MediCrab · Check Report

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7822 words · 17 references · Checked 2026–11–09 11:31 · Report generated 2026–11–09 11:50

15 of 17 references have correct bibliographic details.
However: 1 has details to correct or confirm; the text may misstate what 8 of them say; 1 not fully checked this round.
19 items in the text need confirming, 9 of them high severity.
The study is a cross–sectional study. Under STROBE, items that would benefit from more detail: 3.

15 / 17	10	19	37
Bibliography OK	Citations to fix	Content to confirm	Reviewer comments

Fix first

Where	Issue	Level
Reference [1] · 1. Introduction	Text may not match source: Previously, two studies investiga…	High
Reference [2] · 1. Introduction	Text may not match source: Previously, two studies investiga…	High
Reference [3] · 1. Introduction	Text may not match source: The prevalence rate ranges from 3…	High
Reference [4] · 1. Introduction	Text may not match source: The prevalence rate ranges from 3…	High
Reference [7] · §2.4.1 Sociodemographic …	Text may not match source: The assessment of GPAQ in Indones…	High

23 more; see the sections below.

Plus 37 reviewer comments; see section 3.

Scope of this check

- Cited guideline editions were compared against the 232 guidelines MediCrab tracks; guidelines outside that list are not covered.
- In addition, MediCrab looked up likely sources in the reference list for 1 review comment and checked 1 of them against the source text; the results are shown under each comment. These are not citations marked in the text.
- MediCrab did not search 1 reference at all this round (no web–capable model was available). Re–run the check.
- Of 28 in–text citations, MediCrab checked 28 sentence by sentence.

10 references need usable full text. The first three are listed below; see Appendix A for the full list.

[1] Baglioni C 2014 Sleep changes in the d…
[2] Baylan S 2020 Incidence and prevalen…
[6] Ferre A 2013 Strokes and their rela…

Checks that were not completed or lacked source material are marked as such.

1 Citation check

Status	Refs
Text may not match source	8
Reference details need correction	1
Not searched this round	1
Checked, no issues	7
Total (each reference counted once)	**17**

Text may not match source · 8

What the text says while citing it may not match the source. Open "cited in the body" below and check each spot against the source; if it does not match, fix the numbers, the wording, or the source.

[1] Sleep changes in the disorder of insomnia: a meta-analysis of polysomnographic studies

Baglioni C, Regen W, Teghen A, et al.: Sleep changes in the disorder of insomnia: a meta-analysis of polysomnographic studies. Sleep Med. Rev. 2014;18(3):195—213. PMID: 23809904. doi: 10.1016/j.smrv.2013.04.001. · record from pubmed · No source text

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1

No source text to check this round

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1

No source text to check this round

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1

This source may not be about this claim — Sleep changes, not PSI prevalence

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1 , 2 One meta-analysis, involving 22 studies on insomnia, …

This source may not be about this claim — 22 studies claimed; abstract reports 23

Cited in **1. Introduction**

> Moreover, the available studies involved a small sample size. 1

No source text to check this round

Sentence-level checks and source excerpts: Appendix B

[2] Incidence and prevalence of post-stroke insomnia: a systematic review and meta-analysis

Baylan S, Griffiths S, Grant N, et al.: Incidence and prevalence of post-stroke insomnia: a systematic review and meta-analysis. Sleep Med. Rev. 2020;49:101222. PMID: 31739180. doi: 10.1016/j.smrv.2019.101222. · record from pubmed · Abstract

Cited in **1. Introduction**

> Moreover, the available studies involved a small sample size. 1 , 2 Hence, there is a need to conduct an updated study investigating the effect of gender on PSI and using a lar…

No source text to check this round

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 an…

No source text to check this round

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1 , 2 One meta-analysis, involving 22 studies on insomnia, …

May not match the source — Claim: 28/39.7%; source: 22/38.2%.

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1 , 2 One meta-analysis, involving 22 studies on insomnia, …

May not match the source — 28 studies/39.7%; source: 22/38.2%

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability …

Supported · Checked against the abstract — The review reports 38.2% pooled prevalence and lower estimat

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability …

Supported · Checked against the abstract — The pooled estimate is 38.2%, and diagnostic-tool estimates

Sentence-level checks and source excerpts: Appendix B

[3] Global physical activity questionnaire (GPAQ): nine country reliability and validity study

Bull FC, Maslin TS, Armstrong T: Global physical activity questionnaire (GPAQ): nine country reliability and validity study. J. Phys. Act. Health. 2009;6(6):790—804. doi: 10.1123/jpah.6.6.790. PMID: 20101923. · record from pubmed

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 an…

This source may not be about this claim — GPAQ validation, not stroke cognition

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability …

This source may not be about this claim — GPAQ study, not Taiwan PSI incidence

Sentence-level checks and source excerpts: Appendix B

[4] The prevalence of insomnia in the general population in China: a meta-analysis

Cao X-L, Wang S-B, Zhong B-L, et al.: The prevalence of insomnia in the general population in China: a meta-analysis. PloS one. 2017;12(2):e0170772. PMID: 28234940. doi: 10.1371/journal.pone.0170772. · record from pubmed

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 an…

This source may not be about this claim — [4] discusses general, not stroke, QoL.

Sentence-level checks and source excerpts: Appendix B

[7] Sleep problems worsen health-related quality of life and participation during the first 12 months of stroke rehabilitation

Fulk G, Duncan P, Klingman KJ: Sleep problems worsen health-related quality of life and participation during the first 12 months of stroke rehabilitation. Clin. Rehabil. 2020;34(11):1400—1408. PMID: 32602376. doi: 10.1177/0269215520935940. · record from pubmed

Cited in **§2.4.1 Sociodemographic variables**

> The assessment of GPAQ in Indonesia demonstrated satisfactory inter-rater reliability for categorical variables, with kappa values between 0.44 and 0.78, and test-retest reliabilit…

This source may not be about this claim · This full text is the author's accepted manuscript; check numbers against the published version. — Stroke sleep study, not GPAQ reliability

Sentence-level checks and source excerpts: Appendix B

[10] Comparative efficacy of exercise regimens on sleep quality in older adults: A systematic review and network meta-analysis

Hasan F, Tu Y-K, Lin C-M, et al.: Comparative efficacy of exercise regimens on sleep quality in older adults: A systematic review and network meta-analysis. Sleep Med. Rev. 2022;65:101673. doi: 10.1016/j.smrv.2022.101673. PMID: 36087457. · record from pubmed

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability …

This source may not be about this claim — Exercise review, not prevalence methods

Sentence-level checks and source excerpts: Appendix B

[11] Psychometric properties of Indonesian version of sleep condition indicator for screening poststroke insomnia

Hasan F, Vidyanti AN, Tsai P-S, et al.: Psychometric properties of Indonesian version of sleep condition indicator for screening poststroke insomnia. Sleep Breath. 2023;27:2013–2020. doi: 10.1007/s11325-023-02797-1. PMID: 36854859. · record from pubmed

Cited in **4. Discussion**

> The stroke's site, including the right hemisphere, thalamus, or brainstem, is associated with PSI. 11

This source may not be about this claim — ISCI validation, not lesion location

Sentence-level checks and source excerpts: Appendix B

[16] Gender differences in the prevalence of and trends in sleep patterns and prescription medications for insomnia among US adults, 2005 to 2018

Zuo L, Chen X, Liu M, et al.: Gender differences in the prevalence of and trends in sleep patterns and prescription medications for insomnia among US adults, 2005 to 2018. Sleep Health. 2022;8(6):691–700. PMID: 36117095. doi: 10.1016/j.sleh.2022.07.004. · record from pubmed

Cited in **4. Discussion**

> A previous meta-analysis found that exercise may increase sleep quality. 14 The results are also consistent with previous research indicating that exercise improves sleep quality…

This source may not be about this claim — Exercise benefit is absent, not refuted

Candidate source for a review comment; sentence in **4. Discussion**

> The failure to acquire pertinent confounders, including dietary details, environmental influences, and possible hypnotic usage, may compromise internal validity

No source text to check this round

Sentence-level checks and source excerpts: Appendix B

Reference details need correction · 1

Fix the entry against the field differences below. Conventional forms (initials, journal abbreviations, et al.) need no change.

