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# Probability of Major Depression Classification Based on the SCID, CIDI, and MINI Diagnostic Interviews: A Synthesis of Three Individual Participant Data Meta-Analyses

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**Keywords**
Depressive disorders · Diagnostic interviews · Individual participant data meta-analysis · Major depression · Classification

**Abstract**
***Introduction:*** Three previous individual participant data meta-analyses (IPDMAs) reported that, compared to the Structured Clinical Interview for the DSM (SCID), alternative reference standards, primarily the Composite International Diagnostic Interview (CIDI) and the Mini International Neuropsychiatric Interview (MINI), tended to misclassify major depression status, when controlling for depression symptom severity. However, there was an important lack of precision in the results. ***Objective:*** To compare the odds of the major depression classification based on the SCID, CIDI, and MINI. ***Methods:*** We included and standardized data from 3 IPDMA databases. For each IPDMA, separately, we fitted binomial generalized linear mixed models to compare the adjusted odds ratios (aORs) of major depression classification, controlling for symptom severity and characteristics of participants, and the interaction between interview and symptom severity. Next, we synthesized results using a DerSimonian-Laird random-effects meta-analysis. ***Results:*** In total, 69,405 participants (7,574 [11%] with major depression) from 212 studies were included. Controlling for symptom severity and participant characteristics, the MINI (74 studies; 25,749 participants) classified major depression more often than the SCID (108 studies; 21,953 participants; aOR 1.46; 95% confidence interval [CI] 1.11–1.92]). Classification odds for the CIDI (30 studies; 21,703 participants) and the SCID did not differ overall (aOR 1.19; 95% CI 0.79–1.75); however, as screening scores increased, the aOR increased

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less for the CIDI than the SCID (interaction aOR 0.64; 95% CI 0.52–0.80). ***Conclusions:*** Compared to the SCID, the MINI classified major depression more often. The odds of the depression classification with the CIDI increased less as symptom levels increased. Interpretation of research that uses diagnostic interviews to classify depression should consider the interview characteristics. 

## Introduction

In mental health research, diagnostic interviews are used to classify disorders in a manner consistent with standard classification systems and replicable across studies [1–4]. There are important differences, however, in the designs of commonly used interviews. Semi-structured interviews are designed for administration by trained professionals with diagnostic experience; evaluators can interject queries and use their clinical judgment to determine whether symptoms are present and significant [1–3]. The Structured Clinical Interview for the DSM (SCID) [4] is the most commonly used semi-structured interview in depression research [5–7]. Fully structured interviews, in contrast, are designed for lay-interviewer administration to reduce the cost of clinician-administered interviews. They are completely scripted, and evaluators cannot provide additional explanations or rephrase questions; minimal judgment is involved. They are intended to maximize reliability but may reduce validity [8]. The Composite International Diagnostic Interview (CIDI) [8] is the most commonly used fully structured interview in depression research [5–7]. The Mini International Neuropsychiatric Interview (MINI) [9, 10], also common in depression research, is a very brief, fully structured interview, originally described by its developers as a screening interview and intended to be over-inclusive [10].

Despite their differences, semi-structured interviews, fully structured interviews of conventional length, and abbreviated alternatives such as the MINI are usually treated as equivalent. For instance, meta-analyses of the accuracy of depression screening tools typically pool the primary study results without considering the reference standards [11–17]. Until recently, however, only several small studies, each with ≤61 cases of depression, compared classifications made by different diagnostic interviews [2, 18–23]. Recently, 3 individual participant data meta-analyses (IPDMA) compared the odds of major depression classification between different diagnostic interviews, controlling for symptom severity scores and the characteristics of participants [5–7]. These included an IPDMA with 17,158 participants from 57 primary studies that used the Patient Health Questionnaire-9 (PHQ-9) to control for depression symptom severity [5], 12,759 women in pregnancy or postpartum from 46 studies that used the Edinburgh Postnatal Depression Scale (EPDS) [6], and 15,856 participants from 73 studies that used the depression subscale of the Hospital Anxiety and Depression Scale (HADS-D) [7]. The results suggested that, compared to semi-structured interviews (e.g., the SCID) [4], the CIDI may classify more people with relatively low-level symptoms as depressed but fewer people with higher symptom levels. The MINI appeared to classify major depression in more people across the symptom spectrum. There was important imprecision in results, however, including wide confidence intervals (CIs) around estimates.

