

INPLASY PROTOCOL

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Corresponding author:
Haining Xie

1950843397@qq.com

Author Affiliation:
WANNAN MEDICAL COLLEGE.

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Conflicts of interest:
None declared.

Prevalence of anxiety and depression symptoms among international students during the COVID-19 pandemic: a meta-analysis

Xie, HN¹; Wang, J²; Chen, Y³.

Review question / Objective: To explore the prevalence of anxiety and depression among international students during the COVID-19 epidemic.

Condition being studied: Anxiety disorders are neurotic disorders characterised by generalised and persistent anxiety or recurrent panic attacks. Depression is one of the most common psychological disorders nowadays, with continuous and prolonged depression as the main clinical feature. International students are a high-risk group for mental health problems and are more likely to experience anxiety and depression. To more accurately assess anxiety and depression symptoms among international students, we conducted this meta-analysis.

INPLASY registration number: This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 03 October 2022 and was last updated on 03 October 2022 (registration number INPLASY2022100012).

INTRODUCTION

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generalised and persistent anxiety or recurrent panic attacks. Depression is one of the most common psychological disorders nowadays, with continuous and prolonged depression as the main clinical feature. International students are a high-risk group for mental health problems and are more likely to experience anxiety and

depression. To more accurately assess anxiety and depression symptoms among international students, we conducted this meta-analysis.

METHODS

Search strategy: Databases searched include CNKI WangFang CBM VIP Web of Science PubMed Embase. The search is open from 1 January 2020 to 30 August 2022. No language restrictions. Search terms for “Anxiety Disorders” “Depression” “COVID-19” “International Students”.

Participant or population: The study is aimed at international students. Excluded from the study were general university students in their home countries.

Intervention: COVID-19 exposure is defined as a case of new coronary pneumonia in that country for more than one week

Comparator: COVID-19 exposure is defined as a case of new coronary pneumonia in that country for more than one week.

Study designs to be included: cross-sectional study will be included.

Eligibility criteria: 1) The subjects of the study are international students. 2) Use of specific and validated tools to assess anxiety and depression. 3) Sufficient information was provided to calculate the prevalence of depression and anxiety among international students (e.g., percentages or sample size and number). 4) Studies published during the COVID-19 epidemic.

Information sources: The information comes from an electronic databases including CNKI WangFang CBM VIP Web of Science PubMed and Embase.

Main outcome(s): Prevalence of anxiety and depression among international students during the pandemic Prevalence of anxiety and depressive symptoms.

Quality assessment / Risk of bias analysis: 1) Representativeness of the sample:

inclusion of all subjects or the use of random sampling. 2) Sample size: a population > 200 was defined as a qualified sample. 3) Response rate: response rate is ≥80%. 4) Validated measurement tools: appropriate tools for assessing anxiety symptoms and depression symptoms. 5) Proper statistical analysis: appropriate and clear statistical methods to describe their data.

Strategy of data synthesis: Using Stata15 software to calculate the combined prevalence of anxiety symptoms and depressive symptoms and their 95% confidence intervals (CI). Random effects were used when $I^2 > 50\%$ indicated heterogeneity model, and conversely, fixed-effects models are used.

Subgroup analysis: Subgroup analyses were conducted according to the study characteristics of the included studies and potential factors influencing the mental health of international students by our gender (male or female), education level (undergraduate or graduate and above), age ($25 \leq$ or >25), survival status (living alone or not living alone), screening instruments, anxiety disorders, and severity of depression.

Sensitivity analysis: Sensitivity analyses were performed by excluding each study consecutively to determine the effect of individual studies on overall prevalence estimates.

Country(ies) involved: China.

Keywords: COVID-19, Anxiety, Depression, Prevalence, International student, Meta-analysis.

Contributions of each author:

Author 1 - Haining Xie.
Email: 1950843397@qq.com
Author 2 - Wang, J.
Author 3 - Chen, Y.