

SYSTEMATIC REVIEW

Open Access



The association between socioeconomic position and depression or suicidal ideation in low- and middle-income countries in Southeast Asia: a systematic review and meta-analysis

Lucy Barrass^{1*}, Elisha Joshi¹, Joshua Dawe¹, Bruna Rubbo¹, Maria Theresa Redaniel², Lucy Riglin³, Nanette R. Lee⁴, Laura D. Howe¹ and Duleeka Knipe^{1,5}

Abstract

Background Mental illnesses contribute to a significant burden of disease in low- and middle- income countries (LMICs). Understanding risk factors for poor mental health is essential to reducing the burden, and for preventative measures to be implemented. The role of socioeconomic position (SEP) in poorer mental health is well established in high income countries, but less is known in LMICs. This study aimed to identify and synthesise epidemiological evidence for the associations between SEP and depression and suicidal ideation in LMICs in Southeast Asia, and to describe the strength and direction of any associations identified.

Methods This systematic review identified evidence by searching four databases in February 2023 (Medline, Embase, PsycInfo and Web of Science), grey literature and reference searching of included papers. Papers were included if they were based in a Southeast Asian LMIC general or hospital populations (= 16 years of age) and explored at least one measure of SEP in association with depression or suicidal ideation. Study quality was assessed using the Joanna Briggs Institute tool. A meta-analysis and narrative synthesis were performed.

Results Fifty-nine papers from six out of nine Southeast Asian LMICs were identified, with education the most commonly examined measure of SEP. Several papers explored more than one measure of SEP. Around half of the papers were rated as higher quality. Meta-analyses of education (OR: 1.87, 95% CI: 1.49-2.35) and working status (OR: 1.30, 95% CI: 0.99-1.71) provided evidence of lower levels of education and not being employed being associated with higher odds of depression. Consistent associations between lower SEP and higher odds of depression were also found for financial difficulty and subjective economic status. Three papers used suicidal ideation as their outcome, and there was some evidence of an association with lower SEP and higher ideation.

Conclusions Evidence indicates that lower SEP is associated with higher likelihood of depression, whereas for suicidal ideation, the evidence available is insufficient to reach a conclusion. The lack of longitudinal studies prevents the temporal nature of these associations being established.

*Correspondence:

Lucy Barrass
ed22025@bristol.ac.uk

Full list of author information is available at the end of the article



© The Author(s) 2024. **Open Access** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <http://creativecommons.org/licenses/by/4.0/>.

Systematic review registration PROSPERO: CRD42023410444.

Keywords Review, Depression, Suicidal ideation, Epidemiology, Social determinants

Background

Mental disorders contribute to a significant burden of disease worldwide, particularly in low- and middle-income countries (LMICs), where around 80% of those affected live [1, 2]. Of all mental disorders, depression has the greatest burden worldwide, whilst suicide, often closely associated with suicidal ideation, is one of the leading causes of mortality and years of life lost [1, 3, 4]. Understanding the risk factors for depression and suicidal ideation is important for planning and implementing interventions and preventative measures. The role of socioeconomic position (SEP) in health is well established, with lower SEP frequently associated with poorer health [5]. This association has also been observed for depression and suicidal ideation, with lower SEP associated with higher odds of depression and suicidal ideation [6, 7]. However, the majority of evidence supporting this is from high-income countries, with a paucity of evidence from LMICs.

According to the Global Burden of Disease Study, LMICs in Southeast Asia account for just over 4% of the total cases of major depressive disorder globally, however, this is likely to be an underestimate due to the way estimates are calculated [8]. A systematic review in LMICs exploring common mental disorders, including depression, found a positive relationship between poverty and common mental disorders, but the associations differed between measures of poverty [9]. Education, food insecurity, housing, social class, socio-economic status, and financial stress demonstrated relatively consistent and strong associations with common mental disorders but associations with income, employment and consumption were less consistent. However, this review included only three studies from LMICs in Southeast Asia, so it is not possible to determine if this association was replicated in this region.

There is also limited evidence, and a lack of evidence synthesis, of the association between SEP and suicidal ideation in Southeast Asia, but available evidence suggests lower levels of SEP are associated with higher odds of suicidal ideation [10–12]. Global estimates of suicide in Southeast Asia suggest that rates are low, but as with the estimates for depression, this is likely to be an underestimate due to poorer quality death records that these figures are based on [13, 14].

This systematic review aimed to synthesise the evidence for the associations between SEP and depression or suicidal ideation in LMICs in Southeast Asia, as well

as describe the strength and direction of any associations identified to determine which SEP indicators were most associated with depression or suicidal ideation.

Methods

The protocol for this study was registered with PROSPERO (CRD42023410444). This review is reported in accordance with the PRIMSA guidelines. A single study could be included more than once if they reported associations for different measures in multiple publications. For clarity, we refer to papers rather than studies.

Searches

We searched Medline (from 1946 onwards), Embase, PsycInfo and Web of Science for articles published from 1990 onwards. Search terms were mapped to MeSH or subject headings, and used in keyword searches (see Additional files 1). Grey literature was sought through searching the World Health Organisation, the World Bank, Hinari, the World Mental Health Initiative, and the Asian Development Bank. Mental health survey reports from each country were also searched, which was an addition to that stated in the published protocol. No language restrictions were applied.

References of included papers and relevant systematic reviews identified in the search were examined for additional articles. Database and grey literature searches were completed on the 27th February 2023.

Inclusion criteria

Population

Papers on adults over the age of 16 were included. We used 16 as a cutoff as in Southeast Asia individuals may have finished schooling by this point, and in some countries, with parental consent get married, and are able to work in some capacity. Data had to be collected in one of the nine LMICs in Southeast Asia, defined as countries in the Association of Southeast Asian Nations [15]. This includes Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Thailand, Timor Leste, and Vietnam.

Papers were not excluded based on sex, gender or age, other than already discussed. Papers on school, university, and college students were excluded because attendance and availability of these institutions is likely to be socially patterned, and inclusion of these studies was likely to bias the results [16]. We excluded papers assessing depression or suicidal ideation in a specific clinical or sociodemographic population, e.g. cancer patients.

Exposure

The exposure was individual, household, or area-level SEP. Measures were chosen as the most common indicators of SEP in the setting they were studied, plus common measures from high-income settings [16]. The following SEP measures were included:

- Education level
- Employment
- Area-level measures of deprivation
- Deprivation
- Poverty
- Income
- Assets
- Consumption expenditure
- Aggregate/overall SEP (e.g. indices, combined measures of SEP)

We did not use search terms for the below measures but deemed them suitable measures of SEP for inclusion when subsequently identified in papers:

- Food insecurity
- Insurance ownership

Papers were subjected to full text screening if they mentioned SEP, or one of the specific SEP indicators, in the title or abstract, as an exposure variable or if they had controlled/adjusted for it.

Outcome

Papers measuring depression (either clinically diagnosed or self-reported symptoms) or suicidal ideation were included. Papers focussing on psychotic depression, antenatal depression, or postpartum depression (PPD) were excluded as this review was not looking at particular clinical subgroups.

Study designs

All observational study designs at an individual level and control arms from randomised controlled trials were included. Qualitative studies, ecological studies, case studies and reviews were excluded.

Screening

Articles were deduplicated in Endnote then transferred to Rayyan for title and abstract screening. To ensure both screeners had the same understanding of the task, a sample of papers were assessed before completing the full screening at both title and abstract, and full text stages. Title and abstract screening were done independently by two reviewers (LB and EJ); conflicts were discussed and a decision agreed. EJ and LB agreed on

97.8% of the papers after the first screen, reaching 100% after discussions. Full text screening was completed independently by LB and BR. Google translate was used to screen one Thai language paper [17]. Conflicts were discussed and a consensus reached. A consensus was initially agreed for 73.6% of the papers, and 100% after discussions. If a paper did not provide the age range of participants included in the paper, the authors were contacted.

Data extraction

Data were extracted using a Microsoft Access form, piloted by LB, EJ, and JD. Data on study design, participants, exposure and outcome measures and their associations were extracted by three reviewers independently; LB extracted all papers and EJ/JD performed 50% each. Where possible, associations that were not presented were calculated using raw data. If a two-by-two table contained a zero, it was not possible to calculate an association. When it could not be determined how an estimate was calculated, associations were recalculated using raw data. To compare associations across papers, the associations extracted compared the lowest SEP category to the highest, with the latter used as the reference category. Some papers did not present the associations in this way so were recalculated using the raw data or, where this was not possible, estimates were inverted.