[6] Strokes and their relationship with sleep and sleep disorders

Ferre A, Ribó M, Rodríguez-Luna D, et al.: Strokes and their relationship with sleep and sleep disorders. Neurologia (English Edition). 2013;28(2):103—118. doi: 10.1016/j.nrleng.2010.09.004. PMID: 21163212. · record from crossref · No source text

Exact match on the identifier given in the manuscript

Field	In manuscript	In record
Journal	Neurologia (English Edition)	Neurología (English Edition)

Cited in **1. Introduction**

> Previous meta-analyses suggest that females are more prevalent than males in terms of insomnia in the general population in China. 6

No source text to check this round

Sentence-level checks and source excerpts: Appendix B

Not searched this round · 1

This one was never searched this round. Run the check again before checking the original yourself.

[17] post-stroke insomnia

Hasan F: post-stroke insomnia. Zenodo. 2026. · No source text

Cited in **Data availability statement**

> All datasets supporting this article are accessible via the following link: https://doi.org/10.5281/zenodo.20229933. 17

No source text to check this round

Cited in **Extended data**

> Zenodo: Supplementary data: https://doi.org/10.5281/zenodo.20229933. 17

No source text to check this round

Sentence-level checks and source excerpts: Appendix B

Checked, no issues · 7

Nothing to do.

No.	Title	Citations checked to	Record source
[5]	The role of sleep in recovery following ischemic stroke: a review of human and animal data	Full text	pubmed

No.	Title	Citations checked to	Record source
[8]	Dynamic prevalence of sleep disorders following stroke or transient ischemic attack: systematic review and meta-analysis	No source text	pubmed
[9]	Post-Stroke Insomnia Increased the Risk of Cognitive Impairments: A Hospital-Based Retrospective Cohort Study	No source text	pubmed
[12]	Sleep medicine: stroke and sleep	No source text	pubmed
[13]	The associations between insomnia and health-related quality of life in rehabilitation units at 1 month after stroke	No source text	pubmed
[14]	The effect of resistance exercise on sleep: A systematic review of randomized controlled trials	Abstract	pubmed
[15]	The effect of physical activity on sleep quality: A systematic review	No source text	crossref

Sentence-level evidence is in Appendix B.

2 Content check 19 items · 9 high

High Contradiction **The reported prevalence estimates conflict with the counts in Table 1**

The abstract and Section 3.2 report overall, male, and female prevalence as 28.4%, 25.6%, and 31.2%; Table 1 reports 932/3,574 males (26.1%), 1,230/3,573 females (34.4%), and 2,162/7,147 overall (30.3%). These estimates do not agree and affect the primary outcome and sex difference.

A second review also noted: The Abstract and Results report an overall prevalence of 28.4% and sex-specific values of 25.6% for males and 31.2% for females, whereas Table 1 counts yield 30.3% overall, 26.1% for males, and 34.4% for females. Table 2 reports a further set of denominators and percentages. The manuscript needs to identify the correct denominator and whether estimates are crude or weighted, then align the text and tables.

Suggestion Verify the correct estimates and reconcile all narrative, table, and figure values; identify and explain any weighted versus unweighted estimates.

Abstract "The total prevalence of PSI among stroke survivors in Indonesia was 28.4%. Females exhibited a greater frequency of PSI than males (31.2% versus 25.6%, respecti"

§3.2 Prevalence of post-stroke insomnia "The overall prevalence of PSI among stroke survivors in Indonesia was 28.4%."

§3.1 Study characteristic "7147 | (100) | 932 | (26.1) | 2642 | (73.9) | 1230 | (34.4) | 2343 | (65.6)"

Found in more than one review pass

High Contradiction **Table 2's opening sample differs from the sample in its subsequent rows**

Table 2 opens with 5,366 participants (653 male and 895 female insomnia cases), while its subsequent variable rows generally reflect 7,147 participants, including 932 male and 1,230 female insomnia cases. The table does not identify which sample applies to each analysis.

A second review also noted: The header reports n = 5,366, including 653/2,002 males and 895/1,816 females, while the body rows sum to the full 932/2,642/1,230/2,343 counts. If 5,366 represents complete cases, the handling of missing covariate data in the regressions is not explained.

Suggestion Clarify whether 5,366 is a subset or transcription error and report the sample size and outcome count for each regression model.

§3.1 Study characteristic "5366 | (100) | 653 | (24.6) | 2002 | (75.4) | 895" "Male | p-value"

Found in more than one review pass

High Dubious numbers **The male insomnia education counts exceed the reported university-educated total**

Table 1 reports 781 university-educated males with insomnia, although the total number of university-educated participants is 605. The 72 and 781 counts appear potentially transposed, but that needs source-data verification.

A second review also noted: Table 1 lists 72 male insomnia cases at non-university level and

781 at university level. The review states that the column totals and crude OR can be reproduced only if these counts are swapped; as presented, the education counts do not align with those totals and the reported OR.

Suggestion Verify both education counts against the source data and correct the table if they were transposed.

§3.1 Study characteristic "University level | 605 | (8.5) | 781" "Male (n = 3574)"

Found in more than one review pass

High Dubious numbers **The regular follow-up totals in Table 2 exceed the sample size**

The displayed totals 2,821, 2,826, and 2,821 sum to 8,468 (118.5% of 7,147); the subgroup counts for "No" instead sum to 1,500. These entries cannot be reconciled as presented.
A second review also noted: The "No" regular-follow-up total is reported as 2,821 (39.5%), duplicating the "Yes" row. The review states the three totals sum to 8,468 (118.5%), while the cell counts yield No = 1,500 (21.0%).

Suggestion Regenerate and verify the regular follow-up counts and percentages from the analytical dataset.

§3.1 Study characteristic "No | 2821 | (39.5) | 228 | (24.5) | 534 | (20.2)"

Found in more than one review pass

High Contradiction **The age odds ratios in Tables 3 and 5 resemble coefficients rather than odds ratios**

Table 3 reports age ORs of 0.008 and 0.009 while the confidence intervals are around 1.00–1.02; Table 5 reports 0.002 and 0.006 with confidence intervals around 1. These values are inconsistent as displayed and resemble regression coefficients rather than exponentiated coefficients.
A second review also noted: Table 3 lists 0.008 for male age and 0.009 for female age under the OR heading, although the review notes these look like β coefficients rather than odds ratios; the same issue occurs for 0.002 and 0.006 in Table 5.

Suggestion Audit the age estimates, confidence intervals, and p-values against the original regression output; do not assume a decimal-place repair.

§3.3 Analysis of regression "Age | 0.002 | (0.995 to 1.01)" "Age | 0.008 | (1.002 to 1.015) | <0.01 | 0.009 | (1.003 to 1.014) | <0.01
"

Found in more than one review pass

High Stats mismatch **The male daily-smoking confidence interval conflicts with its significant p-value**

Table 5 reports male daily smoking OR 1.259, 95% CI 0.057 to 1.5, and p = 0.01. The interval crosses 1 despite the reported significance, which is inconsistent with conventional corresponding two-sided logistic-regression inference.
A second review also noted: Table 5 reports 1.259 (0.057 to 1.5) with p = 0.01; the lower

confidence limit is inconsistent with the point estimate and p-value. The review suggests the lower limit is probably 1.057.

Suggestion Check the estimate, confidence interval, and p-value against the original model output.

