

Relationship Between Social Withdrawal (Hikikomori), Personality, and Coping in an Adult Population

Céline Bonnaire (✉ celine.bonnaire@u-paris.fr)

Université Paris Cité

Zoé Roignot

Université Paris Cité

Research Article

Keywords: Hikikomori, Social withdrawal, Personality, Coping, Depression

Posted Date: September 28th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-2095361/v1>

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Abstract

The aim of this study was to investigate the relationships between personality dimensions, coping strategies, and *Hikikomori* while controlling for the presence of depression and anxiety. Two groups were compared: the control group ($n= 101$ participants, mean age \pm SD = 36.2 ± 12.8 years) was recruited from several general Facebook groups, and the *Hikikomori* group ($n = 28$, mean age \pm SD = 30.1 ± 9.1 years) from a private group dedicated to *Hikikomori*. Participants of both groups completed the Big Five Inventory, the Brief Coping Orientation to Problems Experienced, and the Hospital Anxiety and Depression Scale. Univariate regression analysis revealed that depression, anxiety, neuroticism (and the anxiety facet), self-blame, and behavioral disengagement were significant predictors of *Hikikomori*. These findings contribute to a better understanding of the psychological functioning of *Hikikomori* as well as to treatment elaboration.

Introduction

The Japanese term *Hikikomori* was used for the first time by Tamaki in 1998 [1]. This term designates the extreme, voluntary, and prolonged (6 months or more) withdrawal of adolescents and young adults to their home, thus avoiding social contacts, school, or professional activities [1, 2]. In the literature, this term is usually translated as “social withdrawal” but also as “youth social withdrawal”, “housebound syndrome”, or “claustration syndrome”. In Japan, the term *Hikikomori* refers to both the phenomenon and the person affected by this withdrawal. Currently *Hikikomori* is applied to individuals who do not leave their rooms or homes, or who can go out in their neighborhoods but usually stay home, or who go out for their hobbies but usually stay home [3]. In the literature, there is a distinction between “primary *Hikikomori*”, which presents no comorbidity, a “pure” form of social withdrawal, and “secondary *Hikikomori*” due to a known mental disorder [4].

The first estimations and prevalence studies were performed in Japan, where, in 2006, lifetime prevalence was estimated at 1.2% [5]. *Hikikomori* have now been identified in many other countries, such as Hong Kong, Spain, France, India, Korea, Ukraine, and the United States [6-10], and can be conceptualized as having a “contemporary society-bound syndrome” [11]. Despite heterogeneous results across studies, there are several common characteristics of *Hikikomori*: onset around the age of 20 years with a large male predominance [5, 12], living in urban areas [6], and living in high-income, developed countries, with a strong maternal presence [12-14]. Previous studies reported that most *Hikikomori* who seek treatment in a health care center would have presented a psychiatric disorder during their lifetime [5, 15-17]. Nevertheless, the question of whether these psychiatric disorders generate social withdrawal or whether social withdrawal is the cause of psychiatric disorders remains unclear [18].

Beyond psychiatric comorbidities, several studies have investigated the psychological functioning of individuals with *Hikikomori*, especially personality. Thus, some studies that evaluated personality disorder found a strong relationship between *Hikikomori* and avoidant personality [19] or passive-aggressive personality [20]. Other studies that have focused on personality traits found a higher difficulty in

identifying and verbalizing emotions in individuals with *Hikikomori* [21, 22]. Indeed, people with *Hikikomori* are more likely to express emotions indirectly and expect others to presume their feelings and thoughts [20]. More recently, Amendola et al. [23] found a strong relationship between *Hikikomori* and overall personality dysfunction. Nevertheless, only a few studies have investigated personality traits and none have done so according to the most dominant framework for measuring them: the Big Five traits.

Research emphasizes the intra-family relational modalities that are involved in social withdrawal. However, studies have shown heterogeneous results regarding the presence or not of dysfunctional family functioning as a cause or consequence of *Hikikomori* [12, 24]. Insecure attachments, especially avoidant and ambivalent attachment, have been associated with *Hikikomori* [25], thus highlighting vulnerability to situations of rejection. Thus, social withdrawal is often the consequence of experiencing failures in socialization, or of avoiding these situations, the consequence of refusal of the ideals of social success [26] or of traumatic experiences such as school bullying or sexual abuse [27], thus instilling in the individual fear and distrust of the outside world. Experiences of failure, loneliness, and worthlessness are currently known suicide motives in *Hikikomori* [28]. *Hikikomori* can be seen as an expression of contemporary suffering on entering adulthood due to social and family pressures on youth in which the requirements for success are high [14]. Thus, some investigators have proposed that *Hikikomori* could be a (maladaptive) strategy to cope with the stress caused by social judgment [18]. Although the behavioral repertoire of families who cope with individuals with *Hikikomori* have been investigated [29], no study has evaluated the different adjustment strategies used by the *Hikikomori* themselves. Thus, the aim of the present study was to explore the relationships between personality dimensions, coping strategies, and social withdrawal while controlling for the presence of depression and anxiety. Given that social withdrawal may be a sign of depression itself and may be seen as a marker of anxiety, and that the period during which the current study took place during the COVID-19 pandemic was associated with an increase in anxiety and depression due in part to isolation from others [30], it was important to control for the possible effect of psychological distress.

Methods

Participants

Individuals (male and female) who were 18 years or older were included in the study. Participants were excluded if they presented with a possible comorbid psychotic disorder (based on the L module of the Mini International Neuropsychiatric Interview [31]). Participants were recruited from several general Facebook groups and one private group dedicated to *Hikikomori*: "Hikomori France. Communauté francophone des *Hikikomori* et reclus sociaux" (all French speaking). After asking the administrators for their permission, we posted a message explaining the aim, duration, and anonymity of the study, as well as a link to the questionnaire (with a full explanatory note containing the ethical requirements). Participants who agreed to participate in the study had to provide their informed consent before accessing the questionnaires (for minors, one of the parents also had to give consent). For the *Hikikomori*

Facebook group, the questionnaire was distributed through its creator, known by the pseudonym Ael, himself having been *Hikikomori* for 13 years.

