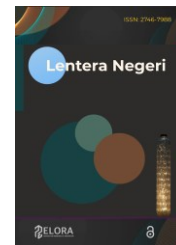




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Prolonged social withdrawal (hikikomori) and psychological distress in adolescents and young adults: a systematic review of depression, anxiety, and suicidality

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ABSTRACT

Prolonged withdrawal from society or social seclusion is a phenomenon often seen among the Japanese that is referred to as "hikikomori". It was first described as a culture-bound phenomenon but it has gradually become acknowledged as a public health problem; yet, there continues to be a limited number of studies showing a connection between it and mental distress. This comprehensive review combines a series of research works which look at the association of prolonged social reclusion with the occurrence of depression, anxiety, and suicidality among the youth. Under PRISMA 2020, three databases-Scopus, PubMed, and ScienceDirect-were interrogated to find relevant literature. A total of 532 records were found; out of these 15 were duplicates so removed, the remaining 517 were screened, 65 of which were evaluated, and 20 studies were finally included. The main variables of the reviewed studies such as population, study design, and outcomes were listed together, the quality of the mixed methods research was assessed with the use of the Mixed Methods Appraisal Tool, and the data were synthesized based on thematic analysis. The four main categories that resulted from clustering analyses were (a) prevalence and characterization, (b) depression and internalizing distress, (c) suicidality and self-harm, and (d) risk and protective factors. Results showed the withdrawal consistently being correlated with the presence of depression, and several-fold rises in suicidal ideation in the different samples were moderated by attachment, coping, loneliness, and Internet use. It is concluded that the findings call for earlier relational screening as well as longitudinal and cross-cultural research studies.



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Introduction

Social connection is a fundamental determinant of mental health across the lifespan, and its absence carries measurable psychological cost. Over the past two decades, a severe and prolonged form of social disengagement-originally described in Japan as hikikomori-has drawn growing international attention as clinicians and researchers document strikingly similar presentations in Asia, Europe, and beyond (Kato et al., 2020a). Contemporary definitions converge on marked physical isolation in the home, persisting for at least six months, accompanied by significant distress or functional impairment (Kato et al., 2020a; Teo & Gaw, 2010). What was once framed as a local sociocultural phenomenon is increasingly conceptualized as

a trans-cultural behavioral syndrome with shared psychopathological features, situating prolonged social withdrawal firmly within the global mental health agenda (Martinotti et al., 2021). Not all withdrawal is pathological. Solitude and shyness can be developmentally adaptive, and brief social avoidance is a normative response to stress; difficulty arises when withdrawal becomes entrenched, involuntary, and self-perpetuating (Ike et al., 2020; Schmidt & Poole, 2020). Developmental research distinguishes motivations such as shyness, unsociability, and active social avoidance, each with a distinct affective signature and prognosis (Gazelle, 2022; McVarnock & Closson, 2022; Masi et al., 2023). Temperamental vulnerabilities, notably behavioral inhibition, and difficulties in identifying and expressing emotion, such as alexithymia, further predispose young people to sustained disengagement (Verhagen et al., 2023; Iannattone et al., 2021). This heterogeneity implies that prolonged withdrawal is best understood not as a unitary trait but as a final common pathway reached through multiple psychological routes.

A substantial body of work has begun to map the correlates of withdrawal. Cross-sectional and clinical studies link severe social withdrawal to depression, anxiety, interpersonal sensitivity, and problematic Internet or gaming behavior (Kato et al., 2020b; Liu et al., 2023). Withdrawal also appears as a transdiagnostic feature that predicts poorer short-term remission across mood and psychotic disorders and complicates the clinical picture in conditions such as bipolar disorder, where stigma compounds isolation (Oliva et al., 2022; Pascual-Sanchez et al., 2020). Loneliness-the subjective experience of unmet relational needs-frequently accompanies withdrawal and is itself a robust correlate of depression in young people (Achterbergh et al., 2020). Together these strands suggest that withdrawal and internalizing distress are tightly, and possibly reciprocally, intertwined. Methodological and contextual developments have accelerated the field. Standardized instruments such as the 25-item Hikikomori Questionnaire have enabled cross-cultural measurement, while family- and school-based frameworks have clarified environmental contributors such as parental control, inter-parental communication, and peer relationships (Amendola et al., 2022; Lin et al., 2020; Clifford et al., 2022). The COVID-19 pandemic served as a natural experiment: enforced physical distancing normalized confinement and, for some, catalysed a shift from temporary restraint toward entrenched withdrawal and hikikomori-like states (Villani et al., 2020; Watabe et al., 2022). Interventions targeting loneliness and family systems have shown early promise, underscoring that withdrawal is modifiable rather than fixed (Smith et al., 2021).

Despite this progress, important gaps persist. First, the evidence base is fragmented across national, clinical, and community samples that use divergent definitions and instruments, making it difficult to determine how consistently prolonged withdrawal is associated with specific distress outcomes (Farina et al., 2022; Bamps et al., 2022). Studies of adolescents-the developmental window in which withdrawal often emerges-remain comparatively scarce relative to adult and community surveys (Braathu et al., 2022; Psychogiou et al., 2022). This dispersion impedes cumulative knowledge and leaves practitioners without a clear picture of which young people are most at risk. Second, although suicidality is repeatedly flagged as a concern, the pathways linking withdrawal to self-harm and suicidal ideation are under-specified, and few reviews have synthesized these findings across cultures (Jia et al., 2024; Junus et al., 2023). The relative contributions of depression, loneliness, stigma, and reduced help-seeking remain unclear, as does the extent to which protective factors such as secure attachment and adaptive coping buffer these risks (Fong et al., 2023b; Wu et al., 2023). Emerging computational and network approaches hint that isolation-related distress may act as a bridge between withdrawal and mood disturbance, but this evidence has not been consolidated (Yokotani et al., 2025; Pupi et al., 2025).

Addressing these gaps is timely and consequential: prolonged social withdrawal is rising among young people worldwide, and its association with distress carries implications for prevention, screening, and service design. This review therefore systematically synthesizes empirical studies on prolonged social withdrawal and psychological distress in adolescents and young adults. Three research questions guide the synthesis:

RQ1: What is the reported prevalence, and what are the sociodemographic and clinical characteristics, of prolonged social withdrawal (hikikomori) among adolescents and young adults?

RQ2: Which indicators of psychological distress-depression, anxiety, suicidality, and loneliness-are most consistently associated with prolonged social withdrawal, and how strong are these associations?

RQ3: Which individual, familial, and contextual risk and protective factors moderate the relationship between prolonged social withdrawal and psychological distress?

By integrating evidence across cultures and designs, this review contributes a consolidated map of the psychological burden of prolonged social withdrawal and a structured agenda for future research and clinical action.

Method

Research Design and Framework

This study adopts a systematic literature review (SLR) design, an approach well suited to consolidating heterogeneous evidence into a transparent, reproducible synthesis. The SLR method was selected because the research questions require aggregating findings across countries, populations, and paradigms rather than testing a single hypothesis, and because a pre-specified protocol reduces the selection and confirmation biases that can affect narrative reviews (Tranfield et al., 2003; Liberati et al., 2009). Reporting adheres to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA 2020) statement (Page et al., 2021), whose identification, screening, eligibility, and inclusion stages are documented below and visualized in Figure 1.

Search Strategy

Prior to constructing the search string, the review questions were decomposed using the PICOS framework (Population, Intervention/Interest, Comparison, Outcome, Study design) to ensure systematic identification of core concepts. Each PICOS element was translated into a cluster of keywords and synonyms, which were then combined with Boolean operators. The Population comprised adolescents and young adults; the Interest was prolonged or severe social withdrawal (hikikomori); the Comparison, where applicable, was non-withdrawn individuals; the Outcomes were indicators of psychological distress; and eligible Study designs were empirical quantitative, qualitative, and mixed-methods studies. The PICOS elements are summarized in Table 1.

