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Identification of the hikikomori syndrome of social withdrawal: Psychosocial features and treatment preferences in four countries

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Abstract

Background—Hikikomori, a form of social withdrawal first reported in Japan, may exist globally but cross-national studies of cases of hikikomori are lacking.

Aims—To identify individuals with hikikomori in multiple countries and describe features of the condition.

Method—Participants were recruited from sites in India, Japan, Korea and the United States. Hikikomori was defined as a 6-month or longer period of spending almost all time at home and avoiding social situations and social relationships, associated with significant distress/impairment. Additional measures included the University of California, Los Angeles (UCLA) Loneliness

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Scale, Lubben Social Network Scale (LSNS-6), Sheehan Disability Scale (SDS) and modified Cornell Treatment Preferences Index.

Results—A total of 36 participants with hikikomori were identified, with cases detected in all four countries. These individuals had high levels of loneliness (UCLA Loneliness Scale $M = 55.4$, $SD = 10.5$), limited social networks (LSNS-6 $M = 9.7$, $SD = 5.5$) and moderate functional impairment (SDS $M = 16.5$, $SD = 7.9$). Of them 28 (78%) desired treatment for their social withdrawal, with a significantly higher preference for psychotherapy over pharmacotherapy, in-person over telepsychiatry treatment and mental health specialists over primary care providers. Across countries, participants with hikikomori had similar generally treatment preferences and psychosocial features.

Conclusion—Hikikomori exists cross-nationally and can be assessed with a standardized assessment tool. Individuals with hikikomori have substantial psychosocial impairment and disability, and some may desire treatment.

Keywords

Social isolation; cross-national; culture

Introduction

The notion of hermits and recluses has existed in many cultures for time immemorial. However, in recent years a particularly severe syndrome of social withdrawal first identified in Japan has garnered the interest of researchers and the lay public alike. Called hikikomori, it has been defined as ‘a phenomenon in which persons become recluses in their own homes, avoiding various social situations (e.g., attending school, working, having social interactions outside of the home, etc.) for at least six months’ (Saito, 2010). Individuals with hikikomori are frequently reported to have social contact predominantly via the internet and some reports suggest overlap with heavy internet use (De Michele, Caredda, Delle Chiaie, Salviati, & Biondi, 2013; Lee, Lee, Choi, & Choi, 2013). An estimated 232,000 Japanese currently suffer from hikikomori, and 1.2% of community-residing Japanese between ages 20–49 have a lifetime history of hikikomori (Koyama et al., 2010). A combination of a shy personality, ambivalent attachment style and life experiences including rejection by peers and parents – among other factors – may promote the development of hikikomori (Krieg & Dickie, 2013). Furthermore, scientific studies point to genetic and other biological influences on sociality that, although not specific to hikikomori, could have implications for the study of the etiology of hikikomori (Meyer-Lindenberg & Tost, 2012). While researchers debate the merits of hikikomori as a psychiatric diagnosis (Teo & Gaw, 2010), practicing clinicians in Japan indicate they view hikikomori as a ‘disorder’ (Tateno, Park, Kato, Umene-Nakano, & Saito, 2012).

Previous reports suggest hikikomori may exist outside of Japan. For instance, case reports have described the presence of hikikomori in several other countries (Furuhashi et al., 2012; Garcia-Campayo, Alda, Sobradie, & Sanz Abos, 2007; Sakamoto, Martin, Kumano, Kuboki, & Al-Adawi, 2005; Teo, 2013). When presented with vignettes of hikikomori, psychiatrists from nine countries around the world indicated that such cases existed in their