Quality assessment

The Joanna Briggs Institute (JBI) checklists were used to assess quality of the included papers [18]. Cross-sectional, case-control and cohort checklists were used to assess different study types. Papers were determined to be of higher quality if they met specific criteria (see Additional files 2). Criteria differed between each study type, but focused on selection, outcome definition and confounding. Regarding confounding, papers with crude (unadjusted) measures of association were deemed to be more appropriate than those who had adjusted, because of concerns about potential overadjustment, which frequently leads to biased estimates in systematic reviews of socioeconomic inequalities in health [19]. If papers did not present unadjusted estimates, an estimate was deemed overadjusted if more than sex, age, ethnicity, marital status and urbanicity had been adjusted for, as we determined that the majority of other variables would lie on the causal pathway between SEP and mental health. LB assessed all papers for quality, whilst EJ and JD did 50% each. Any discrepancies were discussed and a consensus agreed.

Analysis

Papers were first summarised descriptively. A random effects meta-analysis was then performed if there were more than five papers rated as high quality for a given exposure and outcome, using similar measures of the exposure. Meta-analyses were performed sub-grouped by country, and pooled estimates reported when there were five or more papers. A sensitivity analysis, using forest plots and pooled analyses, included papers rated as lower quality. Where a meta-analysis was not possible, forest plots, without pooled estimates, and a narrative synthesis are presented. Only associations comparing levels of outcome across the lowest versus highest categories of SEP were shown. Crude estimates were selected over adjusted estimates.

The *metan* command was used for all analyses, performed in STATA v18. A heatmap was produced to show the number of papers by country, generated in Microsoft Excel. Findings from the papers rated as higher quality are provided in the main results section, whereas the papers rated as lower quality are presented in Additional file 3, and the sensitivity analysis in Additional file 4. We used visual inspection of funnel plots and Egger’s test to assess the possible effects of publication bias in estimates used in the meta-analysis for higher rated papers, which

are shown in Additional file 4. To present the results, SEP measures were split into main and subgroup categories, which can be seen in Additional file 2.

Results

We identified 7863 articles through database searches and 20 via other methods (Fig. 1). In total 65 papers were eligible for inclusion in this review; six of these papers were duplicate reports of the same study datasets, therefore 59 papers were finally included in this review.

Papers characteristics are provided in Additional files 5. The majority of papers were conducted in Malaysia (36%), and there were no eligible papers from Cambodia, Laos or Timor-Leste (Fig. 2).

Most of the papers reported on depression (95%), with three investigating suicidal ideation. The majority of papers were cross-sectional in design (86%). The most commonly measured SEP exposure was education (81%), followed by working status (employment) (51%) and then income (41%). Five papers specifically explored the association between SEP and depression during the COVID-19 pandemic [20–24]. Approximately half (54%) of the papers were restricted to the older adult/elderly population (defined differently in studies), including one paper that combined

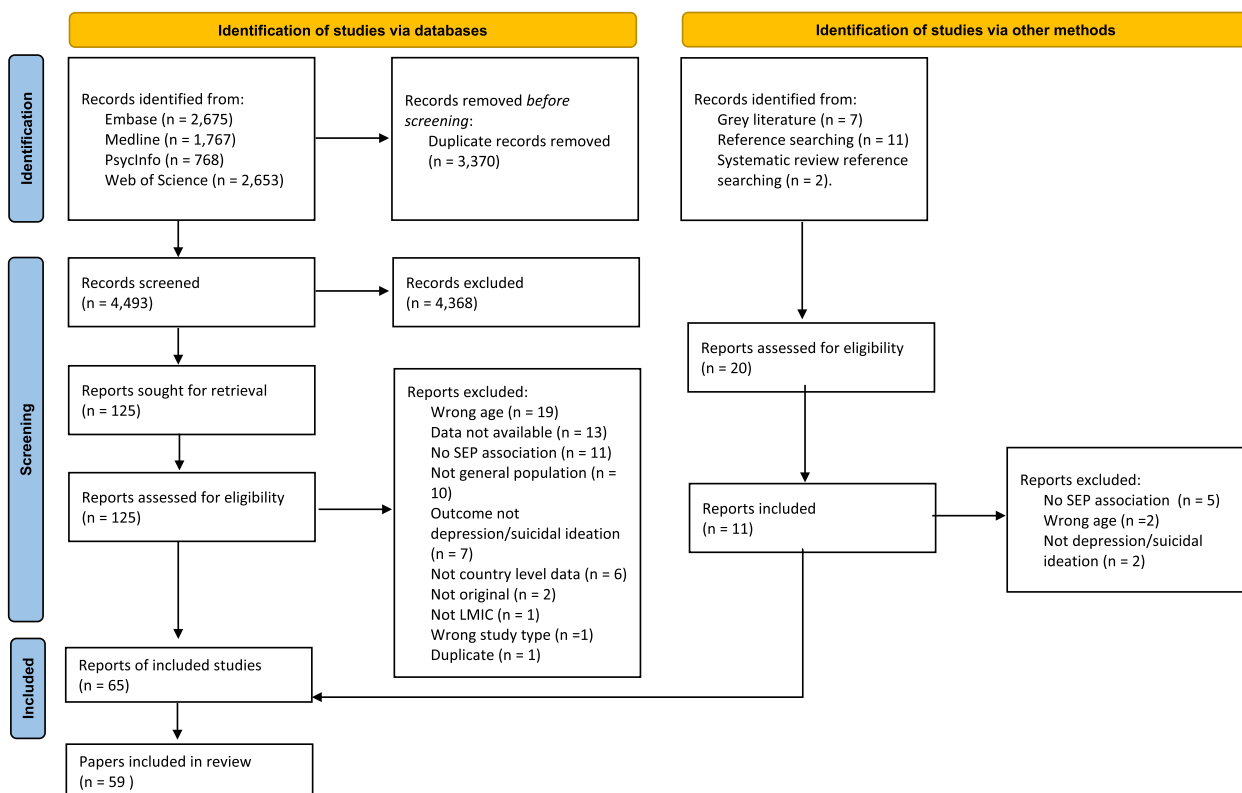


Fig. 1 Flow chart of study selection into the systematic review

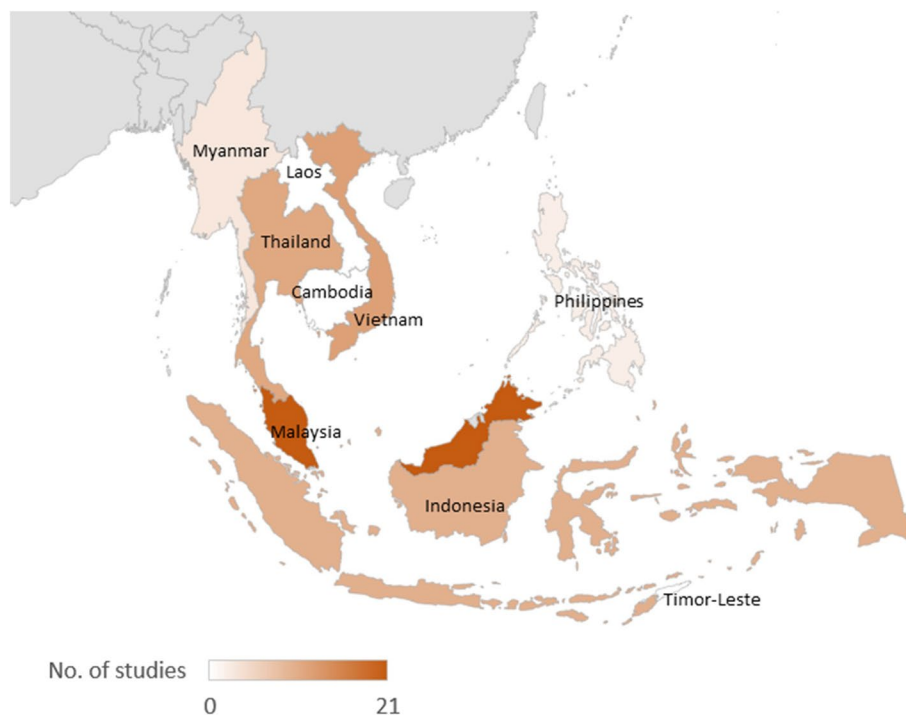


Fig. 2 Heatmap of number of studies by country

a middle-aged population with a high proportion of elderly participants [25]. Three papers were exclusively in a younger population [26–28], whilst an additional paper was entirely in a “pre-elderly” population (45–59 years old) [29]. Four papers did not state the age of their youngest participant [30–33]. One paper solely looked at associations in male participants [21].

Quality assessment

Detailed quality ratings can be found in Additional files 2. Twenty-nine papers were rated as higher quality. None of the higher quality papers explored suicidal ideation.

Associations of SEP with depression

Education

Twenty-five papers rated as higher quality explored the association between education and depression [21, 29, 34–56]. Of these, 21 were included in a meta-analysis, whilst the remaining four (which reported beta coefficients instead of odds ratios) are shown in Table 1 [21, 34–36].