§3.3 Analysis of regression "Yes (everyday) | 1.259 | (0.057 to 1.5) | 0.01"

Found in more than one review pass

High Stats mismatch **The male university-education confidence interval conflicts with its significant p-value**

Table 5 reports male university education OR 0.649, 95% CI 0.493 to 8.54, and p < 0.01. The interval crosses 1 despite the reported significance, which is inconsistent with conventional corresponding two-sided logistic-regression inference.
A second review also noted: Table 5 reports 0.649 (0.493 to 8.54), an interval the review identifies as impossible; the upper limit is probably 0.854.

Suggestion Check the estimate, confidence interval, and p-value against the original model output.

§3.3 Analysis of regression "University level | 0.649 | (0.493 to 8.54) | <0.01"

Found in more than one review pass

High Structure **The adjusted-model descriptions conflict and do not specify reproducible procedures**

Section 2.6 describes "forward and stepwise logistic regression analyses"; Table 5 says it adjusts for all variables, while Table 6 says it adjusts for significant univariate variables. Both table notes cite supplementary tables that were not supplied, and Table 6 includes variables not significant in the displayed univariate analyses.
A second review also noted: The Methods state that forward and stepwise logistic regression were conducted, but Tables 5—6 present every candidate variable, suggesting no selection was applied.

Suggestion Specify each model's procedure, candidate variables, selection thresholds, retained variables, reference categories, and adjustment set; prefer a clinically justified confounder strategy over significance-only selection, provide the promised goodness-of-fit results, and assess assumptions including age linearity on the log-odds scale.

§2.6 Statistical analysis "Subsequently, forward and stepwise logistic regression analyses were conducted"
§3.3 Analysis of regression "Adjusted model is based on all variables in the univariate model in supplementary Table 1 and 2" "Adjusted model is based on significant variables in the univariate model in Supplementary Table 1 and 2"

Found in more than one review pass

High Overclaim **The cross-sectional study cannot establish increases over time or insomnia development**

The abstract and results describe a trend "with time," increasing prevalence over time, and incidence increasing with age; the discussion and conclusion also claim increases or persistence over time. A single 2018 survey cannot establish calendar-time change, within-person aging, incidence, or temporal direction.
A second review also noted: The Abstract, Discussion, and Conclusions describe prevalence as rising or increasing "over time," but the study is a single 2018 cross-section and the Results describe differences across age groups. It can show variation with age, not change over time; the Results also call this incidence.

Suggestion Restrict interpretation to cross-sectional prevalence and associations; do not present incidence, temporal trends, or longitudinal change as findings of this study.

Abstract "both females and males exhibited a trend of rising PSI prevalence with time."

§3.2 Prevalence of post-stroke insomnia "Our findings demonstrate that the incidence of insomnia increases with age."

4. Discussion "the prevalence of insomnia following a stroke has increased over time." "This study is the first to investigate the impact of gender on the prevalence of"

Found in more than one review pass

Medium Stats mismatch **The male smoking counts do not support the reported Pearson chi-square p-value**

The reviewer notes that the male smoking counts do not support the reported ordinary Pearson chi-square p = 0.48. The displayed table therefore needs a check of this descriptive p-value.
A second review also noted: For male smoking, Table 1 reports p = 0.48, while the review's recalculation from the counts gives $\chi^2(2) \approx 5.8$ and $p \approx 0.055$; Table 3 also reports p = 0.02 for daily smoking.

Suggestion Recalculate and verify the male smoking p-value using the stated test and displayed counts.

§3.1 Study characteristic "Smoking status, n (%) | 0.48" "Male (n = 3574)"

Found in more than one review pass

Medium Contradiction **"Post-stroke irrationality (PSI)" names the wrong condition**

The discussion calls PSI "post-stroke irrationality," although PSI is used throughout the manuscript for post-stroke insomnia. This changes the condition being described.

Suggestion Correct the term to "post-stroke insomnia."

4. Discussion "This study is the first to investigate the impact of gender on the prevalence of post-stroke irrationality (PSI) among stroke survivors in Indonesia, to the bes"

Found in more than one review pass

Medium Dubious numbers **The overall age mean does not match the displayed subgroup means and counts**

The displayed subgroup counts and means imply an unweighted overall mean of approximately 57.9 years, not the reported 58.7 years; ordinary rounding does not account for the difference.

Suggestion Verify the overall age summary and regenerate it from the analytical dataset.

§3.1 Study characteristic "Age, mean (SD) | 58.7 | (12.5) | 60.3 | (12.2)"

Medium Contradiction **The sex-specific prevalence values are listed in the opposite order**

The Results name females before males but give "25.6% vs 31.2%, respectively," assigning the male percentage to females and vice versa. The values should be reordered to match the named groups.

Suggestion Check the group order and revise the sentence accordingly.

§3.2 Prevalence of post-stroke insomnia "Overall, we found that females have a higher trend in PSI prevalence compared to males (25.6% vs 31.2%, respectively)."

Medium Contradiction **The stated comparison in the statistical methods does not match Tables 1–2**

The methods say the tests investigate gender disparities in characteristics, but Tables 1–2 compare insomnia with non-insomnia within each sex. The described comparison and the presented tables therefore do not match.

Suggestion Clarify the intended comparisons and align the methods with the tables.

§2.6 Statistical analysis "Subsequently, we performed analyses utilizing χ2 (Chi-square) for categorical variables and the Mann-Whitney U-test (given the data's deviation from a normal di"

Medium Contradiction **The Table 5 and Table 6 model footnotes describe conflicting variable-selection rules**

Table 5 says its adjusted model is based on all variables in the univariate model, while Table 6 says it is based on significant variables in the univariate model, yet Table 6 includes non-significant cancer, CKD, and alcohol variables.

Suggestion Clarify which variables were included in each model and correct the footnotes or tables.

§3.3 Analysis of regression "Adjusted model is based on all variables in the univariate model in supplementary Table 1 and 2" "Adjusted model is based on significant variables in the univariate model in Supplementary Table 1 and 2"

Medium Evidence & citations **The regression footnotes cite supplementary tables that are not listed**

Both model footnotes cite Supplementary Tables 1 and 2, but the univariate results are in main Tables 3–4 and the listed supplementary material contains only a TRIPOD checklist.

Suggestion Correct the table references or provide the cited supplementary tables.

§3.3 Analysis of regression “Adjusted model is based on all variables in the univariate model in supplementary Table 1 and 2” “Adjusted model is based on significant variables in the univariate model in Supplementary Table 1 and 2”

Medium Unclear scope **Section 3.3 generalizes findings that apply only to males**

Section 3.3 states the education, urbanization, and physical-activity findings for “Individuals” generally, although the review says several apply only in males.

Suggestion Specify which sex-specific results support each statement.

§3.3 Analysis of regression “Individuals with a greater educational attainment (university level) are less prone to developing insomnia. Individuals residing in urban environments are less ”

Medium Unclear scope **TRIPOD is the wrong reporting checklist for this cross-sectional study**

STROBE is appropriate for this cross-sectional association study; TRIPOD would not ordinarily apply unless the study intends a prediction-model objective.
A second review also noted: The manuscript lists a TRIPOD checklist, but the review says TRIPOD is for prediction-model studies and STROBE is the appropriate checklist for a cross-sectional observational study.

Suggestion Use the STROBE checklist and retain TRIPOD only if a prediction-model objective is intended.

Extended data “Tripod Checklist.docx.”

Found in more than one review pass

Medium Unclear scope **The male university confidence interval in Table 3 does not match the counts**

Table 3 reports the male university OR as 0.601 (0.456 to 0.848), while the review states the counts yield a 95% CI of about 0.46—0.79 and that the reported interval is asymmetric on the log scale.

Suggestion Recalculate the confidence interval from the source data and verify the reported estimate.

§3.3 Analysis of regression “University level | 0.601 | (0.456 to 0.848) | <0.001”

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3 Reviewer comments · 37

Medium Overclaim **Stratified associations do not establish sex differences in associations**

The manuscript emphasizes smoking and physical activity in males and comorbidities in females, but significance in one group and non-significance in another does not establish that the associations differ by group. No clearly reported adjusted estimate for the overall female–male difference is provided.