clinical practices (Kato et al., 2012). Nonetheless, cross-national studies designed to identify hikikomori have been lacking. Reasons for the lack of recognition have included ambiguity about the features of hikikomori (Tateno et al., 2012; Watts, 2002), and inconsistent or insufficiently detailed definitions of hikikomori (Furuhashi et al., 2011; Garcia-Campayo et al., 2007; Sakamoto et al., 2005). This has caused concern that researchers may not be referring to the same phenomenon. We have previously proposed a research-grade definition of hikikomori, but this definition has not been empirically tested (Teo & Gaw, 2010). Additionally, prior reports of hikikomori have focused on assessment of psychopathology (Lee et al., 2013; Nagata et al., 2013) but fewer studies – especially outside of Japan – have examined psychosocial features more broadly, despite the common belief that sociocultural factors are important contributors to hikikomori (Kato et al., 2012). Finally, prior research has examined treatment recommendations for hikikomori by psychiatrists, but we are unaware of studies that have explored patients' treatment preferences (Kato et al., 2012).

Aims

1. To identify cases of hikikomori cross-nationally;
2. To describe the psychosocial features and treatment preferences of individuals with hikikomori;
3. To explore possible differences in psychosocial features and treatment preferences of individuals with hikikomori across countries.

In this study, we examined individuals with social withdrawal using such a standardized definition of hikikomori cross-nationally.

Method

Design

We conducted a cross-national case series in India, Japan, South Korea and the United States.

Study participants

Participants who had a history of or current social withdrawal were recruited. Indian participants were referred from psychiatric outpatient clinics. Japanese and Korean participants were referrals from either a hospital or community mental health center. At the US site, participants responded to an online advertisement. All participants were adults between the ages of 18 and 39, noninstitutionalized and fluent in the local language of their respective site (English used in India). Participants with a self-reported history of schizophrenia, dementia, mental retardation or autism spectrum disorders and participants with social withdrawal due to a chronic physical illness or injury were excluded. A total of 108 individuals were screened for eligibility, with 26 excluded for not meeting criteria for hikikomori, 18 for age, 2 for schizophrenia, 1 with an autism spectrum disorder and 6 who withdrew consent. This left 55 (51%) who met initial eligibility criteria. An additional 18 individuals did not complete consent or study measures and 1 was excluded for later reporting a history of schizoaffective disorder, leaving a final sample of 36 for analysis.

Participants were compensated US\$50 or equivalent in local currency. This study was approved by the institutional review boards of each participating site. All participants provided written informed consent for participation.

Measures

Assessment of hikikomori—Researchers administered an interview to assess for the presence of suspected hikikomori (see Appendix 1 for questionnaire), adapted from our earlier proposed definition (Teo & Gaw, 2010). We defined hikikomori as (1) spending most of the day and nearly every day at home (duration of at least 6 months); (2) avoiding social situations, such as attending school or going to a workplace (duration of at least 6 months); (3) avoiding social relationships, such as friendships or contact with family members (duration of at least 6 months); and (4) significant distress or impairment due to social isolation.

Self-report measures—We administered the University of California, Los Angeles (UCLA) Loneliness Scale, the Lubben Social Network Scale-6 (LSNS-6), the Sheehan Disability Scale (SDS), the Cornell Treatment Preferences Index (CTPI) and a questionnaire on sociodemographic characteristics to participants.

The UCLA Loneliness Scale is a 20-item questionnaire that assesses how often individuals endorse subjective feelings of loneliness (e.g. ‘How often do you feel that you lack companionship?’). The score range is 20 to 80, with higher scores indicating greater degrees of loneliness (Russell, 1996). Each item is rated on a 4-point scale from 1 (‘never’) to 4 (‘always’). As the Revised UCLA Loneliness Scale has been validated Korean and Japanese samples, it was used at these sites (Kim, 1997; Kudou & Nishikawa, 1983). At the United States and Indian sites, Version 3 of the UCLA Loneliness Scale was used. Version 3 is identical to the revised version, except for minor wording adjustments (Russell, 1996).