Pooled associations (Odds Ratio (OR): 1.87, 95% CI: 1.49–2.35) (Fig. 3) of these papers suggested lower levels of education were associated with increased odds of depression, with statistical evidence to support this. There was substantial variation between estimates ($I^2 = 68.7%$). There were only sufficient estimates from

Table 1 Associations of education and depression in papers with beta coefficients (papers rated as higher quality)

Paper	Categories	Results	Effect	Country	Sample Size
Aung (2016) (CS) [36]	Educational attainment	-0.67 (-1.08, -0.26)	Coefficient (β) (Unadjusted)	Thailand	435
Patria. (2022) (C) [34]	Years of schooling	-0.04 (SE = 0.07)	Coefficient (β) (Unadjusted)	Indonesia	18374
Dao (2018) (CS) [35]	University or above High school or lower	Ref 1.95 (p = 0.13)	Beta (U) (Unadjusted)	Vietnam	299
Hoang (2022) (CS) [21]	High school Less than high school	Ref 0.02 (-0.24, 0.29)	Beta (U) (Unadjusted)	Vietnam	1080

C Cohort, CS Cross-sectional, β Standardised coefficient, U Unclear if standardised or unstandardised coefficient

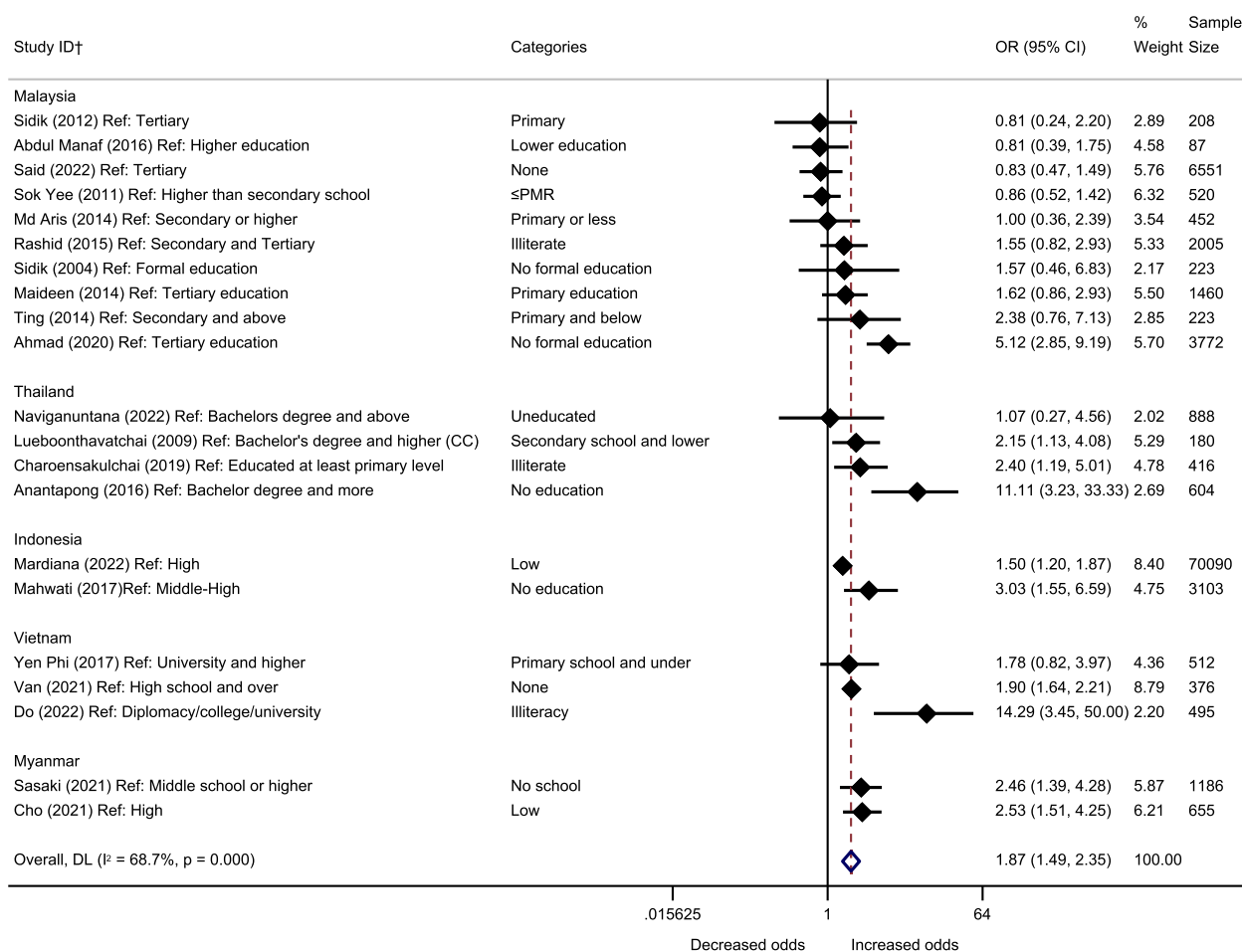


Fig. 3 Meta-analysis of the association between education and depression (odds ratios). †All papers are cross-sectional, unless stated. CC = case-control. All estimates are unadjusted

Malaysia for a subgroup analysis (OR: 1.37, 95% CI: 0.89–2.11, I² = 70.3%), given the high I² value it is unlikely that the observed heterogeneity is likely explained by country variations. Other subgroups are not reported or displayed as there weren't sufficient estimates for pooling of results. Results from the high-quality studies not included in the meta-analysis were also consistent with an association between lower levels of education and higher depression symptoms (Table 1).

Employment

Working status

Working status was used as the measure of SEP in 14 papers rated as higher quality [29, 37–40, 42–45, 47, 48, 51, 52, 56]. Pooled estimates (Fig. 4) suggested weak statistical evidence that being unemployed or not working was associated with higher odds of depression compared with being in employment (OR:1.30, 95% CI: 0.99–1.71). There was substantial variation between estimates (I² = 85.0%). Only Malaysia provided sufficient study estimates

to be pooled, and as with education substantial heterogeneity remained between paper estimates (OR: 1.01, 95% CI: 0.70–1.46, I² = 83.2%).

Occupation

Four papers rated as higher quality that explored occupation and depression showed limited evidence of an association (see Table 2) [21, 35, 41, 57]. Vu et al. found increased odds of depression for freelancers, compared to retired individuals, but limited evidence for other occupation groups. Md Aris et al., Hoan et al. and Dao et al. did not find strong evidence of associations with depression for a range of occupational categories compared to government workers.

Financial status

Income

Eleven papers rated as higher quality assessed the association between income and depression [29, 31, 38–40, 43, 45–48, 58]. Of these, eight showed evidence of an

