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Registered but invisible: how DOI registration agency choice hides a national research literature from international discovery

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Research Article

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Abstract

International discovery and citation tools are built on a single metadata graph, and work registered outside it can be invisible to readers who never learn it exists. This study tests whether that is happening, and by what mechanism, for Japanese-language nursing literature on clinical placement. CiNii Research (Japanese, n = 207) and PubMed/MEDLINE (English, n = 184) were searched in April 2026 for 2006–2026 using translation-equivalent term sets. Of the 207 Japanese records, 87 (42.0%) carry a digital object identifier (DOI), but 79 are registered with the Japan Link Center rather than Crossref; only eight (3.9%) appear in the Crossref metadata graph, against 179 of 184 (97.3%) internationally (odds ratio 766, 95% CI 257–2,281), and none of the eight has a recorded citation. Identifier coverage rose from 34.8% (2006–2010) to 61.7% (2021–2026), but Crossref registration did not follow: only seven of the 47 most recent records (14.9%) are Crossref-registered. The literature is missing from discovery infrastructure not for lack of identifiers, but because those identifiers sit with an agency international tools do not query. A secondary, illustrative content analysis compares what each literature studies: six of nine coded themes differed between corpora (Fisher's exact test, Holm-corrected), Japanese work concentrating on instructor role and pedagogy, international work on students' relational experience; the contrast reproduced under independent English-language reclassification and did not narrow over two decades. Registration-agency choice, not content or quality, is the more tractable barrier to cross-language discoverability, with implications for journal, repository and DOI-agency coordination.

1. Introduction

Research reaches its readers through the literature they can find, and what they can find is determined by infrastructure they do not see. If a body of work is partial in ways its readers cannot detect, the decisions built on it will be partial in the same ways, and nothing within that literature will reveal the omission. This study examines one such case in detail. Clinical placement is central to pre-registration nursing education: it is where students meet patients, and where the relationship between students and those who supervise and assess them bears on their learning behaviour and professional identity. That relationship also has a negative dimension, ranging from discourtesy and exclusion (incivility) to bullying, harassment and violence (Griffin, 2004; Clark, 2013). What educators believe about it shapes how they prepare students, how they brief supervisors, and what they treat as a reportable problem, and those beliefs are formed from research.

The international evidence is substantial. A meta-analysis reports a high global prevalence of bullying during clinical practice (Zhou et al., 2024); a qualitative study describes how students experience it (Amoo et al., 2021). Studies illustrate its forms, from horizontal violence by qualified staff (Curtis et al., 2007) to an unresponsive mentor (Jack et al., 2018) and bullying experienced as inescapable (Minton & Birks, 2019). Students frequently do not report it (Yang et al., 2024); reviews situate such encounters in organisational conditions rather than in individual misconduct (Goh et al., 2022), psychological safety being the recurring lens through which the relationship is read (Edmondson, 1999). Taken together this

literature has largely settled on the student's experience as its object: what students perceive, what they endure, and what conditions make either better or worse.

That literature is not, however, the whole of what has been written on the relationship. A parallel body of work exists in Japanese, and the question this study begins from is not what it contains but whether an international reader could find it at all. Of the 207 Japanese-language records examined here, 87 carry a persistent identifier, yet only eight appear in the metadata graph on which international discovery and citation tools are built. A literature can be properly identified, correctly citable in its own registration graph, and still be invisible to the readers most likely to benefit from it.

2. Background

This evidence base is not equally available to everyone. Educators design placements from the evidence they can read, and that evidence reaches them largely in their own working language. Much nursing-education research is published nationally and is effectively invisible across the language boundary: Japanese-language research, indexed in CiNii Research rather than PubMed, is a case in point. Restricting evidence syntheses to English rarely alters their effect estimates (Nussbaumer-Streit et al., 2020); what is at stake here is prior to that — which topics are studied at all, and whether that work can be found (Amano et al., 2023). If the two literatures have concentrated on different aspects of placement, educators in each setting may work from a partial evidence base without knowing which parts are missing, and no amount of pooling within one language will reveal the omission. Bibliometric comparison of national research profiles is an established way of examining such differences (Thelwall & Mas-Bleda, 2020; Park et al., 2025). A search of CiNii Research, PubMed and Crossref returned no prior comparison of these two literatures (Kondo et al., 2024).

Database coverage is itself an established object of scientometric study, and the present analysis sits within that tradition rather than beside it. Comparisons of what the major indexes contain have repeatedly shown that coverage is neither complete nor neutral. It varies by discipline across 56 databases examined systematically (Gusenbauer, 2022), by document type and citation level (Martín-Martín et al., 2018), and by reference completeness even among the large open indexes (Culbert et al., 2025). Language is one of the dimensions along which it varies. The social sciences and humanities have long been recognised as the case where national-language publishing is least well represented in citation indexes (Sivertsen & Larsen, 2012). The identifier layer beneath those indexes has been examined less often, though errors and gaps in DOI indexing are documented (Franceschini et al., 2015). Recent work has begun to benchmark metadata consistency across databases rather than mere presence (Chen et al., 2026). What has not been asked, to our knowledge, is whether a national-language literature that has adopted persistent identifiers is thereby present in the graph those identifiers are assumed to populate.

The Japanese-language literature illustrates what is lost across that boundary. In Japan, placement is supervised jointly by two groups whose roles differ. Academic staff assess students and accompany

them across successive placements, so they see a student develop over time but spend limited time on any one ward. Hospital-based clinical instructors supervise within their own ward alongside a full clinical workload, so they see the student in the work but not across the programme, and they are usually not the person awarding the grade. The division differs from arrangements in which a single named mentor or preceptor both supervises and assesses. Implications addressed to one group therefore do not automatically apply to the other: advice about assessment relationships speaks to academic staff, advice about teaching in the flow of clinical work speaks to instructors. A substantial Japanese-language literature examines how these supervisors teach (Suzuki & Shiramizu, 2026; Iwasaki & Kajitani, 2025; Tsumesaka & Muranaka, 2020; Kawashima & Baba, 2020); a parallel literature documents violence and harassment directed at students, most of it from patients (Nagae & Watanabe, 2010; Morino, 2014; Okajima, 2024), and sexual harassment (Tomioka et al., 2024).

The consequence is asymmetric. International nursing research has examined what enables and constrains the student–staff relationship on placement, how supervisor behaviour bears on student wellbeing, and how mentors work with linguistically diverse students (Shahsavari et al., 2013; Oikarainen et al., 2018; Rebeiro et al., 2021; Juan et al., 2023), drawing on English-language sources. Japanese work on the same relationship is not cited in that literature, and the question of whether it would have anything to add has not been asked, because asking it requires first knowing what that literature contains.

3. The Study

This study examines the Japanese-language and international literatures on clinical placement for 2006–2026, asking first whether they are equally reachable and then what each contains. Three questions follow. First, is the Japanese-language work reachable by readers outside Japan through the discovery infrastructure they use, and if not, what mechanism accounts for that? Second, do the two literatures distribute their attention across the same aspects of the placement relationship, and do they differ in how far they address harm to students and in the source of that harm? Third, is any such difference stable over time? The study is exploratory and descriptive: it characterises what has been published, and does not adjudicate the conduct of any group or test a prespecified hypothesis.

4. Methods

4.1 Design

This is a cross-sectional bibliometric study combined with thematic content charting. The design was chosen because the question concerns the distribution of research attention rather than the effect of any intervention: a synthesis of findings would presuppose that the two literatures address the same questions, which is precisely what is at issue. Bibliometric methods are established in nursing science for exactly this purpose, mapping what a field has and has not studied (Mezquita et al., 2024), and the approach has precedent in the nursing literature (Železnik et al., 2017; Kantek & Yesilbas, 2020). Reporting adheres to BIBLIO, the reporting guideline for bibliometric reviews of the biomedical literature

(Montazeri et al., 2023), and follows established methodological guidance (Donthu et al., 2021). The completed BIBLIO checklist is in Online Resource 5, the record flow in Online Resource 7. Formal critical appraisal was not undertaken and is not applicable: the unit of analysis is the distribution of research topics across a corpus, not the findings of individual studies, and appraising the internal validity of each study would not change which topics the corpus contains. Throughout, ‘Japanese literature’ means Japanese-language literature and ‘international literature’ means English-language literature indexed in PubMed; neither denotes a country.