The LSNS-6 is a 6-item questionnaire that assesses the number of people in an individual’s social network with whom one has social contact (e.g. ‘How many relatives do you see or hear from at least once a month?’) and who are a source of social support (e.g. ‘How many friends do you feel close to such that you could call on them for help?’). There are two subscales for family and friends. The total score range is 0–30 (0–15 for each subscale), and a total score less than 12 is indicative of social isolation (Lubben et al., 2006). Such a score implies fewer than two social network members, on average, for each item. Each item is rated on a 6-point scale from 0 (‘none’) to 5 (‘nine or more’). The LSNS-6 has been validated in Korean and Japanese (Hong, Casado, & Harrington, 2011; Kurimoto et al., 2011).

The SDS is a 5-item questionnaire that assesses disability or functional impairment. The first three items evaluate level of disruption in each of three domains (work/school, social life and family life/home responsibilities) with response choices on a 0 (‘not at all’) to 10 (‘extremely’) scale, while the remaining two items evaluate days lost and days unproductive (Sheehan, 1983). Higher scores indicate more disability. The word ‘symptom’ in the SDS was replaced with ‘social isolation’ for this study. The scale has been validated in Korean and Japanese (Lee & Song, 1991; Yoshida, Otsubo, Tsuchida, Wada, & Kamijima, 2004).

The CTPI is a 6-item questionnaire that evaluates several different depression treatment preferences, including treatment modality and type of treatment provider (Raue, Schulberg, Heo, Klimstra, & Bruce, 2009). We modified the CTPI to assess preferences related to social isolation (e.g. 'I wish to receive counseling or psychotherapy for my social isolation'). The response scale for the first five items is a 5-point Likert scale from 1 ('strongly disagree') to 5 ('strongly agree'), and the final item uses ranked treatment preferences. For the CTPI, as well as other instruments that lacked an existing translation in a target language, we translated the instrument and used back translation as verification of adequate adaption.

Statistical analysis

We compared variables using the t-test and chi-square for continuous and categorical variables, respectively. When any group or cell contained five or fewer participants, we replaced the t-test and chi-square with the Wilcoxon Rank-Sum test and Fisher's exact test, respectively. Linear regression models were used to examine the association between country and several outcome variables, including loneliness, social network and functional disability. Logistic regression models were similarly used for the association between country and the dichotomized treatment preferences. The regression models were adjusted for the effects of the educational level and age as these were significant in bivariate correlations with country. Sample sizes for particular analyses vary due to differences in number of responses. Significance level for all tests was set at $p < .05$ and tests were two-tailed. Data were analyzed using Stata Version 12 (Stata Corp.)

Results

Identification of hikikomori

Regarding the first aim, 36 adult participants with social withdrawal who met criteria for hikikomori were identified. The cases were found in all four countries included in this study. As seen in Table 1, the vast majority were men with varied education levels. The majority of participants lived with family members; just four (11%) lived alone. Their self-reported period of social withdrawal was on average 2.1 years.

Psychosocial features

We quantitatively described a number of features of individuals with hikikomori. Scores on the UCLA Loneliness Scale indicated a high level of loneliness among all participants ($M = 55.4$, $SD = 10.5$). By comparison, prior studies with normal controls in American, Indian and Korean samples have shown mean scores of about 40 (SD around 9) (Jayashankar, 2013; Lee & Lee, 2004; Russell, 1996), and studies with depressed participants have shown average scores of 49.8 (Groves, Golub, Parsons, Brennan, & Karpiak, 2010). Likewise, social networks for our sample were weak, with participants scoring a mean of 9.7 ($SD = 5.7$) on the LSNS-6. By comparison, prior studies with normal controls have shown average scores of 17.4 (Lubben et al., 2006). Individuals with hikikomori showed slightly higher scores on the family subscale ($M = 5.4$, $SD = 3.0$) than the friend subscale ($M = 4.3$, $SD = 3.5$). Participants with hikikomori had moderate levels of functional disability on the SDS ($M = 16.5$, $SD = 7.9$), levels comparable to patients with psychiatric disorders and more than three-fold higher than those with no mental illness in a study of a study of primary care

patients (Olfson et al., 1997). Impairment was highest in terms of social life/leisure activities, compared to work/school and family life.