All participants received information regarding the survey and all participants provided written informed consent to participate.

The two groups (control group and *Hikikomori* group) were formed on the basis of the following measures: (1) their score on the 25-item *Hikikomori* Questionnaire (HQ-25; see Measures subsection) and (2) their answers to questions created for the study. As recommended by the authors of the HQ-25, given the high rate of false-positives [32], and because of the restrictions linked to the COVID-19 pandemic situation when recruitment took place, three additional questions were asked:

1. Outside of the current restrictions linked to COVID-19, how often do you go out alone or with friends for shopping, sports, or socializing? (once a week, several times a week, every day, once a month, less than once a month, almost never, never)
2. Outside of the current restrictions linked to the COVID-19, do you go outside only for vital needs (food or medical appointment)? (yes, no)
3. Does the current pandemic context have an impact on what you usually want to do in terms of outings, leisure, or any other activity outside your home? (yes, no, not at all)

The control group was composed of 101 participants (30 males, 70 females, 1 other; mean age \pm *SD* = 36.2 \pm 12.8 years). Most participants were either single (39.6%), or married or in a relationship (50.5%). The majority were employed (65.3%) and had less than a high school graduate education (84.2%). They either lived alone (44.0%) or with a partner (36.0%). Most had parents who lived together (45.5%).

The *Hikikomori* group was composed of 28 participants (13 males, 15 females, mean age \pm *SD* = 30.1 \pm 9.1 years). Most were single (67.9%), unemployed (60.7%), and had less than a high school graduate education (75.0%). They either lived alone (39.3%) or with one parent (39.3%). Most had divorced parents (42.9%).

Measures

Participants' characteristics were evaluated, including age, gender, education, and marital and professional status.

The HQ-25 [32] was used to assess the severity of symptoms of *Hikikomori* over the preceding 6 months. This self-administered instrument composed of 25 items evaluates the psychological features and behavioral patterns of typical *Hikikomori* syndrome, such as lack of social connectedness, active social isolation or withdrawal behavior, avoidance of social contact, and a sense of alienation from society. All items of the HQ-25 were rated on a scale ranging from 0 (strongly disagree) to 4 (strongly agree). Authors

of the HG-25 proposed a cutoff score of 42 (out of 100), which was associated with a sensitivity of 94% and a specificity of 61% in their clinical study. In our study, the scale showed high internal consistency, with a Cronbach's alpha of .92.

The French version of the Big Five Inventory (BFI-Fr) [33] is a 45-item self-report questionnaire that assesses five personality domains with two facets per domain: Neuroticism (Anxiety and Emotional Volatility), Agreeableness (Compassion and Respectfulness), Conscientiousness (Organization and Responsibility), Extraversion (Anxiety and Emotional Volatility), and Openness (Aesthetic Sensitivity and Creative Imagination). All items of each dimension were rated on a scale from 1 (strongly disapprove) to 5 (strongly approve), for a total score ranging from 5 to 25 in each dimension. Each domain demonstrated high reliability and a clear factor structure. The BFI-Fr yielded adequate internal consistency in the current sample for neuroticism (Cronbach's $\alpha = .83$), agreeableness (Cronbach's $\alpha = .80$), conscientiousness (Cronbach's $\alpha = .85$), extraversion (Cronbach's $\alpha = .88$) and openness (Cronbach's $\alpha = .80$).

The Brief Coping Orientation to Problems Experienced (Brief-COPE, [34]), French version [35], was used to assess various coping styles. The scale consists of 28 questions, including 14 subscales (two questions per subscale) in a Likert scale format (0 to 4 points). These subscales, or coping styles, include active coping, instrumental support, planning, acceptance, emotional support, humor, positive reframing, religion, behavioral disengagement, denial, self-distraction, self-blame, substance use, and venting. In this study, the scale showed good internal consistency, with a Cronbach's alpha of .70. The problem-focused coping dimension included active coping, planning, and instrumental support. The emotion-focused coping dimension included emotional support, religion, positive reframing, acceptance, humor, and venting. The dysfunctional coping dimension included self-blame, denial, self-distraction, behavioral disengagement, and substance use [34].

The French version of the Hospital Anxiety and Depression Scale (HADS [35]) is a 14-item self-report scale that was used to screen participants for anxiety (seven items) and depression (seven items). This tool has good psychometric properties and is quick to administer and thus suitable for field research. Cutoff scores for the depression and anxiety subscales are as follows: 7 or 8 indicates "possible presence", 10 or 11 suggests "probable presence", and 14 or 15 refers to "severe presence". In this study, the two subscales showed good internal consistency, with a Cronbach's alpha of .80 for depression and 0.74 for anxiety.

Statistical Analysis

All statistical analyses were performed with SPSS software (version 20). For sociodemographic, personality, and coping characteristics, we used *t*-tests or chi-squared tests for group differences, with Cohen's *d* or Cramer's *V* for effect size for continuous or categorical variables, respectively. We considered $d > 0.5$ as a medium effect size and $d > 0.8$ as a large effect size [36]. We also used univariate logistic regression to examine associations between social withdrawal and predictor variables (personality traits,

coping, depression, and anxiety) and the presence of co-occurring social withdrawal. Odds ratios (ORs) and 95% confidence intervals were generated by using logistic regressions.

Results

Descriptive data for the whole sample are presented in Table 1. The proportion of women and men in our two samples was equivalent, but the *Hikikomori* group was significantly younger than the control group ($F(1) = 5.44, p = 0.021, d = 0.54$).

The *Hikikomori* group had higher depression and anxiety scores than the control group did, with a large effect size ($F(1) = 54.74, p < 0.001, d = 1.10$ and $F(1) = 53.08, p < 0.001, d = 1.14$, respectively), but none of the control group had a score of probable or severe depression or anxiety (see Table 2).