A second review also noted: The Abstract lists low educational attainment as a male correlate, but the review says "No formal education" is non-significant and only university education is protective.

Suggestion If effect modification is a central claim, test sex-by-predictor interactions and report uncertainty; provide a direct sex comparison of prevalence with confidence intervals and consideration of age differences, and clarify whether the recorded variable is biological sex or gender.

Abstract "Moreover, daily smoking, low educational attainment, rural residency, and insufficient physical activity were correlated with insomnia symptoms in the male coho"

§3.3 Analysis of regression "Female participants with comorbidities, including heart disease and asthma, exhibited a higher propensity for developing insomnia." "No formal education | 1.291 | (0.976 to 1.708) | 0.07"

Found in more than one review pass

Medium Evidence & citations **The dagger on the female alcohol p-value is undefined**

Table 2 marks the female alcohol p-value "0.76 †" but does not define the dagger; Table 4 reports p = 0.49 for the same comparison.

Suggestion Define the dagger if applicable and reconcile the p-values across tables.

§3.1 Study characteristic "Male | p-value"

Medium Evidence & citations **The mentioned Hosmer–Lemeshow results are not reported**

The Methods say Hosmer–Lemeshow goodness-of-fit tests were performed, but no results are reported.

Suggestion Report the goodness-of-fit results or clarify that they were not assessed.

§2.6 Statistical analysis "Hosmer–Lemeshow goodness-of-fit tests were performed to evaluate the models' alignment with the observed outcome."

Medium Contradiction **The volunteer-sample statement conflicts with the household-sampling description**

The Limitations describe participants as volunteers across Indonesia, whereas the Methods say household members were solicited for a national survey; this also conflicts with the claim of assured national representation.

Suggestion Clarify how participants were sampled and revise the conflicting description.

4. Discussion “The study population was selected from volunteers across Indonesia, assuring national representation.”

§2.1 Study sample “Members of each household (those residing on the premises for at least six months and sharing the same food income source) were solicited to partake in the surv”

Medium Contradiction

The comparison with the Taiwanese 8.2% figure mixes incidence and prevalence

The manuscript compares its prevalence estimate with an 8.2% incidence figure from Taiwanese ICD-coded data, which the review says mixes incidence and prevalence.

Suggestion Use a comparable measure or clearly distinguish incidence from prevalence.

4. Discussion “However, this present study has a higher estimation compared to previous work that used hospital-based data and found the PSI incidence to be 8.2% in Taiwan (us”

Medium Unclear scope

The outcome definition does not establish post-stroke insomnia

Section 2.3 defines insomnia from a yes/no question about sleep disturbances in the previous two weeks. The measure does not establish a clinical diagnosis, symptom frequency or persistence, daytime impairment, pre-stroke symptom status, or onset after or attribution to stroke; sleep-disturbance symptoms among people with a stroke history are not necessarily post-stroke insomnia.

A second review also noted: Insomnia status is assigned from a single item asking about sleep disturbances, but the item does not capture frequency, duration of at least three months, or daytime impairment. The review says the outcome is self-reported sleep disturbance rather than insomnia disorder, and terminology throughout should reflect this.

Suggestion Provide the original survey item, instrument source, validation evidence, coding, and questionnaire routing, then narrow the terminology and conclusions as warranted. The central diagnostic limitation is not the absence of polysomnography, since insomnia is ordinarily assessed clinically rather than requiring polysomnography.

§2.3 Dependent variable “A question related to insomnia was examined: “In the past two weeks, have you experienced any sleep disturbances, such as difficulty initiating sleep, nocturnal”

Found in more than one review pass

Medium Evidence & citations

The national representativeness claim lacks documentation of the survey design

The methods do not describe sampling stages, weights, strata, clusters, or whether analyses accounted for the complex survey design. Ordinary chi-square tests and logistic regression may produce inappropriate uncertainty estimates for clustered survey data, and the statement that participants were volunteers across Indonesia does not justify national representation.

A second review also noted: RISKESDAS uses multistage cluster sampling and provides sampling weights, but the analysis appears unweighted and does not account for clustering or stratification. The review states that the prevalence estimates therefore are not national

estimates and that standard errors are probably underestimated, undermining the “Population-based” title and national-representation claim.

Suggestion Describe the sampling design and its analytical handling, report design-adjusted prevalence estimates and confidence intervals where appropriate, explain analysis of the stroke subgroup, and qualify national population claims if analyses are unweighted.

§2.1 Study sample “Members of each household (those residing on the premises for at least six months and sharing the same food income source) were solicited to partake in the surv”

4. Discussion “The study population was selected from volunteers across Indonesia, assuring national representation.”

Sex Differences in the Prevalence and Co… “Sex Differences in the Prevalence and Correlates of Post-Stroke Insomnia: A Population-Based Study of 7,147 Indonesian Stroke Survivors”

Found in more than one review pass

Medium Overclaim **The exercise association does not establish a treatment effect**

The manuscript recommends exercise to improve sleep quality based on an association; healthier or less-disabled survivors may be more able to exercise, so this analysis does not establish a treatment effect.

A second review also noted: The manuscript recommends regular exercise to improve sleep quality based on an association. The review notes likely reverse causation: greater post-stroke disability may limit activity and also worsen sleep.

Suggestion Separate the observed association from intervention effects and frame intervention recommendations as supported by external evidence, not demonstrated by this study.

4. Discussion “Hence, we recommend regular exercise to improve sleep quality.”

Found in more than one review pass

Medium Unclear scope **Important potential confounders and measurement limitations are underdeveloped**

Relevant omitted factors include stroke severity, disability, time since stroke, stroke type, depression or anxiety, pain, and sleep-related medication use; these may affect reported sleep symptoms and investigated correlates.

A second review also noted: Stroke severity and disability, depression and anxiety, pain, and sleep apnoea are not considered; the review highlights depression as a major determinant of post-stroke insomnia. It also notes that RISKESDAS includes a mental-emotional screening instrument and says the authors should consider adjustment or discuss the omission.

Suggestion Discuss these omitted factors as limitations and clarify their availability in the dataset.

MediCrab picked possible sources from the reference list to check this comment (the manuscript does not cite them here):

Candidate source [16] (no source text): Not enough source text to confirm

4. Discussion “The failure to acquire pertinent confounders, including dietary details, environmental influences, and possible hypnotic usage, may compromise internal validity”

Found in more than one review pass

Medium Evidence & citations

Stroke ascertainment and heart-disease terminology need clarification

The manuscript does not explain how stroke history was identified, or whether "heart disease" and "cardiovascular disease" refer to the same survey variable.
A second review also noted: The manuscript does not clarify whether stroke status was based on self-reported physician diagnosis, symptoms, or both.

Suggestion Clarify the stroke ascertainment method and specify whether the heart-disease and cardiovascular-disease labels refer to the same variable.

§2.1 Study sample "Health-related data on patients diagnosed with stroke was obtained from the 2018 RISKESDAS dataset."
§2.4.1 Sociodemographic variables "2.4.2 Health and lifestyle behavior variables"
Found in more than one review pass

Medium Evidence & citations

The activity measures do not establish guideline-defined insufficient activity

The binary activity measures record whether participants engaged in activities; participation alone does not measure guideline-defined sufficiency, yet the manuscript refers to insufficient physical activity.
A second review also noted: Physical activity is treated as yes/no, which discards GPAQ's MET-minute information; the review asks the authors to justify this choice.

Suggestion Clarify how the binary measures were used to define insufficient activity, or avoid describing them as guideline-defined sufficiency without supporting measurement.

§2.4.1 Sociodemographic variables "Participants were requested to enumerate activities they typically engaged in daily, categorizing them as 'yes' for activities performed and 'no' for those not "
Found in more than one review pass

Medium Overclaim

Assessment methods alone do not explain prevalence differences between studies

The manuscript attributes prevalence differences from other studies to assessment methodologies alone without accounting for stroke phase, population, selection, and case definition.
A second review also noted: The Discussion attributes the lower prevalence to standardized diagnoses yielding lower prevalence than self-report, but this study used self-report. As phrased, that comparison would predict a higher rather than lower prevalence for this study.