Treatment preferences

A total of 78% of the sample expressed a desire for treatment for their social withdrawal. In terms of modality of treatment, participants preferred psychotherapy ($M = 3.6$, $SD = 1.5$) over medication ($M = 2.9$, $SD = 1.4$); $t(31) = 2.13$, $p = .04$. In addition, participants also were significantly more likely to be interested in psychotherapy and medicine management delivered *in-person* compared to an option for provision by *webcam* ($p < .001$ for both comparisons). Participants ranked individual psychotherapy most as a desired treatment, with few desiring complementary and alternative treatments such as herbal remedies or exercise (Figure 1). As for treatment provider, participants preferred mental health specialists ($M = 3.6$, $SD = 1.2$) over primary care physicians ($M = 2.7$, $SD = 1.2$); $t(34) = 3.87$, $p < .001$.

Cross-national comparisons

We compared treatment preferences and psychosocial characteristics of participants across the four countries in this study as our exploratory aim: that is, to generate hypotheses about cross-national differences in hikikomori that might be tested in future studies. Across countries, results generally were similar. For comparison of treatment preferences across countries, the Korean sample was excluded from analyses due to small sample size ($n = 4$). In adjusted models controlling for age and level of education, there were no statistically significant differences in overall desire for treatment, desire for pharmacotherapy, desire for psychotherapy, interest in webcam-delivered medication management or psychotherapy, interest in in-person-delivered medication management or desire for treatment provided by a mental health professional. Participants in the United States were significantly less likely to desire treatment by a primary care physician compared to Japan (odds ratio (OR) = 0.04, 95% confidence interval (CI) = 0.00–0.60). Also, Indian participants had a significantly lower interest in in-person psychotherapy (OR = 0.00, 95% CI = 0.00–0.31). Table 2 illustrates psychosocial features of our sample of individuals with hikikomori. As illustrated by the beta coefficient, American participants demonstrated on average a 12-point higher score on the UCLA Loneliness Scale and a 4-point higher score on the family life subscale of the SDS, as compared with Japanese participants. Indian participants had significantly stronger social networks but higher levels of functional disability. Finally, Korean subjects had significantly higher levels of loneliness, weaker friendships in their social network and higher functional disability.

Discussion

This study bolsters evidence that hikikomori, as a phenotype of severe social withdrawal, exists cross-nationally. Strengths of our approach include use of a standardized definition and assessment tool for hikikomori across four countries with diverse cultures and operationalizing hikikomori with discrete questions about the frequency, length and quality of social withdrawal. Past approaches have relied on a single, complex question (Koyama et al., 2010; Umeda, Kawakami, & The World Mental Health Japan Survey Group, 2002–2006,

2012), an approach that may cause misunderstanding by placing a high cognitive burden on the respondent (Schwarz, 2007). Thus, this study offers a new interview tool to help assess for hikikomori. Our data showing loneliness and limited connections with social network members among study participants support the validity of our assessment approach to hikikomori as we have defined it.

Psychosocial features

Perhaps the most striking features of hikikomori participants in this study were high loneliness scores and impaired social network scores. Our descriptive data paint a picture of the average individual with hikikomori being intensely lonely and deficient in social support, apparently unable to maintain meaningful social ties. This is despite rarely living alone and indicating a desire for treatment of their social withdrawal.

Treatment preferences

In these individuals who have been avoided social contact for such a prolonged period of time, we were surprised to find a consistent preference for treatment delivered in-person, as opposed to telepsychiatry-style. We believe this is the first study to describe treatment preferences in a sample of individuals with hikikomori. Understanding treatment preferences is a valuable first step for intervention research, particularly in light of evidence that treatment response rates for hikikomori are low (Nagata et al., 2013). Individuals with hikikomori may feel ambivalent about their desire for social relationships, and a patient-provider relationship may offer an entry point into re-establishing social connections. Given these results, future intervention studies for hikikomori might consider evaluating home visitation, particularly when conducted by a mental health professional and with an aim of boosting the social support of hikikomori patients (Dickens, Richards, Greaves, & Campbell, 2011; Lee et al., 2013). Other interventions that have shown promise in populations with mental illnesses and are thought to work by bolstering social relationships, such as peer support, might be investigated (Pfeiffer, Heisler, Piette, Rogers, & Valenstein, 2011; Proudfoot et al., 2012).

