




# Hikikomori: A Society-Bound Syndrome of Severe Social Withdrawal

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## ABSTRACT

**Background:** Hikikomori, a severe and often prolonged social withdrawal observed primarily in young people, was first described in Japan, but cases have now been reported in many other countries.

**Methods:** A review paper on hikikomori has been prepared following the literature searches in 3 databases. Search terms related to hikikomori included epidemiology, globalization, diagnosis, treatment, comorbidity, and COVID-19.

**Conclusions:** Hikikomori was first reported in Japan and has been described in detail by researchers there, but there are now reports in many countries of hikikomori-like cases. It occurs primarily in young people, often men in their late teens and early twenties who isolate themselves, sometimes confining themselves to their homes for months or even years. It has been proposed that hikikomori has increased in recent years in part because of advances in information technology that result in decreased socialization. Hikikomori was originally considered a non-psychotic phenomenon, but comorbidity with psychiatric disorders is often present and should be considered during diagnosis. Considerable efforts have been made in recent years to establish reliable, widely applicable guidelines for the diagnosis and treatment of hikikomori. There is very little information with regard to neurobiology, although involvement of the immune system, oxidative stress, and the social brain network has been proposed. It is widely agreed that hikikomori must be treated in a multi-dimensional fashion, with family support very important. Lessons learned from these treatment approaches are relevant to the potential increased risk of social withdrawal arising from COVID-19 pandemic lockdowns.

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## INTRODUCTION

In this review, we provide an overview of the current knowledge of hikikomori, a severe and often long-lasting social withdrawal. A literature review covering the period January 1, 1970, to January 5, 2022, was conducted using the following databases: PubMed, Web of Science, and MEDLINE. The following search terms were used: hikikomori, +epidemiology, +globalization, +diagnosis, +etiology, +comorbidity, +treatment, +COVID-19.

### Hikikomori Phenomenon in Japan

Social withdrawal is seen in many mental illnesses such as depression, anxiety, schizophrenia spectrum disorders, autism spectrum disorder, post-traumatic stress disorder (PTSD), adjustment disorders, and some personality disorders.<sup>1</sup> In Japanese, the translation of severe social withdrawal is hikikomori. The term is used as a noun not only to describe avoidance of social contact but also to describe a person suffering from this disorder.<sup>1</sup> It could be considered a norm violation, that is, a behavior falling

outside the range of acceptable behavior and affected by a number of socio-psychological factors.

Even though in Japan the culture of social withdrawal can be traced back to Japanese mythology, more attention was drawn to it in the 1970s, when more frequent truancy or school refusal (futoko in Japan) and withdrawal neurosis (Taikyaku shinkeishou) happened in the younger population at the time.<sup>1-3</sup> The term hikikomori was first introduced to the public by psychologist Fujiya Tomita in 1985.<sup>4</sup> Hikikomori did not get wide recognition in Japanese society until the book, *Shakaiteki Hikikomori-Owaranai Shishunki (Social Withdrawal: A Never-Ending Adolescence)* by psychiatrist Tamaki Saito was published in 1998. In his book, Saito<sup>5</sup> raised the concern that there was an increase in the number of young people, mostly men in their late teens and early 20s, isolating themselves from the world, dropping out of school, and often confining themselves to their bedrooms for months or even years. Saito<sup>5</sup> considered the hikikomori cases to be marked by a failure to mature

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beyond adolescence, being sensitive to criticism, and being withdrawn into his or her own family, or even his or her own world. In terms of the contributing factors, Saito<sup>5</sup> believed a major contributing social factor was the pressure of the education system. When adolescents cannot meet parental and social expectations and fail in the rigid and standardized education/exam system, they feel relief by withdrawing from their family. Because of the culture and close family structure, Japanese families and society are more tolerant of this form of “dependency,” which can be a disadvantage for the hikikomori sufferer.