Transparency about the analytic focus. An earlier iteration classified titles by ‘subject positioning’ — whose perspective a study centred. That rule conflated an instructor-role theme with an instructor-centred perspective, and the asymmetry it reported did not survive re-coding of the semantic subject. The analysis has been withdrawn in full; the present study reports the thematic comparison only.

4.2 Study setting, sampling and data source

Two databases were searched in April 2026 for 2006–2026: CiNii Research (sources: JaLC and CiNii Articles) for Japanese-language literature, and PubMed/MEDLINE for international literature. To avoid biasing the comparison through asymmetric term selection, translation-equivalent term sets covering the population, the placement setting, and the relationship with its negative and positive dimensions were applied to both. Every record returned within the topical boundary was analysed, so the corpora are complete enumerations of what the searches retrieved rather than samples drawn from them. No sampling fraction or sample-size calculation therefore applies, and the precision of each comparison is fixed by the size of the retrieved corpora. Full search strings and record counts are in Online Resource 1. Because the interfaces differ, term equivalence does not guarantee search equivalence; a search-level sensitivity analysis is a priority for future work (Section 6.8). Classification-vocabulary equivalence is tested in Section 5.4.

4.3 Inclusion and exclusion criteria

Two points must be distinguished. First, the search strings define the topical boundary of each corpus. The third concept block (Online Resource 1) requires a record to mention the relationship or one of its dimensions, so neither corpus samples placement research at large; records about placement that do not name the relationship fall outside both. The comparison is therefore between two literatures on the placement relationship, not between two literatures on placement. Second, within that boundary no topic-level screening was applied. Records were excluded only for duplication and, in the harm subset, where content-level reading showed the retrieval to be a false positive (Section 5.3). Excluding records on topical grounds would have imposed the reviewer’s own topic model on the object of study, which is precisely what the comparison sets out to measure.

4.4 Record flow

Deduplication was performed on titles and bibliographic metadata by the author. From CiNii, 210 records were retrieved and three were removed as duplicates: one record duplicated from the National Diet

Library, one institutional-repository double registration, and one DOI-version double registration. This left 207. From PubMed, 184 records were retrieved with no duplicates. No record was excluded on topical grounds (Section 4.3). Full text was sought but not obtained for two Japanese records, both harassment surveys, whose source of harm was therefore coded as unspecified. The record flow is shown in Online Resource 7.

4.5 Data collection and charting

Charted items were database, title, authors, journal, publication year and identifiers. Author counts are not analysed: CiNii truncates the author field at three names, so team size cannot be compared across the corpora. Nine themes were derived inductively from an initial reading of the corpus titles, then operationalised as explicit term sets: positive or supportive supervision; the negative dimension (incivility, bullying, harassment, violence); relationship and psychological safety; communication as a student skill; stress, anxiety and burnout; instructor role and pedagogy; professional socialisation and identity; learning environment; and COVID-19 and remote placement. Each set was built so that its Japanese and English members name the same concept rather than translate one another word for word, and the sets were fixed before any comparison was run. No protocol was registered and the categories came from the corpus they were then used to compare, so the analysis is exploratory (Section 6.9). Term sets are in Online Resource 2, the classified dataset in Online Resource 3.

A second coder, blinded to the first coder's classifications and to the hypotheses, independently applied the same nine themes to a random 20% sample of each corpus (Japanese n = 41, international n = 37). The seed was fixed, so the selection is reproducible; the coder worked from the instruction sheet in Online Resource 6. The coder was told to mark every theme a title touches on, that more than one theme or none could be marked, and to judge from the words present rather than infer topics a title does not name; specialist nursing knowledge was not required. Agreement was 95% (Cohen's kappa = 0.71, 95% confidence interval, CI, 0.61–0.81). Disagreements were resolved by discussion.

Themes are not mutually exclusive and not exhaustive: a record may match several or none. Here, 8.7% of Japanese and 20.1% of international records matched more than one theme, and 38.6% and 40.8% respectively matched none. The unmatched records largely concern aspects of placement outside the relationship as defined here: clinical competencies, teaching materials, curriculum evaluation, and students' relationships with patients.

Because title-level classification cannot determine the content of a study, the classifications underpinning the claim about the negative dimension were verified at content level for every record in that subset (n = 27). This subset was singled out because it carries the claim most open to misreading, namely who harms students, and because a keyword false positive there would be more consequential than elsewhere. Abstracts were retrievable via Crossref for seven of the 16 international records; for the rest the source record was consulted directly. The source of harm (instructor, preceptor or staff nurse, patient, peer, or unspecified) was coded from the text, and where it could not be established it was

coded as unspecified rather than inferred from the setting or the likely reading of the title (Online Resource 4).

4.6 Data analysis

For each theme, the proportion of records matching it was compared between corpora by two-sided Fisher's exact test. Odds ratios (OR) and 95% CI use the Haldane–Anscombe correction throughout, so that comparisons with and without a zero cell are estimated on the same basis; proportions are given with Wilson intervals. Three families of tests carry adjusted p values — the thematic comparison, the cross-language replication and the temporal interaction — with the Holm procedure applied within each family and not across them. The regression coefficients in Section 5.1, the term-set sensitivity re-tests in Section 5.4 and the single comparison in Section 5.6 are individual tests, reported unadjusted. Precision was fixed by the corpus sizes rather than chosen. For a theme matched by 5.3% of the Japanese corpus, the design had 80% power at the 5% level to detect an international proportion of 13.4% or more, equivalent to an odds ratio of about 2.75. Smaller differences on the least frequent themes were therefore not detectable. The test conditions on the margins while the intervals are Wald-type with a continuity correction, so the two rest on different frameworks. Re-estimating every theme by conditional maximum likelihood with exact conditional intervals left every contrast in the same direction, and every interval on the same side of 1. The largest change in any point estimate was 0.73 (Online Resource 8, Part D).

Annual output was modelled by Poisson regression with a database-by-year interaction; overdispersion was assessed by the Pearson chi-square to degrees-of-freedom ratio and the model refitted as negative binomial. Scripts are deposited (Section 4.8).

4.7 Validation and reliability

Five checks are reported in Section 5.4: validation of title-assigned themes against retrievable abstracts, comparison of the proportion of each corpus matching any theme, stratification by publication type, removal of theme terms that also appear in the search strings together with deliberate widening of two term sets, and reclassification of abstracts in place of titles. The outputs of the two abstract-based checks are in Online Resource 8, Part F. Three further analyses appear in Sections 5.4 to 5.6: reclassification by English title, a database-by-period interaction test, and an identifier and citation audit (Online Resource 8, Parts A–C). Two sensitivity analyses supporting the statistical and design choices are in Online Resource 8, Parts D and E.

4.8 Ethical considerations and data availability

The study used only publicly available bibliographic data. It involved no human participants, no intervention and no personally identifying information beyond the authorship of published works, so institutional ethics review was not applicable and no informed consent was sought. The second coder took part voluntarily, was informed of how the coding would be used, and is acknowledged in the Declarations section rather than named here. Records are discussed as published works and no

inference is drawn about any individual author, institution or student. All materials underpinning the analysis are openly available (see the Data availability statement).

Use of artificial intelligence in the methods. A large language model assisted with retrieving bibliographic metadata through the Crossref and CiNii Research application programming interfaces and with writing and running the Python scripts that produced the statistical results and figures; full disclosure is given in the Declarations section. No generative tool created, altered or retouched any image: every figure was rendered deterministically by those scripts from the deposited dataset and can be regenerated from it. The search strategies, retrieval decisions, thematic definitions, content coding and interpretations were determined by the author, who reviewed and edited all output and is fully responsible for the accuracy of the content.