Table 1. <PICOS framework guiding the search strategy>

PICOS element	Operationalization in this review
Population (P)	Adolescents and young adults (community and clinical)
Interest (I)	Prolonged / severe / pathological social withdrawal (hikikomori)
Comparison (C)	Non-withdrawn individuals, where a comparator was reported
Outcome (O)	Psychological distress: depression, anxiety, suicidality, loneliness
Study design (S)	Empirical quantitative, qualitative, and mixed-methods studies

The field code TITLE-ABS-KEY restricted the query to titles, abstracts, and keywords, and truncation (the asterisk) captured morphological variants such as “withdraw*” and “adolescen*.” The search string was piloted and refined iteratively; an initial version returned an unmanageable volume of tangential biomedical records, prompting the addition of distress-related outcome terms to sharpen precision. The final Boolean string executed was:

TITLE-ABS-KEY (("hikikomori" OR "prolonged social withdrawal" OR "severe social withdrawal" OR "pathological social withdrawal" OR "socially withdrawn") AND ("depress" OR "anxiet*" OR "suicid*" OR "self-harm" OR "loneliness" OR "psychological distress" OR "mental health") AND ("adolescen*" OR "young adult*" OR "youth" OR "student*"))*

Limiters were applied for language (English), document type (article and review), and publication period (2020–2025) to capture the contemporary, internationally comparative literature that followed the consolidation of standardized hikikomori criteria.

Database and Information Sources

Three bibliographic databases were searched: Scopus, PubMed, and ScienceDirect. Scopus served as the primary source given its broad, multidisciplinary indexing of peer-reviewed psychology and psychiatry journals, complemented by PubMed for biomedical coverage and ScienceDirect for full-text reach. The search was executed in a single session, and all bibliographic metadata-authors, titles, source titles, years, digital object identifiers, and abstracts-were drawn directly from the database exports to preserve data integrity. Records were consolidated and de-duplicated prior to screening.

Eligibility Criteria

Inclusion and exclusion criteria were specified a priori and are presented in Table 2. In brief, eligible studies were peer-reviewed empirical works, published in English between 2020 and 2025, that assessed prolonged or severe social withdrawal in adolescent or young-adult populations and reported at least one psychological-distress outcome. Case reports, protocol papers, validation-only studies, commentaries, and studies without a distress outcome were excluded.

Table 2. <Inclusion and exclusion criteria>

Criterion	Inclusion	Exclusion
Language	English	Non-English
Document type	Peer-reviewed article or review	Case report, protocol, editorial, conference paper
Publication period	2020–2025	Before 2020
Population	Adolescents / young adults	Populations outside the target age range
Phenomenon	Prolonged / severe social withdrawal (hikikomori)	Transient or tangential withdrawal only
Outcome	≥ 1 psychological-distress outcome reported	No distress outcome assessed
Design	Empirical (quantitative, qualitative, mixed)	Validation-only or non-empirical

Study Selection Process

Study selection proceeded in three stages. First, titles and abstracts of all de-duplicated records were screened against the eligibility criteria. Second, the full texts of potentially eligible records were retrieved and assessed in detail. Third, studies meeting all criteria were retained for synthesis. Records that were ambiguous at the title/abstract stage were carried forward to full-text assessment to minimize premature exclusion. The complete flow, with counts and reasons for exclusion, is depicted in Figure 1.

Quality Assessment

Methodological quality was appraised using the Mixed Methods Appraisal Tool (MMAT), version 2018 (Hong et al., 2018), selected for its suitability in appraising the heterogeneous designs anticipated in this literature (quantitative descriptive, quantitative non-randomized, qualitative, and mixed methods). For each study, the design category was first classified, after which the corresponding five-criterion checklist was applied with responses of Yes (1), Can't tell/Partial (0.5), or No (0). Studies meeting at least three of five criteria were considered to be of adequate methodological confidence. Consistent with MMAT developer guidance, no study was excluded on the basis of quality score alone; lower-scoring studies were retained but weighted accordingly in the synthesis. A summary of the appraisal is provided in Table 3.

Table 3. <Methodological quality appraisal (MMAT 2018)>

No.	Study	Design category	Q1	Q2	Q3	Q4	Q5	Total	Rating
1	Teo et al. (2020)	Quant. randomized non-	Y	Y	Y	P	Y	4.5/5	High
2	Wu et al. (2020)	Quant. descriptive	Y	Y	P	Y	Y	4.5/5	High
3	Nonaka & Sakai (2021)	Quant. randomized non-	Y	Y	Y	P	Y	4.5/5	High
4	Hamasaki et al. (2021)	Quant. randomized non-	Y	Y	Y	Y	P	4.5/5	High
5	Amendola et al. (2021)	Quant. descriptive	Y	P	P	Y	Y	4.0/5	Medium
6	Zhu et al. (2021)	Quant. descriptive	Y	Y	Y	Y	Y	5.0/5	High
7	Orsolini et al. (2022)	Quant. randomized non-	Y	Y	Y	Y	Y	5.0/5	High
8	Muzi et al. (2022)	Quant. randomized non-	Y	Y	Y	P	P	4.0/5	Medium
9	Hamasaki et al. (2022)	Quant. randomized non-	Y	Y	Y	P	P	4.0/5	Medium
10	Benarous et al. (2022)	Quant. randomized non-	Y	Y	Y	Y	P	4.5/5	High

11	Kubo et al. (2023)	Quant. randomized	non-	Y	Y	Y	Y	P	4.5/5	High
12	Santona et al. (2023)	Quant. descriptive		Y	P	P	Y	Y	4.0/5	Medium
13	Bonnaire & Roignot (2023)	Quant. randomized	non-	Y	Y	Y	P	Y	4.5/5	High
14	Amendola & Cerutti (2023)	Quant. randomized	non-	Y	Y	Y	Y	Y	5.0/5	High
15	Fong & Yip (2023)	Quant. randomized	non-	Y	Y	Y	Y	Y	5.0/5	High
16	Fong et al. (2024)	Quant. randomized	non-	Y	Y	Y	Y	Y	5.0/5	High
17	Li et al. (2025)	Quant. randomized	non-	Y	Y	Y	Y	Y	5.0/5	High
18	Baek & Yoon (2025)	Quant. descriptive		Y	Y	Y	Y	Y	5.0/5	High
19	Park et al. (2025)	Quant. descriptive		Y	Y	Y	Y	Y	5.0/5	High
20	Choi et al. (2025)	Quant. descriptive		Y	Y	Y	Y	Y	5.0/5	High

Note. MMAT criteria scored Yes (1.0), Can't tell/Partial (0.5), No (0.0). Rating: High $\geq 90\%$; Medium 60–89%. Appraisal follows Hong et al. (2018).

Data Extraction Procedure

A standardized extraction sheet was used to chart, from each included study, the following: author(s) and year, country or region, study design, sample size and population, the operational definition and measure of social withdrawal, the psychological-distress outcomes assessed, and the principal findings. Extraction was performed directly from the primary reports to ensure that all charted details were verifiable.

Bibliometric and Descriptive Analysis

Descriptive analyses characterized the corpus by year of publication and geographic origin to contextualize the evidence base. These distributions are reported in Figures 2 and 3. No inferential bibliometric network analysis was undertaken, as the review prioritized thematic synthesis of substantive findings over citation-based mapping.

Data Analysis and Synthesis

Given the heterogeneity of designs and measures, a narrative thematic synthesis was adopted (Thomas & Harden, 2008). Findings were coded inductively; codes were grouped into candidate themes; and themes were reviewed against the full set of studies and refined. Four analytical themes were derived-prevalence and clinical characterization, depression and internalizing distress, suicidality and self-harm, and risk and protective factors-and mapped onto the three research questions. The distribution of studies across themes is shown in Figure 4.

Reporting and Documentation

The review was conducted and reported in accordance with the PRISMA 2020 checklist (Page et al., 2021). All numerical values reported in the abstract, methods, results, and Figure 1 were cross-checked for internal consistency, and all citations were audited bidirectionally against the reference list.

PRISMA 2020 Flow Diagram

The study-selection process is summarized in Figure 1, constructed in accordance with the PRISMA 2020 statement (Page et al., 2021). All counts are consistent with the narrative.