Suggestion Qualify the comparison and consider stroke phase, population, selection, and case definition alongside assessment methods.

[2] The source (abstract) says: "with significantly higher prevalence estimates for studies using non-diagnostic tools, 40.70% (CI 30.96–50.82) compared to studies using diagnostic assessment tools 32.21% (CI 18.5–47.64)."

4. Discussion “The disparity in insomnia prevalence arises from the variability in assessment methodologies; research employing standardized diagnoses reveal lower prevalence ”

Found in more than one review pass

Mediu Evidence & citations

The data-availability statement does not specify repository contents or redistribution permissions

The statement does not specify whether the repository contains participant-level data, code, tables, or only supplementary documents, nor does it clarify redistribution permissions.
A second review also noted: The manuscript says all datasets are available on Zenodo under CC BY 4.0 and calls the data publicly available. The review notes RISKESDAS microdata are normally released by the Ministry under a data-use agreement and asks the authors to confirm redistribution under CC BY 4.0 is permitted.

Suggestion Identify the repository contents and clarify applicable redistribution permissions.

Data availability statement “All datasets supporting this article are accessible via the following link: https://doi.org/10.5281/zenodo.20229933.” “Data are available under the terms of the Creative Commons Attribution 4.0 International.”

Informed consent statement “As the present study involves only secondary analysis of de-identified, publicly available data, no additional informed consent was required.”

Found in more than one review pass

Medium Evidence & citations

The exclusion of participants with missing outcomes needs bias assessment

Of 8,042 participants with a stroke diagnosis, 895 (approximately 11.1%) were excluded for missing insomnia information. If completion relates to disability, cognition, age, or sex, the exclusions could bias prevalence.

Suggestion Report questionnaire eligibility, proxy-response rules, missingness for each analytical variable, and compare included and excluded stroke survivors where possible; distinguish missing responses from questionnaire skips or ineligibility.

§3.1 Study characteristic “Furthermore, 895 participants were excluded because they had missing values on the insomnia variable.”

Medium Evidence & citations

The origin of the screening population is not sufficiently explained

The manuscript gives a screening population of 713,783 but does not sufficiently explain how that screening population was defined or derived.

Suggestion Explain the source and eligibility basis for the 713,783-person screening population.

§3.1 Study characteristic “At the beginning, 713,783 individuals were screened for eligibility.”

Medium Evidence & citations **The smoking definition does not explain occasional and former smoking classification**

The manuscript lists questions about being a smoker and smoking in the past month but does not explain how these distinguish occasional from daily smoking or handle former smokers.

Suggestion Specify the classification rules for occasional, daily, and former smokers based on the survey questions.

§2.4.1 Sociodemographic variables "Smoking status was assessed by the inquiries: 'Are you a smoker?' and 'Have you smoked in the past month?'"

Medium Overclaim **The sparse female alcohol category warrants caution in adjusted estimates**

Female alcohol consumption is sparse, so the adjusted estimates for this category require cautious interpretation.

Suggestion Acknowledge the sparse category and qualify interpretation of the adjusted estimates.

§3.1 Study characteristic "Yes | 133 | (1.9) | 35 | (3.8) | 86 | (3.3) | 3 | (0.2)"

Medium Unclear scope **Age–specific results lack denominators, case counts, and confidence intervals**

The age–specific results do not provide denominators, cases, or confidence intervals for each age—sex category, and small young–age groups may yield unstable percentages.

Suggestion Report denominators, case counts, and confidence intervals for every age—sex category, and flag potentially unstable percentages in small groups.

§3.2 Prevalence of post–stroke insomnia "Figure 2 depicts the comparative prevalence of PSI among males and females across different age groups."

Medium Unclear scope **The manuscript does not report a direct test of the sex difference in prevalence**

The title, Abstract, and Conclusions present a gender influence or difference in PSI prevalence, but the manuscript reports no direct sex comparison, confidence interval, or adjusted female–versus–male odds ratio. The reported stratified analyses do not themselves provide that direct test.

Suggestion Report an appropriate direct comparison of prevalence by sex, with its estimate and uncertainty.

Sex Differences in the Prevalence and Co… "Sex Differences in the Prevalence and Correlates of Post–Stroke Insomnia: A Population–Based Study of 7,147 Indonesian Stroke Survivors"

Abstract "Our findings indicate a gender influence on PSI prevalence, with females exhibiting a higher prevalence than males."

Medium Unclear scope **Stratified significance results do not establish that associations differ by sex**

The manuscript presents analyses separately by sex, but a factor being significant in one stratum and not another does not show that its effect differs between sexes. The sex–difference claim requires interaction terms or a pooled model including sex.

Suggestion Test sex–by–covariate interactions or fit a pooled model with sex as a covariate.

§2.6 Statistical analysis “Subsequently, forward and stepwise logistic regression analyses were conducted to examine the impact of sociodemographic variables, health problems, and lifesty”

Medium Unclear scope **It is unclear whether Tables 5 and 6 represent one model or separate models**

The manuscript does not clarify whether Tables 5 and 6 come from a single model or two separate models. If they are separate, the health and lifestyle odds ratios in Table 6 are not adjusted for age or sociodemographics; the review notes this could explain their similarity to crude odds ratios.

Suggestion Specify the model structure and which covariates are included in each model.

§3.3 Analysis of regression “Table 5. . Associations between demographic characteristics and insomnia symptom using logistic regression.” “Table 6. . Association between health, lifestyle behavior and insomnia symptom using multivariable logistic regression.”

Medium Evidence & citations **Validation data for the sleep–disturbance item are not provided**

The manuscript uses the single sleep–disturbance item to define the outcome but provides no validation data for that item.

Suggestion Provide validation evidence for the item or acknowledge the absence of validation data.

§2.3 Dependent variable “A question related to insomnia was examined: “In the past two weeks, have you experienced any sleep disturbances, such as difficulty initiating sleep, nocturnal”

Medium Unclear scope **The timing of sleep symptoms relative to stroke is not established**

The manuscript does not report time since stroke, so it cannot establish that the measured sleep symptoms began after the stroke or distinguish acute from chronic phases; the Introduction itself draws that distinction.

Suggestion Report time since stroke if available, or qualify the post–stroke terminology and phase–related interpretation.

§2.3 Dependent variable “The insomnia status was assumed if participants answered ‘yes’.”

1. Introduction “The prevalence rate ranges from 35% to 43% from the acute to the chronic phase.”

Medium Unclear scope **The Zenodo record contents do not establish that the data were deposited**

The same DOI is given for “datasets” and “Extended data,” but the listed contents show only “Tripod Checklist.docx”; it is unclear whether the data are actually deposited.

Suggestion Clarify what the Zenodo record contains and provide the actual data location if applicable.

Data availability statement “All datasets supporting this article are accessible via the following link: https://doi.org/10.5281/zenodo.20229933.”

Extended data “Tripod Checklist.docx.”

Low Structure **The supplied tables have misaligned headers**

The table headers are misaligned, making it unclear which estimate and p–value belongs to which group or column.

Suggestion Verify the final table layout so every estimate and p–value is unambiguously assigned.

§3.1 Study characteristic “Male (n = 3574) | p–value | Female (n = 3573) | p–value
”

Low Wording **Table 1 has an extra blank cell in the female totals row**

The review notes that Table 1’s p–value columns are misaligned because the female totals row contains an extra blank cell.

Suggestion Correct the Table 1 row structure and column alignment.

§3.1 Study characteristic “7147 | (100) | 932 | (26.1) | 2642 | (73.9) | 1230 | (34.4) | 2343 | (65.6)”

Low Wording **Table captions contain doubled punctuation**

The table captions use doubled punctuation, such as “Table 1. .” and “Table 2. .”.