Limitations

This study was designed as a case series, and therefore several limitations in interpretation of the results bear note. First, our sample was small, but we have employed statistical methods that adjust for sample size. Second, cross-national comparisons should only be regarded as exploratory because different recruitment methods were used across countries, data harmonization across cultures is always imperfect and adjustment for potential confounders was limited to basic sociodemographic variables. Third, individuals with hikikomori who are able to participate in a research study such as this are unlikely to be representative of all of those with hikikomori. In particular, individuals with hikikomori are often perceived as resistant to undergo treatment, and our sample may represent those who have milder symptoms or begun recovery. Nonetheless, this highlights a group that may represent great opportunity for intervention. Fourth, as this was primarily a descriptive study, no comparison group was included, though we have included comparisons with normative data for selected measures. Finally, the CTPI has not been validated in international samples, and therefore treatment preference data must be interpreted cautiously.

Conclusion

In sum, this study suggests that hikikomori exists cross-nationally, can be assessed with a brief interview tool and is associated with substantial loneliness, impaired social networks, disability and desire for treatment. Results of our study suggest several possible directions for future research. First, we believe future cross-national studies of hikikomori should obtain larger samples, which could be achieved by focusing on just two locations for comparison. Another approach would be to compare hikikomori participants to a control group such as participants with social anxiety disorder to help tease out differences between hikikomori and other conditions. Although it was beyond the scope of this study to conduct formal psychometric testing on our hikikomori assessment tool, future research on the reliability and validity of the hikikomori diagnostic interview would be helpful. Furthermore, development and testing of a hikikomori scale could help with conceptual clarity (e.g. constructs associated with hikikomori) and distinction from related conditions such as social anxiety disorder. Once validated, a hikikomori scale or diagnostic interview could then be applied to research on the prevalence and detection of hikikomori. To reach a more representative sample including individuals unable to leave their residence under any circumstance, Internet-based surveys on hikikomori should be developed. Finally, interventions that account for patient preference might be tested.

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Appendix 1

en00 Date of Screening: _____
Month Day Year

Step 1: Give explanation of study (suggested script below)
'First, I will give you a little background information. This is a research study about social isolation. The purpose of this study is to find out how common social isolation is and difficulties are associated with it. In order to participate in the study, all interested individuals must participate in an interview and complete several questionnaires. No treatment will be provided as part of the study. There is compensation of \$50 for time and costs to you. Your participation is completely voluntary. Whether you choose to participate or not does not have any effect on the medical services you receive. Next, I will ask you some background questions.'

en01 **Step 2: Collect demographic information**
Gender: Female₁ Male₂
en02 Ethnicity (circle of that apply): Asian₁ Black₂ Hispanic₃ White₄ Other₅
en03 Age: _____ [If age is <18 or >39 years, mark 'Ineligible' in Step 6]

Step 3: Collect contact information (on separate document)

Step 4: Review inclusion criteria
en04 1. Do you currently spend most of the day and nearly every day at home?
Yes₁ No₂
en05 a. (If yes) When did it start?
Month Day Year
en06 2. Have you ever in the past spent most of the day and nearly every day at home?
Yes₁ No₂
en07,es08 a. (If yes) When did the longest past period start and end?
Start: Month Day Year End: Month Day Year

STOP AND ASSESS
[If 1 is 'NO' and 2 is 'NO' mark 'Ineligible' in Step 6. If 1(a) is less than 6 months ago and period in 2(a) is less than 6 months, mark 'Ineligible' in Step 6]

en09 3. Do you currently avoid social situations, such as attending school or going to a workplace?
Yes₁ No₂
a. (If yes) What are a couple (two) examples?