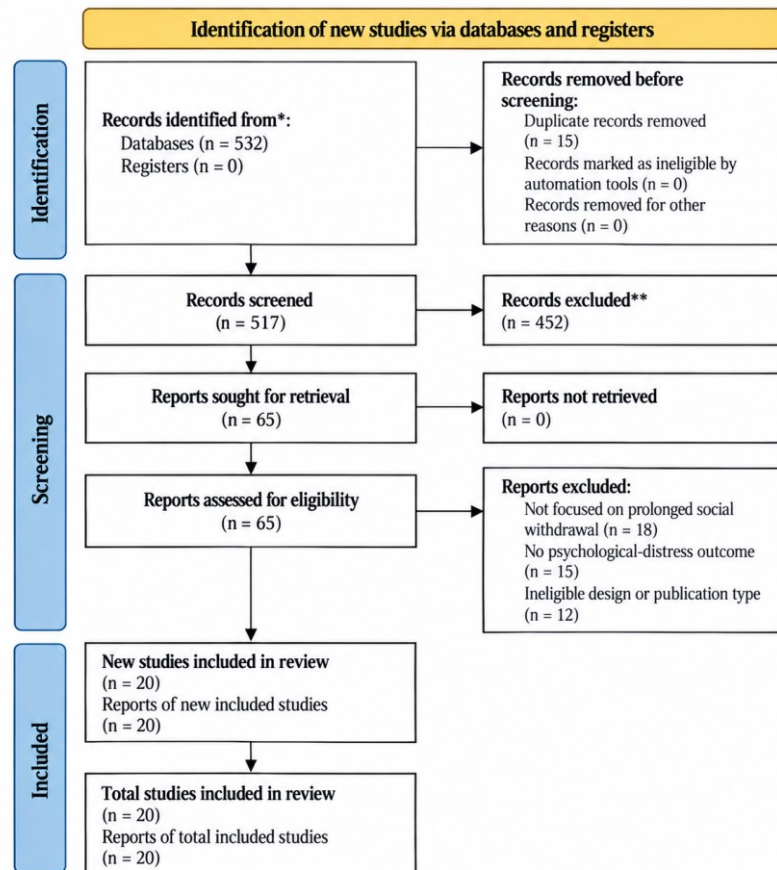


Figure 1. <PRISMA 2020 flow diagram of the study selection process.>

Results and Discussions

Study Selection Results

The database search identified 532 records. After removal of 15 duplicate records, 517 records were screened at the title and abstract level, of which 452 were excluded as clearly irrelevant to prolonged social withdrawal or lacking a distress outcome. The full texts of 65 reports were assessed for eligibility, and 45 were excluded: 18 did not focus on prolonged social withdrawal, 15 assessed no psychological-distress outcome, and 12 were of ineligible design or publication type. Twenty studies satisfied all criteria and were included in the synthesis. This flow is depicted in Figure 1 and is numerically consistent throughout the manuscript.

Descriptive Characteristics

The 20 included studies were published between 2020 and 2025, with a peak in 2023 and sustained output thereafter (Figure 2). Geographically, the corpus spanned East Asia and Europe, with the largest contributions from Italy, Japan, Hong Kong, South Korea, and France (Figure 3), reflecting both the phenomenon's origins and its international diffusion. Designs were predominantly cross-sectional surveys, complemented by case-control studies, retrospective chart reviews, a prospective survey, a network analysis, and a three-wave longitudinal study. Sample sizes ranged from small clinical series to nationally representative surveys exceeding 14,000 respondents. Full characteristics are presented in Table 4, and the thematic-methodological classification in Table 5.

Quality appraisal (Table 3) indicated that most studies were of adequate to high methodological confidence, using validated instruments and clearly defined samples; the principal limitations were the predominance of cross-sectional designs and reliance on self-report.

Table 4. <Summary of included studies>

No	Title	Author(s)	Year	Country	Design	Key findings
1	Social withdrawal in major depressive disorder: a case-control study of hikikomori in Japan	Teo et al.	2020	Japan	Retrospective case-control	Among patients with major depressive disorder, those with social withdrawal showed higher baseline suicidal ideation and significantly higher hikikomori and modern-type-depression scores; withdrawal remained associated with hikikomori and lower reward dependence after adjustment.
2	The presence, characteristics and correlates of pathological social withdrawal in Taiwan: An online survey	Wu et al.	2020	Taiwan	Cross-sectional online survey	About 9% reported pathological social withdrawal for at least six months; affected respondents reported poorer mental health and lower social, academic, and occupational self-confidence than unaffected peers.
3	Psychological factors associated with social withdrawal (Hikikomori)	Nonaka & Sakai	2021	Japan	Cross-sectional survey	Behavioural-disengagement coping, low self-compassion, and higher psychological stress were associated with hikikomori behaviour, whereas greater use of instrumental support was associated with reduced withdrawal, identifying candidate intervention targets.
4	Identifying Social Withdrawal (Hikikomori) Factors in Adolescents: Understanding the Hikikomori Spectrum	Hamasaki et al.	2021	Japan	Case-control (parent-report)	Anxious/depressed and somatic-complaint profiles, poor inter-parental communication, and Internet overuse significantly predicted hikikomori severity in adolescents on the Child Behavior Checklist.
5	Hikikomori, problematic internet use and psychopathology: Correlates in non-clinical and clinical samples of young adults in Italy	Amendola et al.	2021	Italy	Cross-sectional (clinical + non-clinical)	Hikikomori occurred in both clinical and non-clinical samples and was strongly associated with overall personality dysfunction; problematic Internet use correlated with depression and interpersonal sensitivity.
6	Investigating prolonged social withdrawal behaviour as a risk factor for self-harm and suicidal behaviours	Zhu et al.	2021	China	Cross-sectional online survey	Prolonged social withdrawal (prevalence 3.2%) was significantly associated with self-harm and suicidal behaviour over the previous 12 months, constituting an additional risk beyond sociodemographic factors.
7	Sex-differences in hikikomori traits as predictors of problematic internet use in Italian university students	Orsolini et al.	2022	Italy	Cross-sectional survey	Hikikomori traits, together with depressive and stress levels, significantly predicted problematic Internet use; associations differed by sex, with higher anxiety and stress among female problematic users.
8	Peer Power! Secure Peer Attachment Mediates the Effect of Parental Attachment on Depressive Withdrawal of Teenagers	Muzi et al.	2022	Italy	Cross-sectional (COVID-19)	Secure peer attachment mediated the protective effect of parental attachment on depressive withdrawal; higher parental secure-base and peer attachment cumulatively predicted 10–21% less withdrawal.
9	Preliminary study of the social withdrawal (hikikomori) spectrum in French adolescents:	Hamasaki et al.	2022	France / Japan	Case-control (cross-cultural)	A French replication confirmed the non-specificity of hikikomori psychopathology; lack of inter-parental communication and

	focusing on the differences in pathology and related factors compared with Japanese adolescents					Internet overuse again emerged as predictors of withdrawal severity across cultures.
10	Examining the hikikomori syndrome in a French sample of hospitalized adolescents with severe social withdrawal and school refusal behavior	Benarous et al.	2022	France	Retrospective chart review	Seven percent of hospitalized adolescents met hikikomori criteria; these patients showed markedly elevated anxiety-disorder rates (OR = 35.2), longer symptom duration, and longer hospitalization than peers with other withdrawal profiles.
11	Risk factors of hikikomori among office workers during the COVID-19 pandemic: A prospective online survey	Kubo et al.	2023	Japan	Prospective online survey (COVID-19)	Cross-lagged modelling showed hikikomori tendency increased depressive tendencies over time; poor interpersonal relationships, rather than self-restraint behaviour itself, drove increasing isolation during the pandemic.
12	Sensitivity and Attachment in an Italian Sample of Hikikomori Adolescents and Young Adults	Santona et al.	2023	Italy	Cross-sectional survey	Italian individuals with hikikomori reported high depression and anxiety, elevated environmental sensitivity, and insecure attachment; attachment and sensitivity were significantly related to psychopathology.
13	Relationship Between Social Withdrawal (Hikikomori), Personality, and Coping in an Adult Population	Bonnaire & Roignot	2023	France	Case-control	The hikikomori group scored higher on depression, anxiety, neuroticism, and dysfunctional coping (self-blame, behavioural disengagement); being alone and depression were positively, and extraversion and instrumental support negatively, associated with hikikomori.
14	Examining the relationship between social withdrawal motivations and symptoms of hikikomori	Amendola & Cerutti	2023	Italy	Cross-sectional survey	Peer isolation, shyness, unsociability, and avoidance were associated with hikikomori symptoms after covariates; a high-motivation subgroup showed the greatest personality dysfunction and interpersonal sensitivity.
15	Prevalence of hikikomori and associations with suicidal ideation, suicide stigma, and help-seeking among 2,022 young adults in Hong Kong	Fong & Yip	2023	Hong Kong	Cross-sectional online survey	Hikikomori exerted significant positive indirect effects on the occurrence and severity of suicidal ideation via psychological distress and was associated with reduced help-seeking, with isolation increasing help-seeking barriers.
16	Comorbidity among symptoms of internet gaming disorder, social withdrawal, and depression in 3430 young people in Hong Kong: A network analysis	Fong et al.	2024	Hong Kong	Cross-sectional network analysis	In a symptom network of gaming disorder, social withdrawal, and depression, marked social isolation and distress due to isolation acted as bridge symptoms linking withdrawal to depressed mood and self-blame.
17	Young people's social withdrawal intention during COVID-19 in Hong Kong: A three-	Li et al.	2025	Hong Kong	Three-wave longitudinal survey	Baseline loneliness and hopelessness about COVID-19 predicted persistent social-withdrawal intention, whereas better school