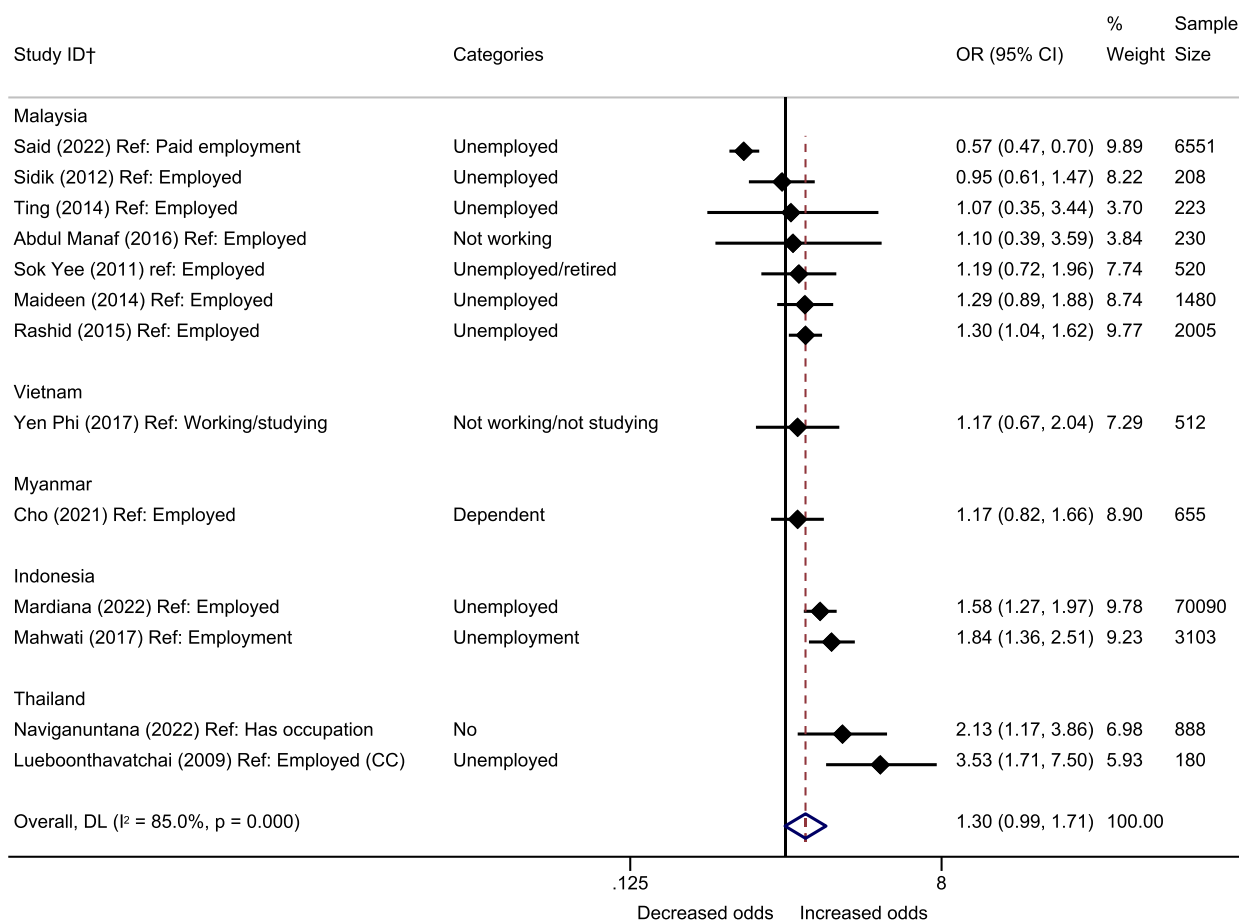


Fig. 4 Meta-analysis of the association between working status and depression (odds ratios). †All papers are cross-sectional, unless stated. CC = case-control. All estimates are unadjusted

Table 2 Associations of occupation and depression (papers rated as higher quality)

Main author (year) (study design)	Categories	Effect	Results	Country	Sample Size
Vu (2019) (CS) [57]	Retired	OR	1.00	Vietnam	523
	Freelancers	(Unadjusted)	2.42 (1.01–5.62)		
	Farmers		1.21 (0.77–1.91)		
	Others		1.56 (0.71–3.32)		
Md Aris (2014) (CS) [41]	Government	OR	1.00	Malaysia	452
	Not working	(Unadjusted)	0.93 (0.39–2.22)		
	Self employed/private		0.76 (0.36–1.68)		
Hoang (2022) (CS) [21]	Medical worker	Coefficient (U)	0.091 (-0.78, 0.96)	Vietnam	1080
	Government staff	(Unadjusted)	Ref		
	Farmer		-0.332 (-1.25, 0.59)		
	Student		0.715 (0.29, 1.14)		
	Other		0.262 (-0.13, 0.66)		
Dao (2018) (CS) [35]	Government officer	Coefficient (U)	Ref	Vietnam	299
	Worker	(Unadjusted)	2.66		
	Business		3.24		
	Free labour		2.18		
	Housewife		-3.64		
	Other		2.82		

CS Cross-sectional, OR Odds ratio, U Unclear if standardised or unstandardised coefficient

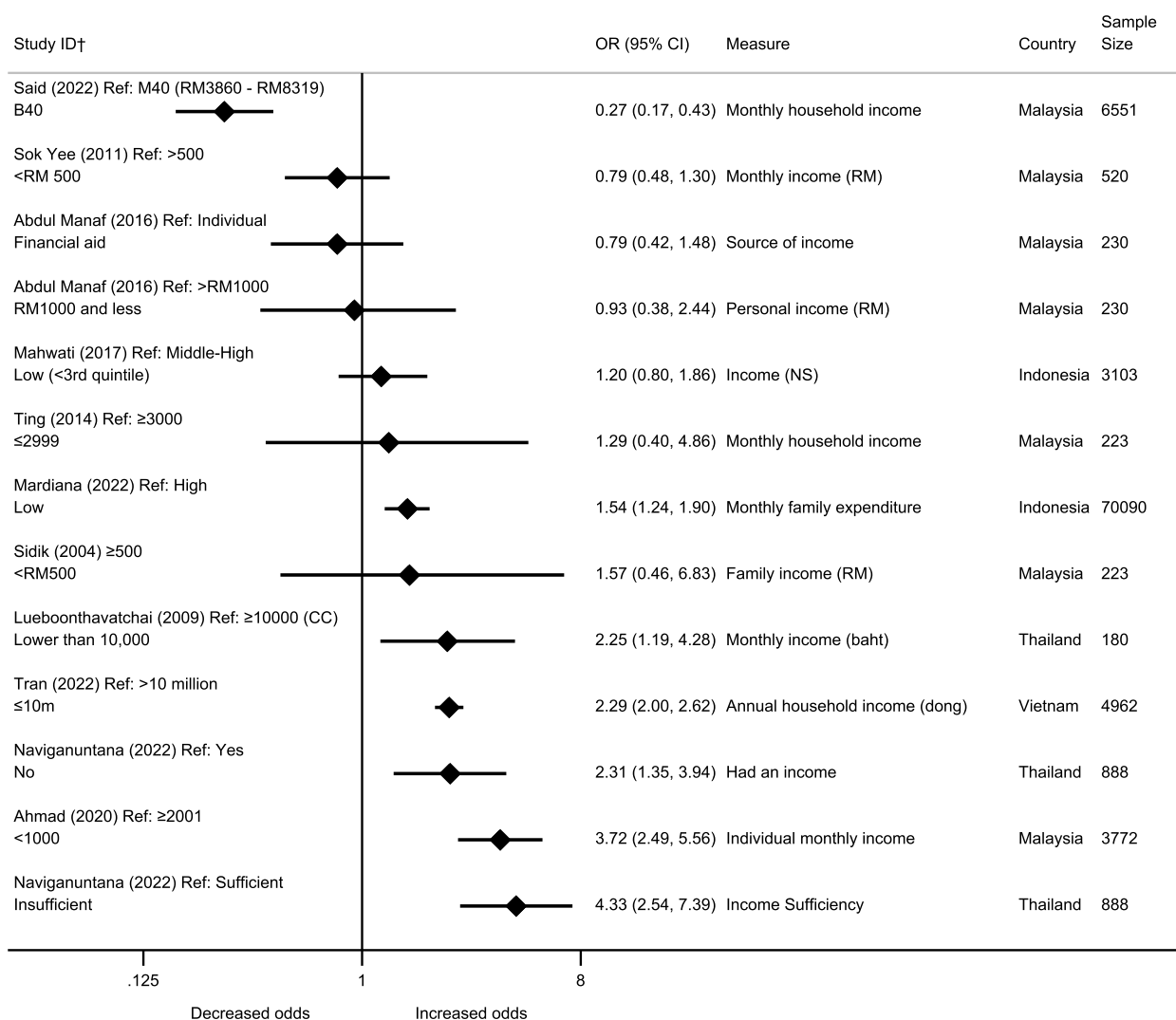


Fig. 5 Association between income and depression in papers rated as higher quality (odds ratios). †All papers are cross-sectional, unless stated. CC=Case-Control RM = Ringgit Malaysia. All estimates are unadjusted

association between lower income and increased odds of depression (Fig. 5). The use of different measures of income across the studies meant it was not appropriate to combine them in a meta-analysis. We found an increase odds of depression in those who had insufficient income, had no income, had moderate to severe financial stress and had family financial problems, however, each association was supported by just a single paper. Having lower family expenditure was also associated with increased odds of depression, backed by statistical evidence.

One paper found that a lower monthly household income was associated with a reduced odds of depression, compared to the middle group of income [39]. However, results should be interpreted with caution as

the comparison group was not the highest category, as is presented in the other papers.

Financial difficulty

The association between financial difficulties and depression was explored in seven papers rated as higher quality [21, 37, 44, 48, 49, 57, 59]. Five of the seven estimates suggested evidence of an association between financial difficulty and increased likelihood of depression, including two cross-sectional studies investigating serious financial problems, a case-control paper investigating family financial stress and moderate to severe financial difficulty and a cohort study investigating food consumption (Fig. 6). This cohort study also found higher food consumption score was associated with small reductions