5. Results

5.1 Characteristics of the corpus

391 records were charted: 207 from CiNii Research and 184 from PubMed/MEDLINE (Table 1; Online Resource 7). No record appears in both corpora: identifiers were compared across all records and titles across the 98 Japanese records carrying an English title (Online Resource 8, Part A). One CiNii record lacked a publication year, so year-based analyses used 390 records. Output is expressed as records per year because the final period is truncated. Japanese output peaked in 2011–2015 (13.6 per year) and then fell (full series: 9.2, 13.6, 9.0, 8.8), whereas international output rose without interruption (3.0, 4.4, 11.8, 16.5), first exceeding Japanese in 2016–2020 (Fig. 1).

The two trajectories differ in kind, not only in level. Over 2006–2025 international output grew by about 13% per year (incidence rate ratio, IRR, 1.126), whereas Japanese output was flat (IRR 0.988, 95% CI 0.965–1.012; $p = 0.329$). The ratio of annual rates is 1.14 (95% CI 1.10–1.18; $p < 0.001$). Counts were not overdispersed (Pearson $\chi^2/df = 0.88$) and a negative binomial refit gave an almost identical interaction (IRR 1.148). The direction held across four period windows and when 2020, 2021 or 2022 was omitted.

5.2 Thematic comparison

The two literatures differed in prevalence on six of the nine themes, each difference surviving Holm correction (Table 2; Fig. 2).

Japanese research more often addressed instructor role and pedagogy (64 records, 30.9%, 95% CI 25.0–37.5, vs 27 records, 14.7%, 95% CI 10.3–20.5; OR 2.57, 95% CI 1.56–4.25; $p = 0.001$) and students' communication skills (31, 15.0%, vs 4, 2.2%; OR 7.16, 95% CI 2.61–19.64; $p < 0.001$).

International research more often addressed the learning environment (1, 0.5%, vs 16, 8.7%; OR 0.07, 95% CI 0.01–0.40; $p < 0.001$), relationship and psychological safety (8, 3.9%, vs 26, 14.1%; OR 0.25, 95% CI 0.11–0.57; $p = 0.003$), professional socialisation and identity (3, 1.4%, vs 17, 9.2%; OR 0.16, 95% CI 0.05–

0.53; p = 0.004) and stress, anxiety and burnout (6, 2.9%, vs 20, 10.9%; OR 0.26, 95% CI 0.10–0.64; p = 0.008).

For three themes the confidence interval was compatible with no difference: positive or supportive supervision (11, 5.3%, vs 20, 10.9%; OR 0.47, 95% CI 0.22–1.00; p = 0.178); COVID-19 and remote placement (10, 4.8%, vs 6, 3.3%; OR 1.46, 95% CI 0.54–3.96; p = 0.463); and the relationship's negative dimension (11, 5.3%, vs 16, 8.7%; OR 0.60, 95% CI 0.27–1.30; p = 0.463), the most consequential. A difference of the size observed here was below what the design could detect: 80% power required an international proportion of 13.4% or more against the Japanese 5.3% (Section 4.6), and the observed figure was 8.7%. The interval admits differences in either direction and equivalence cannot be claimed (Online Resource 8, Part C).

The two corpora also differ in how themes combine. In the Japanese corpus the most frequent combination joined positive supervision with instructor role (six records), two aspects of the supervisor's work; internationally it joined relationship and psychological safety with stress and burnout (seven records), followed by relationship with the learning environment (four), aspects of the student's experience. The hub differs as well as the pairs: in the international corpus relationship and psychological safety is the theme that most often appears alongside another, whereas in the Japanese corpus that position is held by instructor role and pedagogy. Ten distinct theme pairs occur in the Japanese corpus and twenty in the international one, of thirty-six possible. Counts are small and no test is applied; the structure is reported descriptively (Online Resource 8, Part E).

5.3 Source and nature of the negative dimension

All 27 records matching the negative-dimension theme (11 Japanese, 16 international) were examined at content level. One international record concerned students' attitudes towards domestic violence — a clinical topic rather than harm to students — and was excluded as a keyword false positive, leaving 15.

The source of harm differed (Fig. 3; Online Resource 4). In the Japanese corpus, six of 11 records concerned patient-perpetrated violence, reported as verbal abuse, as physical and psychological violence and, in one record, as sexual remarks. None identified an instructor or staff member as the source. In the remaining five the source could not be established from the retrievable record and was coded as unspecified rather than inferred. In the one record where instructors and teachers appear in a role of their own, they do so as the people who gave students advice after the event. Internationally, six of 15 records identified staff nurses, clinical instructors or mentors as the source, two identified patients, and in seven the source was unspecified. The two corpora therefore describe harm arriving from opposite directions in the same setting, one from the people being cared for and the other from the people doing the caring.

The two topics rarely meet. Of the 11 Japanese records addressing harm, one also matched the instructor role and pedagogy theme; of the 16 records matching the harm theme internationally, none did.

5.4 Validation and reliability

Five checks support the classification; the abstract-level outputs are in Online Resource 8, Part F and the cross-language replication in Online Resource 8, Part B. First, title-assigned themes were checked against the abstracts of the 85 international records with a retrievable abstract; all 69 title-based assignments were confirmed (precision 1.00 at term level). This does not test whether the term refers to the target construct: content-level verification of the negative-dimension subset found one record in which harm terms referred to a clinical topic, giving construct-level precision of 26 of 27. Recall was 0.30 overall, ranging by theme from 0.67 (stress and burnout) down to 0.12 (socialisation and identity).

Second, the proportion matching at least one theme was similar (Japanese 127/207, 61.4%; international 109/184, 59.2%), so the two corpora were not differently exhausted by the scheme and the contrast cannot be explained by the categories fitting one literature better than the other.

Third, of the 69 Japanese records carrying journal metadata, 64 could be assigned a publication type by inspection of the journal title, and proportions were similar in peer-reviewed articles (n = 48) and bulletins and proceedings (n = 16): 33.3% versus 31.2% for the instructor theme. Five titles could not be assigned by inspection. To assign those five without further judgement, the same 69 records were also classified by a mechanical rule applied to the journal field, which is reproducible from the deposited data; it classes 54 as peer-reviewed and 15 as bulletins or conference material. The two rules were built independently and do not label every record alike, yet neither finds a thematic difference between publication types: under the mechanical rule the instructor theme stands at 31.5% against 33.3%, and no theme differs at the 5% level (Online Resource 8, Part E). A confound that two independent classifications fail to produce is unlikely to be generating the result.

Fourth, because some theme terms also appear in the search strings, a theme could in principle be inflated by the retrieval itself; 24% of the Japanese and 21% of the English theme terms overlap in this way. Removing the overlapping terms preserved the direction for seven of nine themes. The exception was the Japanese communication theme, which fell from 15.0% to zero while the same theme internationally was unaffected (2.2%). The Japanese search block names communication explicitly and the English one does not, so that contrast should be read as conditional on the search. It is the one finding in the thematic comparison that we would not defend without the cross-language replication reported below, which recovers it independently. Widening two term sets had opposite effects. The instructor theme rose to 35.7% and 15.2%, with the direction preserved (OR 3.06, 95% CI 1.88–5.00). Adding the verbal noun kakawari raised the Japanese relationship figure from 3.9% to 7.7%, narrowing the difference from 14.1% (OR 0.52, 95% CI 0.27–0.99; unadjusted p = 0.049). Relationship is the only theme materially affected by vocabulary.

The fifth check returns to the abstracts. Classifying them rather than titles for the 85 records with a retrievable abstract raised theme prevalence by an average factor of 3.6 (1.5 to 8.3 by theme; Spearman ρ between the rank orders 0.58). Japanese abstracts were not retrievable, so the effect can only be

bounded (Online Resource 8, Part F). Inflating the international counts by their observed factors while holding the Japanese at title-based values preserves the direction for seven of nine themes and five of the six that survived correction.