	wave longitudinal study						bonding and family environment were protective across the pandemic waves.
18	Prolonged social withdrawal (“hikikomori”) and its associations with depressive symptoms and suicidal ideation among young adults in Korea: Findings from the 2022 Youth Life Survey	Baek & Yoon	2025	South Korea	Cross-sectional national survey		Hikikomori syndrome (prevalence 1.4%) was associated with substantially higher depressive symptoms (adjusted OR = 3.91) and suicidal ideation (adjusted OR = 5.24) than non-withdrawal.
19	Association between hikikomori (social withdrawal) and depression in Korean young adults	Park et al.	2025	South Korea	Cross-sectional national survey		Hikikomori was significantly associated with depression in both sexes (males OR = 2.25; females OR = 2.34); household size and sex moderated depression and suicide risk among withdrawn youth.
20	Unmet Health Care Use Among Socially Withdrawn Youth (Hikikomori) in South Korea: Cross-Sectional Survey Study	Choi et al.	2025	South Korea	Cross-sectional national survey (weighted)		Withdrawn youth reported greater perceived need for mental-health services yet far higher unmet health-care use for both mental (aPR = 4.46) and physical (aPR = 3.33) care, worsening with severity and duration.

Note. Full article titles and key findings are reported without truncation. All entries derive from the included primary studies.

Table 5. <Classification of included studies by theme and method>

No	Author(s) & year	Country	Research design	Thematic cluster	Distress outcome(s)
1	Teo et al. (2020)	Japan	Retrospective case-control	Depression & internalizing distress	Depression; suicidal ideation
2	Wu et al. (2020)	Taiwan	Cross-sectional online survey	Prevalence & clinical characterization	General mental health
3	Nonaka & Sakai (2021)	Japan	Cross-sectional survey	Risk & protective factors	Psychological stress
4	Hamasaki et al. (2021)	Japan	Case-control (parent-report)	Risk & protective factors	Anxious/depressed profile
5	Amendola et al. (2021)	Italy	Cross-sectional (clinical + non-clinical)	Prevalence & clinical characterization	Depression; personality dysfunction
6	Zhu et al. (2021)	China	Cross-sectional online survey	Suicidality & self-harm	Self-harm; suicidal behaviour
7	Orsolini et al. (2022)	Italy	Cross-sectional survey	Risk & protective factors	Depression; anxiety; stress
8	Muzi et al. (2022)	Italy	Cross-sectional (COVID-19)	Depression & internalizing distress	Depressive withdrawal
9	Hamasaki et al. (2022)	France / Japan	Case-control (cross-cultural)	Risk & protective factors	Anxious/depressed profile
10	Benarous et al. (2022)	France	Retrospective chart review	Prevalence & clinical characterization	Anxiety; depression
11	Kubo et al. (2023)	Japan	Prospective online survey (COVID-19)	Depression & internalizing distress	Depressive tendency
12	Santona et al. (2023)	Italy	Cross-sectional survey	Depression & internalizing distress	Depression; anxiety
13	Bonnaire & Roignot (2023)	France	Case-control	Depression & internalizing distress	Depression; anxiety
14	Amendola & Cerutti (2023)	Italy	Cross-sectional survey	Risk & protective factors	Interpersonal sensitivity
15	Fong & Yip (2023)	Hong Kong	Cross-sectional online survey	Suicidality & self-harm	Suicidal ideation; distress

16	Fong et al. (2024)	Hong Kong	Cross-sectional network analysis	Depression & internalizing distress	Depression (network)
17	Li et al. (2025)	Hong Kong	Three-wave longitudinal survey	Risk & protective factors	Loneliness; hopelessness
18	Baek & Yoon (2025)	South Korea	Cross-sectional national survey	Suicidality & self-harm	Depression; suicidal ideation
19	Park et al. (2025)	South Korea	Cross-sectional national survey	Depression & internalizing distress	Depression
20	Choi et al. (2025)	South Korea	Cross-sectional national survey (weighted)	Prevalence & clinical characterization	Distress; unmet care