Our objective was to synthesize results from 3 separate IPDMA datasets to compare the most commonly used diagnostic interviews for major depression, i.e., the SCID, CIDI, and MINI, in order to determine (1) if the adjusted odds ratios (aORs) for major depression classification using the CIDI and MINI differ from those of the SCID, when controlling for depression symptom severity and participant characteristics, and (2) if there is an interaction between the interview and depressive symptom level that would suggest that differences in classification odds are associated with symptom levels.

## Materials and Methods

We conducted a 2-stage evidence synthesis. We first conducted IPDMA of the PHQ-9, EPDS, and HADS datasets, separately, by fitting models with and without interaction terms for depressive symptom severity in each dataset, separately. Second, we pooled estimates from the results of the 3 IPDMAs.

*Inclusion Criteria for the Included Datasets*

For the PHQ-9, EPDS, and HADS-D IPDMAs, datasets from articles in any language were eligible for inclusion if (1) they included diagnostic classification for current Major Depressive Disorder or Major Depressive Episode using Diagnostic and Statistical Manual of Mental Disorders (DSM) [24–27] or International Classification of Diseases (ICD) [28] criteria based on a validated, semi-structured or fully structured interview; (2) they included PHQ-9, EPDS, or HADS-D scores; (3) the diagnostic interview and depression screening test were administered within 2 weeks of each other; and (4) participants were ≥18 years of age, not recruited from youth or college settings, and not recruited from psychiatric settings or because they had been identified as having symptoms of depression [29–31].

For the EPDS, participants were women who were pregnant or within 12 months postpartum [30]. In each IPDMA, datasets

**Table 1.** Participant data and number of primary studies included by diagnostic interview

| Diagnostic interview | Screening tool | Studies, *n* | Participants, *n* | Major depression, *n* (%) |
|---|---|---|---|---|
| SCID | PHQ-9 | 44 | 9,186 | 1,384 (15) |
| | EPDS | 28 | 7,279 | 1,017 (14) |
| | HADS-D | 36 | 5,488 | 607 (11) |
| | Total | 108 | 21,953 | 3,008 (14) |
| CIDI | PHQ-9 | 17 | 15,732 | 1,065 (7) |
| | EPDS | 3 | 2,948 | 194 (7) |
| | HADS-D | 10 | 3,023 | 269 (9) |
| | Total | 30 | 21,703 | 1,528 (7) |
| MINI | PHQ-9 | 32 | 15,872 | 1,630 (10) |
| | EPDS | 15 | 2,532 | 342 (14) |
| | HADS-D | 27 | 7,345 | 1,066 (15) |
| | Total | 74 | 25,749 | 3,038 (12) |
| All interviews | | 212 | 69,405 | 7,574 (11) |

CIDI, Composite International Diagnostic Interview; EPDS, Edinburgh Postnatal Depression Scale; HADS-D, Depression subscale of Hospital Anxiety and Depression Scale; MINI, Mini International Neuropsychiatric Interview; PHQ-9, Patient Health Questionnaire-9; SCID, Structured Clinical Interview for DSM.

where not all participants were eligible were included if primary data allowed the selection of eligible participants [29–31]. Over 90% of all the included studies in the IPDMA databases used the SCID, CIDI, or MINI diagnostic interview. Therefore, as we had for the published IPDMAs of the EDPS [6] and HADS-D [7], we restricted our analyses to studies that used the SCID, CIDI, or MINI.