Regarding personality dimensions, participants from the control group had significantly higher extraversion ($F(1) = 56.15; p < 0.001; d = 1.52$), assertiveness ($F(1) = 33.06; p < 0.001; d = 1.24$), energy level ($F(1) = 75.37; p < 0.001; d = 1.68$), agreeableness ($F(1) = 4.97; p = 0.027; d = 0.46$), compassion ($F(1) = 15.01; p < 0.001; d = 0.78$), conscientiousness ($F(1) = 15.69; p < 0.001; d = 0.81$), responsibility ($F(1) = 23.41; p < 0.001; d = 0.99$), openness ($F(1) = 4.45; p = 0.037; d = 0.46$), and creative imagination ($F(1) = 5.05; p = 0.026; d = 0.47$) scores than did those from the *Hikikomori* group, with effect size ranging from medium to large. In contrast, participants from the *Hikikomori* group had higher neuroticism ($F(1) = 15.65; p < 0.001; d = 0.89$) and anxiety ($F(1) = 20.05; p < 0.001; d = 1.41$) scores than did those from the control group, with a large effect size.

Regarding coping, participants from the *Hikikomori* group had significantly lower scores on the problem-focused coping dimensions, especially active coping ($F(1) = 11.69; p = 0.001; d = 0.73$) and instrumental support ($F(1) = 18.73; p < 0.001; d = 1.00$). They also had significantly lower scores on some emotion-focused coping dimensions: emotional support ($F(1) = 10.19; p = 0.002; d = 0.66$), positive reframing ($F(1) = 15.55; p = 0.014; d = 0.87$), acceptance ($F(1) = 9.91; p = 0.002; d = 0.67$), humor ($F(1) = 5.55; p = 0.020; d = 0.54$), and venting ($F(1) = 14.89; p < 0.001; d = 0.88$). Finally, regarding the dysfunctional coping dimension, participants from the *Hikikomori* group had higher scores on self-blame ($F(1) = 8.29; p = 0.005; d = 0.56$) and behavioral disengagement ($F(1) = 34.42; p < 0.001; d = 1.06$) than did those from the control group.

Several factors were positively associated with *Hikikomori* (see Table 3), neuroticism and anxiety on the BFI-Fr (OR = 2.94 and OR = 2.75, $p < 0.001$, respectively) and behavioral disengagement on the Brief-COPE being the strongest (OR = 2.06, $p < 0.001$). In contrast, *Hikikomori* was negatively associated with age (OR = 0.95, $p = 0.026$), extraversion (OR = 0.17, $p < 0.001$), assertiveness (OR = 0.26, $p < 0.001$), energy level (OR = 0.17, $p < 0.001$), agreeableness (OR = 0.42, $p = 0.031$), compassion (OR = 0.27, $p = 0.001$), conscientiousness (OR = 0.31, $p < 0.001$), responsibility (OR = 0.24, $p < 0.001$), openness (OR = 0.53, $p = 0.041$), creative imagination (OR = 0.51, $p = 0.030$), active coping (OR = 0.60, $p = 0.002$), instrumental support (OR = 0.50, $p < 0.001$), emotional support (OR = 0.65, $p = 0.003$), positive reframing (OR = 0.58, p

< 0.001), acceptance (OR = 0.64, $p = 0.003$), humor (OR = 0.71, $p = 0.024$), and venting (OR = 0.54, $p = 0.002$).

Discussion

Until now, only a few studies have investigated the personality dimensions of *Hikikomori* and none have explored coping strategies. The aim of this study was to explore the relationships between *Hikikomori*, personality, and coping while taking into account depression and anxiety.

Our *Hikikomori* sample had an equal proportion of male and female participants, in contrast to the male predominance highlighted in several previous studies [5, 12]. Furthermore, our results showed that being a male is not a risk factor associated with being *Hikikomori*. This is in line with a recent study that found a similar proportion of *Hikikomori* men and women [37]. Because characteristics of *Hikikomori* manifest differently depending on gender [37], greater attention must be paid to gender differences in order to determine whether there are specificities of psychological functioning and, in particular, psychological processes involved in the occurrence of *Hikikomori*. Hence, it is necessary to better adapt treatment for gender specificities.

Our results on personality dimensions showed a strong relationship between neuroticism and *Hikikomori* (the risk is increased by almost three times), especially the anxiety facet. Thus, it is not surprising that *Hikikomori* have higher anxiety scores. This result is in line with the self-reported case study of Chong and Chan [38] that suggested that having an introverted personality plays a crucial role in a person becoming *Hikikomori*. Previous studies have found a relationship between neuroticism and a negative attitude toward events [39] that have interpersonal consequences. Indeed, individuals with high neurotic scores tended to be less satisfied with their relationships overall [40–44] and had higher social deprivation [45]. Given the perceptual effects of neuroticism on relationships, intrapersonal explanations [46] suggest that neurotic individuals “think in ways that lead to more negative perceptions of their interpersonal experiences, regardless of the objective quality of those experiences” [47, p. 1440]. Personality shapes individuals’ perceptions of the world around them [48]; thus, the general tendency of neurotic individuals to experience negative affects [49], especially in the interpersonal domain, could lead to avoidance of social situations and relationships (i.e., *Hikikomori*).

Participants from the *Hikikomori* group also had significantly higher depression scores, and depression was positively associated with the risk of being *Hikikomori*. This result is similar to that of a previous study in which individuals who were reported to be lonely, isolated, or neurotic – as well as any combination thereof – were more depressed than were those who did not have these characteristics; the individuals in that study also had higher social deprivation [45]. Our result is also similar to those in studies that highlighted a strong relationship between depression and both loneliness [50–52] and neuroticism [53, 54].

Compared with members of the control group, *Hikikomori* used significantly more dysfunctional coping strategies, especially self-blame and behavioral disengagement, and less problem-focused and emotion-

focused coping strategies. In the qualitative study of Yong and Kaneko [55], social withdrawal appeared to be a passive way of coping with existing problems. This coping type could be seen as a “specific adaptation to contemporary competitive social changes and the human relationships these changes produce” [55, p. 13]. This a way of creating a safe place where things are more predictable and less challenging. Taken together, our results confirm the definition given by Costa and McCrae that neurotic individuals are “prone to cope more poorly than others with stress” [49]. As in previous studies that found a relationship between ineffective coping styles and poorer mental health [56], *Hikikomori* tended to criticize themselves for a perceived sense of responsibility in the situation (e.g. self-blame) and withdrew (e.g. behavioral disengagement) when they had to face a stressful situation. This is in line with a study on social anxiety in which frequent engagement in dysfunctional coping strategies were associated with higher degrees of social anxiety and related social impairment [57]. Thus, and as suggested by Tran and Haaga [58] for social anxiety, *Hikikomori* cope with their anxiety by fleeing stressful situations.