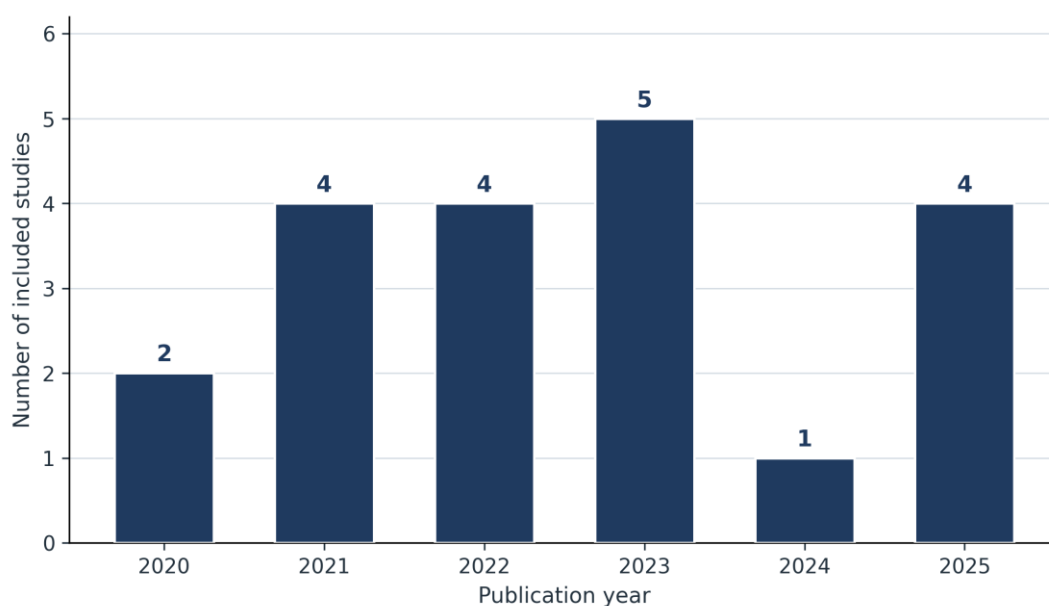


Figure 2. <Temporal distribution of the 20 included studies (2020–2025).>

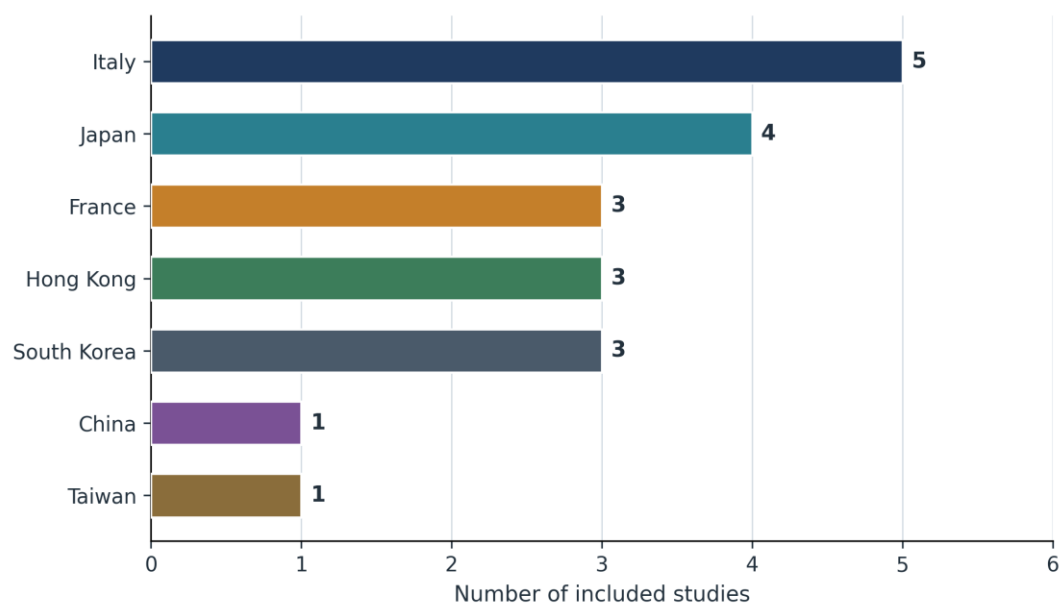


Figure 3. <Geographic distribution of the included studies by country/region.>

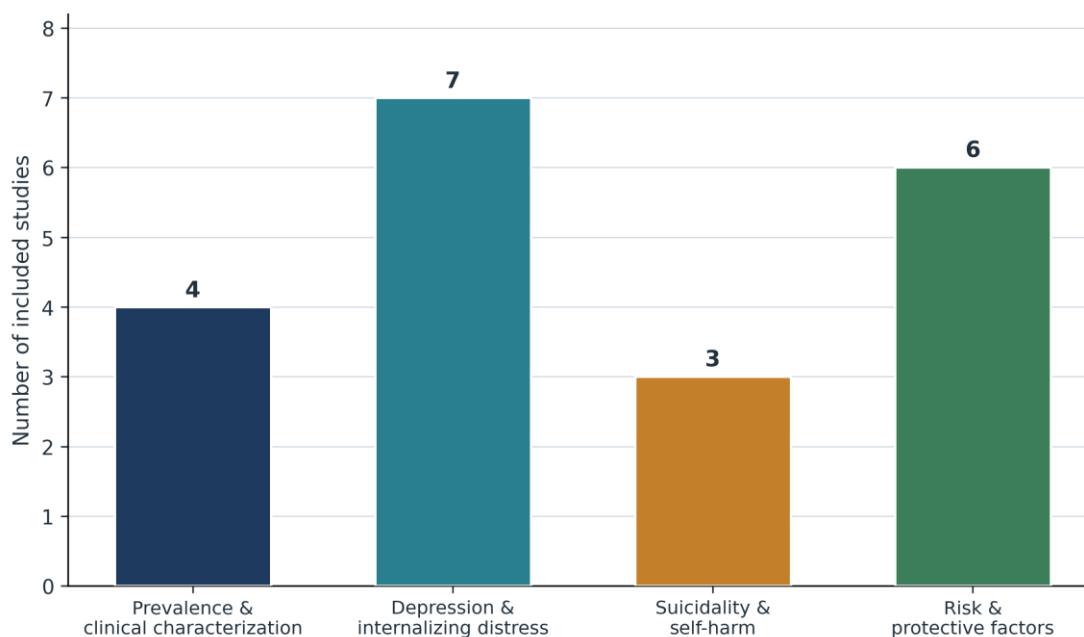


Figure 4. <Distribution of included studies across the four thematic clusters.>

Thematic Synthesis

Findings for RQ1: Prevalence and Clinical Characterization

Reported prevalence varied with definition, setting, and country. In community and online surveys, the proportion meeting withdrawal criteria ranged from roughly 3% among Chinese university students (Zhu et al., 2021) to about 9% in a Taiwanese online sample (Wu et al., 2020), while nationally representative Korean surveys estimated hikikomori syndrome at approximately 1.4% of young adults (Baek & Yoon, 2025). In clinical settings the picture differed: about 7% of hospitalized French adolescents met hikikomori criteria, representing roughly one in six of those presenting with social withdrawal or school refusal (Benarous et al., 2022). The occurrence of withdrawal in both clinical and non-clinical Italian samples further confirmed that the phenomenon is not confined to psychiatric populations (Amendola et al., 2021).

Clinically, withdrawal was characterized by pervasive functional impairment and elevated service need. Withdrawn respondents reported poorer mental health and lower social, academic, and occupational self-confidence than unaffected peers (Wu et al., 2020), and hospitalized adolescents with hikikomori showed longer symptom duration and longer hospitalization than those with other withdrawal profiles (Benarous et al., 2022). Notably, socially withdrawn Korean youth reported a greater perceived need for mental-health services yet substantially higher unmet health-care use for both mental and physical care, a gap that widened with the severity and duration of withdrawal (Choi et al., 2025). Together, these findings indicate that prolonged withdrawal is a clinically significant condition marked by a paradoxical combination of high need and low access.

Findings for RQ2: Associated Indicators of Psychological Distress

Depression was the most consistently reported correlate of withdrawal. In patients with major depressive disorder, those exhibiting social withdrawal displayed higher hikikomori and modern-type-depression scores and greater baseline suicidal ideation (Teo et al., 2020). Case-control and survey studies converged on elevated depression among withdrawn individuals: French and Italian samples reported higher depression, anxiety, and neuroticism in hikikomori groups (Bonnaire & Roignot, 2023; Santona et al., 2023), and a Japanese prospective study showed that hikikomori tendency increased depressive tendencies over time (Kubo et al., 2023). The two large Korean national surveys quantified the association precisely, reporting adjusted odds ratios for depression of 3.91 in one sample (Baek & Yoon, 2025) and of 2.25 for males and 2.34 for females in another (Park et al., 2025). A network analysis of 3,430 young people further identified marked social isolation and isolation-related distress as bridge symptoms linking withdrawal to depressed mood (Fong et al., 2024).

Anxiety, loneliness, and suicidality formed the remaining distress profile. Hospitalized adolescents with hikikomori showed markedly elevated anxiety-disorder rates (Benarous et al., 2022), and loneliness predicted persistent withdrawal intention in a longitudinal youth sample (Li et al., 2025). Suicidality was a recurrent and serious signal: prolonged withdrawal was significantly associated with self-harm and suicidal behaviour among Chinese students (Zhu et al., 2021); it exerted significant indirect effects on the occurrence and severity of suicidal ideation via psychological distress in a large Hong Kong sample, while reducing help-seeking (Fong & Yip, 2023a); and, in the Korean national data, withdrawal was associated with a more than five-fold increase in suicidal ideation (Baek & Yoon, 2025). Across outcomes, depression, anxiety, loneliness, and suicidality co-occurred, indicating a broad internalizing burden rather than an isolated symptom.

Findings for RQ3: Risk and Protective Factors

Individual and coping-related factors shaped the withdrawal–distress link. Behavioral disengagement coping, low self-compassion, and higher psychological stress were associated with withdrawal, whereas instrumental support was protective (Nonaka & Sakai, 2021); dysfunctional coping and neuroticism similarly distinguished hikikomori groups (Bonnaire & Roignot, 2023). Withdrawal motivations such as peer isolation, shyness, unsociability, and avoidance were associated with hikikomori symptomatology, and a high-motivation subgroup exhibited the greatest personality dysfunction and interpersonal sensitivity (Amendola & Cerutti, 2023). Problematic Internet use recurrently accompanied withdrawal, with hikikomori traits and depressive and stress levels jointly predicting problematic use in a sex-differentiated pattern (Orsolini et al., 2022).

Familial, relational, and contextual factors were equally salient. Anxious/depressed profiles, poor inter-parental communication, and Internet overuse predicted withdrawal severity in Japanese and French adolescents (Hamasaki et al., 2021; Hamasaki et al., 2022), while secure peer attachment mediated the protective effect of parental attachment on depressive withdrawal (Muzy et al., 2022). Insecure attachment and heightened environmental sensitivity co-occurred with psychopathology in Italian hikikomori (Santona et al., 2023). Contextually, the COVID-19 pandemic amplified risk: loneliness and hopelessness predicted persistent withdrawal intention, whereas school bonding and a supportive family environment were protective (Li et al., 2025), and poor interpersonal relationships, rather than self-restraint behaviour itself, drove increasing isolation among workers (Kubo et al., 2023). These findings identify attachment security, adaptive coping, social support, and school connectedness as candidate protective levers.

