (Spitzer, Williams, Gibbon, & First, 1990b) because the official Japanese version of DSM-IV SCID-p and SCID-II had not been published at the start of this study. The avoidant and paranoid sections of the Structured Clinical Interview for DSM-IV Personality Disorders (SCID-II) (First, Gibbon, Spitzer, Williams, & Benjamin, 1997; Takahashi & Ohsone, 2002) were added. The Japanese version of the Liebowitz Social Anxiety Scale (LSAS; Liebowitz, 1987; Nagata et al., 2003) and Sheehan Disability Scale (work, social life or leisure activities, and home life or family responsibilities) were used at first consultation.

**Treatment**

Patients with SAD but not *hikikomori* were treated with pharmacotherapy, as per standard clinical practice in Japan (Asakura et al., 2009). Patients identified as suffering from SAD with *hikikomori* were treated with a combination of pharmacotherapy, cognitive behavioral therapy and group activity. During the first few consultations, psychoeducation on pharmacotherapy and cognitive behavioral therapy was conducted. On outpatient visits, patients were escorted by their biological parent(s) if necessary because most lived with them. Pharmacotherapy consisted of selective serotonin reuptake inhibitors (SSRIs) or serotonin-norepinephrine reuptake inhibitors (SNRIs). Because only paroxetine, fluvoxamine and milnacipran were commercially available in Japan at the time of the study, patients who agreed to be treated with medication were administered one of these three drugs. The dose was increased towards the target dose (paroxetine: 40 mg/day; fluvoxamine: 150 mg/day; milnacipran: 100 mg/day) and adjusted individually depending on tolerability of the medication. Individual cognitive behavioural therapy (CBT) consisted of psychoeducation, imaginal and in-vivo exposure, cognitive restructuring and emphasizing the relationship between dysfunctional belief systems and behavioural avoidance. CBT focused on thought restructuring regarding hypersensitivity towards peer relationships. We encouraged the *hikikomori* patients to participate in weekly group activities run by the local government. Vocational counsellors managed the group activities including conversing, playing card games, participating in communication seminars (once a month) and encouraging job interviews. The therapeutic goal of group activity was to have patients experience peer relationships under the direction of vocational counsellors.
and alter dysfunctional thought and behaviours in the real world. Treatment duration was not limited in advance. ‘Improved’ was defined as starting a full-time job (or for students, studying more than four days a week) over the course of the treatment period, as such functional outcomes have been used in earlier studies of hikikomori (Kondo et al., 2007).

**Statistics**

Fisher’s exact test, the χ² test, independent t-test with Levene’s test for the equality of variances and logistic regression analysis were performed whenever appropriate to compare demographic values, Axis I and II comorbidities and LSAS score between hikikomori and non-hikikomori. Next, logistic regression analysis with variable selection (forward stepwise) was performed to predict hikikomori. In comparisons between improved and not improved hikikomori, the Mann-Whitney U test or Fisher’s exact test were used depending on the nature of the data (rank or dichotomous). In contrast with statistical analysis of the whole group, α (0.05) was not reduced for this group comparison because of the preliminary nature of this analysis. All analyses were conducted using SPSS for Windows version 11.0.

**Results**

One-hundred and forty-one SAD patients were included; 27 (19%) patients fulfilled the criteria for hikikomori (Table 1). The reasons the subjects sought treatment were depressive mood (n = 11), social or interpersonal anxiety (n = 9) and