Our results showed that coping styles (i.e. *positive reframing*, which refers to the reinterpretation or reappraisal of a stressful event in positive terms; *acceptance*, defined as the capacity to learn to accept the reality of a stressful situation; and *use of humor* with negative emotions) that were negatively associated with *Hikikomori* were those classified as positive emotion-focused coping styles [59]. Furthermore, our results on venting of emotion, emotional support, positive reframing, humor (all negatively associated with *Hikikomori*), and self-blame (positively associated with *Hikikomori*) highlight the importance of emotion regulation in *Hikikomori*. Indeed, according to the coping circumplex model [59], in stressful situations, individuals need to solve the problem as well as to regulate their emotions. Emotion-focused coping involves focusing on and dealing with the emotions that a problem results in by reviewing one’s own perception of the problem and regulating the resulting emotions [60]. Our results on neuroticism – designed to measure a person’s emotionality or emotional instability and vulnerability to stress [61] – also confirm the importance of emotion regulation in *Hikikomori*. Thus, for a better understanding of the psychological functioning of *Hikikomori*, future studies need to evaluate emotion regulation in terms of both emotional regulation deficits and emotion regulation strategies [62–64].

Limitations And Clinical Implications

This study has several limitations. First, the cross-sectional nature of the study hinders the possibility of making a causality statement. Second, our sample is relatively small ($n = 129$). As suggested by some authors, a small sample increases the risk that the relevance of specific factors remains undiscovered [65]. Despite our sample being relatively small, however, it included a significant proportion of *Hikikomori* ($n = 28$). Nonetheless, our results should be replicated in a larger group of participants. Third, the small number of females did not allow us to investigate gender differences. As mentioned previously, given the specificities highlighted in recent studies, continued investigation of any gender specificities seems warranted. Finally, despite the precautions taken to assess social withdrawal, it is possible that the health context had an impact on participants’ scores on the HQ-25. However, it should be noted that this is the first French study to have used this tool.

Despite these limitations, this study shows a strong relationship between anxiety, depression, and *Hikikomori* on one hand, and neuroticism, self-blame, behavioral disengagement, and *Hikikomori* on the other hand. Anxiety and depression refer to the psychiatric level that is generally used to identify standardized treatment that targets specific syndromes [66]. Nevertheless, according to the psychological model, psychiatric symptoms are a consequence of impaired or disturbed psychological processes [67]. Thus, it is important to further investigate and understand the specific psychological processes implicated in the occurrence of *Hikikomori* and its comorbidities. Our study is the first to have contributed to this understanding. As evidence-based psychological interventions typically target psychological processes (e.g., dysfunctional emotional regulation processes, cognitive impairment) and not risk factors per se (e.g., personality dimensions), it is crucial to apply a process-based analysis when designing treatment [68–70]. An understanding of the specific psychological processes implicated in the onset and maintenance of the disorder (i.e., *Hikikomori*) will help tailor treatment depending on the specific psychological processes implicated [66]. Given the dysfunctional coping strategies identified in this study, *Hikikomori* would benefit from an intervention that especially targets self-blame, as in, for example, emotion-focused therapy [71]. Self-blame is also a core emotion in major depressive disorder [72]; thus, targeting this process will be useful for both social withdrawal and depression.

Summary

This study examined the relationships between personality dimensions, coping, and *Hikikomori* (while controlling for the presence of depression and anxiety), as only a few studies have examined these psychological variables. We sought to identify psychological characteristics related to *Hikikomori* to better understand its etiology and to adapt psychotherapeutic interventions. Participants in the control group were recruited from several general Facebook groups and those in the *Hikikomori* group from a private group dedicated to *Hikikomori*. Participants of both groups completed the BFI-Fr, the Brief-COPE, and the Hospital Anxiety and Depression Scale. Univariate regression analysis revealed that depression, anxiety, neuroticism (and the anxiety facet), self-blame, and behavioral disengagement are significant predictors of *Hikikomori*. These findings contribute to an understanding of the psychological functioning of *Hikikomori* as well as to treatment elaboration.

Declarations

Acknowledgements

We are grateful to all the individuals who participated in this study and we would particularly like to thank Ael without whom we would not have had access to his community. We would also like to thank Barbara Every for English language editing.

Author Contributions

CB and ZR conceived and designed the study. ZR recruited participants. CB and ZR acquired and analyzed the data. CB, under the supervision of ZR, contributed to data interpretation and final manuscript preparation. All authors reviewed the content of the manuscript and approved its final version.

Funding

This study received no funding.

Compliance with Ethical Standards

Conflict of interest

The authors declare that they have no conflict of interest.

Ethical Approval

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments or comparable ethical standards.

Informed Consent

Informed consent was obtained from all participants in the study.

References

1. Tamaki S (2013) *Hikikomori: adolescence without end* (J. Angles, Trans.). University of Minnesota Press
2. Kato TA, Kanba S, Teo AR (2016) A 39-year-old “adulolescent”: understanding social withdrawal in Japan. *Am J Psychiatry* 173:112–114
3. Imai H, Takamatsu T, Mitsuya H, Yoshizawa H, Mitsuya H, Furukawa TA (2020) The characteristics and social functioning of pathological social withdrawal, “Hikikomori,” in a secondary care setting: a one-year cohort study. *BMC Psychiatry* 20:352. <https://doi.org/10.1186/s12888-020-02660-7>
4. Suwa M, Suzuki K (2002) Psychopathological features of “primary social withdrawal”. *Seishin Shinkeigaku Zasshi* 104(12):1228–1241
5. Koyama A, Miyake Y, Kawakami N, Tsuchiya M, Tachimori H, Takeshima T (2010) Lifetime prevalence, psychiatric comorbidity and demographic correlates of “hikikomori” in a community population in Japan. *Psychiatry Res* 176(1):69–74. <https://doi.org/10.1016/j.psychres.2008.10.019>
6. Kato TA, Tateno M, Shinfuku N, Fujisawa D, Teo AR, Sartorius N et al (2012) Does the “hikikomori” syndrome of social withdrawal exist outside Japan? A preliminary international investigation. *Soc Psychiatry Psychiatr Epidemiol* 47(7):1061–1075. <https://doi.org/10.1007/s00127-011-0411-7>