Reliability was separately tested by double coding (Section 4.5); agreement did not differ between the Japanese and English halves (kappa 0.70 and 0.72). Seven themes reached kappa above 0.70 and five reached 0.85 or above; two did not — instructor role and pedagogy (0.37) and learning environment (0.38, resting on two assignments by the first coder and three by the second, so uninformative). Disagreements were systematic in both directions: the rule assigned the theme to nine records in which instructors appeared as respondents rather than as the object of pedagogical study, the second coder to 11 records on nursing education more broadly. Because this theme carries the largest difference, its measurement is the least secure.

A cross-language replication was possible for the 98 Japanese records (47.3%) whose CiNii metadata includes a publisher-supplied English title. Applying the English term sets — those used for the international corpus — to these titles reproduced the direction of the difference for all nine themes. Instructor role and pedagogy remained more frequent in the Japanese subset (28.6% vs 14.7%; OR 2.32, 95% CI 1.28–4.20; adjusted p = 0.049), as did communication as a student skill (12.2% vs 2.2%; OR 5.80, 95% CI 1.91–17.55; p = 0.008), while learning environment remained absent (0% vs 8.7%; p = 0.014). The subset is not representative, and its bias runs against the finding: records with an English title are more often in society journals (24.5% versus 10.1%) and more often carry an identifier (58.2% versus 27.5%), yet match the instructor theme less often (24.5% versus 36.7%). The replication is conservative, and tests the equivalence of the classification vocabulary, not of the searches.

5.5 Temporal trends

Thematic emphases shifted over time (Fig. 1). Internationally, stress and burnout, relationship and psychological safety, and professional socialisation rose in the two most recent periods; in the Japanese literature, instructor role and pedagogy remained largest throughout while communication declined.

Whether the contrast is narrowing was tested by adding a database-by-period interaction to a logistic model for each theme. No interaction survived Holm correction within this family (smallest adjusted p = 0.155); for instructor role and pedagogy there was no indication of interaction (p = 0.637). Over two decades there is no evidence of convergence, and the contrast is not an artefact of any single period (Online Resource 8, Part C).

5.6 Visibility in the international citation infrastructure

Of the 207 Japanese-language records, 87 (42.0%) carry a digital object identifier, but 79 are registered with the Japan Link Center rather than Crossref. Japanese records carry no DOI in the CiNii export, so each record’s CRID was resolved against the CiNii Research JSON-LD endpoint and the identifier read from the returned metadata. Each identifier was then queried for its registration agency and, where present, for its Crossref citation count (Online Resource 8, Part A). The distinction matters because the

two are registration agencies for the same identifier system but maintain separate metadata graphs. A work registered with one agency resolves correctly from its identifier, yet its references and citations are recorded in that agency's graph and are not visible to tools built on the other. Only eight Japanese records (3.9%) are present in the Crossref metadata graph, and none of those eight has a recorded Crossref-indexed citation. Of the 184 international records, 179 (97.3%) are present in Crossref, with a median of 15 recorded citations (maximum 234; 4,562 in total). The difference in Crossref presence is 93.4 percentage points (OR 766, 95% CI 257–2,281). The citation comparison rests on the eight Japanese records present in Crossref and is correspondingly weak (Online Resource 8, Part A).

The gap is not closing as identifiers become more common. Digital object identifier coverage in the Japanese corpus rose from 34.8% of records published in 2006–2010 to 61.7% of those published in 2021–2026. Crossref registration did not track that rise. None of the 46 records from 2006–2010, and only one of the 45 from 2016–2020, is Crossref-registered, against seven of the 47 most recent records (14.9%) in 2021–2026 (Online Resource 8, Part A). Even at its highest observed rate, Crossref registration among identified Japanese records remains an order of magnitude below the international corpus's 97.3%. Increasing identifier adoption in the source database, on present trends, would not on its own close the visibility gap; it would produce more identifiers registered with an agency that international discovery tools do not query.

This study's own reference list illustrates the mechanism directly rather than only in aggregate. Eight of the 35 works cited are Japanese-language sources with a digital object identifier. Querying the Crossref registration-agency endpoint for each of the eight found seven registered with the Japan Link Center. Each of those seven returns HTTP 404 from the Crossref works endpoint, meaning Crossref holds no metadata record for it. The DOI itself resolves without error through the identifier's home registration agency. The eighth, registered with Crossref, resolves and returns metadata normally. A reader who tried to trace this manuscript's own citations using only Crossref-built tools would find seven of its eight Japanese sources unretrievable by DOI lookup, not because the identifiers are broken, but because they were never registered where those tools look.

6. Discussion

6.1 Principal finding: identifiers exist, but not where discovery tools look

The Japanese-language literature on clinical placement is not absent from international discovery infrastructure for want of persistent identifiers. Nearly half of the corpus (42.0%) carries a digital object identifier, a proportion that has risen steadily over two decades (Section 5.6). What it lacks is registration with the agency that Crossref-built discovery and citation tools query: 79 of the 87 identified records are registered with the Japan Link Center, a separate metadata graph that resolves identifiers correctly but does not feed those tools. The distinction between having an identifier and being discoverable through it is not a technicality; it is the entire finding. A reader outside Japan who searches Crossref-backed

literature will not encounter this work, will receive no error or gap in the search interface signalling that something is missing, and has no reason to suspect the omission.

Crossref registration is not the only route to a document, and this study does not claim otherwise. A reader who already knows a Japanese record exists can reach it through CiNii Research, through a general web search, or through the identifier itself, which resolves correctly whichever agency registered it. What registration in that graph governs is not retrieval of a known item but discovery of an unknown one. Reference lists, citation counts, recommendation systems and the search interfaces built on the graph cannot surface a work for which they hold no record. The effect is not confined to Crossref itself. OpenAlex, which builds on Crossref metadata, returns a record for Crossref-registered Japanese items in this corpus but none for those registered with the Japan Link Center. A literature absent from the one graph is absent from the tools built on it.

The mechanism is structural rather than a lag that adoption will close. Identifier coverage in the Japanese corpus rose from 34.8% (2006–2010) to 61.7% (2021–2026), yet Crossref registration barely moved: from zero records before 2016 to seven of 47 (14.9%) in the most recent period, still an order of magnitude below the international corpus's 97.3%. Continued growth in identifier adoption, on present trends, would not close this gap; it would produce more records correctly identified but still invisible to the tools most readers use. This study's own reference list demonstrates the mechanism at the smallest possible scale: of the eight Japanese-language works cited, seven are registered with the Japan Link Center and each returns no metadata record from Crossref, while resolving without error through its home registration agency (Section 5.6).

The gap in volume is widening: international output has grown steadily while Japanese output has not. The thematic contrast, by contrast, is stable (Section 5.5).

The consequence is concrete. A Japanese educator seeking evidence on psychological safety in placement finds eight records in the Japanese corpus, the concept having entered it only recently (Yamaguchi & Matsuda, 2025), against twenty-six internationally; an English-speaking educator seeking evidence on clinical teaching finds the reverse. Neither is short of evidence in general; each is short of evidence on the aspect the other has developed.

One finding corrects an intuition a reader might otherwise form. No difference was detected in how far the literatures address the negative dimension (5.3% vs 8.7%; $p = 0.463$). The comparison is underpowered and cannot establish equivalence, but it rules out the reading that one literature attends to this problem while the other ignores it.

6.2 Why registration-agency choice, and not a lag in adoption

A lag explanation is the natural first hypothesis: perhaps Japanese publishers are simply later adopters of Crossref, and the gap will close as the newest cohorts age into the citation graph. The period-specific

data do not support this. If adoption lagged uniformly, the most recent period would show the international rate approached from below; instead it shows 14.9% against 97.3%, a gap of the same order of magnitude as the earliest period examined. A genuine lag would also predict that once a Japanese journal registers with Crossref, its older back-catalogue is progressively registered too. Pre-2016 Crossref registrations are almost entirely absent among currently-identified records. That pattern points instead to a standing institutional choice — which registration agency a journal or its publishing society uses — which a lag model does not generate.

