REVIEW PROTOCOL
Review title and timescale
1 Review title
Give the working title of the review. This must be in English. Ideally it should state succinctly the interventions or exposures being reviewed and the associated health or social problem being addressed in the review.

Attention deficit hyperactivity disorder (ADHD) and written ability: a rapid systematic review

2 Original language title
For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.
N/A

3 Anticipated or actual start date Give the date when the systematic review commenced, or is expected to commence.
1/12/2019

4 Anticipated completion date Give the date by which the review is expected to be completed.
15/11/2020

5 Stage of review at time of this submission Indicate the stage of progress of the review by ticking the relevant boxes.

Review stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	No
Risk of bias (quality) assessment	Yes	No
Data analysis	Yes	No

Review team details
6 Named contact
Stanley Cheng
7 Named contact email
stacheng@unimelb.edu.au
8 Named contact address
The University of Melbourne
Victoria 3010
9 Named contact phone number
+61 435 435 855
10 Organisational affiliation of the review
The University of Melbourne, Parkville, Melbourne, Australia
11 Review team members and their organisational affiliations

Title	First name	Last name	Affiliation
Prof	David	Coghill	The University of Melbourne
Dr	Nardia	Zendarski	The University of Melbourne
Mr	Stanley	Cheng	The University of Melbourne

12 Funding sources/sponsors
N/A

13 Conflicts of interest
List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review. Are there any actual or potential conflicts of interest?
No

14 Collaborators
Give the name, affiliation and role of any individuals or organisations who are working on the review but who are not listed as review team members.
N/A

Review methods
15 Review question(s) State the question(s) to be addressed / review objectives.
To develop a better understanding of why school-aged individuals with ADHD have increased difficulty with writing and how this potentially influences academic outcomes. The specific aspects of writing ability that the current review would focus on are high-level composition skills, namely, text formation, composition, and written expression.

16 Searches
Give details of the sources to be searched, and any restrictions (e.g. language or publication period).
The full search strategy is not required, but may be supplied as a link or attachment.
A systematic search of Scopus, Medline, PubMed, and ERIC. Searches are limited to English-language articles that were published or in press from 1999 onwards. Keyword and/or Subject heading database searches of article abstracts, and titles were conducted using two categories: 1) Attention Deficit Disorder with Hyperactivity, 2) Writing performance.

17 URL to search strategy
N/A

18 Condition or domain being studied
Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.
Attention Deficit and Hyperactive disorder; writing abilities/achievement.

19 Participants/population
Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.
School-aged individuals.

20 Intervention(s), exposure(s)
Give full and clear descriptions of the nature of the interventions or the exposures to be reviewed.

A relatively broad definition of writing performance was employed during the initial database search to increase the chance that all the related papers would be covered for the subsequent articles screening and selection processes. Writing involves both low-level transcription skills (i.e. handwriting, spelling, punctuation, capitalization, and grammar) and high-level composition skills (i.e. planning, content, organization, and revision) (Graham & Harris, 2005). There are at least three distinct language levels in writing: letter formation (handwriting), word formation (spelling or keyboarding), and text formation (composition). The first two levels are often viewed as foundational or low-level transcription skills, whereas the third level, composition encompasses the high-level skills (Berninger and Abbott 2003). In the current study, only studies that are primarily related to high-level composition skills are included in the screening and selection process.

The review will include studies where ADHD is the participants' primary diagnoses based on the Diagnostic and Statistical Manual of Mental Disorders (DSM) III, IIIR, IV, IV-TR or 5 criteria; the International Statistical Classification of Diseases 10th Revision (ICD-10) criteria; or on a diagnostic instrument that uses these criteria (e.g. ADHD Rating Scale-IV, Schedule for Affective Disorders and Schizophrenia for School-Age Children-Present and Lifetime Version, or Conners' rating scales).

21 Comparator(s)/control
Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group).
Comparison/control groups are not required for articles to be included in the review.

22 Types of study to be included
Give details of the study designs to be included in the review. If there are no restrictions on the types of study design eligible for inclusion, this should be stated.

Observational studies, natural experiments, or prospective, retrospective, experimental, or longitudinal studies.

23 Context
Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.

School or clinical settings.

24 Primary outcome(s)
Give the most important outcomes.

Writing performance as assessed by standardised and validated tests including national standardised tests (e.g. NAPLAN).

25 Secondary outcomes
List any additional outcomes that will be addressed. If there are no secondary outcomes enter None.

None

26 Data extraction (selection and coding)
Give the procedure for selecting studies for the review and extracting data, including the number of researchers involved and how discrepancies will be resolved. List the data to be extracted.

Titles and abstracts of articles will be screened by the lead author (SC) and included if they met the eligibility criteria. Both the lead author and co-author (NZ) will conduct a full-text articles evaluation to determine if the articles meet the eligibility of being included in the review. Any disagreement will be resolved by co-author (DC) to make a final decision. Data will be extracted for all included articles across different categories: demographic information of the participants, writing tests used, outcome measures, and results.

27 Risk of bias (quality) assessment
State whether and how risk of bias will be assessed, how the quality of individual studies will be assessed, and whether and how this will influence the planned synthesis.

Strength of evidence for each article will be determined by rating each paper against the "Standard Quality Assessment Criteria for Evaluating Primary Research Papers", as per the PRISMA guidelines for rapid reviews.

28 Strategy for data synthesis
Give the planned general approach to be used, for example whether the data to be used will be aggregate or at the level of individual participants, and whether a quantitative or narrative (descriptive) synthesis is planned. Where appropriate a brief outline of analytic approach should be given.

We will provide a narrative synthesis of the findings from the included studies, target population (school aged participants). Effect sizes will be calculated for the outcomes (i.e. writing performance) if those data are available from the studies. We anticipate that there will be a limited scope for meta-analysis because of the board range of different measurement/statistics approaches employed to measure the outcomes.

29 Analysis of subgroups or subsets
Give any planned exploration of subgroups or subsets within the review. 'None planned' is a valid response if no subgroup analyses are planned.

Proposed subgroup analysis: English V's English as a second language, gender; writing outcomes by study quality/design (e.g. a regression model, no control group design).

Review general information

30 Type and method of review
A Rapid Systematic review

31 Language
English
Will a summary/abstract be made available in English?
Yes
32 Country

Australia

33 Other registration details
N/A

34 Reference and/or URL for published protocol
Give the citation for the published protocol, if there is one. Give the link to the published protocol, if there is one. This may be to an external site or to a protocol deposited with CRD in pdf format. I give permission for this file to be made publicly available
Yet to be published.

35 Dissemination plans
Give brief details of plans for communicating essential messages from the review to the appropriate audiences.
We intend to publish this rapid review in a scientific, peer-reviewed, academic journal and at scientific conferences.

36 Keywords
Give words or phrases that best describe the review.
Attention deficit hyperactivity disorder
Writing ability
Writing achievement

37 Details of any existing review of the same topic by the same authors
Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.

Nothing to note

38 Current review status
Review status should be updated when the review is completed and when it is published.

In progress.

39 Any additional information
Provide any further information the review team consider relevant to the registration of the review.
N/A