Comparative and Critical Analysis

Methodologically, the corpus was dominated by cross-sectional self-report surveys, which establish association but not direction. The few departures from this pattern are informative: the prospective and three-wave longitudinal studies suggested temporal precedence, with withdrawal predicting later depressive tendency and loneliness predicting later withdrawal intention (Kubo et al., 2023; Li et al., 2025), while the network analysis moved beyond bivariate association to locate isolation-related distress as a structural bridge (Fong et al., 2024). Sample scale varied enormously—from clinical series of a few dozen participants (Amendola et al., 2021; Santona et al., 2023) to national surveys exceeding 14,000 respondents (Baek & Yoon, 2025; Park et al., 2025; Choi et al., 2025)—producing a trade-off between depth of clinical characterization and population representativeness. Measurement heterogeneity, spanning the Hikikomori Questionnaire, checklist-based parent reports, and survey-derived operationalizations, further complicates direct comparison and signals a need for measurement harmonization.

Interpretation of findings. This review shows that, across markedly different cultures and designs, prolonged social withdrawal is reliably accompanied by internalizing distress—most consistently depression, and, in the largest samples, substantially elevated suicidal ideation. The convergence of small clinical studies and nationally representative surveys on the same directional association strengthens confidence that the relationship is robust rather than an artefact of any single setting or instrument (Baek & Yoon, 2025; Park et al., 2025). At the same time, the phenomenon's occurrence in non-clinical samples indicates that withdrawal-related distress extends well beyond diagnosed psychiatric populations (Amendola et al., 2021; Wu et al., 2020). Theoretical implications. The pattern is consistent with a self-perpetuating cycle in which withdrawal and distress reinforce one another: isolation deprives young people of relational regulation and reward, deepening depression, which in turn motivates further withdrawal. The identification of isolation-related distress as a bridge symptom offers empirical grounding for this cyclical model (Fong et al., 2024), while the mediating role of peer attachment situates withdrawal within attachment and interpersonal frameworks rather than treating it as a purely individual deficit (Muzy et al., 2022). These findings extend transdiagnostic accounts of withdrawal as a common pathway across disorders (Oliva et al., 2022).

Practical implications. Because withdrawn young people report high need yet low access to care (Choi et al., 2025) and reduced help-seeking (Fong & Yip, 2023a), services cannot rely on self-referral. The prominence of loneliness, attachment insecurity, and family communication as correlates points toward relationship-focused and family-based prevention, and toward school connectedness as a protective target (Li et al., 2025; Muzi et al., 2022). Screening embedded in schools, primary care, and digital settings—where problematic Internet use may serve as an accessible marker (Orsolini et al., 2022)—could enable earlier identification. Comparison with prior reviews and contradictions. Consistent with earlier characterizations of hikikomori as a trans-cultural syndrome (Martinotti et al., 2021; Kato et al., 2020a), the present synthesis documents convergent psychopathology across continents. Yet contradictions remain: comorbidity with diagnosed psychiatric disorders varied widely, from low rates in some community surveys (Wu et al., 2020) to high rates in clinical samples (Benarous et al., 2022), and the boundary between hikikomori and anxiety or depressive disorders was not cleanly delineated. Such discrepancies likely reflect sampling and measurement differences rather than true divergence, and echo unresolved definitional debates in the wider literature (Ike et al., 2020).

Research gaps. Three gaps stand out. First, longitudinal and experimental designs are scarce, leaving causal direction largely inferential (Bamps et al., 2022). Second, adolescents remain under-represented relative to adults, despite being the developmental window of onset (Braathu et al., 2022; Psychogiou et al., 2022). Third, protective factors are studied far less systematically than risks, limiting prevention science (Smith et al., 2021). **Limitations of this review.** The review was restricted to English-language, peer-reviewed articles from three databases and a 2020–2025 window, which may have excluded relevant grey literature and non-English work central to a culturally rooted phenomenon. The predominance of cross-sectional evidence constrains causal inference, and heterogeneity of measures precluded meta-analytic pooling. Finally, thematic synthesis entails interpretive judgement, mitigated here by transparent coding and bidirectional citation auditing.

Future research agenda. Priorities include: (1) longitudinal and, where ethical, experimental studies that model the temporal dynamics of withdrawal and distress (Yokotani et al., 2025); (2) harmonized, cross-culturally validated measurement to enable pooling (Amendola et al., 2022); and (3) trials of relationship-focused, family-based, and digitally delivered interventions that explicitly target loneliness, attachment, and help-seeking (Smith et al., 2021; Fong et al., 2023b). In summary, the evidence answers the review's questions clearly: prolonged social withdrawal is prevalent across community and clinical settings (RQ1); it is consistently associated with depression and, at scale, with markedly elevated suicidal ideation and co-occurring anxiety and loneliness (RQ2); and these associations are moderated by coping, attachment, family communication, Internet use, and school connectedness (RQ3).

Conclusions

This systematic review synthesized 20 studies on prolonged social withdrawal and psychological distress in adolescents and young adults across East Asia and Europe. The evidence indicates that severe withdrawal is a clinically significant, trans-cultural condition consistently associated with depression and, in large representative samples, with several-fold increases in suicidal ideation, alongside elevated anxiety and loneliness. These associations are shaped by coping style, attachment security, family communication, problematic Internet use, and school connectedness, identifying concrete targets for prevention. The review's core contribution is a consolidated, cross-cultural map of the psychological burden of withdrawal and of its risk and protective architecture. Its conclusions are tempered by the predominance of cross-sectional, self-report evidence and measurement heterogeneity. Practitioners should prioritize early, relationship-focused screening in schools, primary care, and digital settings, and researchers should pursue longitudinal, harmonized, and intervention-oriented work to move from association toward prevention.

References

- Achterbergh, L., Pitman, A., Birken, M., Pearce, E., Sno, H., & Johnson, S. (2020). The experience of loneliness among young people with depression: A qualitative meta-synthesis of the literature. *BMC Psychiatry*, 20(1), Article 415. <https://doi.org/10.1186/s12888-020-02818-3>
- Amendola, S., Cerutti, R., Presaghi, F., Spensieri, V., Lucidi, C., Silvestri, E., Di Giorgio, V., Conti, F., Martorelli, A., Izzi, G., & Teo, A. (2021). Hikikomori, problematic internet use and

