REVIEW

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Shifting the paradigm of social withdrawal: a new era of coexisting pathological and non-pathological hikikomori

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Purpose of review
Social withdrawal syndrome, known as hikikomori, has been highlighted since the late 1990 s in Japan. Hikikomori is more common in urban areas, and often comorbid with mental disorders, and now spreading throughout the world. In the post-COVID-19 era, not outing is no longer considered pathological in itself as the new normal, and a novel concept of hikikomori is needed. This review summarizes the concept of hikikomori, and presents the latest methods for identification of hikikomori.

Recent findings
The novel definition can distinguish between pathological and non-pathological hikikomori using the scale of Hikikomori Diagnostic Evaluation (HiDE), which has been developed in the hikikomori research lab at Kyushu University. An online survey among non-working adults has revealed that persons who have become pathological hikikomori for less than three months showed a particularly strong tendency toward gaming disorder and depression.

Summary
Now, physical isolation itself is not pathological, but when dysfunction and distress are present, rapid mental health support should be provided. In the novel urban society, the establishment of a checkup system to assess whether persons who stay home are happy or suffering is important for prevention against mental disorders triggered by social isolation.

Keywords
depression, HiDE, hikikomori, HQ-25 M, social isolation

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Since the late 1990 s in Japan, problematic social withdrawal behavior known as "hikikomori," in which people stay at home for six months or longer without going out, has been identified [1]. Hikikomori is known to be more common in urban areas [2], and often comorbid with mental disorders [3,4,5▪,6]. In 2011, we pioneeringly proposed the pandemic of hikikomori in the future [7], and more than a decade has passed, hikikomori is now spreading throughout the world as we warned [8]. Hikikomori negatively impacts not only the affected individual's mental health, but also wider education and workforce stability, and as such is an urgent global issue in the administration of health, welfare and labor [7–10]. Remarkably, hikikomori has been newly listed in the section of the "Culture and Psychiatric Diagnosis" in the Diagnostic & Statistical Manual of Mental Disorders (DSM)-5-TR [11▪]. On the other hand, due to the COVID-19 pandemic, we are now entering into the era of the "new normal," where not outing is no longer considered pathological in itself, and a new concept of "hikikomori" is needed. This review summarizes the evolutional process of the concept of hikikomori and presents the latest methods for identification of hikikomori. Finally, we propose the impact of distinguishing

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KEY POINTS

- A recent definition of hikikomori requires less frequency of going out (no more than 3 days per week) and longer duration of less going out (6 months or more), but in the post-COVID-19 era, a new healthy lifestyle that meets these aspects is paradoxically being advocated as a new normal.
- A pilot survey using the self-rated scale called HiDE-S (Hikikomori Diagnostic Evaluation-Screening Form), which can distinguish between pathological and non-pathological hikikomori, has shown that persons with pathological hikikomori who had been withdrawn for no more than 3 months with social dysfunction and/or distress had the highest risk to have gaming disorder and depression.
- A new self-rated scale One-month version of Hikikomori Questionnaire (HQ-25 M), can measure hikikomori-like conditions (states) within one month, including three factors: physical isolation, lack of socialization, and lack of emotional support.
- In the era of the new normal, when work-at-home and online classes have become the norm, a checkup system with both HiDE-S and HQ-25 M to routinely assess whether a person is pathological or non-pathological hikikomori will be expected to lead to early intervention for pathological hikikomori and the prevention of the onset of accompanying mental disorders.

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between pathological and non-pathological hikikomori.

SHIFTING THE DEFINITIONS OF HIKIKOMORI

Pathological social withdrawal condition has long been observed among youth especially as a school refusal (“futoko”) in Japan since around 1970 s, and Tamaki Saito, a Japanese psychiatrist, proposed the concept of “hikikomori” in 1998 by his book “Hikikomori - Adolescence without End” [1]. Traditionally, hikikomori had been discussed as a culture-bound syndrome unique to Japan [12–14]. “Haji (shame),” “Amae (a form of culturally accepted over-dependent behaviors),” and “Kahogo (overprotection for children)” are deeply rooted in Japanese society, and these factors have been suggested to be link to hikikomori in Japan [3,10,15]. Saito defined hikikomori as “a condition in which the person stays at home and does not participate in society for six months or longer, and that becomes pathological by the late twenties, and other mental disorders are unlikely to be the primary cause” [1].