<table>
<thead>
<tr>
<th></th>
<th>Hikikomori</th>
<th>Not hikikomori</th>
<th>t-test/Fisher’s exact test (p)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n = 27</td>
<td>n = 114</td>
<td></td>
</tr>
<tr>
<td>Average age (SD)</td>
<td>27.4 (7.5)</td>
<td>29.2 (10.9)</td>
<td>0.8 (.42)</td>
</tr>
<tr>
<td>Male (%)</td>
<td>12 (44%)</td>
<td>50 (44%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>26 (96%)</td>
<td>95 (83%)</td>
<td>3.6 (.16)</td>
</tr>
<tr>
<td>Married</td>
<td>0 (0%)</td>
<td>13 (11%)</td>
<td></td>
</tr>
<tr>
<td>Divorced</td>
<td>1 (4%)</td>
<td>6 (5%)</td>
<td></td>
</tr>
<tr>
<td>Length of education, years (SD)</td>
<td>11.7 (1.7)</td>
<td>13.9 (2.5)</td>
<td>5.4 (&lt;.001)</td>
</tr>
<tr>
<td>Age of onset of SAD (SD)</td>
<td>9.9 (4.0)</td>
<td>13.4 (4.9)</td>
<td>3.4 (.001)</td>
</tr>
<tr>
<td>Generalized type of SAD (%)</td>
<td>27 (100%)</td>
<td>101 (89%)</td>
<td>(.07)</td>
</tr>
<tr>
<td>Age of onset of hikikomori (SD)</td>
<td>21.7 (5.8)</td>
<td>NA</td>
<td>0.9 (35)</td>
</tr>
<tr>
<td>LSAS total score (SD)</td>
<td>104.3 (19.8)</td>
<td>81.5 (24.8)</td>
<td>4.5 (&lt;.001)</td>
</tr>
<tr>
<td>Lifetime (Axis I) comorbidities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major depressive disorder b (%)</td>
<td>15 (56%)</td>
<td>56 (49%)</td>
<td>(0.67)</td>
</tr>
<tr>
<td>Dysthymia b (%)</td>
<td>4 (15%)</td>
<td>18 (16%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Bipolar I b (%)</td>
<td>0</td>
<td>2 (2%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Alcohol abuse b (%)</td>
<td>0</td>
<td>3 (3%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Alcohol dependence b (%)</td>
<td>1 (4%)</td>
<td>3 (3%)</td>
<td>(0.58)</td>
</tr>
<tr>
<td>Panic disorder (%)</td>
<td>2 (7%)</td>
<td>5 (4%)</td>
<td>(0.62)</td>
</tr>
<tr>
<td>Specific phobia (%)</td>
<td>7 (26%)</td>
<td>17 (15%)</td>
<td>(0.25)</td>
</tr>
<tr>
<td>Obsessive compulsive disorder (%)</td>
<td>5 (19%)</td>
<td>4 (4%)</td>
<td>(0.01)</td>
</tr>
<tr>
<td>Generalized anxiety disorder (%)</td>
<td>4 (15%)</td>
<td>9 (8%)</td>
<td>(0.27)</td>
</tr>
<tr>
<td>Personality disorder (Axis II) comorbidities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paranoid (%)</td>
<td>6 (22%)</td>
<td>18 (16%)</td>
<td>(0.41)</td>
</tr>
<tr>
<td>Schizotypal b (%)</td>
<td>0</td>
<td>2 (2%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Schizoid b (%)</td>
<td>0</td>
<td>2 (2%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Antisocial b (%)</td>
<td>0</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Borderline b (%)</td>
<td>2 (7%)</td>
<td>2 (2%)</td>
<td>(0.17)</td>
</tr>
<tr>
<td>Histrionic b (%)</td>
<td>0</td>
<td>3 (3%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Narcissistic b (%)</td>
<td>0</td>
<td>3 (3%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Avoidant (%)</td>
<td>26 (96%)</td>
<td>96 (84%)</td>
<td>(0.41)</td>
</tr>
<tr>
<td>Dependent b (%)</td>
<td>5 (19%)</td>
<td>22 (19%)</td>
<td>(1.0)</td>
</tr>
<tr>
<td>Obsessive compulsive b (%)</td>
<td>9 (33%)</td>
<td>24 (21%)</td>
<td>(0.21)</td>
</tr>
</tbody>
</table>

*a* Mean and standard deviation.

*b* Comorbidity according to DSM-IIIR criteria.

*c* $\chi^2$.

LSAS = Liebowitz Social Anxiety Scale, SD = standard deviation.

Table 1. Demographic and clinical features of social anxiety disorder patients (SAD) with and without comorbid social withdrawal (hikikomori).
symptoms of eating disorders (n = 7), based on a review of the interview sheets. Therefore, only nine out of 27 (33%) patients visited the outpatient clinic due to SAD symptoms. Onset of hikikomori was at an average age of 21.7 (SD = 5.8), and this was 11.7 years after the onset of SAD (SD = 7.7). In no case did hikikomori precede SAD. The onset of SAD in hikikomori was earlier than in non-hikikomori and these patients showed significantly fewer educational years and a higher LSAS score. All hikikomori SAD patients eventually participated in group activities; however, most did not participate for the first few months, receiving only individual CBT and pharmacotherapy initially.

In contrast to our hypothesis, there were almost no differences in Axis I and II comorbidities regarding hikikomori. Only obsessive–compulsive disorder (OCD) was significantly more comorbid in hikikomori plus SAD patients. Of the 27 patients with hikikomori, 15 (56%) had a lifetime history of major depressive disorder. Major depressive disorder preceded hikikomori in 80% (12/15) of cases. One patient had alcohol dependence before hikikomori, and he did not drink during hikikomori because he could not buy alcohol. In logistic regression analysis with variable selection by Wald statistics, LSAS, educational years, OCD and onset of SAD predicted hikikomori (Table 2).

Table 2. Results of logistic regression analysis.