The prolonged social withdrawal not only negatively affects individuals’ and families’ mental health and wellbeing, but it also impacts the workforce and health and welfare systems at the societal level. An epidemiological survey between 2002 and 2006 carried out by the World Mental Health Japan Survey Group on individuals 20-49 years old in Japan reported that 1.2% of that population had experienced social withdrawal (hikikomori) for greater than 6 months.<sup>6</sup> A survey conducted in Japan by the Cabinet Office on people 15-39 years of age in 2016 reported that 540 000 people in that age group had been socially withdrawn for more than 6 months.<sup>7</sup> In the studies mentioned above, males with hikikomori outnumbered females by >3 : 1. Furthermore, there are concerns about an aging hikikomori population who might have social withdrawal for many years. In 2019, the Japan Cabinet Office estimated the number of people with hikikomori in the 40-65 years age range in Japan was 610 000.<sup>8</sup> Kato et al<sup>1</sup> have cautioned that these surveys have been based on simple questionnaires and that more comprehensive investigations are required. An 8050 crisis is now of concern in Japan. This crisis involves the issue of hikikomori children who are now entering their 50s and

have parents in their 80s.<sup>9</sup> These situations may become unsustainable because the parents may be experiencing physical, financial, and/or cognitive problems that limit their ability to support their children.<sup>9</sup>

In Japan, hikikomori became such a phenomenon that in 2003 the Ministry of Health, Labour, and Welfare (MHLW) of the Japanese Government gave guidelines on possible causes and how to respond to hikikomori.<sup>10</sup> In 2010, the MHLW gave a formal definition of hikikomori in their Guidelines for Evaluation and Support of Hikikomori.<sup>11</sup> In those guidelines, the hikikomori individual was described as withdrawing from social participation (including schooling, employment, and other interactions outside of the home), which continued by remaining house-bound for a period of more than 6 months (which could include leaving the home for short periods of time but still avoiding interactions with others).<sup>1,11</sup> Hikikomori was considered to be a non-psychotic phenomenon distinguishable from withdrawal states associated with schizophrenia, but schizophrenia could not be excluded until a definitive diagnosis is made.<sup>1</sup>

Although Saito<sup>5</sup> stated that in hikikomori the primary symptom of withdrawal is not better explained by a psychiatric disorder and the guidelines just mentioned above state that hikikomori is generally considered a non-psychotic phenomenon, other experts feel that it is important to consider the coexistence of psychiatric disorders such as psychoses, depression, personality disorders, social anxiety disorder, and autism when discussing treatment approaches for hikikomori.<sup>1,12</sup> Certainly, psychiatric disorders coexisting with hikikomori have been reported, but it is not clear at this time if such disorders have hikikomori as a symptom or if hikikomori is the cause of the concurrent disorder.<sup>1</sup> In a comprehensive review, Kato et al<sup>1</sup> have discussed the comorbidity issues with hikikomori and a variety of psychiatric disorders. In their revised diagnostic criteria for hikikomori, in the section on specifiers (not mandatory criteria but useful for additional characterization of hikikomori), Kato et al<sup>1</sup> have indicated that co-occurring conditions may include avoidant personality disorder, social anxiety disorder, major depressive disorder, autism spectrum disorder or schizophrenia. Hattori, in a case study of 35 hikikomori patients, reported that all of the patients presented with a loss of secure attachment, two-thirds had dual personality systems, and inability to trust or relate to others was the primary clinical feature.<sup>13</sup> In that paper, Hattori reported that although hikikomori is a progressive condition, there is a good treatment prognosis with early psychotherapy intervention.<sup>13</sup>

In the past few decades, scholars in Japan explored several hypotheses of hikikomori and identified several contributing factors from cultural and socioeconomic perspectives. In the Japanese culture, when facing conflict around the achievement of goals and lacking the means, young people may be likely to retreat.<sup>14,15</sup> According to Japanese mythology, the sun goddess Amaterasu, one of

#### MAIN POINTS

- Hikikomori is a severe, often prolonged social withdrawal first described in detail in Japan, but now reported in many other countries worldwide. It has been proposed that advances in information technology and the resultant decreased direct socialization and increased bullying may be contributing factors to the increased incidence of hikikomori in recent years.
- Primary hikikomori does not have a comorbid mental disorder while secondary hikikomori does, although the use of these terms remains somewhat controversial.
- In recent years, there has been considerable effort to establish reliable guidelines for diagnosis and treatment of hikikomori. It is now generally agreed that treatment of hikikomori should be multi-dimensional in nature, with family support being an important component.
- There is a paucity of information on neurobiological causes of hikikomori, although some studies have suggested involvement of the immune system, oxidative stress, and the social brain network.
- There is a fear of increased prolonged social withdrawal as a result of the COVID-19 pandemic, but the knowledge gained from treatment of hikikomori may be useful in helping people deal with such situations.