*Search Strategy, Study Selection, and Acquisition and Extraction of Data*

More details on the search and selection processes as well as data contribution, extraction, and synthesis can be found in online supplementary Method 1 (for all online suppl. material, see www.karger.com/doi/10.1159/000509283). For information on how the IPDMA datasets and our analyses deviated from our previous published IPDMAs on diagnostic interview performance using the PHQ-9 [5], EPDS [6], and HADS-D [7] IPDMA databases, please see online supplementary Methods 2 and 3, and Figure 1.

*Statistical Analysis*

IPDMA of PHQ-9, EPDS, and HADS-D Datasets

We initially standardized symptom severity scores in each dataset. To do this, for each measure, we converted the raw screening-tool scores to standardized scores by *Z*-transformation (subtracting the mean and dividing by the SD of the raw scores). We then analyzed the PHQ-9, EPDS, and HADS datasets separately. In each dataset, we fitted binomial generalized linear mixed models with a logit link function to compare the aOR of major depression classification for the CIDI versus the SCID, the MINI versus the SCID, and, as a supplementary analysis, the MINI versus the CIDI, controlling for depressive symptom levels and other participant characteristics.

We adjusted for different covariates in the models for each dataset, based on relevant measures. For the PHQ-9 and HADS-D datasets, as in the previously published IPDMAs [5, 7], we controlled for depressive symptom severity (continuous standardized scores), age, sex, country Human Development Index (very high, high, or low-to-medium) [32], and patient care setting (PHQ-9: primary care, outpatient specialty care, inpatient specialty care, or non-medical care [33]; HADS-D: outpatient care, inpatient care, non-medical care, or mixed inpatient and outpatient [7]). For the EPDS, we did not control for sex or patient care settings but for pregnancy versus postpartum status [6]. To account for the correlation between subjects within primary studies in each dataset, a random intercept was fitted. Fixed slopes were estimated for all covariates in each model. We also fitted additional models in each dataset, where we added an interaction term between interview and symptom severity (continuous PHQ-9, EPDS, and HADS-D standardized scores), to evaluate whether any differences in aORs of major depression classification were associated with depression symptom severity.

Synthesis of IPDMA Results

To synthesize results from the 3 IPDMAs, we pooled estimates of the aOR for each comparison (CIDI vs. SCID, MINI vs. SCID, and MINI vs. CIDI) and the aOR for the interaction of interview and depression symptom severity in each comparison, along with its 95% CI. We used a DerSimonian-Laird random effects meta-analysis to pool the aORs [34]. Heterogeneity was examined using the $I^2$ statistic based on log aORs [35]. Because some studies were included in both the PHQ-9 and HADS-D IPDMAs, as a sensitiv-