- psychopathology: Correlates in non-clinical and clinical samples of young adults in Italy. *Journal of Psychopathology*, 27(2), 106–114. <https://doi.org/10.36148/2284-0249-412>
- Amendola, S., Presaghi, F., Teo, A. R., & Cerutti, R. (2022). Psychometric Properties of the Italian Version of the 25-Item Hikikomori Questionnaire for Adolescents. *International Journal of Environmental Research and Public Health*, 19(16), Article 10408. <https://doi.org/10.3390/ijerph191610408>
- Amendola, S., & Cerutti, R. (2023). Examining the relationship between social withdrawal motivations and symptoms of hikikomori. *Journal of Child and Adolescent Mental Health*, 35(1-3), 25–41. <https://doi.org/10.2989/17280583.2023.2291180>
- Baek, S.-U., & Yoon, J.-H. (2025). Prolonged social withdrawal (“hikikomori”) and its associations with depressive symptoms and suicidal ideation among young adults in Korea: Findings from the 2022 Youth Life Survey. *Journal of Affective Disorders*, 381, 514–517. <https://doi.org/10.1016/j.jad.2025.04.044>
- Bamps, E., Teixeira, A., Lafit, G., Achterhof, R., Hagemann, N., Hermans, K. S. F. M., Hiekkaranta, A. P., Lecei, A., Kirtley, O. J., & Myin-Germeyns, I. (2022). Identifying Clusters of Adolescents Based on Their Daily-Life Social Withdrawal Experience. *Journal of Youth and Adolescence*, 51(5), 915–926. <https://doi.org/10.1007/s10964-021-01558-1>
- Benarous, X., Guedj, M.-J., Cravero, C., Jakubowicz, B., Brunelle, J., Suzuki, K., & Cohen, D. (2022). Examining the hikikomori syndrome in a French sample of hospitalized adolescents with severe social withdrawal and school refusal behavior. *Transcultural Psychiatry*, 59(6), 831–843. <https://doi.org/10.1177/13634615221111633>
- Bonnaire, C., & Roignot, Z. (2023). Relationship Between Social Withdrawal (Hikikomori), Personality, and Coping in an Adult Population. *Psychiatry Investigation*, 20(8), 740–749. <https://doi.org/10.30773/pi.2023.0099>
- Braathu, N., Bølstad, E., Bowker, J. C., & Coplan, R. J. (2022). Evaluating Links between Social Withdrawal Motivations and Indices of Psychosocial Adjustment among Norwegian Emerging Adults. *Journal of Genetic Psychology*, 183(6), 549–563. <https://doi.org/10.1080/00221325.2022.2094210>
- Choi, E., Choi, S., & Jang, S. (2025). Unmet Health Care Use Among Socially Withdrawn Youth (Hikikomori) in South Korea: Cross-Sectional Survey Study. *JMIR Public Health and Surveillance*, 11, Article e79043. <https://doi.org/10.2196/79043>
- Clifford, B. N., Eggum, N. D., An, D., Clifford, S., & Lemery-Chalfant, K. (2022). Withdrawn and Acting out?: Early Adolescents’ Social Avoidance and Externalizing Problems. *Journal of Research on Adolescence*, 32(2), 711–719. <https://doi.org/10.1111/jora.12642>
- Farina, E. A., Assaf, M., Corbera, S., & Chen, C.-M. (2022). Factors Related to Passive Social Withdrawal and Active Social Avoidance in Schizophrenia. *Journal of Nervous and Mental Disease*, 210(7), 490–496. <https://doi.org/10.1097/NMD.0000000000001502>
- Fong, T. C. T., & Yip, P. S. F. (2023a). Prevalence of hikikomori and associations with suicidal ideation, suicide stigma, and help-seeking among 2,022 young adults in Hong Kong. *International Journal of Social Psychiatry*, 69(7), 1768–1780. <https://doi.org/10.1177/00207640231174376>
- Fong, T. C. T., Cheng, Q., Pai, C. Y., Kwan, I., Wong, C., Cheung, S.-H., & Yip, P. S. F. (2023b). Uncovering sample heterogeneity in gaming and social withdrawal behaviors in adolescent and young adult gamers in Hong Kong. *Social Science and Medicine*, 321, Article 115774. <https://doi.org/10.1016/j.socscimed.2023.115774>
- Fong, T. C. T., Junus, A., Wen, M., & Yip, P. S. F. (2024). Comorbidity among symptoms of internet gaming disorder, social withdrawal, and depression in 3430 young people in Hong Kong: A network analysis. *Journal of Affective Disorders*, 359, 319–326. <https://doi.org/10.1016/j.jad.2024.05.091>
- Gazelle, H. (2022). Two Models of the Development of Social Withdrawal and Social Anxiety in Childhood and Adolescence: Progress and Blind Spots. *Children*, 9(5), Article 734. <https://doi.org/10.3390/children9050734>

- Hamasaki, Y., Pionnié-Dax, N., Dorard, G., Tajan, N., & Hikida, T. (2021). Identifying Social Withdrawal (Hikikomori) Factors in Adolescents: Understanding the Hikikomori Spectrum. *Child Psychiatry and Human Development*, 52(5), 808–817. <https://doi.org/10.1007/s10578-020-01064-8>
- Hamasaki, Y., Pionnié-Dax, N., Dorard, G., Tajan, N., & Hikida, T. (2022). Preliminary study of the social withdrawal (hikikomori) spectrum in French adolescents: focusing on the differences in pathology and related factors compared with Japanese adolescents. *BMC Psychiatry*, 22(1), Article 477. <https://doi.org/10.1186/s12888-022-04116-6>
- Hong, Q. N., Pluye, P., Fàbregues, S., Bartlett, G., Boardman, F., Cargo, M., Dagenais, P., Gagnon, M.-P., Griffiths, F., Nicolau, B., O'Cathain, A., Rousseau, M.-C., & Vedel, I. (2018). Mixed Methods Appraisal Tool (MMAT), version 2018. Registration of Copyright (#1148552). Canadian Intellectual Property Office, Industry Canada.
- Iannattone, S., Miscioscia, M., Raffagnato, A., & Gatta, M. (2021). The role of alexithymia in social withdrawal during adolescence: a case-control study. *Children*, 8(2), Article 165. <https://doi.org/10.3390/children8020165>
- Ike, K. G. O., de Boer, S. F., Buwalda, B., & Kas, M. J. H. (2020). Social withdrawal: An initially adaptive behavior that becomes maladaptive when expressed excessively. *Neuroscience and Biobehavioral Reviews*, 116, 251–267. <https://doi.org/10.1016/j.neubiorev.2020.06.030>
- Jia, H., Min, Z., Yiyun, C., Zhiguo, W., Yousong, S., Feng, J., Na, Z., Yiru, F., & Daihui, P. (2024). Association between social withdrawal and suicidal ideation in patients with major depressive disorder: The mediational role of emotional symptoms. *Journal of Affective Disorders*, 347, 69–76. <https://doi.org/10.1016/j.jad.2023.11.051>
- Junus, A., Hsu, Y.-C., Wong, C., & Yip, P. S. F. (2023). Is internet gaming disorder associated with suicidal behaviors among the younger generation? Multiple logistic regressions on a large-scale purposive sampling survey. *Journal of Psychiatric Research*, 161, 2–9. <https://doi.org/10.1016/j.jpsychires.2023.02.038>
- Kato, T. A., Kanba, S., & Teo, A. R. (2020a). Defining pathological social withdrawal: proposed diagnostic criteria for hikikomori. *World Psychiatry*, 19(1), 116–117. <https://doi.org/10.1002/wps.20705>
- Kato, T. A., Shinfuku, N., & Tateno, M. (2020b). Internet society, internet addiction, and pathological social withdrawal: The chicken and egg dilemma for internet addiction and hikikomori. *Current Opinion in Psychiatry*, 33(3), 264–270. <https://doi.org/10.1097/YCO.0000000000000601>
- Kubo, H., Katsuki, R., Horie, K., Yamakawa, I., Tateno, M., Shinfuku, N., Sartorius, N., Sakamoto, S., & Kato, T. A. (2023). Risk factors of hikikomori among office workers during the COVID-19 pandemic: A prospective online survey. *Current Psychology*, 42(27), 23842–23860. <https://doi.org/10.1007/s12144-022-03446-8>
- Li, T. M. H., Zhu, S., & Wong, P. W. C. (2025). Young people's social withdrawal intention during COVID-19 in Hong Kong: A three-wave longitudinal study. *Journal of Psychiatric Research*, 186, 314–321. <https://doi.org/10.1016/j.jpsychires.2025.04.034>
- Liberati, A., Altman, D. G., Tetzlaff, J., Mulrow, C., Gøtzsche, P. C., Ioannidis, J. P. A., Clarke, M., Devereaux, P. J., Kleijnen, J., & Moher, D. (2009). The PRISMA statement for reporting systematic reviews and meta-analyses of studies that evaluate health care interventions. *PLoS Medicine*, 6(7), e1000100. <https://doi.org/10.1371/journal.pmed.1000100>
- Lin, H., Harrist, A. W., Lansford, J. E., Pettit, G. S., Bates, J. E., & Dodge, K. A. (2020). Adolescent social withdrawal, parental psychological control, and parental knowledge across seven years: A developmental cascade model. *Journal of Adolescence*, 81, 124–134. <https://doi.org/10.1016/j.adolescence.2020.04.007>
- Liu, S., Zhang, D., Tian, Y., Xu, B., & Wu, X. (2023). Gender differences in symptom structure of adolescent problematic internet use: A network analysis. *Child and Adolescent Psychiatry and Mental Health*, 17(1), Article 49. <https://doi.org/10.1186/s13034-023-00590-2>
- Martinotti, G., Vannini, C., Di Natale, C., Sociali, A., Stigliano, G., Santacroce, R., & di Giannantonio, M. (2021). Hikikomori: psychopathology and differential diagnosis of a condition with epidemic