the highest Kami divinities in Japanese Shinto religion, is the first figure of voluntary withdrawal from society.<sup>2</sup>

Several hypothesized contributing factors related to societal change in Japan have also been explored. In the 1950s, there was refusal by many students of any form of competition as an expression of opposing the surrender in World War II after the Hiroshima bombing.<sup>15</sup> In the 1990s, students took similar action as a response to the lack of opportunities in the post-bubble burst economy.<sup>16,17</sup> In addition, the culturally accepted tolerance of dependence and support provided by the family and welfare system probably contributed to the hikikomori phenomenon becoming a persistent issue in Japan.<sup>17</sup>

### Does Hikikomori Occur Globally?

Many cases similar to hikikomori have been identified in some other Asian countries such as South Korea, China, Thailand, Singapore, India, Bangladesh, and Iran, where the people share many similar cultural concepts.<sup>18,19</sup> Therefore, hikikomori, although previously conceptualized as a culture-bound syndrome from Japan, may be better understood as a cultural expression of distress occurring in many countries. In DSM-5 by the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (DSM-5), the term culture-bound syndrome was replaced by cultural concepts including cultural syndromes, cultural idioms, and cultural explanations. Cultural concepts of distress refer to ways that cultural groups experience, understand, and communicate suffering, behavioral problems, or troubling thoughts and emotions.<sup>20</sup>

Beyond being a culture-bound syndrome in Japan, there is now evidence that the prolonged hikikomori-like social withdrawal has relevance as a modern society-bound syndrome with cultural-historical roots reported in the literature of various countries. A prolonged hikikomori-like social withdrawal phenomenon spreading globally to Europe, North and South America, Oceania, and Africa has been recognized.<sup>1,12,21</sup> Nonaka et al<sup>22</sup> conducted a systematic review of demographic and clinical features of hikikomori (52 studies, with a total sample size of 4744) and reported higher age of hikikomori individuals, lower percentage of males, and shorter duration of hikikomori in studies conducted in other countries compared to Japan.

Previously, in the English literature, social withdrawal was considered to be the core characteristic of the “house-bound syndrome,” which refers to a particular form of agoraphobia.<sup>2,23</sup> In the French literature, social withdrawal was described as “claustration,” which is believed to relate to paranoid delusions.<sup>2</sup> Many prolonged voluntary social withdrawal cases cannot be categorized into any psychiatric disorders, which is the same as the situation which has often been reported for hikikomori. Hikikomori sufferers in different countries may, probably because of socio-cultural influences in those countries, differ in aspects such as degree of loneliness and levels of

disability.<sup>1</sup> It has been reported that hikikomori sufferers in the United States are more likely than their Japanese counterparts to be diagnosed with a mood disorder, a substance use disorder, or an anxiety disorder.<sup>24</sup>

Some scholars believe indirect communication via Information Technology has accelerated hikikomori spread worldwide.<sup>1</sup> Often texting has replaced direct communication; video games have replaced group outdoor playing, and social media have replaced direct socialization. Further, internet and gaming addiction have been reported to widely overlap with social withdrawal.<sup>25,26</sup> The most common cause of internet addiction worldwide is excessive online gaming, and it has been reported that online gaming is favored by male internet users while female users are primarily using social networking services.<sup>26</sup> Tateno et al<sup>26</sup> compared groups at high and low risk for hikikomori and found that the former group used the internet much longer and had higher scores on the Internet Addiction Test. Stavropoulos et al<sup>25</sup> compared samples consisting of young adult Massively Multiplayer Online players from Australia and the United States and used scales to assess internet gaming disorder (IGD) and hikikomori. They found that with both populations hikikomori symptoms are associated with IGD and that longer game playing time exacerbated that association. Interestingly, Australian players experiencing hikikomori symptoms were at higher risk of developing IGD when living with their parents, but the same effect was not observed in American players. Stavropoulos et al<sup>25</sup> mentioned that young adults who continue living with their parents have often been reported to have poor parent-child relationships, and this possible aspect of hikikomori was also commented on by Stip et al.<sup>27</sup> Further to possible involvement of the internet in hikikomori, cyberbullying is now a worldwide social problem.<sup>28</sup> Therefore, some scholars even refer to hikikomori as a “modern society-bound syndrome.”<sup>1</sup>