A WHO-based survey in Japan between 2002 and 2006 targeting citizens aged between 15 and 49 years estimated that 1.2% of the population has experienced social withdrawal for six months or longer [16]. The definition of hikikomori in this survey is “a state of social withdrawal for more than 6 months, not going to work or school, except for occasionally outings, but not communicating with people besides family members.”

Japan’s Cabinet Office surveys in 2015 and 2018 estimated the number of hikikomori who are socially withdrawn for 6 months and/or longer is 1 150 000 between 15 and 65 years old [17,18]. The latest Cabinet Office survey in 2022 estimates that 1.46 million persons are in the condition of hikikomori (2.05% of the 15–39 year-old-group and 2.02% of the 40–64 year-old-group), which suggest the increase of the number of hikikomori due to the COVID-19 pandemic [19]. The definition of hikikomori in the above Cabinet Office surveys is the persons who “usually stay at home, but go out to the neighborhood convenience store, etc.,” or “go out from their own room but never leave their house,” or “rarely leave their own room.”

On the other hand, the Japan’s Ministry of Health, Labour and Welfare (MHLW) published the guideline of hikikomori for evaluation and supports in 2010, and the definition of hikikomori is as follows:

“As a result of various factors, avoiding social participation (schooling including compulsory education, employment including part-time jobs and other interactions outside of the home), which in principle has continued under the condition of being house-bound for a period of more than 6 months (this may include leaving the home while still avoiding interactions with others). In general, hikikomori is considered to be a non-psychotic phenomenon that is distinguishable from the withdrawal state based on the positive or negative symptoms of schizophrenia, but it should be noted that it is not unlikely that in fact it may include schizophrenia before definitive diagnosis” [20].

The MHLW definition is similar to the definition of Saito (1998); however, this definition did not exclude the possibility of comorbid with various mental disorders and did not exclude the persons who leave the home while still avoiding interactions with others [20]. Kondo *et al.* [21] conducted a survey from 2007 to 2009 among hikikomori suffers who visit five mental health welfare centers in Japan. In this survey, hikikomori was diagnosed by the above MHLW criteria, and people with hikikomori were comorbid with various mental disorders including schizophrenia, mood disorders, anxiety disorders, personality disorders, and pervasive developmental disorder based on the criteria of DSM-IV [21]. The above WPA-based survey showed

that among persons with hikikomori, 54.5% had also experienced psychiatric disorders such as mood disorders, anxiety disorders, impulse control disorders, or substance-related disorders in their lifetime [16].

On the other hand, strong efforts have been conducted to accommodate the concept of hikikomori in DSM-5. At first, American psychiatrists Teo and Gaw (2020) proposed the following criteria of primary hikikomori for the purpose of fitting the criteria of the forthcoming DSM-5 as follows: spending most of the day and nearly every day confined at home, persistent avoidance of social participation (such as going to school or working) and social relationships (such as friendships and contact with family members), exclusion of some mental disorders (i.e., social phobia, major depressive disorder, schizophrenia, and avoidant personality disorder), and duration of the social withdrawal behaviors of at least 6 months [22].

Next, Teo and Kato modified these criteria of hikikomori (not limited to primary hikikomori) as follows: at least 6 months of spending most of the day and nearly every day at home; avoiding social situations, such as attending school or going to a workplace; avoiding social relationships, such as friendships or contact with family members; and significant distress or impairment due to social isolation [23].

Using the diagnostic interviews of this hikikomori definition and the Structured Clinical Interview for DSM-IV (SCID-IV), Teo, Kato and their colleagues have clarified that hikikomori is comorbid with a variety of mental disorders such as major depressive disorder, bipolar disorder, social anxiety disorder, posttraumatic stress disorder (PTSD), and multiple personality disorders [23], and that persons with hikikomori based on this strict criteria exist not only in Japan but also in India, South Korea, and USA [24].