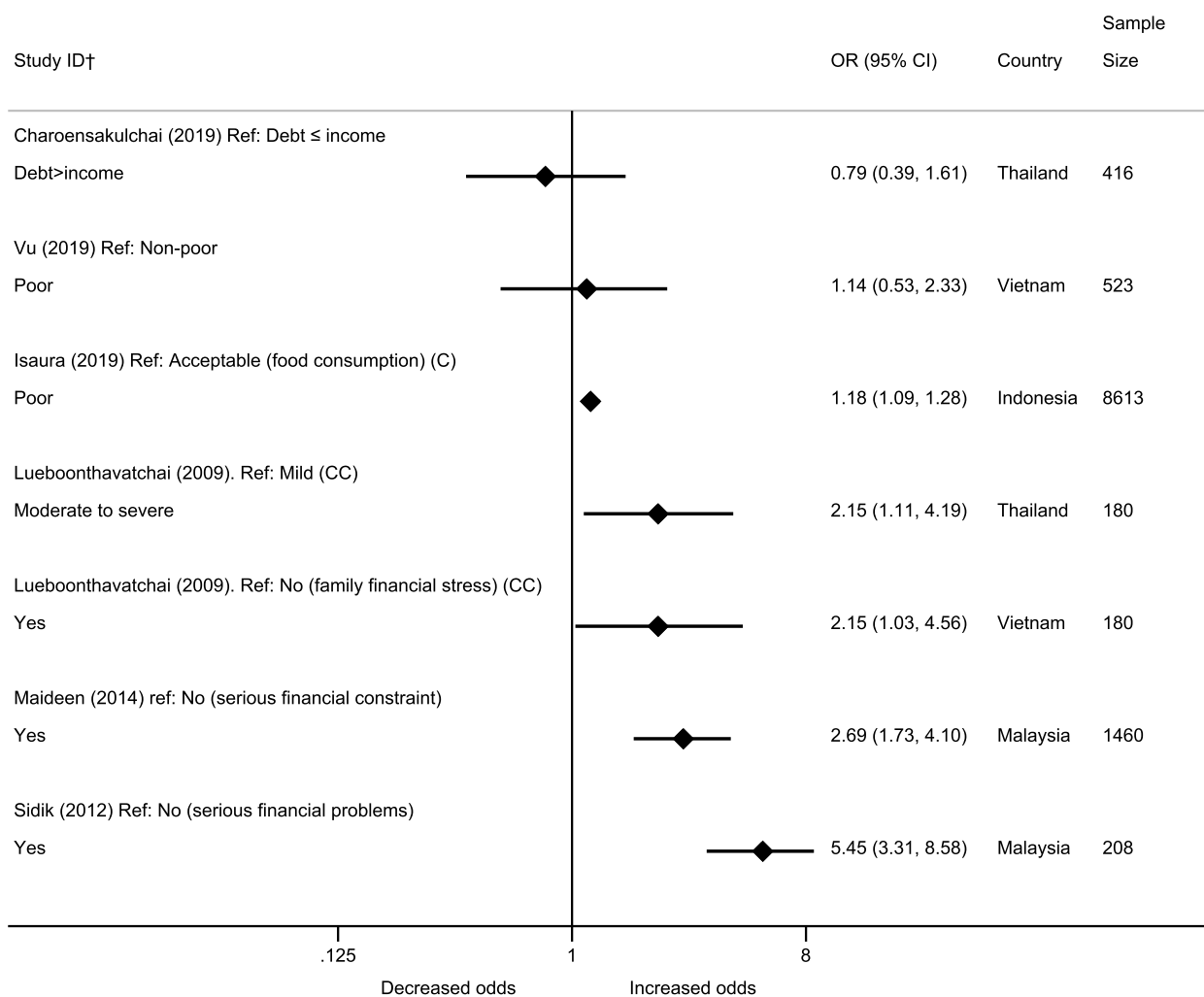


Fig. 6 Association between financial difficulty and depression in papers rated as higher quality (odds ratios). †All papers are cross-sectional, unless stated. CC= case-control C = cohort. All estimates are unadjusted

in the depressive symptom score ($\beta = -9.51 \times 10^{-3}$, 95% CI: -6.45×10^{-3} , -1.26×10^{-2} , $p < 0.001$). Two cross-sectional studies investigating debt relative to income and being poor did not find strong evidence of association with depression.

Hoang et al. explored family financial status, according to government guidelines, and found that compared to average status, those classified as poor were more likely to experience depression with a coefficient of 1.95 (95% CI: 0.91, 2.99) [21]; comparisons were not made against the highest reference category (rich) and therefore not equivalent to other papers.

Subjective economic status

Two papers, rated as higher quality, explored measures of subjective economic status [52, 54]. Sasaki et al. [54] asked participants to best describe their current financial situation in light of general economic conditions

[54]. The results suggest that those who see themselves as having difficult or very difficult financial situations had increased odds of having depression (crude OR (cOR): 4.82, 95% CI: 3.51–6.62). Yen Phi et al. (2017) demonstrated similar results in a Vietnamese sample, recruited from a primary care setting (cOR: 8.54, 95% CI: 2.35–30.98) [52].

Asset based Composite

Two papers rated as higher quality used a composite measure as their SEP exposure [54, 60]. Composite measures are defined if the authors used more than one variable to create the measure (Table 3).

Sasaki et al. found evidence that those with a low wealth index had increased odds of depression (cOR: 1.88, 95% CI: 1.40–2.50) compared to middle/high wealth [54]. One longitudinal paper reported on an aggregate measure of

Table 3 Composite measures as socioeconomic position exposure

Main author (year)	Measure	Derived
Sasaki (2021) (54)	Wealth Index	Ownership of: Radio, black & white television, colour television, Video/DVD player, electric fan, refrigerator, computer, store-bought furniture, personal music player, washing machine, gas cooker, electric cooker or rice cooker, air conditioner, bicycle, motorcycle, van/truck, microwave oven, mobile telephone, and internet
Jittawisuthikul (2011) (60)	Socioeconomic status	Household assets (not stated)

SEP, derived from number of household assets owned [60]. The measure was then classified as high or low depending on whether an individual's index scores were above or below the median index score. Those classified in the low category had a 22% reduced risk of depression, compared to those classified in the high category (95% CI: 0.40–1.17).

Ownership

Two papers rated as higher quality reported on ownership of single assets [29, 57]. They found weak evidence of an association between not owning insurance and a reduced odds of depression (cOR: 0.86, 95% CI: 0.92–1.19) as well as limited evidence of not owning health insurance and an increased odds of depression (cOR: 1.13, 95% CI: 0.64–2.07).

Comparison between low and high quality papers

Comparison between low and high quality papers

Results of the sensitivity analysis with education and working status can be seen in Additional files 4, and show consistency with results from papers rated as higher quality. Inclusion of the papers rated as lower quality substantially increased the heterogeneity in the education analyses ($I^2 = 80.5\%$).

Results for subjective economic status, ownership, income, and occupation were similar, regardless of the rated quality of the study. Asset based measures were more strongly positively associated with depression in papers rated as lower quality, compared to those rated as higher. The association between depression and financial difficulty was weaker in papers rated as lower quality, with direction of associations remaining the same, but wider confidence intervals that mostly crossed the null.

Three papers rated lower quality explored the association between SEP and suicidal ideation (Additional files 3), and found evidence of an association between lower levels of education and high odds of depression. Working status, income and financial difficulty were only explored in one paper, and broadly found associations between lower levels of SEP and higher levels of ideation.

Discussion

Main findings

Fifty-six papers were identified that explored at least one measure of SEP in association with depression, in six out of nine Southeast Asian LMICs. The majority of included studies were conducted in Malaysia [23, 31, 37–46, 61–69]. A small number of papers identified explored the association between measures of SEP and suicidal ideation ($n = 3$) [26, 62, 70].

The association between lower levels of SEP and higher likelihood of depression were most consistent with education, working status, financial difficulty, and subjective economic status. Occupation, income, composite measures, and ownership showed inconsistent findings, with variable results in both the strength and direction of associations. The inconsistencies in findings may be due to the variations in how these SEP variables were defined, and contextual differences between the countries or the reference category used.

Three papers rated as lower quality explored the association of SEP with suicidal ideation, and whilst the direction of association was consistent when exploring education (i.e. lower education was associated with higher odds of suicidal ideation), there was not always statistical evidence to support this, potentially representing underpowered studies. Only one of these studies included suicidal ideation as the primary outcome (for which weak evidence of an association was found), which was also the only study to conduct a sample size calculation [70].

Comparison with other studies-depression

A recent systematic review explored the association between socioeconomic status and depression, considering only composite/asset-based measures of SEP [71]. The authors concluded that the lower the socioeconomic status, the higher the risk of depression. They also found that the strength of associations with subjective measures of SEP were greater than objective measures; our results also found consistent positive results with subjective economic status. Subjective measures are often considered to be more closely related to the perceived position in society, compared to objective measures, and may play a

more important role in the associations with depression through stress and feeling unable to provide as required [72]. The review did not include any papers we identified, possibly due to our review including papers where SEP was a covariate, nor did it include any papers from Southeast Asia with the majority of papers coming from the United States and China. An older meta-analysis also explored the associations between socioeconomic inequalities and prevalence or incidence depression [6]. As above, there were no papers from Southeast Asia included but there was more diversity of countries (24 included versus 10 above) in the studies included. Results suggest that there are socioeconomic inequalities in incidence and prevalence of depression, with higher SEP groups at lowest likelihood of depression, which was broadly replicated in our findings.