7. Lee YS, Lee JY, Choi TY, Choi JT (2013) Home visitation program for detecting, evaluating and treating socially withdrawn youth in Korea. *Psychiatry Clin Neurosci* 67(4):193–202. <https://doi.org/10.1111/pcn.12043>
8. Malagon-Amor A, Corcoles-Martinez D, Martin-Lopez LM, Perez-Sola V (2015) Hikikomori in Spain: a descriptive study. *Int J Soc Psychiatry* 61(5):475–483. <https://doi.org/10.1177/0020764014553003>
9. Wong PWC, Li TMH, Chan M, Law YW, Chau M, Cheng C et al (2015) The prevalence and correlates of severe social withdrawal (hikikomori) in Hong Kong: a cross-sectional telephone-based survey study. *Int J Soc Psychiatry* 61(4):330–342. <https://doi.org/10.1177/0020764014543711>
10. Frankova I (2019) Similar but different: psychological and psychopathological features of primary and secondary hikikomori. *Front Psychiatry* 10:558. <https://doi.org/10.3389/fpsy.2019.00558>
11. Kato TA, Kanba S (2016) Boundless syndromes in modern society: an interconnected world producing novel psychopathology in the 21st century. *Psychiatry Clin Neurosci* 70:1–2. <https://doi.org/10.1111/pcn.12368>
12. Teo AR (2010) A new form of social withdrawal in Japan: a review of hikikomori. *Int J Soc Psychiatry* 56(2):178–185
13. Umeda M, Kawakami N (2012) Association of childhood family environments with the risk of social withdrawal ('hikikomori') in the community population in Japan. *Psychiatry Clin Neurosci* 66(2):121–129. <https://doi.org/10.1111/j.1440-1819.2011.02292.x>. World Mental Health Japan Survey Group 2002–2006
14. De Luca M (2019) Hikikomori: retrait et claustration chez les adolescents et jeunes adultes contemporains. *EMC Psychiatrie* 17(181):1–14
15. Chauliac N, Couillet A, Faivre S, Brochard N, Terra JL (2017) Characteristics of socially withdrawn youth in France: a retrospective study. *Int J Soc Psychiatry* 63(4):339–344. <https://doi.org/10.1177/0020764017704474>
16. Guedj-Bourdiau M-J (2011) Clausturation à domicile de l'adolescent. *Hikikomori Ann Médico-Psychologiques* 169(10):668–673
17. Kondo N, Sakai M, Kuroda Y, Kiyota Y, Kitabata Y, Kurosawa M (2013) General condition of hikikomori (prolonged social withdrawal) in Japan: psychiatric diagnosis and outcome in mental health welfare centres. *Int J Soc Psychiatry* 59(1):79–86. <https://doi.org/10.1177/0020764011423611>
18. Kato TA, Kanba S, Teo AR (2019) Hikikomori+Š: multidimensional understanding, assessment, and future international perspectives. *Psychiatry Clin Neurosci* 73(8):427–440. <https://doi.org/10.1111/pcn.12895>
19. Hayakawa K, Kato TA, Watabe M, Teo AR, Horikawa H, Kuwano N et al (2018) Blood biomarkers of Hikikomori, a severe social withdrawal syndrome. *Sci Rep* 8(1):2884. <https://doi.org/10.1038/s41598-018-21260-w>
20. Katsuki R, Inoue A, Indias S, Kurahara K, Kuwano N, Funatsu F et al (2019) Clarifying deeper psychological characteristics of hikikomori using the Rorschach Comprehensive System: a pilot

- case-control study. *Front Psychiatry* 10:412. <https://doi.org/10.3389/fpsy.2019.00412>
21. Suwa M, Suzuki K, Hara K, Watanabe H, Takahashi T (2003) Family features in primary social withdrawal among young adults. *Psychiatry Clin Neurosci* 57(6):586–594. <https://doi.org/10.1046/j.1440-1819.2003.01172.x>
 22. Frankova I (2019) Similar but different: psychological and psychopathological features of primary and secondary hikikomori. *Front Psychiatry* 10:558. <https://doi.org/10.3389/fpsy.2019.00558>
 23. Amendola S, Cerutti R, Presaghi F, Spensieri V, Lucidi C, Silvestri E et al (2021) Hikikomori, problematic internet use and psychopathology: correlates in a non-clinical and clinical sample of young adults in Italy. *J Psychopathol* 27:106–114. <https://doi.org/10.36148/2284-0249-412>
 24. Nonaka S, Shimada H, Sakai M (2018) Assessing adaptive behaviors of individuals with hikikomori (prolonged social withdrawal): development and psychometric evaluation of the parent-report scale. *Int J Culture Mental Health* 11(3):280–294. <https://doi.org/10.1080/17542863.2017.1367411>
 25. Li TM, Wong PW (2015) Youth social withdrawal behavior (hikikomori): a systematic review of qualitative and quantitative studies. *Aust N Z J Psychiatry* 49(7):595–609. <https://doi.org/10.1177/0004867415581179>
 26. Furuhashi T, Vellut N (2014) Si proches, si lointains: hikikomori en France et au Japon. In: Fansten M, Figueiredo C, Pionnié-Dax N, Vellut N (eds) *Hikikomori, ces adolescents en retrait*. Armand Colin, Paris, pp 139–154
 27. Guedj Bourdieu M-J (2020) Traumatismes cumulatifs, harcèlement dans l'enfance et retrait social/hikikomori du jeune adulte. *Ann Médico-psychologiques* 178(4):428–431
 28. Ari H, Mari S-T (2020) Suicide motives and protective factors: contributions from a Hikikomori discussion board. *Issues Mental Health Nursing* 42(1):13. <https://doi.org/10.1080/01612840.2020.1817209>
 29. Nonaka S, Shimada H, Sakai M (2020) Behavioral repertoire of families for coping with individuals with *hikikomori* (prolonged social withdrawal) in Japan. *Japanese Psychol Res* 63(1):13–25. <https://doi.org/10.1111/jpr.12273>
 30. Shevlin M, McBride O, Murphy J, Miller JG, Hartman TK, Levita L et al (2020) Anxiety, depression, traumatic stress and COVID-19-related anxiety in the UK general population during the COVID-19 pandemic. *B J Psych Open* 6(6):e125. <https://doi.org/10.1192/bjo.2020.109>
 31. Sheehan DV, Lecrubier Y, Sheehan KH, Amorim P, Janavs J, Weiller E et al (1998) The Mini-International Neuropsychiatric Interview (M.I.N.I.): the development and validation of a structured diagnostic psychiatric interview for DSM-IV and ICD-10. *J Clin Psychiatry* 59(Suppl 20):22–33
 32. Teo AR, Chen JI, Kubo H, Katsuki R, Sato-Kasai M, Shimokawa N et al (2018) Development and validation of the 25-item Hikikomori Questionnaire (HQ-25). *Psychiatry Clin Neurosci* 72(10):780–788. <https://doi.org/10.1111/pcn.12691>
 33. Plaisant O, Srivastava S, Mendelsohn GA, Debray Q, John OP (2005) Relations entre le Big Five Inventory français et le manuel diagnostique des troubles mentaux dans un échantillon clinique français. *Ann Med Psychol* 163(2):161–167