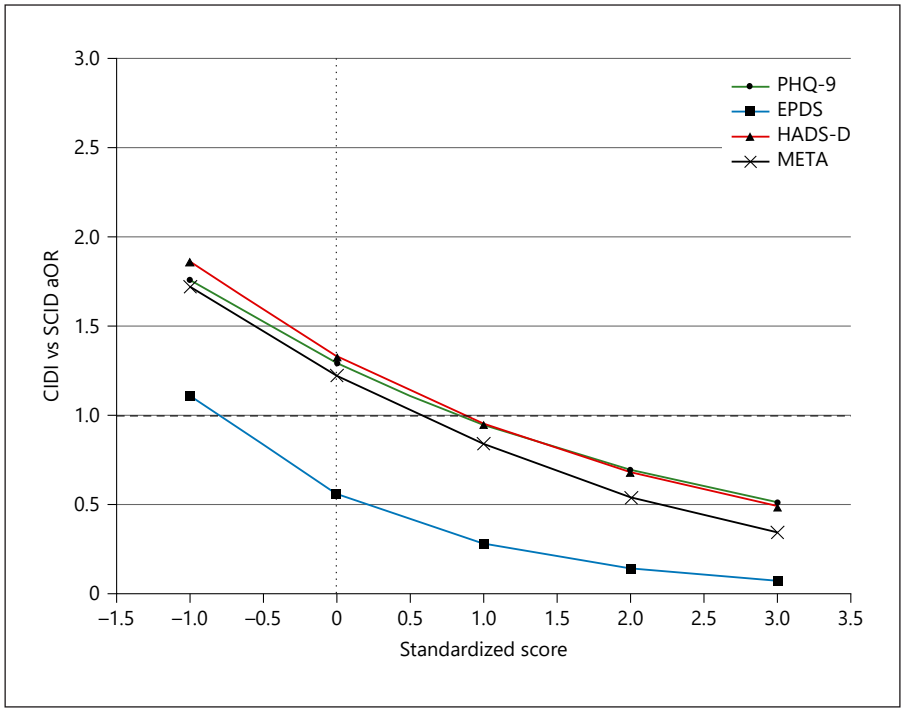


**Fig. 1.** Comparison of major depression classification odds of the Composite International Diagnostic Interview (CIDI) vs. the Structured Clinical Interview for DSM (SCID). Adjusted odds ratio (aOR) of the major depression classification for the CIDI compared to the SCID in primary studies based on the PHQ-9, EPDS, and HADS-D and pooled estimates at standardized scores. The standardized scores of −1, 0, 1, 2, and 3 are approximately equal to scores of 0, 5, 10, 16, and 21 on the PHQ-9 (SD 5.26); 1, 7, 13, 18, and 24 on the EPDS (SD 5.58); and 1, 5, 9, 13, and 17 on the HADS-D (SD 4.07). We present standardized scores from −1 to 3, because raw scores corresponding to standardized scores below −1 or above 3 would be negative or beyond the maximum scores of the included screening tools. EPDS, Edinburgh Postnatal Depression Scale; HADS-D, Depression subscale of Hospital Anxiety and Depression Scale; META, Pooled estimates from the synthesis meta-analysis; PHQ-9, Patient Health Questionnaire-9.

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ity analysis, we re-analyzed the results after removing these studies.

All analyses were conducted in *R* (*R* v3.5.1 and Studio v1.1.463) [36, 37] using the glmer function within the lme4 package [38] and the rma function within the metafor package [39].

## Results

In total, 69,405 participants (7,574 [11%] with major depression) were included in the 3 individual IPDMAs (Table 1). Of the 212 included primary studies, the SCID was used in 108 studies (21,953 participants, 14% with major depression), the CIDI in 30 studies (21,703 participants, 7% with major depression), and the MINI in 74 studies (25,749 participants, 12% with major depression). The mean (SD) of raw screening-tool scores, prior to standardization, was 4.99 (5.26) for the PHQ-9, 6.98 (5.58) for the EPDS, and 5.16 (4.07) for the HADS-D. Characteristics of individual primary studies are available in online supplementary Table 1 and the details of the PHQ-9 update in online supplementary Method 1. Thirteen studies were included in both the PHQ-9 and HADS-D datasets, involving 2,383 (6%) participants in the PHQ-9 IPDMA and 2,349 (15%) in the HADS-D IPDMA. There was no overlap between the EPDS and the PHQ-9 or HADS-D IPDMAs.

Estimates of aORs of major depression classification by diagnostic interview, controlling for depressive symptom severity and other participant characteristics, individually and pooled, are reported in Table 2. The overall odds of major depression classification did not differ for the CIDI and SCID (aOR 1.19; 95% CI 0.79–1.75) in the full model that included the interaction term, but there was a significant interaction between the CIDI and depressive symptom severity; as screening-tool scores increased, the odds of major depression classification increased less for the CIDI than for the SCID (interaction aOR 0.64; 95% CI 0.52–0.80). As shown in Figure 1, participants with lower depressive symptom severity were more likely to be classified with major depression by the CIDI than by the SCID, but the opposite was true with greater symptom severity. Compared to the SCID, the MINI classified major depression more often (aOR 1.45; 95% CI 1.08–1.93), when controlling for depressive symptom severity and participant characteristics. There was no apparent interaction between symptom levels and odds of classification (interaction aOR 0.95; 95% CI 0.78–1.15) (Fig. 2).