Suggestion Remove the extra punctuation in the captions.

§3.1 Study characteristic “Table 1. . Demographic characteristic of participants.” “Table 2. . Health, lifestyle behavior and insomnia.”

Low Wording **“Sometime” should be “Sometimes”**

The manuscript uses “Sometime” as the follow–up response label; the review says it should be “Sometimes.”

Suggestion Change “Sometime” to “Sometimes” where it appears.

§3.1 Study characteristic “Sometime | 2826 | (39.5)”

Low Wording **The manuscript uses “gender” and “sex” interchangeably**

The review says gender and sex are used interchangeably, although the variable is presumably biological sex as recorded in the survey.

Suggestion Use terminology consistently and clarify what variable was recorded.

Sex Differences in the Prevalence and Co… “Sex Differences in the Prevalence and Correlates of Post-Stroke Insomnia: A Population-Based Study of 7,147 Indonesian Stroke Survivors”

§2.4.1 Sociodemographic variables “Sociodemographic characteristics encompassed age, gender, educational attainment, marriage status, occupation, and degree of urbanization.”

Low-priority comments · 8

- The use of stepwise selection is not justified
- The manuscript makes unsupported or overstated claims
- Means and standard deviations do not match the reported Mann—Whitney U test
- The GPAQ description should specify a continuous 10-minute bout
- The GPAQ description mixes up inter-rater and test-retest reliability
- Age-stratum sample sizes and uncertainty are not reported for Figure 2
- Reference 3 may be cited for two different claims
- The use of Chinese general-population data to motivate an Asian stroke study needs acknowledgment or support

4 Study design and reporting

Study design: Cross–sectional study (described by the authors as: quantitative prevalence analysis) · Applicable guideline: STROBE

The manuscript describes a quantitative prevalence analysis of 2018 national survey data, consistent with a cross–sectional study.

Please clarify several aspects of the survey and analysis that are not fully described.

Suggested additions

- **Sampling method and survey timing**: The manuscript identifies the 2018 national survey and describes household interviews, but does not specify the sampling method or the fieldwork dates.
  (see “2.1 Study sample”: “The data utilized in this study were obtained from the 2018 Basic Health Researc…”)
- **Sample size rationale**: The number included in the analysis is reported, but the basis for determining the sample size is not stated.
  (see “3.1 Study characteristic”: “The final analysis comprised 7,147 stroke participants”)
- **Handling of missing data**: Participants with missing insomnia values were excluded; handling of missing values in other variables is not described.
  (see “2.2 Inclusion and exclusion criteria”: “Participants whose insomnia variable had missing values were not included in the…”)

Appendix A Methods and limits

References needing full text

For 10 references MediCrab had only a search summary or no material, so the claims citing them could not be decided. Add their full-text PDFs to the project and re-run the check:

- [1] Baglioni C 2014 Sleep changes in the d…
- [2] Baylan S 2020 Incidence and prevalen…
- [6] Ferre A 2013 Strokes and their rela…
- [8] Hasan F 2021 Dynamic Prevalence of …
- [9] Hasan F 2023 Post-Stroke Insomnia I…
- [12] Hepburn M 2018 Sleep Medicine: Stroke…
- [13] Kim W-H 2017 The associations betwe…
- [14] Kovacevic A 2018 The effect of resistan…
- [15] Wang F 2021 The effect of physical…
- [17] Hasan F: post-stroke ins… 2026 Zenodo

The other references were judged from public material; adding their full text upgrades those conclusions from abstract level to full-text level.

Where records and source texts came from

Source	Used for	Refs
PubMed / Europe PMC	English records, abstracts and full text	14
Crossref / DOI registry	Bibliographic records by DOI	2
Journal sites and others	Abstracts and full-text pages	3

The pages read for each reference are listed in the “Pages read” appendix.

Models used

`Claude Opus`, `Web Search`, `gpt-6-luna`, `gpt-6.1-sol`

How to read evidence scope

"Checked against a full-text passage" means the evidence comes from a passage found in the full text; "checked against the abstract" means only the database abstract was checked; "search summary only" means no source text was retrieved and the conclusion rests on a search summary, which is weaker than both.

"Full text, search miss" only says MediCrab did not find support for the sentence in the full text — not that the work lacks it; only "full text, confirmed absent" is a negative conclusion. "No matching record" means the databases were searched and have no entry; "lookup failed" means the search did not complete; "outside coverage" means the databases never index that kind of source, as with most Chinese journals.

Appendix B Detailed citation evidence

Sentence-level checks, source excerpts and review conclusions for 17 references. Links in the main report lead to the corresponding entries.

Text may not match source

[1] Sleep changes in the disorder of insomnia: a meta-analysis of polysomnographic studies

Baglioni C, Regen W, Teghen A, et al.: Sleep changes in the disorder of insomnia: a meta-analysis of polysomnographic studies. Sleep Med. Rev. 2014;18(3):195—213. PMID: 23809904. doi: 10.1016/j.smrv.2013.04.001. · record from pubmed · No source text

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1

No source text to check this round

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1

No source text to check this round

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1

This source may not be about this claim — Sleep changes, not PSI prevalence

— Not mentioned	Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published.	

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1 , 2 One meta-analysis, involving 22 studies on insomnia, found the prevalence to be 38.2%. 1

This source may not be about this claim — 22 studies claimed; abstract reports 23

— Not mentioned	Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published.	
! Check against source	One meta-analysis, involving 22 studies on insomnia,	Source: Twenty-three studies met inclusion criteria.
— Not mentioned	found the prevalence to be 38.2%.	

Cited in **1. Introduction**

> Moreover, the available studies involved a small sample size. 1

No source text to check this round

Text may not match source

[2] Incidence and prevalence of post-stroke insomnia: a systematic review and meta-analysis

Baylan S, Griffiths S, Grant N, et al.: Incidence and prevalence of post-stroke insomnia: a systematic review and meta-analysis. Sleep Med. Rev. 2020;49:101222. PMID: 31739180. doi: 10.1016/j.smrv.2019.101222. · record from pubmed · Abstract

Cited in **1. Introduction**

> Moreover, the available studies involved a small sample size. 1 , 2 Hence, there is a need to conduct an updated study investigating the effect of gender on PSI and using a larger sample size.

No source text to check this round

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 and reduced health-related quality of life. 4 , 5 Researchers and clinicians are now paying high attention to managing the insomnia problem.

No source text to check this round

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1 , 2 One meta-analysis, involving 22 studies on insomnia, found the prevalence to be 38.2%. 1 The updated meta-analysis, which included 28 studies, suggested a prevalence rate of 39.7%. 2 However, most of the included studies were derived from Western populations.

May not match the source — Claim: 28/39.7%; source: 22/38.2%.

— Not mentioned	Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published.	
— Not mentioned	The updated meta-analysis	
! Check against source	which included 28 studies	Source: Twenty-two studies on prevalence of insomnia or insomnia symptoms including individuals with stroke were included with fourteen studies suitable for inclusion in the meta-analysis.
! Check against source	suggested a prevalence rate of 39.7%.	Source: Meta-analysis indicated pooled prevalence of 38.2% (CI 30.1–46.5) with significantly higher prevalence estimates for studies using non-diagnostic tools, 40.70% (CI 30.96–50.82) compared to studies using diagnostic assessment tools 32.21% (CI 18.5–47.64).