en10 b. (If yes) When did it start?
Month Day Year
en11 4. Have you ever in the past avoided social situations?
Yes₁ No₂
en12,es13 a. (If yes) When did the longest past period start and end?
Start: Month Day Year End: Month Day Year

STOP AND ASSESS
[If 3 is 'NO' and 4 is 'NO', mark 'Ineligible' in Step 6. If 3(a) is less than 6 months ago and period in 4(a) is less than 6 months, mark 'Ineligible' in Step 6]

en14 5. Do you currently avoid social relationships, such as friendships or contact with family members?
Yes₁ No₂
a. (If yes) What are a couple (two) examples?

en15 b. (If yes) When did it start?
Month Day Year
en16 6. Have you ever in the past avoided social relationships?
Yes₁ No₂
en17,es18 a. (If yes) When did the longest past period start and end?
Start: Month Day Year End: Month Day Year

STOP AND ASSESS
[If 5 is 'NO' and 6 is 'NO' mark 'Ineligible' in Step 6. If 5(a) is less than 6 months ago and period in 6(a) is less than 6 months, mark 'Ineligible' in Step 6]

en19 7. Considering your most severe period of social isolation, (if/does) it do any of the following:
a) interfere significantly with your normal routine.
b) interfere significantly with your ability to work or attend school.
c) interfere significantly with social activities or relationships, or
d) bother you a lot?
Yes₁ No₂
[If NO, mark 'Ineligible' in Step 6]
8. Briefly, what is/was the reason you started being socially isolated?

[If all episodes due to a chronic physical illness or injury, mark 'Ineligible' in Step 6]

Step 5: Review of exclusion criteria
en20 1. Are you comfortable speaking and reading English? Yes₁ No₂ [If NO, mark 'Ineligible' in Step 6]
en21 2. Do you live in a group home or institution? Yes₁ No₂ [If YES, mark 'Ineligible' in Step 6]
en22a 3. Do you have a history or have you been told you have any of the following conditions:
en22b Schizophrenia
en22c Dementia (any type)
en22d Mental Retardation
en22e Asperger Syndrome
Autistic Disorder (Autism)
[If any of the above conditions checked, mark 'Ineligible' in Step 6]

Step 6: Determine eligibility screening outcome
en23 1. _____ Ineligible for study participation.
'Go sorry to say that you are not eligible to participate in this study. Thank you for your interest. Do you have any questions or concerns?'
2. _____ Eligible for study participation.
'I'm pleased to say that you are eligible to participate in this study.'

*English replaced by the local language for non-English-speaking sites.

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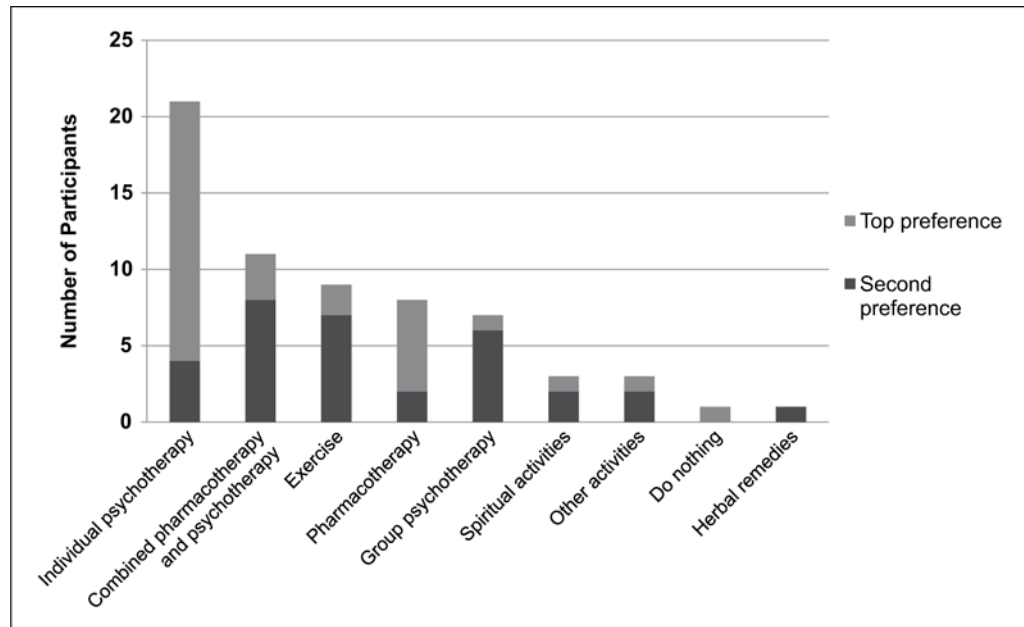