Trends of the probability of major depression classification by reference standards for individual IPDMAs are presented in online supplementary Fig. 2–4. There was minimal between-IPDMA heterogeneity of overall aORs for the comparison of the CIDI versus the SCID and the

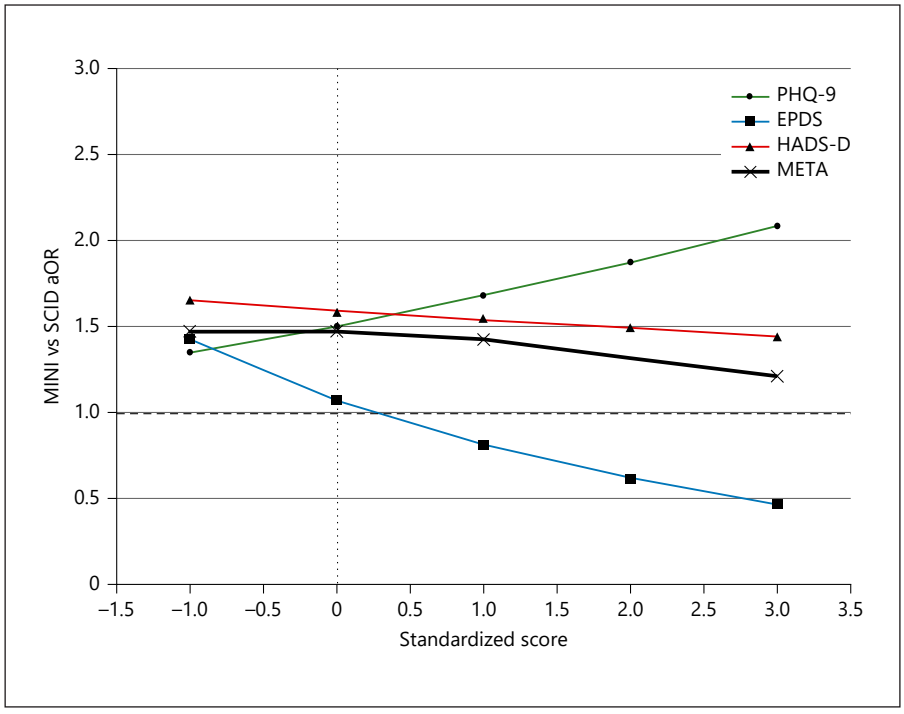


**Fig. 2.** Comparison of major depression classification odds of the Mini International Neuropsychiatric Interview (MINI) vs. the SCID considering the interaction between depressive symptom severity and the MINI. aOR of major depression classification for the MINI compared to the SCID for primary studies based on the PHQ-9, EPDS, and HADS-D and pooled estimates at standardized scores. The standardized scores of –1, 0, 1, 2, and 3 are approximately equal to scores of 0, 5, 10, 16, and 21 on the PHQ-9 (SD 5.26); 1, 7, 13, 18, and 24 on the EPDS (SD 5.58); and 1, 5, 9, 13, and 17 on the HADS-D (SD 4.07). We present standardized scores from –1 to 3, because raw scores corresponding to standardized scores below –1 or above 3 would be negative or beyond the maximum scores of the included screening tools. EPDS, Edinburgh Postnatal Depression Scale; HADS-D, Depression subscale of Hospital Anxiety and Depression Scale; META, pooled estimates from the synthesis meta-analysis; PHQ-9, Patient Health Questionnaire-9.



MINI versus the SCID in models without the interaction term ($I^2$ = 11% and 0%, respectively) and including the interaction term ($I^2$ = 0% and 0%, respectively). However, there was substantial between-IPDMA heterogeneity of interaction aORs for both comparisons ($I^2$ = 82% and 82%; Table 2).

In the comparison of the MINI versus the CIDI, the MINI was more likely to classify participants as having major depression (aOR 2.05; 95% CI 1.36–2.10), controlling for depressive symptom levels and other participant characteristics. As screening-tool scores increased, the odds of major depression classification increased more for the MINI than for the CIDI (interaction aOR 1.48; 95% CI 1.36–1.60). Heterogeneity was low for aORs with/without the interaction term and interaction aORs ($I^2$ = 0%, 0%, and 0%, respectively).