Another review conducted mostly in high-income settings looking at financial indicators found a positive association between financial hardship, and subjective financial strain, with depression, in line with our conclusions [73]. Guan *et al.* found that household assets were a strong indicator of depression, but we identified mixed evidence surrounding this measure in high quality papers; in lower quality papers, our results are similar to Guan *et al.* This may be due to the differences in assets used and the importance of them in different contexts, or could be due to the use of adjusted estimates, and therefore could suggest overadjustment by other sociodemographic variables [16]. Guan *et al.* also found mixed evidence for income, suggesting that how income was measured affected the strength and direction of association, which is a plausible reason for the inconsistencies in our review, which included multiple definitions of income across studies. It is also possible that some of our inconsistencies in the associations with income are due to a high proportion of the papers being conducted in older populations, although we did not investigate this as this was not the focus of this review.

It is likely that associations with working status, occupation and income may be closely linked. No papers in our review explore the interactions between these variables. For example, although those who are working are perceived to have higher socioeconomic status than those who are unemployed, there are many different types of working status e.g. self-employed, which may in itself be a precarious situation due to uncertainties over income, subsequently resulting in higher odds of depression [74]. The aim of this review was not to disentangle these relationships but to acknowledge that they do exist. It is also important to consider when the data were collected as contextual issues e.g. an economic crisis, COVID-19, severe weather event may contribute towards increased levels of depression that

are interlinked to occupation, income and employment, and external contributing factors towards depression [75–77].

Within our review, the papers included used a wide variety of tools to assess depression. The differences in outcome measurement could explain some of the heterogeneity seen in the meta-analysis results for education and working status. Papers rated as higher quality used tools that had been validated previously, however, this was not always in the setting it was then subsequently used. Stigma is often attached to mental health disorders in Southeast Asia, including the presence of depression [78, 79]. Using tools that are not validated in the setting it is used may mean that depression was underreported in the papers we included, as they may ask questions not deemed culturally sensitive i.e. participants may be more willing to report physical symptoms than psychological ones. Similarly, using cut-offs of depression that are meant for different settings could also lead to inaccurate estimates [80].

Comparisons with other studies—suicidal ideation

To the best of our knowledge, there are no other systematic reviews exploring the association between SEP and suicidal ideation in Southeast Asia. However, there was a review looking at the relationship in South Korea (a high income country) [7]. This study was similar in that it explored multiple socioeconomic indicators in relation to suicidal ideation. For education, their findings differ slightly from what we identified. Although the majority of their papers showed a positive association between lower education and suicidal ideation, they had additional studies that demonstrated the reverse. The South Korean review found that, in some of their included studies, income had a greater effect on men than women, which was consistent with findings in our review. However, our review had reverse findings when comparing results for different age categories, with lower income being associated with lower odds of ideation, albeit not supported by statistical evidence. It is important to note that we only included one study exploring income in association with suicidal ideation, and therefore it is difficult to draw comparisons to a review that included 15.

There are limited systematic reviews to compare our results to that explore suicidal ideation. However, a systematic review was conducted on suicide and attempted suicide, both related to suicidal ideation, in South and Southeast Asia that explored SEP [81]. Despite a different outcome, this review also found mixed evidence regarding income, but found more consistent evidence of an association with education.

Underlying mechanisms

The theories behind the mechanisms of the relationships between SEP and depression/suicidal ideation are broadly divided into two hypotheses: social causation and social selection/drift. The former suggests that the conditions of poverty, such as increased stressors, limited access to health care and increased traumatic life events, are thought to increase poor mental health. This may be supported by our evidence that suggests education, a measure often attained earlier in life, is associated with higher odds of depression and ideation. Lower education levels may lead to poorer or more limited job opportunities, resulting in reduced income and therefore additional stressors which can increase poor mental health. The latter theory, social selection/drift, suggests the inverse: poor mental health results in increased conditions of poverty due to loss of employment and subsequently reduced income, as examples. Most of the literature concentrates on the social causation hypothesis in relation to depression, particularly when looking at associations longitudinally, although recent evidence from South Africa indicates that the causal mechanism also involves social drift [82]. Given the vast majority of findings and basis for these theories arise from studies in high-income countries, it cannot be assumed that these will also apply to LMICs. Lower SEP is likely to be associated with more acute levels of poverty and access to mental health services considerably more limited in LMICs compared to high-income countries, which may mean that associations between SEP and mental health due to social causation are stronger in LMICs. However, higher mental health stigma in LMIC compared to high-income countries could also lead to stronger associations due to social section/drift. High quality longitudinal studies are needed to investigate these theories in the Southeast Asian setting.

Strengths and limitations

This review employed a comprehensive search strategy which identified relevant papers which have been missed from existing systematic review on this topic [9, 71, 73, 83]. This review did not restrict on language and also searched grey literature. The review does, however, have some limitations. Firstly, whilst efforts were made to include papers that mentioned SEP in their title or abstract, we did not explore all papers to see if the authors had included SEP as a confounder in their analyses but had not mentioned it in their abstract. We may have missed eligible papers because of this. However, previous work suggests this is likely to have omitted a minimal number of studies [84].

Additionally, the assessment of quality did not take into account response rates therefore we may have incorrectly rated a study as being low risk of bias (i.e. higher quality) when the results were impacted by a non-response bias. Many of the papers did not report response bias so this review could not reliably assess that. Relatedly higher quality papers had to have a crude estimate of association, to limit the potential for overadjustment of associations, a common problem in systematic reviews of socioeconomic inequalities [19]. It is possible that under adjustment for some measures e.g sex may be present. Finally, excluding papers exploring PPD/maternal depression may have resulted in a large female population being missed. However, inclusion may have biased the results by including a more clinical population than other types of study and by collider bias due to socioeconomic differences in birth rates.

Conclusions

We found evidence that lower SEP increases the likelihood of depression in Southeast Asian LMICs, with some indication of this association with suicidal ideation. Education, working status, financial status and subjective economic status show the most consistent associations between lower SEP and increased likelihood of depression. Our review highlights the need for additional research exploring SEP in relation to depression and suicidal ideation in all LMIC in Southeast Asia. Similarly, more work is needed to ensure tools used for identification of poor mental health are validated in the relevant settings before use of them in epidemiological studies. Further investigations into whether the relationships we have examined are causal would aid political decision-making surrounding interventions and funding needs.

Abbreviations

LMICs	Low- and middle- income countries
PPD	Post partum depression
SEP	Socioeconomic position

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12889-024-20986-9>.

- Supplementary Material 1.
- Supplementary Material 2.
- Supplementary Material 3.
- Supplementary Material 4.
- Supplementary Material 5.

Acknowledgements

Not applicable.

Authors' contributions

LB - Conceptualisation, design, searching, screening, data extraction, quality appraisal, analysis, interpretation, writing (original draft) & writing (reviewing and editing); EJ - screening, data extraction, quality appraisal, writing (reviewing and editing); JD - data extraction, quality appraisal, writing (reviewing and editing); BR - screening, writing (reviewing and editing); MTR - conceptualisation, design, interpretation, writing (reviewing and editing); LR - conceptualisation, design, interpretation, writing (reviewing and editing); NL - writing (reviewing and editing); LH - conceptualisation, design, interpretation, writing (reviewing and editing); DK - conceptualisation, design, interpretation, writing (reviewing and editing). All authors read and approved the final manuscript.

Funding

LB and JD are funded by grant MR/W006308/1 for the GW4 BIOMED MRC DTP, awarded to the Universities of Bath, Bristol, Cardiff, and Exeter from the Medical Research Council (MRC)/UKRI. LR is supported by the Wolfson Centre for Young People's Mental Health, established with support from the Wolfson Foundation. BR is supported by the Centre for Pesticide Suicide Prevention, which is funded by a grant from Open Philanthropy at the recommendation of GiveWell. MTR is funded by the National Institute for Health and Care Research Applied Research Collaboration West (NIHR ARC West; core NIHR infrastructure-fund: NIHR200181). The views expressed are those of the authors and not necessarily those of the NIHR. DK is funded through the Elizabeth Blackwell Institute for Health Research at the University of Bristol which is supported by the Wellcome Trust (204813/Z/16/Z). The work was also supported by the NIHR Biomedical Research Centre at University Hospitals Bristol and Weston NHS Foundation Trust and the University of Bristol.

Data availability

All data generated or analysed during this study are included in this published article and its supplementary information files.

Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Author details

¹Population Health Sciences, Bristol Medical School, University of Bristol, Bristol, UK. ²NIHR ARC West, Population Health Sciences, University of Bristol, Bristol, UK. ³The Wolfson Centre for Young People's Mental Health and Division of Psychological Medicine and Clinical Neurosciences, MRC Centre for Neuropsychiatric Genetics and Genomics, Cardiff University, Cardiff, UK. ⁴Office of Population Studies Foundation, University of San Carlos, Cebu City, Philippines. ⁵South Asian Clinical Toxicology Research Collaboration, Faculty of Medicine, University of Peradeniya, Peradeniya, Sri Lanka.