Now, hikikomori-like cases have been reported in many countries and areas such as Hong Kong, Mainland China, India, Spain, Italy, France, Oman, and Brazil [7,25–32,33▪,34,35]. For example, in Hong Kong, 1.9% of citizen has been estimated to be a condition of hikikomori [30]. The estimated prevalence of hikikomori in Europe (2020–2022) is 1.71% using publicly available data from 29 European countries [36▪▪].

THE LATEST DEFINITION OF HIKIKOMORI

In 2013, the world-first hikikomori research clinic has been launched at Kyushu University Hospital (Fukuoka, Japan), and hundreds of persons who show hikikomori-like conditions have been introduced, treated, and also recruited for clinical research [9,37▪▪]. Interestingly, during clinical interviews, some persons denied being called "hikikomori" by the following reasons: "I am not avoiding society but just staying home because I have nothing to do," "I go to convenience store every night," and/or "I do not meet friends in-person, but I meet and chat many friends via online gaming every day." Importantly, majority of such persons revealed to have significant functional impairment or distress associated with hikikomori-like conditions.

Like that, previous definitions of hikikomori were somehow vague, which resulted in confusion in clinical practice. To combat the confusion surrounding the definitions of hikikomori [1,16–20,22–24], Kato *et al.* [38▪▪] proposed a novel international diagnostic criteria of hikikomori in 2019–2020 just before the COVID-19 pandemic as follows.

"Hikikomori is a form of pathological social withdrawal or social isolation whose essential feature is physical isolation in one's home. The person must meet the following criteria:

(1) Marked social isolation in one's home.
(2) Duration of continuous social isolation for at least 6 months.
(3) Significant functional impairment or distress associated with the social isolation.

Individuals who *occasionally* leave their home (2–3 days/week), *rarely* leave their home (1 day/week or less), and *rarely* leaves a single room may be characterized as mild, moderate, and severe, respectively. Individuals who leave their home *frequently* (4 or more days/week), by definition, do not meet criteria for hikikomori. When counting the frequency, brief outings (such as to take out the trash or visit a convenience store) should not be included. The estimated continuous duration of social withdrawal should be noted (e.g., 8 months). Individuals with a duration of continuous social withdrawal of at least 3 (but not 6) months should be noted as *pre-hikikomori*. The age at onset is typically during adolescence or early adulthood. However, onset after the third decade is not rare, and homemakers and elderly who meet the above criteria can also be considered." Several specifiers (such as lack of social participation, lack of in-person social interaction, experience of loneliness and a co-occurring psychiatric condition) are excluded from the necessary criteria. However, these specifiers are very useful for additional characterization of hikikomori especially in the process of assessing the severity, and considering the treatment strategy. It is important to note that even though an individual has a certain

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psychiatric disorder, this definition can diagnose his/her as hikikomori as a comorbid diagnosis."

(Specifiers)

(1) With lack of social participation. The individual occasionally (2–3 days/week) or rarely (1 day/week or less) participates in activities such as attending school, going to a workplace, or going to medical appointments. This specifier would likely apply to hikikomori who are also not in education, employment, or training (i.e., "Not in Education, Employment, or Training (NEET)") [39,40].
(2) With lack of in-person social interaction. The individual occasionally (2–3 days/week) or rarely (1 day/week or less) has meaningful in-person social interactions (conversations) with people outside home. In severe cases, the individual rarely has in-person social interaction even with co-habitating people such as family members. This specifier would likely apply to individuals with hikikomori who have social interactions that primarily occur via digital communication technologies (e.g., social media, online gaming) [41,42,43▪].
(3) Indirect communication. Due to the proliferation of the internet in modern society, "indirect" communication via web-based or other technologies is increasingly common. Thus, such indirect communication should be assessed in accordance with direct communication. Some cases have daily bidirectional indirect communication via online tools such as SNS and/or online games [41,42,43▪].
(4) With loneliness. The individual endorses feeling lonely. The presence of loneliness tends to be more common as the length of hikikomori increases [3,14].
(5) With a co-occurring condition. Hikikomori may co-occur with numerous psychiatric disorders, such as avoidant personality disorder (e.g., isolation due to fears of criticism or rejection) [3], social anxiety disorder (e.g., avoidance of social situations because of fear of embarrassment) [3], major depressive disorder (e.g., avoidance of social situations as a reflection of neurovegetative symptoms) [6,40,44,45▪], autism spectrum disorder (deficits in social interactions and communication) [4,5▪], or schizophrenia (e.g., isolation due to positive and negative symptoms of psychosis) [3].
(6) Age of onset. In many cases, the age at onset is adolescence and early adulthood. However, cases with onset after the third decade are not rare [3].
(7) Family pattern and dynamics. Socioeconomic status and parenting styles may influence the development of hikikomori [3,46]. For instance, overprotective parenting and/or absence of paternal involvement are suggested to be linked to the occurrence of this phenomenon [14,47,48▪].
(8) Cultural background. The pathological social withdrawal was originally characterized and described in Japan and more recently in other countries especially in East Asia and Europe [26,49,50]. Sociocultural situation may influence this condition.
(9) Intervention. Even though few evidence-based interventions have been established, pharmacotherapy (if the individuals are comorbid with psychiatric disorders) [3], a variety of psychotherapy [14,47,48▪], social work [3], and family approach have been provided [51,52▪,53]. Precision (individualized) approach is recommended based on the above assessments [54,55].