In the individual IPDMAs, some results from the EPDS dataset appeared to diverge from those generated in the PHQ-9 and HADS-D datasets. However, the number of studies and cases included in the EPDS dataset for the CIDI and MINI were smaller than any other combination of screening tool and diagnostic interview (Table 1).

As a sensitivity analysis, we removed the 13 datasets included in both the PHQ-9 and HADS-D IPDMAs and re-ran all analyses. This produced similar results (online suppl. Table 2).

## Discussion

There were 2 main findings. First, the overall odds of major depression classification did not differ between the fully structured CIDI and the semi-structured SCID. However, adjusting for depressive symptom levels and participant characteristics, the odds of major depression classification with the CIDI increased significantly less than those for the SCID did, as levels of depressive symptoms increased. This suggests that, compared to the SCID, the CIDI is relatively more likely to classify individuals with sub-threshold or mild depressive symptoms and relatively less likely to classify people with more severe symptoms. Second, participants evaluated with the MINI were significantly more likely to be classified as having major depression than those assessed with the SCID, independent of symptom severity. Between-study heterogeneity was low for models without the interaction term but higher for models with interaction terms. The EPDS IPDMA estimates appeared to diverge somewhat from the PHQ-9 and HADS-D IPDMAs. This may have been related to the small numbers of studies and major depression cases for the CIDI and MINI among studies that used the EPDS.

Our findings appear to be consistent with characteristics of the different types of diagnostic interviews. The

**Table 2.** Comparison of major depression classification odds across diagnostic interviews

| Diagnostic interview comparison | Screening tool | Model without interaction[a] | Model with interaction[b] | |
|---|---|---|---|---|
| | | aOR (95% CI) | aOR (95% CI) | aOR for interaction (95% CI) |
| CIDI vs. SCID | PHQ-9 | 0.81 (0.50–1.33) | 1.15 (0.69–1.92) | 0.73 (0.66–0.81) |
| | EPDS[c] | 0.34 (0.09–1.34) | 0.66 (0.15–2.82) | 0.50 (0.41–0.61) |
| | HADS-D[c] | 1.09 (0.56–2.13) | 1.40 (0.72–2.74) | 0.71 (0.59–0.84) |
| | Pooled | 0.83 (0.54–1.27) | 1.19 (0.79–1.75) | 0.64 (0.52–0.80) |
| | $I^2$, % | 11 | 0 | 82 |
| MINI vs. SCID | PHQ-9 | 1.62 (1.05–2.50) | 1.43 (0.91–2.25) | 1.11 (1.00–1.24) |
| | EPDS[c] | 0.91 (0.43–1.94) | 1.15 (0.52–2.50) | 0.76 (0.62–0.93) |
| | HADS-D[c] | 1.52 (1.01–2.30) | 1.57 (1.03–2.40) | 0.96 (0.84–1.09) |
| | Pooled | 1.46 (1.11–1.92) | 1.45 (1.08–1.93) | 0.95 (0.78–1.15) |
| | $I^2$, % | 0 | 0 | 82 |
| MINI vs. CIDI | PHQ-9[d] | 2.00 (1.13–3.54) | 1.34 (0.75–2.38) | 1.52 (1.37–1.68) |
| | EPDS[c] | 3.72 (1.21–11.43) | 2.83 (0.85–9.33) | 1.49 (1.18–1.88) |
| | HADS-D[c] | 1.70 (0.84–3.43) | 1.40 (0.71–2.76) | 1.34 (1.13–1.58) |
| | Pooled | 2.05 (1.36–2.10) | 1.49 (0.99–2.25) | 1.48 (1.36–1.60) |
| | $I^2$, % | 0 | 0 | 0 |

aOR, adjusted odds ratio; CI, confidence interval; CIDI, Composite International Diagnostic Interview; EPDS, Edinburgh Postnatal Depression Scale; HADS-D, Depression subscale of Hospital Anxiety and Depression Scale; MINI, Mini International Neuropsychiatric Interview; PHQ-9, Patient Health Questionnaire-9; SCID, Structured Clinical Interview for DSM.