### Psychiatric Approaches to Understanding and Treating Hikikomori

Historically, hikikomori has been conceptualized and treated in Japan by psychodynamically oriented psychiatrists.<sup>1</sup> Using a psychodynamic understanding of hikikomori, Japanese psychiatrists have developed effective individual and group psychoanalytic treatments that focus on developing what D.W. Winnicott describes as “capacity to be alone,” which “relieves a person from defensive physical withdrawal.”<sup>29</sup> Saito<sup>5</sup> also described hikikomori cases as a failure to mature beyond adolescence. In addition, describing the social withdrawal of hikikomori as a cultural idiom of distress highlights its development from psychodynamic vulnerability that arises during the transition from adolescence to adulthood.<sup>2</sup> As the id becomes increasingly excited during adolescence, increasing drives conflict with the impossibility of achieving them, intensified by a superego with high socio-cultural

expectations. Hikikomori may be a psychic retreat into social withdrawal or passivity in order to maintain ego needs in a “suspended ideal.”<sup>2</sup>

Hikikomori has been accepted as a cultural idiom in DSM-5.<sup>20</sup> A cultural idiom is defined as a way of expressing distress that may not involve specific symptoms or syndromes, but that provides collective, shared ways of experiencing and talking about personal or social concerns.<sup>20</sup> Even though hikikomori has been considered a phenomenon that does not fit any primary psychiatric disorder classification, prolonged social withdrawal could definitely bring mental distress. Terms for 2 types of hikikomori have emerged in the psychiatric research field,<sup>30,31</sup> although the terminology used is not approved by all authors. Primary hikikomori is the one without a comorbid mental disorder and does not fit into a psychopathological structure. Secondary hikikomori is interwoven with comorbid mental disorders.<sup>2</sup> Kondo et al.<sup>32</sup> in a study on hikikomori, reported that the help-seeking secondary hikikomori patients they examined fell into 3 main subgroups regarding comorbidity: schizophrenia, mood, and anxiety disorders; developmental disorders; and personality disorders, with approximately equal numbers in each of these subgroups. American psychiatrists Alan Teo and Albert Gaw proposed diagnostic criteria for hikikomori in 2010 based on the guidelines published by the MHLW.<sup>33</sup> Recently, Teo and his Japanese colleague Takahiro Kato further updated the proposal for diagnostic criteria.<sup>1,34</sup> In summary, hikikomori is proposed to be a form of extreme social withdrawal or social isolation whose essential feature is physical isolation in one’s home. The duration of continuous social isolation is at least 6 months, and there is significant functional impairment or distress associated with the social isolation. Those occasionally leaving their home (2-3 days/week), rarely leaving their home (1 day/week or even less), or rarely leaving a single room could be characterized as mild, moderate, or severe, respectively.<sup>1,34</sup> In addition to the 3 mandatory criteria mentioned above, Kato et al<sup>1</sup> have listed 9 specifiers which may be useful in further characterizing hikikomori. Teo et al<sup>35</sup> have published a self-rating questionnaire, the Hikikomori Questionnaire, which can be completed very quickly. More recently, Loscalzo et al<sup>36</sup> have created the Hikikomori Risk Inventory which they tested on youths and adults in Italy and Japan and found to be successful with regard to factor structure and convergent and divergent validity. Nonaka and Sakai<sup>37</sup> developed a quality of life scale for hikikomori and confirmed its reliability and validity.