34. Carver CS (1997) You want to measure coping but your protocol's too long: consider the brief COPE. *Int J Behav Med* 4(1):92–100
35. Lépine JP, Godchau M, Brun P, Lempérière T (1985) Evaluation de l'anxiété et de la dépression chez des patients hospitalisés dans un service de médecine interne [Evaluation of anxiety and depression among patients hospitalized on an internal medicine service]. *Ann Med Psychol* 143(2):175–189
36. Cohen J (1992) A power primer. *Psychol Bull* 112(1):155–159. <https://doi.org/10.1037/0033-2909.112.1.155>
37. Yong RKF, Fujita K, Chau PYK, Sasak H (2020) Characteristics of and gender difference factors of hikikomori among the working-age population: a cross-sectional population study in rural Japan. *Japanese Soc Public Health Nihon Koshu Eisei Zasshi* 67(4):237–246. https://doi.org/10.11236/jph.67.4_237
38. Chong SC, Chan KM (2012) A case study of a Chinese 'hikikomorian' in Canada: theorizing the process of hikikomorization. *J Special Ed Rehab* 13:99–114. <http://dl.fzf.ukim.edu.mk/index.php/jser/article/view/840/838>
39. Rafienia P, Azadfallah P, Fathi-Ashtiani A, Rasoulzadeh-Tabatabaie K (2008) The role of extraversion, neuroticism and positive and negative mood in emotional information processing. *Pers Individ Diff* 44(2):392–402. <https://doi.org/10.1016/j.paid.2007.08.018>
40. Caughlin JP, Huston TL, Houts RM (2000) How does personality matter in marriage? An examination of trait anxiety, interpersonal negativity, and marital satisfaction. *J Pers Soc Psychol* 78(2):326–336. <https://doi.org/10.1037//0022-3514.78.2.326>
41. Donnellan MB, Conger RD, Bryant CM (2004) The Big Five and enduring marriages. *J Res Pers* 38(5):481–504. <https://doi.org/10.1016/j.jrp.2004.01.001>
42. Fisher TD, McNulty JK (2008) Neuroticism and marital satisfaction: the mediating role played by the sexual relationship. *J Fam Psychol* 22(1):112–122. <https://doi.org/10.1037/0893-3200.22.1.112>
43. Rogge RD, Bradbury TN, Hahlweg K, Engl J, Thurmaier F (2006) Predicting marital distress and dissolution: refining the two-factor hypothesis. *J Fam Psychol* 20(1):156–159. <https://doi.org/10.1037/0893-3200.20.1.156>
44. Wilson RE, Harris K, Vazire S (2015) Personality and friendship satisfaction in daily life: do everyday social interactions account for individual differences in friendship satisfaction? *Eur J Pers* 29:173–186. <https://doi.org/10.1002/per.1996>
45. de Lange AMG, Kaufmann T, Quintana DS, Winterton A, Westlye LT, Ebmeier KP (2020) Risk factors associated with loneliness, social isolation, and neuroticism in the UK Biobank cohort. <https://doi.org/10.31234/osf.io/q8kqv>. PsyArXiv
46. Terman LM, Bittenwieser P, Ferguson LW, Johnson WB, Wilson DP (1938) Psychological factors in marital happiness. McGraw-Hill, New York
47. McNulty JK (2008) Neuroticism and interpersonal negativity: the independent contributions of perceptions and behaviors. *Pers Soc Psychol Bull* 34(11):1439–1450. <https://doi.org/10.1177/0146167208322558>