[a] No interaction; adjusted for depression symptom severity (standardized PHQ-9, EPDS, or HADS-D scores), age, and country human development index for all 3 IPDMAs, sex and patient care setting for the PHQ-9 and HADS-D IPDMAs, and pregnancy status (pregnant vs. postpartum) for the EPDS.

[b] Including an interaction between diagnostic interview and PHQ-9, EPDS, or HADS-D scores; adjusted for depression symptom severity (standardized PHQ-9, EPDS, or HADS-D scores), age, and country Human Development Index for all 3 IPDMAs, sex and patient care setting for the PHQ-9 and HADS-D IPDMAs, and pregnancy status (pregnant vs. postpartum) for the EPDS.

[c] Results are slightly different from previously published results [6, 7] in terms of adjusted ORs for the interactions due to using standardized rather than raw scores in our analyses.

[d] Only the 2 models of MINI vs. CIDI converged with the default optimizer in glmer, so we used bobyqa instead for all other models.

MINI was designed as a screening interview and described by its developers as over-inclusive in classifying psychiatric disorders [10]. For the CIDI, the lack of sensitivity to different levels of depressive symptoms severity may be because it assesses symptoms in the last 12 months and over the lifetime, then probing to determine if the symptoms are currently present by means of a single question. In contrast, the SCID and the MINI specifically assess symptoms in the past 2 weeks. In addition, the CIDI is much more complicated than the MINI or the SCID. It includes complex branches and is scored using algorithms subject to calibration, which may influence how well diagnoses map onto the DSM criteria. This could lead to error at all symptom levels, which would result in more people being classified at lower symptom severity levels and fewer at higher levels.

The results were generally consistent with limited evidence from small studies that previously directly compared depression classification by administering semi- and fully structured diagnostic interviews to the same participants. In 2 studies that examined general population samples with low prevalence, the fully structured interviews classified major depression substantially more frequently than the semi-structured interviews did [2, 20]. On the other hand, in a study of participants undergoing inpatient alcohol treatment, where the symptom severity would be expected to be higher, the depression

classification likelihood was similar for the semi-structured and fully structured interviews [22].

Our findings have important implications for research, including clinical trials, prognostic and risk-factor studies, diagnostic accuracy studies, and prevalence studies. Concerns have been raised about the degree to which antidepressant trials are generalizable to real-world clinical practice [40]. Based on our findings, the method used to classify depression status is clearly also an important consideration. If used to determine trial eligibility, the CIDI may not identify some participants who would be eligible according to the SCID, but then the CIDI and MINI may both include some participants who would not be eligible according to the SCID. This could reduce the ability to detect treatment effects and further limit applicability to participants in practice who meet the diagnostic criteria. Differences in classifying participants could similarly reduce the ability to identify potential associations between risk factors and depression. In studies of diagnostic test accuracy, the accuracy of the depression screening tool has been shown to differ across reference standards [33, 41, 42]. In studies of major depression prevalence, the MINI tends to overestimate compared to the SCID whereas with the CIDI, relative prevalence will depend on the underlying distribution of depressive symptoms.

Our findings, which are contrary to the common belief that different reference standards can be treated equivalently in mental health research, provide evidence that different approaches are needed [43]. Ideally, researchers should use semi-structured interviews, such as the SCID, which are designed to replicate diagnostic procedures as closely as possible, to establish diagnostic status. However, this is not always feasible due to the resources required, including highly trained staff. Future studies are needed to develop models to calibrate weights of major depression classification, based on different reference standards that could facilitate the synthesis of results of different diagnostic interviews. Meanwhile, in selecting a diagnostic interview for use in research, investigators should consider the advantages and disadvantages of the different types of interviews, including the performance characteristics and the resources required. In published studies, authors should comment on the potential implications of the type of diagnostic interview that has been used. Users of research, including clinicians, should be aware that results in studies that use the CIDI or MINI may differ from those found when using semi-structured interviews which are designed to replicate diagnostic procedures as closely as possible. It is also important to underline that, from a clinimetric perspective [44–46], the assessment of diagnostic status alone is not sufficient and rating tools and self-report questionnaires are also needed to characterize symptom severity and the specific nature of the symptoms experienced.