Using this criteria, hikikomori-like persons can be well classified and well diagnosed as hikikomori using the above A-I specifiers (specifiers are not mandatory criteria, however useful for additional characterization of hikikomori) [3]. Frequency of going out should be carefully assessed: If a person goes to a convenience store or takes a walk every night, such behaviors do not count as a meaningful outing. Definitions of the Japan's Cabinet Office survey (2018, 2019, 2022) and The MHLW definition (2010) includes such persons as hikikomori [20]. Nonaka and Sakai have also suggested the importance of assessing the frequency of outings in more details [56▪]. Thus, we have herein added the above new underlined sentences on the original definition in Kato *et al.* Psychiatry Clin Neurosci 2019 & Kato *et al.* World Psychiatry 2020 [3,38▪▪].

EVALUATION OF PATHOLOGICAL AND NON-PATHOLOGICAL HIKIKOMORI IN THE POST-COVID-19 ERA

The above definition of hikikomori (in Kato *et al.* World Psychiatry 2020) includes its assessment criterion "a frequency of outings is no more than three times a week" [3,38▪▪]. However, during the COVID-19 pandemic due to the lockdown and self-restraint policies, and now in the post-COVID-19 era, work-at-home and online classes have become widespread as the "new normal," where not outing is no longer considered pathological in itself, and a new concept of "hikikomori" is needed [14]. An increasing number of people are meeting the criteria of hikikomori especially on the frequency of outings, but many of them are still heathy and not morbid. Thus, it is not necessary to consider all of these people as

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pathological hikikomori only by assessing the frequency of outings.

Thus, we are now proposing a novel concept of "non-pathological" hikikomori [14]. If a person is in the condition of hikikomori and has no "significant functional impairment and distress associated with the social isolation," he/she should be regarded as "non-pathological" hikikomori. Just recently, the Hikikomori Research Lab at Kyushu University (Hiki-Lab@Q) has developed a structured interview

Table 1. HiDE-S (Hikikomori Diagnostic Evaluation-Screening Form)