48. Allport GW (1937) *Personality: a psychological interpretation*. Holt, New York
49. Costa PT Jr, McCrae RR (1992) Four ways five factors are basic. *Pers Individ Diff* 13(6):653–665. [https://doi.org/10.1016/0191-8869\(92\)90236-l](https://doi.org/10.1016/0191-8869(92)90236-l)
50. Cacioppo JT, Hawkley LC, Ernst JM, Burleson M, Berntson GG, Nouriani B et al (2006) Loneliness within a nomological net: an evolutionary perspective. *J Res Pers* 40:1054–1085. <https://doi.org/10.1016/j.jrp.2005.11.007>
51. Victor CR, Yang K (2012) The prevalence of loneliness among adults: a case study of the United Kingdom. *J Psychol* 146(1–2):85–104. <https://doi.org/10.1080/00223980.2011.613875>
52. Nolen-Hoeksema S, Ahrens C (2002) Age differences and similarities in the correlates of depressive symptoms. *Psychol Aging* 17(1):116–124. <https://doi.org/10.1037//0882-7974.17.1.116>
53. Kendler KS, Gatz M, Gardner CO, Pedersen NL (2006) Personality and major depression: a Swedish longitudinal, population-based twin study. *Arch Gen Psychiatry* 63(10):1113–1120. <https://doi.org/10.1001/archpsyc.63.10.1113>
54. Rhebergen D, Beekman AT, Graaf Rd, Nolen WA, Spijker J, Hoogendijk WJ et al (2009) The three-year naturalistic course of major depressive disorder, dysthymic disorder and double depression. *J Affect Disord* 115(3):450–459. <https://doi.org/10.1016/j.jad.2008.10.018>
55. Yong R, Kaneko Y (2016) Hikikomori, a phenomenon of social withdrawal and isolation in young adults marked by an anomic response to coping difficulties: a qualitative study exploring individual experiences from first- and second-person perspectives. *Open J Prev Med* 6:1–20. <https://doi.org/10.4236/ojpm.2016.61001>
56. Gurvich C, Thomas N, Thomas EH, Hudaib AR, Sood L, Fabiatos K et al (2021) Coping styles and mental health in response to societal changes during the COVID-19 pandemic. *Int J Soc Psychiatry* 67(5):540–549. <https://doi.org/10.1177/0020764020961790>
57. Thomasson P, Psouni E (2010) Social anxiety and related social impairment are linked to self-efficacy and dysfunctional coping. *Scandinavian J Psychol* 51:171–178. <https://doi.org/10.1111/j.1467-9450.2009.00731.x>
58. Tran GQ, Haaga DAF (2002) Coping responses and alcohol outcome expectancies in alcohol abusing and nonabusing social phobics. *Cog Ther Res* 26(1):1–17. <https://doi.org/10.1023/A:1013803803192>
59. Stanisławski K (2019) The Coping Circumplex Model: an Integrative model of the structure of coping with stress. *Front Psychol* 10:694. <https://doi.org/10.3389/fpsyg.2019.00694>
60. Monat A, Lazarus RS (1985) *Stress and coping*. Columbia University Press, New York
61. Eysenck HJ, Eysenck SBG (1975) *Manual of the Eysenck Personality Questionnaire*. Hodder and Stoughton, London
62. Rogier G, Velotti P (2018) Conceptualizing gambling disorder with the process model of emotion regulation. *J Behav Addictions* 7(2):239–251. <https://doi.org/10.1556/2006.7.2018.52>

63. Velotti P, Rogier G, Beomonte Zobel S, Billieux J (2021) Association between gambling disorder and emotion (dys)regulation: a systematic review and meta-analysis. *Clin Psychol Rev* 87:102037. <https://doi.org/10.1016/j.cpr.2021.102037>
64. Tull MT, Aldao A (2015) Editorial overview: new directions in the science of emotion regulation. *Curr Opin Psychol* 3:4–10. <https://doi.org/10.1016/j.copsyc.2015.03.009>
65. Rehbein F, Baier D (2013) Family-, media-, and school-related risk factors of video game addiction: a 5-year longitudinal study. *J Media Psychol Theories Methods App* 25(3):118–128. <https://psycnet.apa.org/doi/10.1027/1864-1105/a000093>
66. Bonnaire C, Billieux J (2022) A process-based analysis of the pathways model of problem gambling through clinical case formulations. *Int Gambl Stud* 22(2):222–246. <https://doi.org/10.1080/14459795.2022.2102203>
67. Kinderman P (2005) A psychological model of mental disorder. *Harv Rev Psychiatry* 13(4):206–217. <https://doi.org/10.1080/10673220500243349>
68. Billieux J, Philippot P, Schmid C, Maurage P, de Mol J, Van der Linden M (2015) Is dysfunctional use of the mobile phone a behavioural addiction? Confronting symptom-based versus process-based approaches. *Clin Psychol Psychother* 22:460–468. <https://doi.org/10.1002/cpp.1910>
69. Dudley R, Kuyken W, Padesky CA (2011) Disorder specific and trans-diagnostic case conceptualisation. *Clin Psychol Rev* 31:213–224. <https://doi.org/10.1016/j.cpr.2010.07.005>
70. Philippot P, Bouvard M, Baeyens C, Dethier V (2019) Case conceptualization from a process-based and modular perspective: rationale and application to mood and anxiety disorders. *Clin Psychol Psychother* 26(2):175–190. <http://dx.doi.org/10.1002/cpp.2340>
71. Paivio SC, Pascual-Leone A (2010) Transforming guilt, shame, and self-blame. In: Paivio SC, Pascual-Leone A, *Emotion-focused therapy for complex trauma: an integrative approach* (pp. 203–227). American Psychological Association. <https://doi.org/10.1037/12077-009>
72. Zahn R, Lythe KE, Gethin JA, Green S, Deakin JF, Young AH, Moll J (2015) The role of self-blame and worthlessness in the psychopathology of major depressive disorder. *J Affect Disord* 186:337–341. <http://dx.doi.org/10.1016/j.jad.2015.08.001>

Tables

Table 1. Sociodemographic characteristics of social withdrawal and control groups

	Control group (<i>n</i> = 101)		<i>Hikikomori</i> (<i>n</i> = 28)		t-Test/chi-square test	p-Value
	m	n %	m	n %		
Age	36.18	12.76	30.14	9.10	5.44	0.021
Gender						
Male	30	29.7	13	46.4		NS
Female	70	69.3	15	53.6		
Other	1	1.0	0			
Marital status						
Single	40	39.6	19	67.9		NA
Married/in a relationship	51	50.5	6	21.4		
Divorced	10	9.9	3	10.7		
Employment status						
Employed	66	65.3	8	28.6		NA
Student	13	12.9	1	3.6		
Out of school	0		2	7.1		
Unemployed	22	21.8	17	60.7		
Education						
Not a graduate	1	1.0	4	14.3		NA
Less than high school graduate	85	84.2	21	75.0		
High school graduate	1	1.0	3	10.7		
Some college or more	14	13.9	0			
Parental status						
Parents live together	46	45.5	7	25.0		NA
Parents divorced	37	36.6	12	42.9		
One parent died	17	16.8	7	25.0		
One unknown parent	1	1.0	2	7.1		
Living situation						