A strength of this study was the inclusion of 69,405 participants with 7,574 (11%) major depression cases from 212 studies. This allowed us to overcome the limitations of previous IPDMAs and generate more precise estimates. A second strength was that data within each included dataset was standardized in terms of the definitions of major depression classification, the eligibility criteria, and the variables.

A limitation to consider is that for the IPDMAs we included, we could not obtain primary data for 28/117 PHQ-9 studies (24% of eligible studies and 17% of eligible participants), 19/64 EPDS studies (30% of eligible studies and 30% of eligible participants), and 47/116 HADS-D studies (41% of eligible studies and 29% of eligible participants). The second is that we used standardized scores instead of raw depression symptom scores, which required making the assumption that a SD change in scores was equivalent across the different screening tools. Third, because only 3 estimates were pooled, our ability to estimate heterogeneity and explore possible causes was limited. Fourth, some studies were included in the IPDMA of both the PHQ-9 and the HADS-D, although a sensitivity analysis showed that the results were similar when these studies were removed. Fifth, we examined the SCID, CIDI, and MINI because we did not have access to enough studies to include other diagnostic interviews. It is unclear to what degree our findings would generalize to other types of diagnostic interviews. Finally, our study did not include a head-to-head comparison of interviews from a randomized controlled trial or by administering different interviews to all participants. It is unlikely, however, that such a study would be feasible with a large enough sample to draw conclusions with confidence. Our study design, despite its limitations, overcame this barrier.

To conclude, the semi-structured SCID was designed to replicate diagnostic standards and procedures as closely as possible. By synthesizing results from 3 large IPDMAs, we found that the most commonly used fully structured diagnostic interviews to classify major depression, the CIDI and MINI, did not perform equivalently to the SCID. The CIDI is not as responsive as the SCID to different levels of reported depressive symptoms, and the MINI identifies more cases across the spectrum of depressive symptom levels. Researchers should carefully consider the advantages and disadvantages of using these

diagnostic interviews, and findings from studies based on the CIDI or the MINI should be interpreted by taking into consideration how their performance deviates from that of the SCID.

## Statement of Ethics

This study involved the analysis of previously collected de-identified data and the studies we included were originally required to have obtained ethics approval and informed consent. The Research Ethics Committee of the Jewish General Hospital therefore determined that ethics approval was not required.

## Conflict of Interest Statement

All authors completed the ICJME uniform disclosure form and declare no support from any organization for the submitted work; no financial relationships with any organizations that might have an interest in the submitted work in the previous 3 years. All authors declare no other relationships or activities that could appear to have influenced the submitted work. No funder had any role in the design and conduct of the study; collection, management, analysis, and interpretation of the data; preparation, review, or approval of the manuscript; and decision to submit the manuscript for publication.


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## Author Contributions

Y.W., B.L., J.P.A.I., A.B., and B.D.T. were responsible for the study conception and design. B.D.T. contributed a primary dataset that was included in this study. Y.W., B.L., and B.D.T. contributed to data extraction and coding for the meta-analysis. Y.W., B.L., A.B., J.P.A.I., and B.D.T. contributed to data analysis and interpretation. Y.W., A.B., and B.D.T. contributed to drafting the manuscript. All authors provided a critical review and approved the final manuscript. A.B. and B.D.T. are the guarantors; they had full access to all the data in the study and take responsibility for the integrity of the data and the accuracy of the data analyses.

## Group Author Contributions

The DEPRESSD Collaboration includes collaborators who contributed:

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