The Japan Link Center has served as Japan's national DOI registration agency since 2012, operating in close association with J-STAGE, the platform through which most Japanese academic societies publish their journals. Why a given journal registers with one agency rather than the other, or with both, is an institutional and often historical decision that this bibliometric design cannot adjudicate from title-level data alone. What the data show is the consequence rather than the cause: a scholarly record can be properly identified and correctly citable within its home graph, and still sit outside the graph on which the field's dominant international discovery tools are built.

6.3 A secondary, illustrative finding: what each literature studies

The visibility gap is the principal finding because it is general: it would apply to Japanese-language nursing research on any topic, not only clinical placement, and it is adjudicable from registration-agency data alone. A second, more topic-specific comparison was also carried out, asking not whether the two literatures are equally discoverable but what each says once found. This comparison is weaker in two respects that the reader should weigh throughout: it rests on title-level classification rather than full text (Section 6.6), and, unlike the visibility finding, it describes only the clinical-placement literature and may not generalise to Japanese nursing research more broadly. It is reported because, once a reader crosses the visibility boundary, what they find on the other side is itself informative.

6.4 Several explanations, two of them adjudicated by the data

Several explanations are consistent with the contrast; the data adjudicate two of them.

Research traditions differ: Japanese nursing education has an instructor- and pedagogy-centred tradition of inquiry, whereas international scholarship has developed a student-experience one.

Publication ecology differs: the Japanese corpus includes bulletins and proceedings, whereas PubMed indexes predominantly peer-reviewed journals. Among Japanese records whose type could be determined, thematic proportions were similar across types (Section 5.4), and restricting the comparison to peer-reviewed titles preserved the direction of every contrast (Online Resource 8, Part E). The explanation is therefore weakened, though journal metadata are missing for two-thirds of the Japanese corpus.

Database and search factors may contribute: term equivalence is not search equivalence (Section 4.2). Classification-vocabulary equivalence, however, was tested directly and held (Section 5.4), and the proportion of each corpus matching any theme was similar (61.4% versus 59.2%).

A lag explanation — that Japanese research is arriving later at the same questions — predicts convergence, and none was found across two decades (Section 5.5). That leaves an explanation this design cannot test: that the two research communities conceive the placement relationship differently. On one reading it is a teaching problem, whose unit is the supervisor's behaviour and whose remedy is better pedagogy; on the other it is an experience undergone by the student, whose unit is the student's perception and whose remedy is a safer environment. The two are not incompatible, and neither is wrong, but they generate different research questions, different instruments and different implications, and a researcher trained in one will not naturally pose the questions of the other. The co-occurrence structure is consistent with this reading (Section 5.2), though it cannot establish it. Distinguishing a difference in conception from a difference in reporting convention would require reading studies rather than counting them.

6.5 The negative dimension, framed fairly

Where the negative dimension is studied, the literatures locate it differently. Internationally, students' negative experiences are attributed to staff nurses, clinical instructors and mentors and, in some studies, patients (Curtis et al., 2007; Jack et al., 2018; and, for racism specifically, Dafny et al., 2025); in the Japanese corpus they predominantly concern patient-perpetrated violence (Nagae & Watanabe, 2010; Okajima, 2024).

This asymmetry must be read with care: that no Japanese record identified an instructor or staff member as a source of harm is evidence about what has been studied, not what occurs. Several mechanisms could produce a literature that is silent on a problem that exists. A topic may be difficult to fund or to obtain ethical approval for when the potential perpetrators are also the gatekeepers of placement sites. It may be difficult to publish where the readership includes the institutions studied. Students may be reluctant to report to researchers what they are reluctant to report to their programme, and international work finds under-reporting even where the topic is well established (Yang et al., 2024). In five of the 11 Japanese records the source could not be established, two of them paired reports of one survey whose full text we could not obtain. The finding is an absence in the literature, not in practice, and it should not be read as evidence that Japanese placements are free of staff-perpetrated harm.

The balance between positive and negative framings differs less than might be expected. Internationally, records addressing supportive supervision outnumbered those matching the harm theme (20 versus 16, of which 15 concerned harm to students); in the Japanese corpus the two were equal (11 each). Sexual harassment on placement has been reviewed on its own terms (Smith et al., 2023); the present comparison addresses a different question and does not supersede that review.

Two conclusions follow for how the finding should be used. Instructors in both settings are frequently under-prepared for a supervisory role carried alongside a full clinical workload, so framing them as culpable would be unfair. Where the harm students meet comes from patients, preparation for and debriefing after aggression are the priority, not policies written for a different source.

6.6 A methodological caution: keywords are not content

Title-level keyword classification, on which bibliometric comparison commonly relies, can misassign studies: one of 27 records retrieved by harm terms concerned a clinical topic rather than harm to students. Validation against abstracts confirms that theme terms assigned from titles are present in the record; content-level verification shows that presence does not guarantee the term refers to the intended construct. The classification also proved insensitive (recall 0.30), and insensitivity was uneven across themes, from 0.67 to 0.12. A single figure for classification accuracy would therefore have been misleading in both directions: it would overstate the reliability of the themes recovered poorly and understate that of the themes recovered well. One reading of the unevenness, which these data cannot test, is that a title announces what was measured rather than what it was taken to mean. Themes named by a distinctive noun that authors put in titles, such as stress or burnout, are then recovered well; themes that are a study's framing rather than its object, such as professional socialisation, are recovered badly. Studies relying on title matching should report recall by theme, and should verify at content level any subset on which a substantive claim rests, as was done here for the negative dimension.

6.7 What each literature offers the other

The counts show where attention has settled; they do not show what a reader would gain by crossing the boundary. The titles indicate that much, and are worth stating plainly, because a distribution alone gives an educator nothing to act on. Japanese-language work poses questions about the supervisor's conduct that student-experience research seldom frames as questions at all. Which teaching behaviours raise a student's motivation to learn, seen from the perspective of instructors who carry a clinical caseload while they teach (Suzuki & Shiramizu, 2026)? What does the teaching of nursing ethics actually consist of when it is done by ward-based instructors rather than by academic staff (Iwasaki & Kajitani, 2025)? What does a student take to be recognition, and what does being praised by an instructor do to subsequent learning (Kawashima & Baba, 2020; Tsumesaka & Muranaka, 2020)? These are the questions of a supervisor asking how to teach well in the middle of clinical work and under time pressure.

The international literature poses the complementary set, which the Japanese corpus addresses sparsely. What makes a placement environment one in which a student will speak up (Edmondson, 1999; Rebeiro et al., 2021)? What do students perceive as constraining in their dealings with instructors (Shahsavari et al., 2013), and how does instructor behaviour bear on their wellbeing (Juan et al., 2023)? How do mentors work with students whose language and background differ from their own (Oikarainen et al., 2018)? These are the questions of a student asking what the placement is doing to them. Put beside one another, the two sets describe a single relationship from the two positions that constitute it.

Neither set of questions is the more important, and the point is not that either literature is deficient. An educator who has only the Japanese questions will design supervision carefully, and may not think to ask what the student experienced. An educator who has only the international ones will attend closely to the student's experience, and may leave the supervisor without practical guidance on the teaching itself. This is the sense in which we call the two literatures complementary. It is also the limit of what a title-level design can deliver: we can say what each literature asks, because titles carry questions, but we cannot say from this design what answers it reached. A reader who wants those must go to the studies, which is why the Japanese records are cited here by name.

6.8 Implications for journals, repositories and registration agencies

Four implications follow, addressed to the parties best placed to act on them rather than restated as findings.

Dual registration, where feasible, is the direct remedy. A journal already registering with the Japan Link Center could additionally register with Crossref, or the two agencies could establish reciprocal metadata sharing, without requiring authors or existing publications to do anything differently. Either route would be a matter for journals, their host societies and the registration agencies themselves; a bibliometric study can identify the gap but not close it.

Repositories and aggregators that index Japanese-language research, such as CiNii Research itself, could expose the registration-agency field more prominently, so that a record's absence from Crossref is visible to a searcher at the point of discovery rather than silent. The distinction between 'has an identifier' and 'is in the graph this tool queries' is not obvious from a typical search interface, and making it visible would let a reader know to search elsewhere rather than conclude nothing exists.