Cited in **1. Introduction**

> Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published. 1 , 2 One meta-analysis, involving 22 studies on insomnia, found the prevalence to be 38.2%. 1 The updated meta-analysis, which included 28 studies, suggested a prevalence rate of 39.7%. 2

May not match the source — 28 studies/39.7%; source: 22/38.2%

– Not mentioned	Previously, two studies investigating the global prevalence of PSI using a meta-analytic design have been published.	
– Not mentioned	The updated meta-analysis	
! Check against source	which included 28 studies	Source: Twenty-two studies on prevalence of insomnia or insomnia symptoms including individuals with stroke were included with fourteen studies suitable for inclusion in the meta-analysis.
! Check against source	suggested a prevalence rate of 39.7%.	Source: Meta-analysis indicated pooled prevalence of 38.2% (CI 30.1–46.5) with significantly higher prevalence estimates for studies using non-diagnostic tools, 40.70% (CI 30.96–50.82) compared to studies using diagnostic assessment tools 32.21% (CI 18.5–47.64).

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability in assessment methodologies; research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported instruments. 2 , 10 However, this present study has a higher estimation compared to previous work that used hospital-based data and found the PSI incidence to be 8.2% in Taiwan (using ICD codes). 3 Early detection of insomnia using precise measurement scales is critical.

Supported · Checked against the abstract — The review reports 38.2% pooled prevalence and lower estimat

✓ Supported	This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%.	Source: Meta-analysis indicated pooled prevalence of 38.2% (CI 30.1–46.5)
✓ Supported	The disparity in insomnia prevalence arises from the variability in assessment methodologies;	Source: with significantly higher prevalence estimates for studies using non-diagnostic tools, 40.70% (CI 30.96–50.82) compared to studies using diagnostic assessment tools 32.21% (CI 18.5–47.64).
✓ Supported	research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported instruments.	Source: same as above

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability in assessment methodologies; research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported instruments. 2

Supported · Checked against the abstract — The pooled estimate is 38.2%, and diagnostic-tool estimates

✓ Supported	This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%.	Source: Meta-analysis indicated pooled prevalence of 38.2% (CI 30.1–46.5)
✓ Supported	The disparity in insomnia prevalence arises from the variability in assessment methodologies; research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported	Source: Meta-analysis indicated pooled prevalence of 38.2% (CI 30.1–46.5) with significantly higher prevalence estimates for studies using non-diagnostic tools, 40.70% (CI 30.96–50.82) compared to studies using diagnostic assessment tools 32.21% (CI 18.5–47.64).

Text may not match source

[3] Global physical activity questionnaire (GPAQ): nine country reliability and validity study

Bull FC, Maslin TS, Armstrong T: Global physical activity questionnaire (GPAQ): nine country reliability and validity study. J. Phys. Act. Health. 2009;6(6):790—804. doi: 10.1123/jpah.6.6.790. PMID: 20101923. · record from pubmed

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 and reduced health-related quality of life. 4 , 5 Researchers and clinicians are now paying high attention to managing the insomnia problem.

This source may not be about this claim — GPAQ validation, not stroke cognition

— Not mentioned	Stroke patients with insomnia have a higher risk of developing cognitive impairment

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability in assessment methodologies; research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported instruments. 2 , 10 However, this present study has a higher estimation compared to previous work that used hospital-based data and found the PSI incidence to be 8.2% in Taiwan (using ICD codes). 3

This source may not be about this claim — GPAQ study, not Taiwan PSI incidence

— Not mentioned	previous work that used hospital-based data
— Not mentioned	found the PSI incidence to be 8.2% in Taiwan

— **Not mentioned** (using ICD codes)

Text may not match source

[4] The prevalence of insomnia in the general population in China: a meta-analysis

Cao X-L, Wang S-B, Zhong B-L, et al.: The prevalence of insomnia in the general population in China: a meta-analysis. PloS one. 2017;12(2):e0170772. PMID: 28234940. doi: 10.1371/journal.pone.0170772. · record from pubmed

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 and reduced health-related quality of life. 4

This source may not be about this claim — [4] discusses general, not stroke, QoL.

— **Not mentioned** and reduced health-related quality of life.

Text may not match source

[7] Sleep problems worsen health-related quality of life and participation during the first 12 months of stroke rehabilitation

Fulk G, Duncan P, Klingman KJ: Sleep problems worsen health-related quality of life and participation during the first 12 months of stroke rehabilitation. Clin. Rehabil. 2020;34(11):1400—1408. PMID: 32602376. doi: 10.1177/0269215520935940. · record from pubmed

Cited in **§2.4.1 Sociodemographic variables**

> The assessment of GPAQ in Indonesia demonstrated satisfactory inter-rater reliability for categorical variables, with kappa values between 0.44 and 0.78, and test-retest reliability for continuous variables, with Spearman's rho ranging from 0.45 to 0.80. 7

This source may not be about this claim · This full text is the author's accepted manuscript; check numbers against the published version. — Stroke sleep study, not GPAQ reliability

— **Not mentioned** The assessment of GPAQ in Indonesia demonstrated satisfactory inter-rater reliability for categorical variables, with kappa values between 0.44 and 0.78

— **Not mentioned** and test-retest reliability for continuous variables, with Spearman's rho ranging from 0.45 to 0.80.

Text may not match source

[10] Comparative efficacy of exercise regimens on sleep quality in older adults: A systematic review and network meta-analysis

Hasan F, Tu Y-K, Lin C-M, et al.: Comparative efficacy of exercise regimens on sleep quality in older adults: A systematic review and network meta-analysis. Sleep Med. Rev. 2022;65:101673. doi: 10.1016/j.smrv.2022.101673. PMID: 36087457. · record from pubmed

Cited in **4. Discussion**

> This contrasts with previous meta-analyses that suggested the prevalence of PSI was between 35% and 43%. 1 , 2 The disparity in insomnia prevalence arises from the variability in assessment methodologies; research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported instruments. 2 , 10 However, this present study has a higher estimation compared to previous work that used hospital-based data and found the PSI incidence to be 8.2% in Taiwan (using ICD codes). 3 Early detection of insomnia using precise measurement scales is critical.

This source may not be about this claim — Exercise review, not prevalence methods

- Not mentioned The disparity in insomnia prevalence arises from the variability in assessment methodologies;
- Not mentioned research employing standardized diagnoses reveal lower prevalence rates than those utilizing self-reported instruments.

Text may not match source

[11] Psychometric properties of Indonesian version of sleep condition indicator for screening poststroke insomnia

Hasan F, Vidyanti AN, Tsai P-S, et al.: Psychometric properties of Indonesian version of sleep condition indicator for screening poststroke insomnia. Sleep Breath. 2023;27:2013–2020. doi: 10.1007/s11325-023-02797-1. PMID: 36854859. · record from pubmed

Cited in **4. Discussion**

> The stroke's site, including the right hemisphere, thalamus, or brainstem, is associated with PSI. 11

This source may not be about this claim — ISCI validation, not lesion location

- Not mentioned The stroke's site, including the right hemisphere, thalamus, or brainstem, is associated with PSI.

Text may not match source

[16] Gender differences in the prevalence of and trends in sleep patterns and prescription medications for insomnia among US adults, 2005 to 2018

Zuo L, Chen X, Liu M, et al.: Gender differences in the prevalence of and trends in sleep patterns and prescription medications for insomnia among US adults, 2005 to 2018. Sleep Health. 2022;8(6):691–700. PMID: 36117095. doi: 10.1016/j.sleh.2022.07.004. · record from pubmed

Cited in **4. Discussion**

> A previous meta-analysis found that exercise may increase sleep quality. 14 The results are also consistent with previous research indicating that exercise improves sleep quality across all age groups. 15 , 16 Hence, we recommend regular exercise to improve sleep quality.

This source may not be about this claim — Exercise benefit is absent, not refuted

- Not mentioned The results are also consistent with previous research indicating that exercise improves sleep quality across all age groups.