Received: 15 February 2024 Accepted: 5 December 2024

Published online: 18 December 2024

References

- GBD 2019 Mental Disorders Collaborators. Global, regional, and national burden of 12 mental disorders in 204 countries and territories, 1990–2019: a systematic analysis for the Global burden of disease study 2019. *Lancet Psychiatr*. 2022;9(2):137–50.
- World Health Organisation. World mental health report: Transforming mental health for all. 2022.
- Ward JL, Azzopardi PS, Francis KL, et al. Global, regional, and national mortality among young people aged 10–24 years, 1950–2019: a systematic analysis for the Global Burden of Disease Study 2019. *Lancet*. 2021;398(10311):1593–618.
- Roth GA, Abate D, Abate KH, et al. Global, regional, and national age-specific mortality for 282 causes of death in 195 countries and territories, 1980–2017: a systematic analysis for the Global Burden of Disease Study 2017. *Lancet*. 2018;392(10159):1736–88.
- World Health Organisation. Social determinants of health. Available from: https://www.who.int/health-topics/social-determinants-of-health#tab=tab_1. Accessed 14 February 2024.
- Lorant V, Deliège D, Eaton W, Robert A, Philippot P, Ansseau M. Socio-economic inequalities in depression: a meta-analysis. *Am J Epidemiol*. 2003;157(2):98–112.
- Raschke N, Mohsenpour A, Aschentrup L, Fischer F, Wrona KJ. Socio-economic factors associated with suicidal behaviors in South Korea: systematic review on the current state of evidence. *BMC Public Health*. 2022;22(1):129.
- Institute for Health Metrics and Evaluation. Global Burden of Disease results. Available from: <https://vizhub.healthdata.org/gbd-results/>. Accessed 26 Jan 2024.
- Lund C, Breen A, Flisher AJ, et al. Poverty and common mental disorders in low and middle income countries: a systematic review. *Soc Sci Med*. 2010;71(3):517–28.
- Madigan A, Daly M. Socioeconomic status and depressive symptoms and suicidality: the role of subjective social status. *J Affect Disord*. 2023;326:36–43.
- Begum A, Viitasara E, Soares J, Rahman A, Macassa G. Parental socio-economic position and suicidal ideation among adolescents in Rural Bangladesh. *J Psychiatry Behav Sci*. 2018;4:1018.
- Pirkis J, Currier D, Butterworth P, et al. Socio-economic position and suicidal ideation in men. *Int J Environ Res Public Health*. 2017;14(4).
- World Health Organisation. THE GLOBAL HEALTH OBSERVATORY: Suicide rates. Available from: <https://www.who.int/data/gho/data/themes/mental-health/suicide-rates>. Accessed 31 Jan 2024.
- Mohsen N. Global, regional, and national burden of suicide mortality 1990 to 2016: systematic analysis for the Global Burden of Disease Study 2016. *BMJ*. 2019;364:194.
- Association of Southeast Asian Nations. ASEAN. Available from: <https://asean.org/>. Accessed 14 Dec 2023.
- Howe LD, Galobardes B, Matijasevich A, et al. Measuring socio-economic position for epidemiological studies in low- and middle-income countries: a methods of measurement in epidemiology paper. *Int J Epidemiol*. 2012;41(3):871–86.
- Jackson JL, Kuriyama A, Anton A, et al. The accuracy of google translate for abstracting data from non-english-language trials for systematic reviews. *Ann Intern Med*. 2019;171(9):677–9.
- Joanna Briggs Institute. Critical Appraisal Tools. Available from: <https://jbi.global/critical-appraisal-tools>. Accessed 1 Feb 2024.
- van Zwielen A, Dai J, Blyth FM, Wong G, Khalatbari-Soltani S. Overadjustment bias in systematic reviews and meta-analyses of socio-economic inequalities in health: a meta-research scoping review. *Int J Epidemiol*. 2023;53(1).
- Duong K, Bao T, Nguyen P, et al. Psychological Impacts of COVID-19 During the First Nationwide Lockdown in Vietnam: Web-Based, Cross-Sectional Survey Study. *JMIR Form Res*. 2020;4(12): e24776.
- Hoang VTH, Nguyen HTH. Factors associated with depression, anxiety, and stress symptoms among men in a rural area in Vietnam during COVID-19. *Front Psychiatry*. 2022;13:987686.
- Mubasyiroh R, Suryaputri IY, Idaiani S, et al. Mental health disorders of the Indonesian people in the early stages of the COVID-19 Pandemic: Who is vulnerable to experiencing it? *Int J Mental Health Promot*. 2022;24(5):725–37.
- Razali S, Tukhvatullina D, Hashim NA, et al. Sociodemographic factors of depression during the COVID-19 pandemic in Malaysia: the COVID-19 Mental health international study. *East Asian Arch Psychiatry*. 2022;32(4):82–8.
- Wichaidit W, Prommanee C, Choocham S, Chotipanvithayakul R, Assanangkornchai S. Modification of the association between experience of economic distress during the COVID-19 pandemic and behavioral health outcomes by availability of emergency cash reserves: findings from a nationally-representative survey in Thailand. *PeerJ*. 2022;10:e13307.
- Peltzer K, Pengpid S. Socioeconomic position and physical and mental health among middle-aged and older adults: cross-sectional and

