**Supplementary material**

**Supplementary Data 1**

Search strategy adopted across varying datasets. Queries run from Inception through June 4, 2017.

**PubMed/MEDLINE (1506 references)**

((nursing home\*[Title/Abstract] OR long-term care[Title/Abstract] OR homes for the aged[Title/Abstract])) AND (((((((("Psychotic Disorders"[Mesh] OR "Bipolar Disorder"[Mesh]) OR "Depressive Disorder, Major"[Mesh]) OR ("Mood Disorders"[Mesh] OR "Seasonal Affective Disorder"[Mesh] OR "Affective Disorders, Psychotic"[Mesh])) OR ("Depression"[Mesh] OR "Depressive Disorder"[Mesh])) OR "Schizophrenia"[Mesh]) OR "Schizophrenia Spectrum and Other Psychotic Disorders"[Mesh])) OR (psychosis))

**PsycINFO**

Search 1: (depression or schizophrenia or psychosis or psychotic or depressive or bipolar disorder or mania or bipolar depression or schizoaffective disorder or major depression or major depressive disorder).ti,ab,kw

Search 2: (nursing home$ or long-term care or home$ for the aged).ti,ab,kw

Search 3: #1 and #2

**EMBASE**

Search 1: (depression or schizophrenia or psychosis or psychotic or depressive or bipolar disorder or mania or bipolar depression or schizoaffective disorder or major depression or major depressive disorder).ti,ab,kw

Search 2: (nursing home$ or long-term care or home$ for the aged).ti,ab,kw

Search 3: #1 and #2

**Supplementary Fig. 1**: Meta-regression analysis of publication year. The Y-axis indicates the predicted variable (the effect size), while the X-axis indicates the predictor (the moderator in point). The intercept indicates the value taken by the Y when X equals zero, while the slope (beta), and indicates the angular coefficient of the regression line. A statistically significant beta coefficient indicates that as the moderator values change, the size of the effect will vary accordingly.



Specifically, the more recent the publication year, the higher the reported prevalence of MDD among nursing homes residents. Note: Year of publication ranged from 1984 to 2013.

**Supplementary Fig. 2**: Meta-regression analysis of mean age. The Y-axis indicates the predicted variable (the effect size), while the X-axis indicates the predictor (the moderator in point). The intercept indicates the value taken by the Y when X equals zero, while the slope (beta), and indicates the angular coefficient of the regression line. A statistically significant beta coefficient indicates that as the moderator values change, the size of the effect will vary accordingly.



Specifically, the older the mean age of the residents, the lower the reported prevalence of MDD among nursing homes residents.

Note: only 22 out of 32 studies reported quantitative data relevant to the present pooling.#

**Supplementary Fig. 3**: Meta-regression analysis of the percentage of males. The Y-axis indicates the predicted variable (the effect size), while the X-axis indicates the predictor (the moderator in point). The intercept indicates the value taken by the Y when X equals zero, while the slope (beta), and indicates the angular coefficient of the regression line. A statistically significant beta coefficient indicates that as the moderator values change, the size of the effect will vary accordingly.



Specifically, the higher the proportion of males among the nursing homes residents, the higher the rates of MDD overall.

Note: only 25 out of 32 studies reported quantitative data relevant to the present pooling.

**Supplementary Fig. 4**: Meta-regression analysis of residents receiving antidepressant drugs. The Y-axis indicates the predicted variable (the effect size), while the X-axis indicates the predictor (the moderator in point). The intercept indicates the value taken by the Y when X equals zero, while the slope (beta), and indicates the angular coefficient of the regression line. A statistically significant beta coefficient indicates that as the moderator values change, the size of the effect will vary accordingly.



Specifically, the higher the antidepressant drug utilization, the higher the rates of MDD overall.

Note: only 8 out of 32 studies reported quantitative data relevant to the present pooling.

**supplementary Table 1: PRISMA 2009 checklist**

|  |  |  |  |
| --- | --- | --- | --- |
| ***Section/topic*** | ***#*** | ***Checklist item*** | ***Reported*** |
| ***TITLE*** | | |  |
| *Title* | *1* | *Identify the report as a systematic review, meta-analysis, or both.* | *✓* |
| ***ABSTRACT*** | | |  |
| *Structured summary* | *2* | *Provide a structured summary including, as applicable: background; objectives; data sources; study eligibility criteria, participants, and interventions; study appraisal and synthesis methods; results; limitations; conclusions and implications of key findings; systematic review registration number.* | *✓* |
| ***INTRODUCTION*** | | |  |
| *Rationale* | *3* | *Describe the rationale for the review in the context of what is already known.* | *✓* |
| *Objectives* | *4* | *Provide an explicit statement of questions being addressed with reference to participants, interventions, comparisons, outcomes, and study design (PICOS).* | *✓* |
| ***METHODS*** | | |  |
| *Protocol and registration* | *5* | *Indicate if a review protocol exists, if and where it can be accessed (e.g., Web address), and, if available, provide registration information including registration number.* | *✓* |
| *Eligibility criteria* | *6* | *Specify study characteristics (e.g., PICOS, length of follow-up) and report characteristics (e.g., years considered, language, publication status) used as criteria for eligibility, giving rationale.* | *✓* |
| *Information sources* | *7* | *Describe all information sources (e.g., databases with dates of coverage, contact with study authors to identify additional studies) in the search and date last searched.* | *✓* |
| *Search* | *8* | *Present full electronic search strategy for at least one database, including any limits used, such that it could be repeated.* | *✓* |
| *Study selection* | *9* | *State the process for selecting studies (i.e., screening, eligibility, included in systematic review, and, if applicable, included in the meta-analysis).* | *✓* |
| *Data collection process* | *10* | *Describe method of data extraction from reports (e.g., piloted forms, independently, in duplicate) and any processes for obtaining and confirming data from investigators.* | *✓* |
| *Data items* | *11* | *List and define all variables for which data were sought (e.g., PICOS, funding sources) and any assumptions and simplifications made.* | *✓* |
| *Risk of bias in individual studies* | *12* | *Describe methods used for assessing risk of bias of individual studies (including specification of whether this was done at the study or outcome level), and how this information is to be used in any data synthesis.* | *✓* |
| *Summary measures* | *13* | *State the principal summary measures (e.g., risk ratio, difference in means).* | *✓* |
| *Synthesis of results* | *14* | *Describe the methods of handling data and combining results of studies, if done, including measures of consistency (e.g., I2) for each meta-analysis.* | *✓* |