Candidate source for a review comment; sentence in **4. Discussion**

> The failure to acquire pertinent confounders, including dietary details, environmental influences, and possible hypnotic usage, may compromise internal validity

No source text to check this round

Reference details need correction

[6] Strokes and their relationship with sleep and sleep disorders

Ferre A, Ribó M, Rodríguez-Luna D, et al.: Strokes and their relationship with sleep and sleep disorders. Neurologia (English Edition). 2013;28(2):103—118. doi: 10.1016/j.nrleng.2010.09.004. PMID: 21163212. · record from crossref · No source text

Exact match on the identifier given in the manuscript

Field	In manuscript	In record
Journal	Neurologia (English Edition)	Neurología (English Edition)

Cited in **1. Introduction**

> Previous meta-analyses suggest that females are more prevalent than males in terms of insomnia in the general population in China. 6

No source text to check this round

Not searched this round

[17] post-stroke insomnia

Hasan F: post-stroke insomnia. Zenodo. 2026. · No source text

Cited in **Data availability statement**

> All datasets supporting this article are accessible via the following link: https://doi.org/10.5281/zenodo.20229933. 17

No source text to check this round

Cited in **Extended data**

> Zenodo: Supplementary data: https://doi.org/10.5281/zenodo.20229933. 17

No source text to check this round

Checked, no issues

[5] The role of sleep in recovery following ischemic stroke: a review of human and animal data

Duss SB, Seiler A, Schmidt MH, et al.: The role of sleep in recovery following ischemic stroke: a review of human and animal data. Neurobiology of sleep and circadian rhythms. 2017;2:94—105. PMID: 31236498. doi: 10.1016/j.nbscr.2016.11.003. · record from pubmed · Full text

Matched by the manuscript's identifier; title matches, plus 7 more fields

Cited in **1. Introduction**

> The prevalence rate ranges from 35% to 43% from the acute to the chronic phase. 1 , 2 Stroke patients with insomnia have a higher risk of developing cognitive impairment 3 and reduced health-related quality of life. 4 , 5 Researchers and clinicians are now paying high attention to managing the insomnia problem.

Supported · Checked against a full-text passage — The review links insomnia with worse health-related quality

✓ Supported	and reduced health-related quality of life.	Source: However, some studies provide evidence that insomnia patients and poor sleepers show worse stroke recovery measured by functional independence scores, scores assessing activities of daily living, and health-related quality of life (Leppavuori et al., 2002, Tang et al., 2015).

Checked, no issues

[8] Dynamic prevalence of sleep disorders following stroke or transient ischemic attack: systematic review and meta-analysis

Hasan F, Gordon C, Wu D, et al.: Dynamic prevalence of sleep disorders following stroke or transient ischemic attack: systematic review and meta-analysis. Stroke. 2021;52(2):655—663. doi: 10.1161/STROKEAHA.120.029847. PMID: 33406871. · record from pubmed · No source text

Matched by the manuscript's identifier; title matches, plus 8 more fields

Cited in **4. Discussion**

> Consistent with a previous study, increasing age was associated with the presence of insomnia. 8

No source text to check this round

Checked, no issues

[9] Post-Stroke Insomnia Increased the Risk of Cognitive Impairments: A Hospital-Based Retrospective Cohort Study

Hasan F, Muhtar MS, Wu D, et al.: Post-Stroke Insomnia Increased the Risk of Cognitive Impairments: A Hospital-Based Retrospective Cohort Study. Behav. Sleep Med. 2023;21:802—810. doi: 10.1080/15402002.2023.2165491. PMID: 36606311. · record from pubmed · No source text

Matched by the manuscript's identifier; title matches, plus 7 more fields

Cited in **4. Discussion**

> Consistent with a previous study, increasing age was associated with the presence of insomnia. 8 Moreover, females exhibited a greater prevalence of sleep disturbances than males among American adults. 9

No source text to check this round

Checked, no issues

[12] Sleep medicine: stroke and sleep

Hepburn M, Bollu PC, French B, et al.: Sleep medicine: stroke and sleep. Mo. Med. 2018;115(6):527—532. PMID: 30643347. · record from pubmed · No source text

Matched by the manuscript's identifier; title matches, plus 7 more fields

Cited in **4. Discussion**

> The stroke's site, including the right hemisphere, thalamus, or brainstem, is associated with PSI. 11 Moreover, a confluence of environmental factors (e.g., hospitalization) 12 and biological factors (e.g., heightened sympathetic activation, intermittent hypoxemia, oxidative stress, inflammatory processes leading to frequent arousals, and disrupted sleep–wake regulation) may exacerbate post–stroke insomnia. 13

No source text to check this round

Checked, no issues

[13] The associations between insomnia and health–related quality of life in rehabilitation units at 1 month after stroke

Kim W–H, Jung H–Y, Choi H–Y, et al.: The associations between insomnia and health–related quality of life in rehabilitation units at 1 month after stroke. J. Psychosom. Res. 2017;96:10—14. doi: 10.1016/j.jpsychores.2017.02.008. PMID: 28545786. · record from pubmed · No source text

Matched by the manuscript's identifier; title matches, plus 7 more fields

Record found: The associations between insomnia and health–related quality of life in rehabilitation units at 1month after stroke. · J Psychosom Res · 2017 May · `10.1016/j.jpsychores.2017.02.008`

Cited in **4. Discussion**

> The stroke's site, including the right hemisphere, thalamus, or brainstem, is associated with PSI. 11 Moreover, a confluence of environmental factors (e.g., hospitalization) 12 and biological factors (e.g., heightened sympathetic activation, intermittent hypoxemia, oxidative stress, inflammatory processes leading to frequent arousals, and disrupted sleep–wake regulation) may exacerbate post–stroke insomnia. 13

No source text to check this round

Checked, no issues

[14] The effect of resistance exercise on sleep: A systematic review of randomized controlled trials

Kovacevic A, Mavros Y, Heisz JJ, et al.: The effect of resistance exercise on sleep: A systematic review of randomized controlled trials. Sleep Med. Rev. 2018;39:52—68. doi: 10.1016/j.smrv.2017.07.002. PMID: 28919335. · record from pubmed · Abstract

Matched by the manuscript's identifier; title matches, plus 7 more fields

Cited in **4. Discussion**

> A previous meta-analysis found that exercise may increase sleep quality. 14

Only partly supported · Checked against the abstract — Meta-analysis status remains unverified

– Not mentioned	A previous meta-analysis found that	
✓ Supported	exercise may increase sleep quality.	Source: These results suggest that resistance exercise may be an effective intervention to improve sleep quality.

Checked, no issues

[15] The effect of physical activity on sleep quality: A systematic review

Wang F, Boros S: The effect of physical activity on sleep quality: A systematic review. Eur. J. Phys. 2021;23(1):11–18. doi: 10.1080/21679169.2019.1623314. · record from crossref · No source text

Matched by DOI, plus 7 more fields

Cited in **4. Discussion**

> A previous meta-analysis found that exercise may increase sleep quality. 14 The results are also consistent with previous research indicating that exercise improves sleep quality across all age groups. 15

No source text to check this round

Appendix C Pages read

Grouped by reference number. “Bibliographic record” and “Evidence” are pages read when judging; “Search result” pages were returned by web search, may include unrelated pages, and are not evidence. To re-check a reference, open the addresses listed here.

Reference	Used as	Page
[1]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/23809904/
[2]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/31739180/
[3]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/20101923/
[4]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/28234940/
	Evidence	https://pmc-oa-opendata.s3.amazonaws.com/PMC5325204.1/PMC5325204.1.xml
[5]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/31236498/
	Evidence	https://pmc-oa-opendata.s3.amazonaws.com/PMC6575180.1/PMC6575180.1.xml
[6]	Bibliographic record	https://doi.org/10.1016/j.nrleng.2010.09.004
[7]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/32602376/
	Evidence	https://pmc-oa-opendata.s3.amazonaws.com/PMC11145505.319/PMC11145505.319.xml
[8]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/33406871/
[9]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/36606311/
[10]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/36087457/
[11]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/36854859/
[12]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/30643347/
[13]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/28545786/
[14]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/28919335/
[15]	Bibliographic record	https://doi.org/10.1080/21679169.2019.1623314
[16]	Bibliographic record	https://pubmed.ncbi.nlm.nih.gov/36117095/