These questions ask about your lifestyle. Please select the appropriate answer for each question below.
1. During the past one month, about how many days a week did you go out briefly, such as to take out the trash or visit a convenience store?
$\square_0$ Four or more days/week $\square_1$ Two or three days/week $\square_2$ One day or less/week $\square_3$ None
2. Setting aside times when you went out briefly as in #1 above, during the past one month, about how many days a week did you go out for an hour or more, including going out for work, school, shopping, and so on?
$\square_0$ Four or more days/week $\square_1$ Two or three days/week $\square_2$ One day or less/week $\square_3$ None
3. If you answered four or more days/week for #2, please select None here. If you answered anything else, about how long has it been that you have been going out at that frequency?
$\square_0$ None $\square_1$ Less than three months $\square_2$ Between at least 3 months and less than 6 months $\square_3$ 6 months or more (Specify:)
4. During the past one month, how often do you feel you have gone out?
$\square_0$ Very often $\square_1$ Often $\square_2$ Somewhat often $\square_3$ Not often $\square_4$ Very seldom
5. Does the frequency of how often you have gone out in the past one month bother you?
$\square_0$ No $\square_1$ Yes
6. Does the frequency of how often you have gone out in the past one month make you feel isolated or lonely?
$\square_0$ No $\square_1$ Yes
7. Has your family or people around you sought seemed to worry about the frequency of how often you have gone out in the past one month?
$\square_0$ No $\square_1$ Yes
8. Has your family or people around you sought help because of the frequency of how often you have gone out in the past one month?
$\square_0$ No $\square_1$ Yes
9. Has the frequency of how often you have gone out in the past one month disrupted your work or job search?
$\square_0$ No $\square_1$ Yes
10. Has the frequency of how often you have gone out in the past one month disrupted your relationships with family members?
$\square_0$ No $\square_1$ Yes
11. Has the frequency of how often you have gone out in the past one month disrupted your relationships with friends?
$\square_0$ No $\square_1$ Yes
12. Please select the choice that best fits your current situation. Multiple answers are allowed. If none apply, select None.
$\square_1$ I'm a student. $\square_2$ I work. $\square_3$ I'm on a long vacation. $\square_4$ I'm taking a leave of absence from school or work. $\square_5$ I'm preparing for college or employment. $\square_6$ I'm a homemaker. $\square_7$ I'm a domestic helper. $\square_8$ I'm unemployed. $\square_9$ I'm retired (after age limit). $\square_0$ None

Cited from the original version on the website of the Hikikomori Lab @ Kyushu University (https://www.hikikomori-lab.com/pdf/SupplementaryInformation.pdf).
The following instruction of HiDE-S was originally prepared for this article.
[How to use the HiDE-S] Q1, Q2, and Q3 assess the degree of outings as physical hikikomori and its duration. First, Q1 asks about the frequency of outings for short periods of time. Q2 asks about the frequency of outings other than those in Q1. Even if a person goes out for short periods of time four or more days a week in Q1, if he/she goes out less than three days a week in Q2, he/she is evaluated as a physical hikikomori. Depending on the frequency of outings in Q2, the respondent will be rated as non hikikomori condition if he/she goes out more than 4 days a week, as mild if he/she goes out 2–3 days a week, and as moderate or more if he/she goes out once a week or less. Q3 evaluates the duration of hikikomori: pre-hikikomori for 3 months to less than 6 months, and hikikomori for more than 6 months.
Q4 asks about subjective feelings about outings. This is an important item for providing supports and interventions, but it is not directly related to the diagnosis.
Seven questions from Q5 to Q11 assess presence of distress and/or impairment. If any of the answers are yes, the person is considered to have pathological hikikomori. If the answer to any of the questions is No, the person is considered to have non-pathological hikikomori. In other words, even if a person meets the criteria for physical hi
ikomori in Q2, if he/she answers No to all of Q5 through Q11, he/she is evaluated as possibly having non-pathological hikikomori.
Q12 assesses current social status. It is not uncommon for homeworkers and retirees to fall into the category of physical hikikomori, but most of them are assumed to be non-pathological hikikomori. In the unlikely event that a person falls into the category of pathological hikikomori," some forms of supports and interventions are needed.
For a more rigorous assessment and diagnosis, a structured interview (HiDE-I) should be conducted.

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form and a self-rated screening form for diagnosing hikikomori, called HiDE (Hikikomori Diagnostic Evaluation) [57▪▪]. The HiDE allows stratification into pathological and non-pathological hikikomori [57▪▪]. A self-rated scale, called "HiDE-Screening Form (HiDE-S)," contains 15 questions, which enable to estimate persons with hikikomori whether he/her is "pathological" or "non-pathological," easily and quickly (Table 1) [57▪▪].