- diffusion. *International Journal of Psychiatry in Clinical Practice*, 25(2), 187–194. <https://doi.org/10.1080/13651501.2020.1820524>
- Masi, G., Berloff, S., Milone, A., & Brovedani, P. (2023). Social withdrawal and gender differences: Clinical phenotypes and biological bases. *Journal of Neuroscience Research*, 101(5), 751–763. <https://doi.org/10.1002/jnr.24802>
- McVarnock, A. M., & Closson, L. M. (2022). Motivations for social withdrawal and academic adjustment in emerging adulthood. *British Journal of Developmental Psychology*, 40(2), 352–367. <https://doi.org/10.1111/bjdp.12411>
- Muzi, S., Rogier, G., & Pace, C. S. (2022). Peer Power! Secure Peer Attachment Mediates the Effect of Parental Attachment on Depressive Withdrawal of Teenagers. *International Journal of Environmental Research and Public Health*, 19(7), Article 4068. <https://doi.org/10.3390/ijerph19074068>
- Nonaka, S., & Sakai, M. (2021). Psychological factors associated with social withdrawal (Hikikomori). *Psychiatry Investigation*, 18(5), 463–470. <https://doi.org/10.30773/pi.2021.0050>
- Oliva, V., Fanelli, G., Kasper, S., Zohar, J., Souery, D., Montgomery, S., Albani, D., Forloni, G., Ferentinos, P., Rujescu, D., Mendlewicz, J., Kas, M. J., de Ronchi, D., Fabbri, C., & Serretti, A. (2022). Social withdrawal as a trans-diagnostic predictor of short-term remission: a meta-analysis of five clinical cohorts. *International Clinical Psychopharmacology*, 37(2), 38–45. <https://doi.org/10.1097/YIC.0000000000000384>
- Orsolini, L., Yilmaz-Karaman, I. G., Longo, G., Bellagamba, S., Kato, T. A., & Volpe, U. (2022). Sex-differences in hikikomori traits as predictors of problematic internet use in Italian university students. *Journal of Psychiatric Research*, 155, 211–218. <https://doi.org/10.1016/j.jpsychires.2022.08.015>
- Page, M. J., McKenzie, J. E., Bossuyt, P. M., Boutron, I., Hoffmann, T. C., Mulrow, C. D., Shamseer, L., Tetzlaff, J. M., Akl, E. A., Brennan, S. E., Chou, R., Glanville, J., Grimshaw, J. M., Hróbjartsson, A., Lalu, M. M., Li, T., Loder, E. W., Mayo-Wilson, E., McDonald, S., . Moher, D. (2021). The PRISMA 2020 statement: An updated guideline for reporting systematic reviews. *BMJ*, 372, n71. <https://doi.org/10.1136/bmj.n71>
- Park, S. M., Joo, M. J., Lim, J. H., Jang, S.-Y., Park, E.-C., & Ha, M. J. (2025). Association between hikikomori (social withdrawal) and depression in Korean young adults. *Journal of Affective Disorders*, 380, 647–654. <https://doi.org/10.1016/j.jad.2025.03.125>
- Pascual-Sanchez, A., Jenaro, C., & Montes, J. M. (2020). Understanding social withdrawal in euthymic bipolar patients: The role of stigma. *Psychiatry Research*, 284, Article 112753. <https://doi.org/10.1016/j.psychres.2020.112753>
- Psychogiou, L., Ahun, M. N., Boivin, M., Tremblay, R. E., Orri, M., & Côté, S. M. (2022). The mediating role of adolescents' loneliness and social withdrawal in the association between maternal depressive symptoms and suicidality in adolescence: A 20-year population-based study. *Development and Psychopathology*, 34(3), 1045–1053. <https://doi.org/10.1017/S0954579420001753>
- Pupi, V., Bressi, C., Porcelli, P. M., Rossetti, M. G., Bellani, M., Trabacca, A., Brambilla, P., & Delle Fave, A. (2025). Hikikomori (prolonged social withdrawal) and co-occurring psychiatric disorders and symptoms in adolescents and young adults: A scoping review. *Comprehensive Psychiatry*, 138, Article 152573. <https://doi.org/10.1016/j.comppsy.2024.152573>
- Santona, A., Lionetti, F., Tognasso, G., Fusco, C., Maccagnano, G., Barreca, D., & Gorla, L. (2023). Sensitivity and Attachment in an Italian Sample of Hikikomori Adolescents and Young Adults. *International Journal of Environmental Research and Public Health*, 20(12), Article 6148. <https://doi.org/10.3390/ijerph20126148>
- Schmidt, L. A., & Poole, K. L. (2020). Adaptive Shyness: Multiple Perspectives on Behavior and Development. *Adaptive Shyness: Multiple Perspectives on Behavior and Development*, 1–327. <https://doi.org/10.1007/978-3-030-38877-5>
- Smith, R., Wuthrich, V., Johnco, C., & Belcher, J. (2021). Effect of Group Cognitive Behavioural Therapy on Loneliness in a Community Sample of Older Adults: A Secondary Analysis of a Randomized

- Controlled Trial. Clinical Gerontologist, 44(4), 439–449. <https://doi.org/10.1080/07317115.2020.1836105>
- Teo, A. R., & Gaw, A. C. (2010). Hikikomori, a Japanese culture-bound syndrome of social withdrawal? A proposal for DSM-5. *Journal of Nervous and Mental Disease*, 198(6), 444–449. <https://doi.org/10.1097/NMD.0b013e3181e086b1>
- Teo, A. R., Nelson, S., Strange, W., Kubo, H., Katsuki, R., Kurahara, K., Kanba, S., & Kato, T. A. (2020). Social withdrawal in major depressive disorder: a case-control study of hikikomori in japan. *Journal of Affective Disorders*, 274, 1142–1146. <https://doi.org/10.1016/j.jad.2020.06.011>
- Thomas, J., & Harden, A. (2008). Methods for the thematic synthesis of qualitative research in systematic reviews. *BMC Medical Research Methodology*, 8, 45. <https://doi.org/10.1186/1471-2288-8-45>
- Tranfield, D., Denyer, D., & Smart, P. (2003). Towards a methodology for developing evidence-informed management knowledge by means of systematic review. *British Journal of Management*, 14(3), 207–222. <https://doi.org/10.1111/1467-8551.00375>
- Verhagen, M., Derks, M., Roelofs, K., & Maciejewski, D. (2023). Behavioral inhibition, negative parenting, and social withdrawal: Longitudinal associations with loneliness during early, middle, and late adolescence. *Child Development*, 94(2), 512–528. <https://doi.org/10.1111/cdev.13874>
- Villani, E. R., Vetrano, D. L., Damiano, C., Paola, A. D., Ulgiati, A. M., Martin, L., Hirdes, J. P., Fratiglioni, L., Bernabei, R., Onder, G., & Carfi, A. (2020). Impact of COVID-19-Related Lockdown on Psychosocial, Cognitive, and Functional Well-Being in Adults With Down Syndrome. *Frontiers in Psychiatry*, 11, Article 578686. <https://doi.org/10.3389/fpsyt.2020.578686>
- Watabe, M., Kubo, H., Horie, K., Katsuki, R., Yamakawa, I., Sakamoto, S., & Kato, T. A. (2022). Effects of COVID-19 on Mental Health in Business: Increasing the Hikikomori-Like Workers in Japan. *COVID-19 and the Evolving Business Environment in Asia: The Hidden Impact on the Economy, Business and Society*, 189–204. https://doi.org/10.1007/978-981-19-2749-2_10
- Wu, A. F.-W., Catmur, C., Wong, P. W. C., & Lau, J. Y. F. (2020). The presence, characteristics and correlates of pathological social withdrawal in Taiwan: An online survey. *International Journal of Social Psychiatry*, 66(1), 84–92. <https://doi.org/10.1177/0020764019882724>
- Wu, A. F.-W., Chou, T.-L., Catmur, C., & Lau, J. Y. F. (2023). Understanding the links between self-concept, sociocultural deviance and mental health problems in pathological social withdrawal. *Current Psychology*, 42(7), 5290–5296. <https://doi.org/10.1007/s12144-021-01865-7>
- Yokotani, K., Takano, M., Abe, N., & Kato, T. A. (2025). Predicting social anxiety disorder based on communication logs and social network data from a massively multiplayer online game: Using a graph neural network. *Psychiatry and Clinical Neurosciences*, 79(5), 274–281. <https://doi.org/10.1111/pcn.13804>
- Zhu, S., Lee, P. H., & Wong, P. W. C. (2021). Investigating prolonged social withdrawal behaviour as a risk factor for self-harm and suicidal behaviours. *BJPsych Open*, 7(3), Article e90. <https://doi.org/10.1192/bjo.2021.47>