For readers and reviewers evaluating a national literature's contribution, absence from Crossref-built citation counts and discovery tools should not be read as evidence of absence, low output, or low relevance. This study's own reference list shows the point concretely: seven of its eight Japanese-language sources return no metadata from Crossref, yet all eight are genuine, citable, identifiable works published in named academic-society or institutional journals. A citation count or discovery-tool result restricted to Crossref-indexed sources will systematically undercount contributions from literatures that register elsewhere, and should be reported and interpreted with that limitation stated rather than left implicit.

6.9 Strengths and limitations of the work

Four features invite challenge; our reasoning follows.

Title-based classification. Its limits are quantified in Sections 5.4 and 6.6. *The same procedure was applied to both corpora, so insensitivity affects the level of the counts rather than the direction of the contrast; the percentages in Table 2 are lower bounds. Whether insensitivity is equal in the two corpora could be*

*bounded but not tested, because Japanese abstracts were not retrievable. Two checks bear on it (*Section 5.4*): reclassification by English title, and inflation of the international counts by their abstract-level factors. Both point the same way, but neither replaces a direct test.*

Single investigator. Retrieval, screening and content coding were performed by one person. Theme assignments were double-coded on a 20% sample and agreed substantially (kappa 0.71), with the qualification that the theme carrying the largest contrast in the secondary comparison was the least reliable (kappa 0.37) — disclosed here rather than aggregated away, because it bears directly on the strongest claim that comparison makes. The harm-subset coding was not double-coded. In compensation, the term sets, the classified dataset and the record-level basis for every harm coding are published (Online Resources 2–4), so any reader can re-code the corpus and compare; the classification rule is a published artefact rather than a judgement held by one reader.

Inductive category derivation. The nine themes were derived from the same corpus on which they were then compared, so the analysis is exploratory: the reported intervals describe the contrast within a fixed category set rather than test a prespecified hypothesis, which a confirmatory study would specify in advance.

Reporting standard. BIBLIO is described by its developers as a preliminary guideline setting minimum requirements, and it is newer and less tested than PRISMA. We adopted it because it is the only EQUATOR-listed instrument written for bibliometric work, and because the alternative — reporting against a guideline designed for evidence synthesis — would imply a quality-appraisal step that this design does not contain. The completed checklist (Online Resource 5) records where each item is addressed, so a reader who prefers a different standard can locate the underlying information directly.

*Against these, three features of the design are worth stating. The same instrument was applied to both corpora, rather than an instrument built for one literature and translated for the other. Its equivalence was then tested rather than assumed, by reclassifying the Japanese records that carry a publisher-supplied English title with the English term sets (*Section 5.4*). The corpora are complete enumerations of what the searches retrieved rather than samples, so no selection was exercised after retrieval and the record flow is fully accounted for (Online Resource 7). And every artefact on which the findings rest — the term sets, the classified dataset, the record-level harm coding, the second-coder materials and the analysis scripts — is deposited, so a reader who doubts a classification can change it and see what happens to the result. The design cannot establish why the two literatures differ, but what it does establish can be checked by anyone.*

*Two objections can be anticipated and answered from the deposited materials. That a single database stands for each language is a real constraint on coverage. The claim tested here is not that the corpora are complete: it is that two retrievable bodies of work differ in thematic profile, and that difference survives a change in the language of classification (*Section 5.4*). That the nine themes were built by the investigator would be fatal if the classification could not be checked, but applying the deposited term sets to the deposited titles reproduces all 3,519 record-by-theme judgements exactly, so a reader who disputes a category can redraw it and see what changes.*

The comparison is of two discursive spaces rather than national populations, and each language was represented by a single database. Japanese literature indexed only in Ichushi Web (the Japan Medical Abstracts Society database) was not captured; non-English international work was excluded.

The Japanese literature is compared with the aggregate of all other language communities, not one country.

Japanese expresses some concepts with native verbal nouns rather than Sino-Japanese compounds, and our term sets did not always capture both (Section 5.4). Adding 11 euphemistic terms for harsh supervision yielded no additional record; at title level, euphemism does not appear to hide harm-focused Japanese work.

Abstracts were retrievable for under half the international corpus and for none of the Japanese, which is why the equality of insensitivity across corpora could only be bounded (Section 6.9). The search date of April 2026 truncates the final period.

Crossref-indexed citation counts do not capture citations from works registered with the Japan Link Center, so the asymmetry discussed in Sections 5.6 and 6.1 partly reflects the coverage of the counting instrument. The corpora also differ in publication type — many Japanese records are institutional bulletins, whereas PubMed indexes predominantly peer-reviewed journals — so the thematic contrast reported in Section 6.3 is confounded with type as well as language. Restricting the Japanese corpus to the 54 titles the mechanical rule classes as peer-reviewed (Section 5.4; Online Resource 8, Part E) preserved the direction of all nine contrasts. Communication survived Holm correction within that family and instructor role fell just outside it, which is what the reduction from 207 to 54 records would predict. Publication type therefore does not appear to generate the thematic contrast, although the records without journal metadata leave it incompletely excluded.

6.10 Recommendations for further research

Four extensions would test what this design could not. First, and most directly, the visibility finding invites a controlled test rather than an audit. Registering a sample of existing Japanese records with a Crossref member, then measuring the change in their discovery and citation, would establish whether infrastructure rather than content limits reach. The journals and repositories concerned could act on that answer. Second, the language boundary examined here is one of many; the same registration-agency audit applied to another national-language literature, or to Japanese-language research in a different clinical field, would show whether the pattern found here is specific to nursing or general to research published outside the Crossref-dominant registration ecosystem. Third, a search-level sensitivity analysis would strengthen the secondary, topic-level comparison: the same question should be posed with alternative term sets and, where possible, alternative interfaces, so that term equivalence and search equivalence can be separated (Section 4.2). Fourth, the Japanese corpus in that secondary comparison should be widened beyond CiNii Research to Ichushi Web, whose coverage of Japanese

clinical nursing differs, to see whether the thematic contrast survives a change of database as it survived a change of classification language.

7. Conclusion

This study asked whether Japanese-language nursing research on clinical placement is discoverable through the infrastructure international readers use, and found that it largely is not, for a specific and correctable reason. Of 207 Japanese-language records, 87 (42.0%) carry a digital object identifier, but 79 are registered with the Japan Link Center rather than Crossref. Only eight (3.9%) appear in the Crossref metadata graph, against 97.3% of the international corpus. Identifier coverage has risen over two decades without a corresponding rise in Crossref registration. The literature is properly identified and correctly citable within its own registration graph; it is simply outside the graph that international discovery and citation tools query. A secondary, more topic-specific comparison found that the two literatures also differ in what they study: six of nine coded themes differed between corpora, Japanese work concentrating on instructor role and pedagogy and students' communication skills, international work on students' relational experience. This thematic contrast did not depend on the language of classification and has not narrowed in twenty years, but it describes only the clinical-placement literature examined here and should not be generalised beyond it.

The visibility finding is the more general one. It would apply to Japanese-language nursing research on any topic, because it concerns registration infrastructure rather than content. The mechanism it identifies — a properly identified record sitting outside the metadata graph that discovery tools query — is neither a quality problem nor one specific to this literature or this field. It is a problem journals, repositories and registration agencies can act on directly, through dual registration, clearer disclosure of which agency a journal uses, or better exposure of registration status in discovery interfaces. Content or quality is not the barrier this study found; where a record is registered is.

Declarations

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Competing Interests

The author declares no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Ethics Approval

The study used only publicly available bibliographic data and did not involve human participants, so institutional ethics review was not applicable and no informed consent was sought.

Consent to Participate

Not applicable.

Consent for Publication

Not applicable.