Many psychiatric scholars have been trying to understand hikikomori from a bio-psycho-socio-cultural model. From a biological perspective, at this time hikikomori cannot be explained adequately through biological and physiological knowledge alone. However, levels of some biochemicals in blood samples of the hikikomori population have been reported as significantly different from the levels

in healthy control groups and have been suggested as potential biomarkers, with the findings to date suggesting possible contributions of oxidative stress and inflammation to the etiology of hikikomori.<sup>1</sup> Hayakawa et al<sup>38</sup> conducted a study in 2 parts on possible blood biomarkers. The first part, in non-hikikomori volunteers, revealed that traits of avoidant personality disorder, a common comorbidity, were negatively associated with high-density lipoprotein cholesterol (HDL-C) and uric acid (UA) (both are antioxidants) in men and showed a positive association with fibrin degradation products and high sensitivity C-reactive protein (hsCRP) (both are inflammatory markers) in women. The second part was on hikikomori individuals and healthy controls and found that the hikikomori individuals showed higher avoidant personality scores in both sexes compared to the controls as well as showing lower serum UA levels in men and lower HDL-C levels in women relative to the healthy controls. These researchers also reported that there is an association between lower levels of LDL-C and loneliness and social phobia, living in isolation with reduced social support, and reduced trust in others in non-clinical young volunteer females.<sup>38</sup> In a recent study on 42 drug-free hikikomori patients and healthy controls, the same group of researchers carried out a comprehensive biochemical study on plasma/serum levels utilizing metabolomic analysis combined with machine learning models.<sup>39</sup> They found that levels of long-chain acylcarnitines were much higher in the hikikomori patients, the ratio of direct/indirect bilirubin was lower in the hikikomori patients, and levels of arginine were significantly lower in male hikikomori patients than in the healthy controls, while the reverse was true with ornithine. In this regard, it is interesting that acylcarnitines, substrates for mitochondrial beta-oxidation, are important contributors to the energy supply to the brain.<sup>39</sup> Unlike their previous study,<sup>38</sup> in this investigation, these researchers did not find a significant difference in HDL-C or UA in males or hsCRP in females, and they surmised that discrepancy may have been due to the presence of some patients on medication in the previous study. They suggested that future studies should also evaluate physical activity and diet and include other countries in addition to Japan.<sup>39</sup> It is also interesting and possibly relevant to hikikomori that inflammation induced in humans by injection of an endotoxin causes increased feelings of social disconnection.<sup>40,41</sup>

Zovetti et al<sup>42</sup> describe hikikomori as an extreme social withdrawal leading to avoidance of social contexts and have set out to review the neural basis of social isolation. While underscoring the paucity and heterogeneity of studies in this field, they suggest that social isolation and perceived loneliness are associated with emerging evidence of structural and functional changes within the social brain network. This social brain circuit, supported by a wider diffuse network, includes the prefrontal cortex, temporal sulcus, amygdala, temporal cortex, parietal cortex, and hippocampus. Future research may elucidate how social

brain circuits relate to the vulnerability, development, and expression of severe social withdrawal seen in hikikomori.

Since Saito<sup>5</sup> made hikikomori widely acknowledged by the Japanese society, a consensus has developed that hikikomori should be treated in a multi-dimensional fashion.<sup>1</sup> Among several therapeutic approaches, family support is probably the single most important step that should be taken in a multi-dimensional fashion.<sup>1,11,43</sup> Because the majority of hikikomori individuals withdraw into their own home, Saito<sup>11</sup> pointed out that the problem of social withdrawal and its treatment should primarily involve the family as the mediating structure between hikikomori individuals and society. The family support should start with psychoeducation, letting the family recognize the hikikomori, overcoming the stigma regarding mental health, and then focusing on coaching families on “positive communication” through the whole process of treating hikikomori.<sup>1,11,43,44</sup> In terms of approaching hikikomori individuals, home visits have been found to be a necessary step in assessment, evaluation, and treatment.<sup>1</sup> Not only can healthcare professionals perform thorough assessments and treat comorbid mental illness they can also help hikikomori individuals gradually feel more comfortable at least communicating with certain people other than family members.<sup>44,45</sup> In addition, home visits may lay a foundation for further psychotherapy.<sup>46</sup> Over the years, psychoanalysis and psychodynamic psychotherapy, both individual and group therapy, have proved to be effective when part of a multi-dimensional approach.<sup>1</sup> The ambivalence of engage and escape from therapy during psychodynamic therapy advocates the “capacity to be psychic alone,”<sup>29</sup> which would relieve the hikikomori individuals from defensive physical withdrawal.<sup>1</sup> Other therapy including animal therapy, robot pets and communication-assisting robots, physical activities, and video games such as Pokémon GO have been proposed as effective supplementary therapy.<sup>1,47-49</sup>