<table>
<thead>
<tr>
<th></th>
<th>Hikikomori</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>OR (95% CI)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>LSAS</td>
<td>1.04 (1.01–1.06)</td>
<td>0.002*</td>
</tr>
<tr>
<td>Length of education</td>
<td>0.72 (0.56–0.92)</td>
<td>0.008*</td>
</tr>
<tr>
<td>OCD</td>
<td>11.7 (1.7–80.8)</td>
<td>0.01*</td>
</tr>
<tr>
<td>Onset of SAD</td>
<td>0.86 (0.75–0.98)</td>
<td>0.02*</td>
</tr>
</tbody>
</table>

χ² of model = 44.1, df = 4, p < .001.
*p < .05.
OR = odds ratio.
LSAS = Liebowitz Social Anxiety Scale.

Discussion and conclusion

One of the most important findings of the present study is that in an outpatient group of SAD patients 19% also fulfilled the currently accepted criteria for hikikomori, or severe social withdrawal. In all cases, SAD onset preceded or coincided with hikikomori. Interestingly, two-thirds of patients sought treatment for problems other than SAD, although this subset of hikikomori SAD patients appeared to have a more severe form of SAD. Hikikomori SAD patients had significantly earlier onset, had worse symptoms based on LSAS score, had less formal education and were much more likely to also suffer from OCD. Severe or generalized SAD has been likened to avoidant personality disorder (Stein & Stein, 2008). However, avoidant personality disorder does not fully account for hikikomori behaviour that includes withdrawal from society. Thus, DSM or Western nomenclature may not adequately explain the hikikomori phenomenon in Japan.

To our knowledge, no previous study has demonstrated a relationship between hikikomori and OCD. However, if left untreated, adolescent OCD can interfere with the ability to play, socialize, attend school and function as a part of a family, ultimately affecting success not only in school but in the transition from school to work, and leaving the family home (Zohar, Fostick, Black, & Lopez-Ibor, 2007). It may be that severe OCD patients become socially withdrawn due to repetitive checking or excessive ritualistic behaviours (Zohar et al., 2007).

Treatment response in this study sample appears to fall between the rates in previous studies of SAD and hikikomori. For example, treatment duration was notably longer and response significantly lower than is commonly seen in SAD alone, about 70%–80% response after 24 weeks of treatment (Stein & Stein, 2008). Improvement rate was also lower than our previous experience in a similar clinical setting in which around half (48%) of patients with SAD responded to pharmacotherapy plus psychoeducation over three months (Nagata et al., 2004). However, improvement rate in this study was much better than in a previous report on hikikomori in which only five (17%) of 29 hikikomori patients started work (including part-time or with welfare support) (Kondo, et al., 2007).

Parental divorce is a factor often mentioned in relation to many psychiatric disorders. In the present study there was no difference in the rate of parental divorce between SAD with and without hikikomori. Usually, parental divorce is a negative factor in any psychiatric disorder; however, hikikomori with a single parent were significantly related with functional improvement. This may be explained by either a type I error (due to the lack of correction for multiple testing) or increased economic strain in single parent households.
resulting in more pressure on their hikikomori child to obtain employment.

In contrast with previous reports that estimate 70%–80% of hikikomori as being male (Kondo et al., 2007; Koyama et al., 2010; Saito, 1998), the current study showed that males were not prevalent. Because subjects with SAD were included and population studies consistently show a higher prevalence of SAD in females (Stein & Stein, 2008), this study may highlight a tendency for recognition bias among hikikomori because withdrawal of females into the home in Japanese society, unlike males, is often not considered pathological or reported.

Interestingly, only 33% (9/27) of the subjects sought treatment for social or interpersonal anxiety, although we could not check all the interview sheets of non-hikikomori SAD. This result might explain why earlier reports, such as Koyama et al.’s (2010) community survey, have found lower rates of SAD. Interviewers in their study were not specialized in hikikomori and interviews did not assess personality disorders, which are defined as including ‘interpersonal functioning… across a broad range of personal and social situations’ (American Psychiatric Association, 2000, p. 689). The present study suggests that well-experienced therapists can detect SAD and other psychiatric disorders among hikikomori who are usually reluctant to report the presence of any psychiatric disorders because of stigma and shame about symptoms (Kinugasa, 1998).

Limitations

There are a number of limitations to this study. Because it is a case series, treatment was uncontrolled, efficacy of group activity for SAD never proved and sample size was small. Results may not be widely generalizable because patients were from a single treatment centre and hikikomori with SAD who do not seek care from professionals may have not been included in the present study. Moreover, questions based on Western culture might not appropriately assess the symptoms of SAD in Japanese culture. For example, ‘Expressing disagreement or disapproval to someone you don’t know very well’ (18th item of LSAS) is prohibited in Japanese culture. Also, some symptoms of SAD are not considered pathological in Japanese culture. Further examination of hikikomori based on tailor-made assessment including cultural background and its overlap with other psychopathology will help determine whether it is merely a symptom or a larger syndrome.

References