Data Availability

To support reproducibility, the complete classified dataset, the theme term sets, the record-level harm-subset coding, the second-coder reliability materials, the identifier and citation audit, the abstract-level validation, the estimator sensitivity and publication-type analyses, and the analysis and figure-generation scripts are openly available in a public repository: Zenodo, https://doi.org/10.5281/zenodo.21868098 (CC BY 4.0). Applying the deposited term sets to the deposited dataset reproduces every count reported in the manuscript, with one exception: the identifier and citation figures in Section 5.6 and the abstract-level validation figures in Section 5.4 were retrieved from live services in August 2026 and are deposited as dated snapshots, because the underlying records change over time and cannot be reproduced from a static dataset.

Author Contributions

Hiroyuki Tajima is the sole author and is responsible for all aspects of this work: conceptualization, methodology, investigation, formal analysis, data curation, visualization, and writing (original draft and review and editing).

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Use of Generative AI and AI-Assisted Technologies

A large language model was used during the preparation of this work to assist with retrieving bibliographic metadata through the Crossref and CiNii Research application programming interfaces, and with writing and running the Python scripts that produced the statistical results and the figures from the analysed data. No generative AI was used to create, alter, enhance or retouch any image: every figure was rendered deterministically by those scripts from the dataset deposited in the repository, and can be regenerated from it. All search strategies, retrieval decisions, thematic definitions, content coding and interpretations were determined by the author, who reviewed and edited all output and takes full responsibility for the content of the publication. AI-assisted copyediting limited to correcting grammar, spelling and phrasing in the English text is not separately disclosed, consistent with the journal’s policy.

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Figures

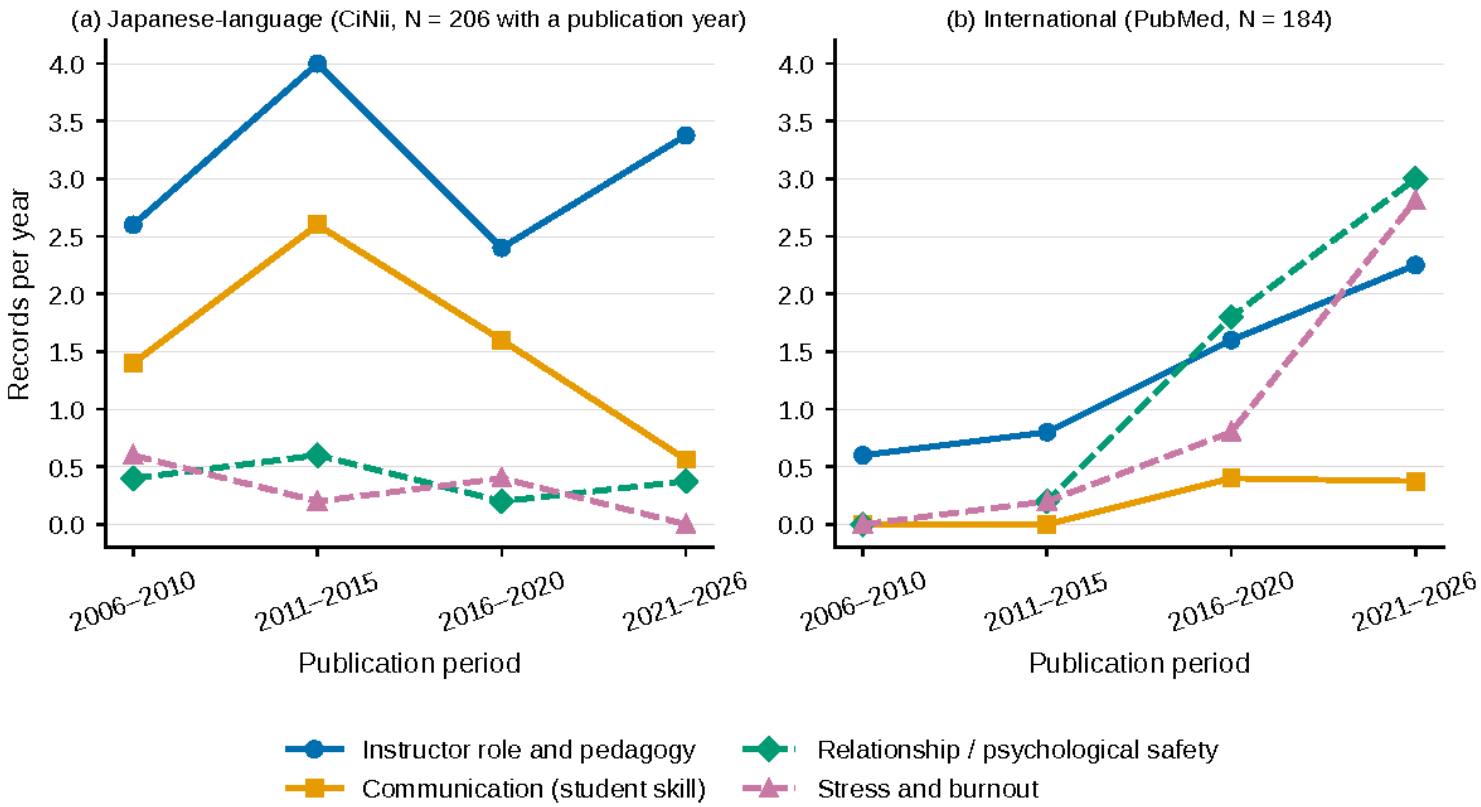


Figure 1

Thematic trends over time in the Japanese and international literatures, 2006–2026. Four themes are plotted, chosen to show both directions of the contrast and to keep the panels legible. Two are those on which the Japanese corpus leads by the widest margin: instructor role and pedagogy, and communication as a student skill. Two are those reaching the highest rates in the international corpus in the most recent periods: relationship and psychological safety, and stress, anxiety and burnout. The labels inside the figure are shortened forms of these four names. The remaining five themes are omitted for legibility only, and the series for all nine can be reconstructed from the deposited dataset (Online Resource 3). Records matching each theme are plotted as records per year for four publication periods, separately for (a) the Japanese-language corpus and (b) the international corpus. One Japanese record lacks a publication year and is necessarily excluded here, so panel (a) is based on 206 of the 207 Japanese records; panel (b) uses all 184 international records. Rates per year are shown rather than raw counts because the final period is truncated at the search date (April 2026) and therefore spans 5.33 rather than 5 years. Themes were assigned by matching titles against translation-equivalent term sets applied identically to both corpora (Online Resource 2); they are not mutually exclusive, so a record may contribute to more than one line. Both panels are drawn to the same y-axis scale, so heights are directly comparable between them. In the Japanese corpus the instructor role and pedagogy theme remains the largest throughout, while communication declines steadily after 2011–2015. Colours follow the Okabe–Ito colour-blind-safe palette and are additionally distinguished by marker shape and line style