Live with parents	4	4.0	5	17.9	NA
Live with mother	7	7.0	6	21.4	
Live with father	0		1	3.6	
Live alone	44	44.0	11	39.3	
Collocation	9	9.0	1	3.6	
Live with partner	36	36.0	4	14.3	

NA not applicable (statistical conditions are not met, $n < 5$), NS not significant

Table 2. Psychopathological characteristics of social withdrawal and control groups

	Control group (<i>n</i> = 101)		<i>Hikikomori</i> group (<i>n</i> = 28)			
	<i>m</i>	<i>SD</i>	<i>m</i>	<i>SD</i>	<i>t</i> -test	<i>p</i> -Value
HQ-25 total	33.11	14.84	68.32	11.83	133.85	<0.001
HADS						
Anxiety	6.86	2.96	14.61	9.17	53.08	<0.001
Depression	5.01	2.98	14.89	12.29	54.74	<0.001
BFI-Fr						
Extraversion	3.44	0.76	2.17	0.90	56.15	<0.001
Assertiveness	3.24	0.91	2.12	0.92	33.06	<0.001
Energy Level	3.77	0.74	2.26	1.03	75.37	<0.001
Agreeableness	3.98	0.52	3.73	0.56	4.97	0.027
Compassion	4.01	0.58	3.51	0.69	15.01	<0.001
Respectfulness	3.75	.81	3.78	0.87	0.05	NS
Conscientiousness	3.50	0.69	2.89	0.81	15.69	<0.001
Organization	2.83	0.97	2.55	1.06	1.72	NS
Responsibility	3.49	0.71	2.74	0.80	23.41	<0.001
Neuroticism	2.95	0.89	3.71	0.81	16.65	<0.001
Anxiety	2.89	0.98	3.81	0.92	20.05	<0.001
Emotional Volatility	2.91	1.04	3.09	1.03	0.69	NS
Openness	3.77	0.70	3.46	0.66	4.45	0.037
Aesthetic Sensitivity	3.65	1.01	3.31	1.13	2.41	NS
Creative Imagination	3.84	0.71	3.51	0.68	5.05	0.026
Brief COPE						
Problem-focused coping						
Active coping	5.27	1.53	4.14	1.58	11.69	0.001
Planning	5.28	1.70	4.71	2.19	2.10	NS
Instrumental support	4.99	1.70	3.50	1.23	18.73	<0.001
Emotion-focused coping						

Emotional support	5.13	1.66	3.96	1.86	10.19	0.002
Religion	2.95	1.61	3.07	1.51	0.13	NS
Positive reframing	5.49	1.66	4.11	1.52	15.55	0.014
Acceptance	5.65	1.56	4.61	1.52	9.91	0.002
Humor	4.31	1.74	3.46	1.40	5.55	0.020
Venting	5.18	1.68	3.86	1.30	14.89	<0.001
Dysfunctional coping						
Denial	2.77	1.08	3.18	1.39	2.74	NS
Self-blame	4.73	1.48	5.71	1.98	8.29	0.005
Self-distraction	5.38	1.36	5.43	1.60	0.03	NS
Substance use	3.27	1.71	2.93	1.46	0.91	NS
Behavioral disengagement	2.63	1.08	4.25	1.86	34.52	<0.001

BFI-Fr French version of the Big Five Inventory, *Brief COPE* Brief Coping Orientation to Problems Experienced, *HADS* Hospital Anxiety and Depression Scale, *HQ-25* Hikikomori Questionnaire, *NS* not significant

Table 3. Factors associated with social withdrawal (univariate logistic regression analysis)

	Total (<i>n</i> = 129)			
	OR	95% CI		<i>p</i>
Age	0.95	0.91	1.00	0.026
Gender (reference = female)				NS
HADS				
Anxiety	1.37	1.18	1.60	<0.001
Depression	1.37	1.18	1.60	<0.001
BFI-Fr				
Extraversion	0.17	0.09	0.33	<0.001
Assertiveness	0.26	0.14	0.46	<0.001
Energy Level	0.17	0.09	0.32	<0.001
Agreeableness	0.42	0.19	0.92	0.031
Compassion	0.27	0.13	0.57	0.001
Respectfulness	1.06	0.63	1.77	NS
Conscientiousness	0.31	0.16	0.60	<0.001
Organization	0.75	0.48	1.16	NS
Responsibility	0.24	0.12	0.47	<0.001
Neuroticism	2.94	1.64	5.29	<0.001
Anxiety	2.75	1.65	4.59	<0.001
Emotional Volatility	1.19	0.79	1.80	NS
Openness	0.53	0.28	0.97	0.041
Aesthetic Sensitivity	0.73	0.49	1.09	NS
Creative Imagination	0.51	0.28	0.94	0.030
Brief COPE				
Problem-focused coping				
Active coping	0.60	0.44	0.83	0.002
Planning	0.84	0.66	1.07	NS
Instrumental support	0.50	0.35	0.72	<0.001

Emotion-focused coping				
Emotional support	0.65	0.49	0.86	0.003
Religion	1.05	0.81	1.35	NS
Positive reframing	0.58	0.43	0.79	<0.001
Acceptance	0.64	0.48	0.86	0.003
Humor	0.71	0.52	0.96	0.024
Venting	0.54	0.38	0.77	0.002
Dysfunctional coping				
Denial	1.32	0.94	1.85	NS
Self-blame	1.45	1.11	1.90	0.006
Self-distraction	1.03	0.76	1.38	NS
Substance use	0.87	0.66	1.16	NS
Behavioral disengagement	2.06	1.50	2.83	<0.001

BFI-Fr = French version of the Big Five Inventory, *Brief COPE* Brief Coping with Orientations to Problems Experienced, *CI* confidence interval, *HADS* Hospital Anxiety and Depression Scale, *HQ-25* = Hikikomori Questionnaire, *NS* not significant, *OR* odds ratio