For the prevention of pathological hikikomori, the criterion of the "6 months" duration needs to be revised [38▪▪]. In addition to the criterion of "pre-hikikomori (3–6 months of physical isolation)" [38▪▪], much shorter periods should also be considered for early intervention. The above HiDE-S enable to assess early stage of hikikomori (within 3 months from the onset) [57▪▪]. Interestingly, an online survey among non-working adults in Japan has revealed that persons who have become "pathological" hikikomori for "less than three months" showed a particularly strong tendency toward gaming disorder compared to the other groups of hikikomori for more than three months [58▪▪]. On the contrary, regardless of time period, persons with "non-pathological" hikikomori showed less game disorder tendency and less depression tendency. Moreover, this survey has revealed that hikikomori persons who have lower tendency of "avoiding social roles" tend to become gaming disorder, and the most popular game among the participants was

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Table 2. HQ-25 M (One-month version of Hikikomori Questionnaire-25)

Over the LAST MONTH, how accurately do the following statements describe you?	Strongly disagree	Somewhat disagree	Neither agree nor disagree	Somewhat agree	Strongly agree
1 I stay away from other people.	0	1	2	3	4
2 I spend most of my time at home.	0	1	2	3	4
3 There really isn't anyone with whom I can discuss matters of importance.	0	1	2	3	4
4 I love meeting new people.	0	1	2	3	4
5 I shut myself in my room.	0	1	2	3	4
6 People bother me.	0	1	2	3	4
7 There are people in my life who try to understand me.	0	1	2	3	4
8 I feel uncomfortable around other people.	0	1	2	3	4
9 I spend most of my time alone.	0	1	2	3	4
10 I can share my personal thoughts with several people.	0	1	2	3	4
11 I don't like to be seen by others.	0	1	2	3	4
12 I rarely meet people in-person.	0	1	2	3	4
13 It is hard for me to join in on groups.	0	1	2	3	4
14 There are few people I can discuss important issues with.	0	1	2	3	4
15 I enjoy being in social situations.	0	1	2	3	4
16 I do not live by society's rules and values.	0	1	2	3	4
17 There really isn't anyone very significant in my life.	0	1	2	3	4
18 I avoid talking with other people.	0	1	2	3	4
19 I have little contact with other people talking, writing, and so on.	0	1	2	3	4
20 I much prefer to be alone than with others.	0	1	2	3	4
21 I have someone I can trust with my problems.	0	1	2	3	4
22 I rarely spend time alone.	0	1	2	3	4
23 I don't enjoy social interactions.	0	1	2	3	4
24 I spend very little time interacting with other people.	0	1	2	3	4
25 I strongly prefer to be around other people.	0	1	2	3	4

Cited from Kato *et al.* Psychiatry Clin Neurosci 2023.
The HQ-25 M has a theoretical score range of 0 to 100. Items of 4, 7, 10, 15, 21, 22, and 25 were reversely scored.

"role-playing" game [58■■]. These data suggest that loss of job and consequent hikikomori situations may cause loss of roles in society, and that use of games during early hikikomori condition may be a self-care action by gaining social roles in the gaming world where persons can gain avatar-society roles. In addition, a longitudinal online survey during the COVID-19 pandemic has revealed the potential unexpected risk factors for pathological hikikomori in initially working adults without social isolation [59■■]. In general, extroverted, confident, agreeable, socially engaged, and/or motivated people are believed to be not related to hikikomori due to high coping skills. However, these factors have paradoxically increased the risk of becoming pathological hikikomori during the COVID-19 pandemic, and novel different strategies for preventing pathological hikikomori are needed during the "new normal" era [59■■].

Previously, Teo, Kato and their colleagues have developed a self-rated scale, called "25 items of Hikikomori Questionnaire (HQ-25)," to grasp the severity of hikikomori condition among 6 months, using a local sample of 399 Japanese participants who live in Fukuoka, Japan [60]. The HQ-25 contains three factors: physical isolation (a core feature of hikikomori), lack of socialization, and lack of emotional support (second and third are mediating factors that enhance physical isolation) [60]. Based on the original HQ-25, the Hiki-Lab@Q has just recently developed a new self-rated scale, named "One-month version of Hikikomori Questionnaire (HQ-25 M), which can measure hikikomori-like conditions (states) within 1 month (Table 2) [61■■].

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CONCLUSION

In the post-COVID-19 era, physical isolation itself is not pathological, but when dysfunction and distress are present, rapid support should be provided. In the novel urban society, the establishment of a checkup system with both HiDE-S and HQ-25 M to assess whether persons who stay home are happy hikikomori or suffering hikikomori is important for prevention against mental disorders triggered by social isolation.

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Conflicts of interest

There are no conflicts of interest.

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