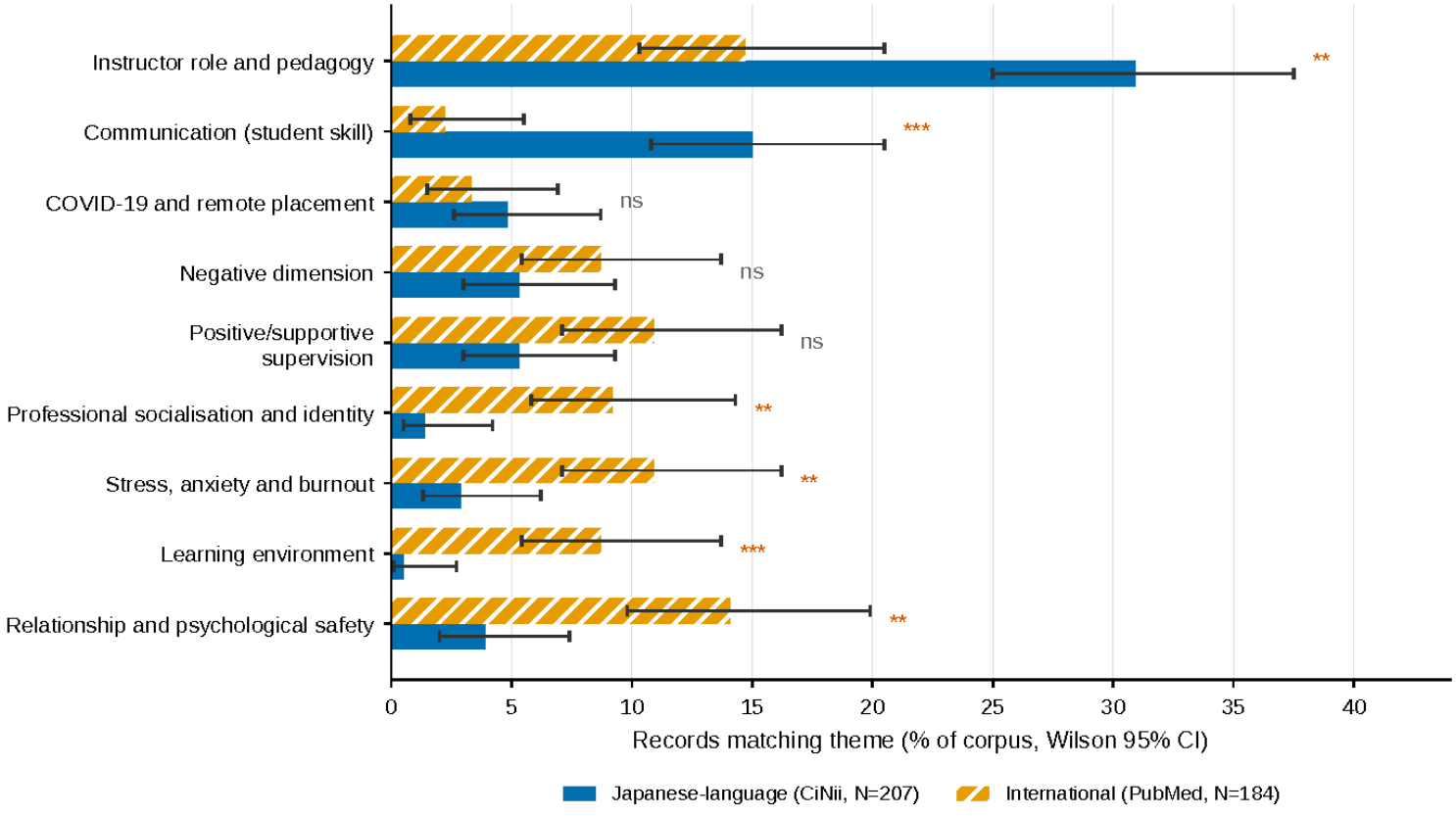


Figure 2

Thematic priorities of the Japanese and international literatures. Bars show the percentage of each corpus whose title matched a given theme, for the Japanese-language corpus (CiNii Research, N = 207) and the international corpus (PubMed/MEDLINE, N = 184). Error bars are Wilson 95% confidence intervals for a proportion; the odds ratio and its interval for every theme are given in Table 2. Themes are ordered by the signed difference between corpora (Japanese minus international percentage points). Comparisons were made by two-sided Fisher's exact test with the Holm procedure applied across all nine; the adjusted value is marked *** below 0.001, ** below 0.01, * below 0.05, and ns otherwise. Themes are neither mutually exclusive nor exhaustive: a record may match several themes or none (8.7% of Japanese and 20.1% of international records matched more than one theme; 38.6% and 40.8% respectively matched none), so percentages do not sum to 100. Because title matching is insensitive (recall 0.30; Section 5.4), the percentages are lower bounds on the attention each literature gives a theme. Full term sets are in Online Resource 2 and the classified dataset in Online Resource 3. Theme labels in the figure are shortened; in full the two abbreviated labels are communication as a student skill and positive or supportive supervision. Colours follow the Okabe–Ito palette with hatching for greyscale reproduction

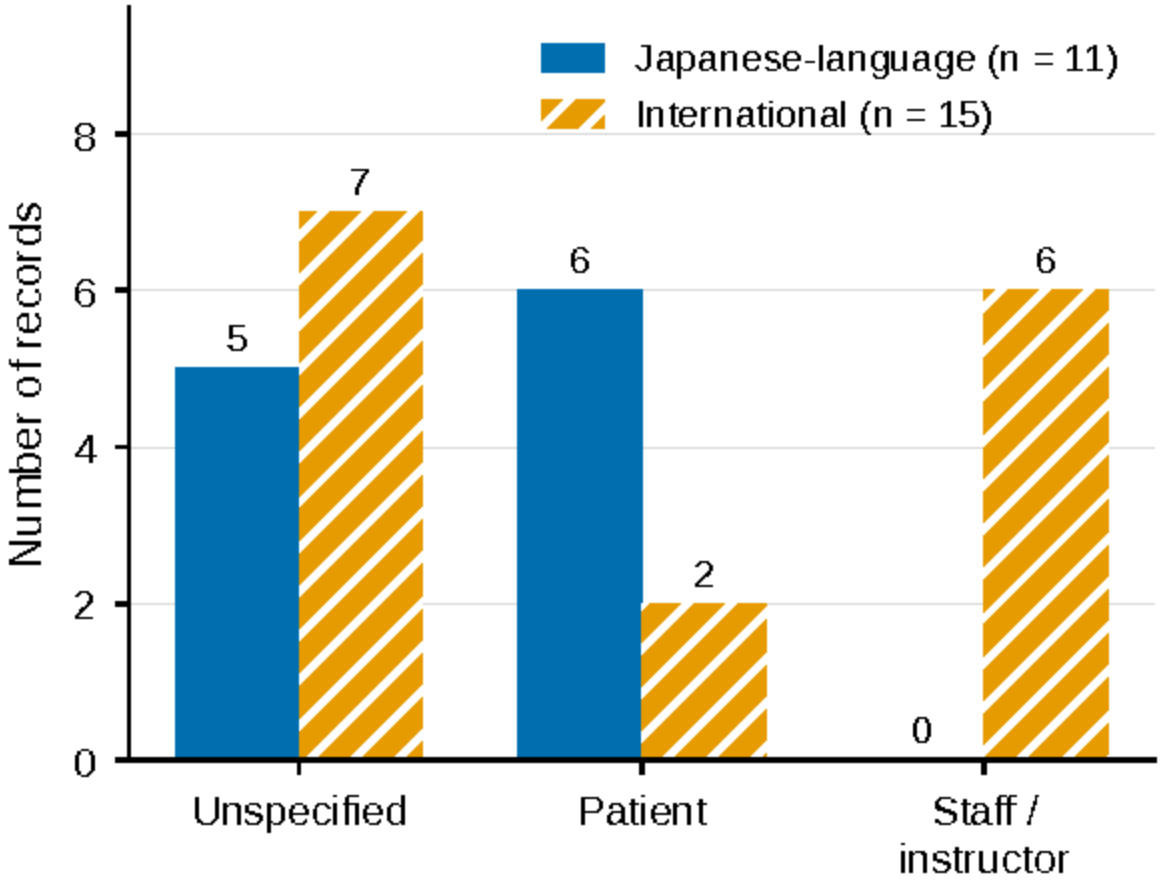


Figure 3

Source of harm in studies addressing the negative dimension of the placement relationship. All records matching the negative-dimension theme (incivility, bullying, harassment, violence) were examined at the level of study content, and the source of harm to students was coded as patient, staff member or

instructor, or unspecified. Counts are shown for the Japanese-language corpus (n = 11) and the international corpus (n = 15). Records whose source could not be established are shown first, because they account for 45% and 47% of each subset respectively and bound what the remaining categories can support. One of the 16 international records retrieved by the harm term set concerned students' attitudes towards domestic violence — a clinical topic rather than harm directed at students — and was excluded as a keyword false positive, so 15 international records are shown. Where the source could not be established from the retrievable record it was coded as unspecified rather than inferred; the coded value and supporting evidence for every record are given in Online Resource 4. Colours follow the Okabe–Ito palette with hatching for greyscale reproduction