### Hikikomori and the COVID Pandemic Outbreak

Since the coronavirus disease 2019 (COVID-19) pandemic outbreak in 2020, many people across the world have been confined to their homes. This forced social withdrawal could negatively affect people’s mental health, resulting in disorders such as depression, anxiety, and even PTSD.<sup>50</sup> Due to quarantine social lockdowns and foreseeing financial recession, it is predicted that the COVID-19 pandemic is a risk factor that may trigger hikikomori states in vulnerable persons, while making existing hikikomori worse.<sup>51-54</sup> In addition, widely available online services from grocery shopping to virtual entertainment may also facilitate voluntary social withdrawal.<sup>52</sup> Even though the forced social withdrawal during the COVID-19 pandemic is different from hikikomori, successful treatment strategies for hikikomori could be employed to help persons during the period of global lockdown.<sup>50</sup> All previously mentioned treatment approaches to hikikomori, which target social

avoidance behaviors and engage family systems, can be applied to help people in forced lockdown. Family support, physical activities, animal therapy, some internet activities, and robot therapy should be helpful in terms of getting people connected and supported.<sup>48-53</sup> Some other potential positive outcomes from the pandemic with regard to hikikomori are also possible. Wong<sup>54</sup> has suggested that because many people have experienced social distancing and other restrictions for many months, they may empathize more with socially withdrawn people. Gavin and Brosnan<sup>55</sup> conducted an online survey of a large international sample of participants with questions about their experience during the COVID-19 restrictions. They found an association of higher hikikomori risk with being male, greater time in lockdown, and less frequent leaving of the house. Interestingly, an increase in internet use during lockdown was associated with a reduced risk of hikikomori, in contrast to some previous pre-pandemic research suggesting increased use of the internet is associated with increased hikikomori. However, as mentioned previously in this review, online gaming may be more related to hikikomori risk than social media use. Gavin and Brosnan found that during the lockdown increases in social media use were related to reduced hikikomori risk in both males and females, while lockdown was associated with increased gaming and increased hikikomori risk for females, suggesting online gaming as a hikikomori risk factor both before and during the lockdown. These authors surmised that social media use may support physical social relationships but that is not the case with social gaming, and also indicated that it will be important to determine if the benefits of social media use during the COVID-19 restrictions extend to a post-COVID society.<sup>55</sup>

### CONCLUSION

In conclusion, hikikomori is a prolonged voluntary social withdrawal that was originally considered a non-psychotic social-cultural phenomenon; however, with this prolonged social isolation, people may experience depression, anxiety, low self-esteem, and other forms of mental illness. There is considerable variability in the literature on reports of comorbidity with psychiatric disorders and what those disorders are, but there now seems to be a general consensus that most hikikomori cases have psychiatric comorbidity. There is still discussion about whether these disorders have hikikomori as a symptom or if hikikomori is the cause of the concurrent disorder. The terms primary and secondary hikikomori are used to describe cases without and with psychiatric comorbidity, respectively, although not all authors agree with the use of these terms. Hikikomori was first described in detail in Japan, and researchers from that country still continue to make important contributions to the diagnosis and treatment of the disorder, but in recent years, hikikomori has become increasingly recognized globally as a modern

society-bound syndrome rather than just a culture-bound syndrome. It has been proposed that increased indirect communication, reduced direct socialization, increased IGD, and increased bullying related to internet use have accelerated the spread of hikikomori globally. There is a paucity of information available about possible biochemical bases for hikikomori, but recent research suggests the involvement of oxidative stress and inflammation. Further studies on the child-parent relationship in hikikomori are also warranted. Researchers have made recent important advances in establishing guidelines for the diagnosis and treatment of hikikomori. It is generally agreed that multidimensional therapeutic approaches are necessary and that interventions involving the family are important in the case of hikikomori sufferers living with family members. With the COVID-19 pandemic outbreak, wide-ranging, prolonged social withdrawal is being addressed seriously as a mental health crisis, and knowledge gained from the treatment of hikikomori should be advantageous in helping people deal with other forms of social withdrawal.

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