Figure 1. Top two treatment preferences of participants with hikikomori for their social withdrawal ($n = 32$).

Table 1

Sociodemographic characteristics of participants with hikikomori in four countries.

Characteristic	Total	Japan	USA	India	Korea	p
	(n = 36) n (%)	(n = 11) n (%)	(n = 11) n (%)	(n = 10) n (%)	(n = 4) n (%)	
Male	29 (81)	10 (91)	7 (64)	9 (90)	3 (75)	.33
Age (years)						
18–21	11 (32)	2 (18)	2 (18)	3 (30)	4 (100)	.04
22–30	11 (32)	3 (27)	4 (36)	6 (60)	0 (0)	
31–49	12 (35)	6 (55)	5 (45)	1 (10)	0 (0)	
Education level						
High school graduate or less	16 (44)	7 (64)	2 (18)	3 (30)	4 (100)	.01
Some college or more	20 (56)	4 (36)	9 (81)	7 (70)	0 (0)	
Living situation						
Lives with others	32 (89)	10 (91)	8 (73)	10 (100)	4 (100)	.2
Lives with no one	4 (11)	1 (9)	3 (27)	0 (0)	0 (0)	

Table 2
 Multivariable linear regression of exploratory associations between psychosocial features of hikikomori and country.

Characteristic	Japan (n = 11)		USA (n = 11)		India (n = 10)		Korea (n = 4)	
	β	(95% CI)	β	(95% CI)	β	(95% CI)	β	(95% CI)
Loneliness (UCLA Loneliness Scale)	Ref		12.35**	(5.41, 19.29)	-3.78	(-10.90, 3.33)	16.31**	(6.44, 26.17)
Social network (Lubben Social Network Scale - 6)	Ref		0	(-4.69, 4.68)	5.05*	(0.24, 9.85)	-5.37	(-12.03, 1.29)
<i>Family subscale</i>	Ref		-0.24	(-2.77, 2.30)	3.41*	(0.81, 6.01)	-0.86	(-4.46, 2.75)
<i>Friend subscale</i>	Ref		0.23	(-2.73, 3.19)	1.64	(-1.40, 4.67)	-4.51*	(-8.72, -0.31)
Functional disability (Sheehan Disability Scale)	Ref		4.95	(-1.90, 11.81)	9.04*	(2.16, 15.92)	13.86*	(3.44, 24.27)
<i>Disrupted work/school work</i>	Ref		-0.36	(-3.40, 2.68)	2.20	(-0.85, 5.25)	1.49	(-3.13, 6.12)
<i>Disrupted social life/leisure activities</i>	Ref		2.04	(-0.29, 4.36)	2.86*	(0.48, 5.24)	4.67*	(1.01, 8.32)
<i>Disrupted family life/home responsibilities</i>	Ref		4.03**	(1.54, 6.52)	4.06**	(1.51, 6.61)	7.70***	(3.78, 11.61)

UCLA: University of California, Los Angeles.

Analyses controlled for age and level of education. Japan used as the reference group (Ref) for country comparisons.

- * statistically significant at the .05 level;
- ** statistically significant at the .01 level;
- *** statistically significant at the .001 level.