- longitudinal results from a national community sample in Thailand. *J Human Behav Soc Environ*. 2022;34:1–15.
26. Cheung YB, Ashorn P. Linear growth in early life is associated with suicidal ideation in 18-year-old Filipinos. *Paediatr Perinat Epidemiol*. 2009;23(5):463–71.
 27. Fakhrunnisak D, Patria B. The positive effects of parents' education level on children's mental health in Indonesia: a result of longitudinal survey. *BMC Public Health*. 2022;22(1):949.
 28. Kim AW, Adam EK, Bechayda SA, Kuzawa CW. Early life stress and HPA axis function independently predict adult depressive symptoms in metropolitan Cebu, Philippines. *Am J Phys Anthropol*. 2020;173(3):448–62.
 29. Mardiana L, Astuti PAS, Suariyani NLP, Wirawan DN. Disability and Lower Social Gradient Increased Risk of Depression Among Pre-Elderly in Indonesia: finding from a Nationwide Health and Socio-Economic Survey. *Asia Pac J Public Health*. 2022;34(5):501–9.
 30. Kim Y, Manley J, Radoias V. Air Pollution and long term mental health. *Atmosphere*. 2020;11(12).
 31. Manaf M, Qureshi A, Loftizadeh M, Ganaegeran K, Yadav H, Al-Dubai S. Factors associated with anxiety and depression among outpatients in Malaysia: a cross-sectional study. *Malays J Public Health Med*. 2016;16(3):181–7.
 32. Mumang AA, Liaury K, Syamsuddin S, et al. Socio-economic-demographic determinants of depression in Indonesia: a hospital-based study. *PLoS One*. 2020;15(12):e0244108.
 33. Sharma S, Singhal S, Tarp F. Corruption and mental health: evidence from Vietnam. *J Econ Behav Organ*. 2021;185:125–37.
 34. Patria B. The longitudinal effects of education on depression: finding from the Indonesian national survey. *Front Public Health*. 2022;10:1017995.
 35. Dao ATM, Nguyen VT, Nguyen HV, Nguyen LTK. Factors associated with depression among the elderly living in Urban Vietnam. *Biomed Res Int*. 2018;2018:2370284.
 36. Aung MN, Moolphate S, Aung TN, Katonyoo C, Khamchai S, Wannakrairot P. The social network index and its relation to later-life depression among the elderly aged =80 years in Northern Thailand. *Clin Interv Aging*. 2016;11:1067–74.
 37. Sidik SM, Arroll B, Goodyear-Smith F, Ahmad R. Prevalence of depression among women attending a primary urban care clinic in Malaysia. *Singapore Med J*. 2012;53(7):468–73.
 38. Abdul Manaf MR, Mustafa M, Abdul Rahman MR, Yusof KH, Abd Aziz NA. Factors influencing the prevalence of mental health problems among Malay elderly residing in a rural community: a cross-sectional study. *PLoS ONE*. 2016;11(6):e0156937.
 39. Said MA, Thangiah G, Abdul Majid H, et al. Income disparity and mental wellbeing among adults in semi-urban and rural areas in Malaysia: the mediating role of social capital. *Int J Environ Res Public Health*. 2022;19(11):6604.
 40. Sok Yee W, Pei Lin L. Anxiety and depressive symptoms among communities in the East Coast of Peninsular Malaysia: A rural exploration. *Malays J Psychiatry*. 2011;20(1):59–71.
 41. Aris MA, Halim NA, Musa R. Prevalence of depression and its associated risk factors in the primary care setting in Kuantan. *J Adv Med Medical Res*. 2014;4(24):4201–9.
 42. Rashid A, Tahir I. The prevalence and predictors of severe depression among the elderly in Malaysia. *J Cross Cult Gerontol*. 2015;30(1):69–85.
 43. Sidik SM, Rampal L, Affi M. Physical and mental health problems of the elderly in a rural community of sepang, selangor. *Malays J Med Sci*. 2004;11(1):52–9.
 44. Maideen SFK, Sidik SM, Rampal L, Mukhtar F. Prevalence, associated factors and predictors of depression among adults in the community of Selangor, Malaysia. *PLoS One*. 2014;9(4):e95395.
 45. Ting NK, Leong TK. Prevalence and factors associated with depression among rural communities in Negeri Sembilan, Peninsular Malaysia. *J Scientific Res Rep*. 2014;3(12):1689–702.
 46. Ahmad NA, Abd Razak MA, Kassim MS, et al. Association between functional limitations and depression among community-dwelling older adults in Malaysia. *Geriatr Gerontol Int*. 2020;20(S2):21–5.
 47. Naviganuntana Y, Kercharoen N, Rawdaree P. Factors associated with depressive symptoms in elderly individuals living in urban communities. *Psychol Res Behav Manag*. 2022;15:855–64.
 48. Lueboonthavatchai P. Role of stress areas, stress severity, and stressful life events on the onset of depressive disorder: a case-control study. *J Med Assoc Thai*. 2009;92(9):1240–9.
 49. Charoensakulchai S, Usawachoke S, Kongbangpor W, et al. Prevalence and associated factors influencing depression in older adults living in rural Thailand: A cross-sectional study. *Geriatr Gerontol Int*. 2019;19(12):1248–53.
 50. Anantapong K, Pitanupong J, Werachattawan N. Prevalence of depression, and its associated factors among the elderly in Songkhla Province, Thailand: two-stage cluster sampling study. *J Clin Gerontol Geriatr*. 2017;8(2):58–63.
 51. Mahwati Y. The Relationship between spirituality and depression among the elderly in Indonesia. *Makara J Health Res*. 2017;21(1):13–19.
 52. Yen Phi HN, Quoc Tho T, Xuan Manh B, et al. Prevalence of depressive disorders in a primary care setting in Ho Chi Minh City, Vietnam: a cross-sectional epidemiological study. *Int J Psychiatry Med*. 2022;58(2):86–101.
 53. Van NHN, Huyen NTK, Luong NT, Duc DM, Thanh PQ. Factors associated with depression among the elderly living in rural Vietnam 2019: recommendations to remove barriers of psychological service accessibility. *Int J Ment Health*. 2021;50(2):136–50.
 54. Sasaki Y, Shobugawa Y, Nozaki I, et al. Association between depressive symptoms and objective/subjective socioeconomic status among older adults of two regions in Myanmar. *PLoS One*. 2021;16(1):e0245489.
 55. Do TTH, Nguyen DTM, Nguyen LT. Depressive symptoms and their correlates among older people in Rural Viet Nam: a study highlighting the role of family factors. *Health Serv Insights*. 2022;15.
 56. Cho SM, Saw YM, Saw TN, et al. Prevalence and risk factors of anxiety and depression among the community-dwelling elderly in Nay Pyi Taw Union Territory, Myanmar. *Sci Rep*. 2021;11(1):9763.
 57. Vu HT, Lin V, Pham T, et al. Determining Risk for Depression among Older People Residing in Vietnamese Rural Settings. *Int J Environ Res Public Health*. 2019;16(15).
 58. Tran KV, Esterman A, Saito Y, et al. Factors associated with high rates of depressive symptomatology in older people in Vietnam. *Am J Geriatr Psychiatry*. 2022;30(8):892–902.
 59. Isaura ER, Chen Y-C, Adi AC, Fan H-Y, Li C-Y, Yang S-H. Association between depressive symptoms and food insecurity among Indonesian adults: results from the 2007–2014 Indonesia Family Life Survey. *Nutrients*. 2019;11(12).
 60. Jittawisuthikul O, Jirapramukpitak T, Sumpowthong K. Disability and late-life depression: a prospective population-based study. *J Med Assoc Thai*. 2011;94(Suppl 7):S145–52.
 61. Cheah Y, Azahadi M, Phang S, Abd Manaf N. Sociodemographic, lifestyle and health factors associated with depression among adults in Malaysia: an ethnic comparison. *J Health Transl Med*. 2019;22(1).
 62. Cheah YK, Azahadi M, Phang SN, Abd Manaf NH. Association of suicidal ideation with demographic, lifestyle and health factors in Malaysians. *East Asian Arch Psychiatry*. 2018;28(3):85–94.
 63. Foong HF, Hamid TA, Ibrahim R, Haron SA. The intersectional effects of ethnicity/race and poverty on health among community-dwelling older adults within multi-ethnic Asian populace: a population-based study. *BMC Geriatr*. 2021;21(1):516.
 64. Imran A, Azidah AK, Asrenee AR, Rosediani M. Prevalence of depression and its associated factors among elderly patients in outpatient clinic of Universiti Sains Malaysia Hospital. *Med J Malaysia*. 2009;64(2):134–9.
 65. Mesbah SF, Sulaiman N, Mohd Shariff Z, Ibrahim Z. Does food insecurity contribute towards depression? A cross-sectional study among the urban elderly in Malaysia. *Int J Environ Res Public Health*. 2020;17(9).
 66. Sherina MS, Rampal L, Mustaqim A. The prevalence of depression among the elderly in Sepang. *Selangor Med J Malaysia*. 2004;59(1):45–9.
 67. Sidik S, Zulkefli N, Shah SA. Factors associated with depression among elderly patients in a primary health care clinic in Malaysia. *Asia Pac Fam Med*. 2003;2(3):148–52.
 68. Vanoh D, Shahar S, Yahya HM, Hamid TA. Prevalence and determinants of depressive disorders among community-dwelling older adults: findings from the towards useful aging study. *Int J Gerontol*. 2016;10(2):81–5.
 69. Yeoh SH, Tam CL, Wong CP, Bonn G. Examining depressive symptoms and their predictors in Malaysia: stress, locus of control, and occupation. *Front Psychol*. 2017;8.

70. Peltzer K, Pengpid S. Suicidal ideation and associated factors among clients of primary care and religious care centers in Thailand. *Asian J Soc Health Behav.* 2022;5(2):57–62.
71. Zhang Y, Zhang J, Li H, Jiang Y. The relationship between socioeconomic status and depression: a systematic review and meta-analysis. *Adv Psychol Sci.* 2022;30(12):2650–65.
72. Singh-Manoux A, Marmot MG, Adler NE. Does Subjective social status predict health and change in health status better than objective status? *Psychosom Med.* 2005;67(6):855–61.
73. Guan N, Guariglia A, Moore P, Xu F, Al-Janabi H. Financial stress and depression in adults: a systematic review. *PLoS One.* 2022;17(2):e0264041.
74. Willeke K, Janson P, Zink K, et al. Occurrence of mental illness and mental health risks among the self-employed: a systematic review. *Int J Environ Res Public Health.* 2021;18(16).
75. Guerra O, Eboeime E. The Impact of economic recessions on depression, anxiety, and trauma-related disorders and illness outcomes-a scoping review. *Behav Sci (Basel).* 2021;11(9).
76. Santomauro DF, Mantilla Herrera AM, Shadid J, et al. Global prevalence and burden of depressive and anxiety disorders in 204 countries and territories in 2020 due to the COVID-19 pandemic. *Lancet.* 2021;398(10312):1700–12.
77. Isobel S, Colleen MD. Climate change, climate-related disasters and mental disorder in low- and middle-income countries: a scoping review. *BMJ Open.* 2021;11(10):e051908.
78. Lauber C, Rössler W. Stigma towards people with mental illness in developing countries in Asia. *Int Rev Psychiatry.* 2007;19(2):157–78.
79. Alibudbud R. Towards transforming the mental health services of the Philippines. *Lancet Reg Health West Pac.* 2023;39:100935.
80. Lee JJ, Kim KW, Kim TH, et al. Cross-cultural considerations in administering the center for epidemiologic studies depression scale. *Gerontology.* 2011;57(5):455–61.
81. Knipe DW, Carroll R, Thomas KH, Pease A, Gunnell D, Metcalfe C. Association of socio-economic position and suicide/attempted suicide in low and middle income countries in South and South-East Asia - a systematic review. *BMC Public Health.* 2015;15(1):1055.
82. Lund C, Cois A. Simultaneous social causation and social drift: Longitudinal analysis of depression and poverty in South Africa. *J Affect Disord.* 2018;229:396–402.
83. Anders J, Rebecca M, Heather CW, et al. Socioeconomic status and depression - a systematic review. *medRxiv.* 2023.
84. Knipe DW. Life course influences on suicidal behaviour in low and middle income countries: a study based on 45,000+ households in Sri Lanka: University of Bristol; 2016.

Publisher's Note

Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.