**PROTOCOL FOR SYSTEMATIC REVIEW**

**PROSPERO**

**International prospective register of systematic reviews**

**Systematic review**

**1. \* Review title**

Effects of the use of information and communication technologies in the learning of nursing and midwifery students in low and middle income countries : a systematic review

**2. Original language title**

French

**3. \* Anticipated or actual start date**

06/04/2020

**4. \* Anticipated completion date**

01/03/2021

**5. \* Stage of review at time of this submission**

The review has not yet started: No

|  |  |  |
| --- | --- | --- |
| **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 | No |
| Data extraction | No | No |
| Risk of bias (quality) assessment | No | No |
| Data analysis | No | No |

Protocol not yet finalized : Yes

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**10. \* Organisational affiliation of the review**

None

**11. Review team members and their organisational affiliations.**

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**12. \* Funding sources/sponsors**

This research received no specific grants from any public, commercial or not-for-profit granting agencies.

**13. \* Conflicts of interest**

None

**14. Collaborators**

None

**15. \* Review question**

What are the effects of the use of information and communication technologies in the learning of nursing and midwifery students in low and middle income countries?

**16. \* Searches**

We plan to carry out research of relevant studies based on terms and terminologies derived from predefined conceptual groups. Examples of search terms and terminologies on Pubmed.

1. ("Nursing students" OR "Student, Nursing" [MeSH] OR "Undergraduate nursing students" OR "Midwifery students" OR "Nursing trainees" OR "Postgraduate nursing students") OR "Midwifery trainees" OR "Undergraduate Midwifery students" OR "Postgraduate midwifery students" OR "Schools, Nursing" [MeSH] OR "Faculty, Nursing" [MeSH] OR "Training institutions for nurses and midwives" OR "Midwifery training schools" OR "Nursing and midwifery training schools") ("Students, Health Occupations"[MeSH]")
2. ("Information and communication technologies for education" OR "ICT for education" OR "Web-based learning" OR "E-learning" OR "Distance education" OR "Distance Learning" [MeSH] OR "Learning, Distance" [MeSH] OR "Computerized technological resources" OR "Online Learning" [MeSH] OR "Learning, Online" [MeSH] OR "Online Education" [MeSH] OR "Virtual classroom" OR "Integration of ICT" OR "ICT" OR "Internet use" [MeSH] OR "Computer User Training" [MeSH])
3. ("Access to ICT" OR "Use of ICT" OR "Capacity of use" OR "Perceived usefulness" OR "Confirmation of expectations" OR "Student satisfaction" OR "Health knowledge, attitudes, practice" OR "Health Knowledge, Attitudes, Practice" [MeSH]OR "Student engagement" OR "Academic Success" [MeSH] OR "Learning" OR "Professional Competence" [MeSH] OR "mental competency" [MeSH] OR "Skills")

In addition we will carry out research of articles certain specialized journals such as : Nurse education pratice, Midwifery, nursing education perspectives, Nurse education today, The journal of Nursing Education, Journal of Advanced Nursign, International education journal scholarship, Nurse educator

**17. URL to search strategy**

Example of Pubmed search strategy

("Nursing students" OR "Student, Nursing" [MeSH] OR "Undergraduate nursing students" OR "Midwifery students" OR "Nursing trainees" OR "Postgraduate nursing students") OR "Midwifery trainees" OR "Undergraduate Midwifery students" OR "Postgraduate midwifery students" OR "Schools, Nursing" [MeSH] OR "Faculty, Nursing" [MeSH] OR "Training institutions for nurses and midwives" OR "Midwifery training schools" OR "Nursing and midwifery training schools") **AND** ("Information and communication technologies for education" OR "ICT for education" OR "Web-based learning" OR "E-learning" OR "Distance education" OR "Distance Learning" [MeSH] OR "Learning, Distance" [MeSH] OR "Computerized technological resources" OR "Online Learning" [MeSH] OR "Learning, Online" [MeSH] OR "Online Education" [MeSH] OR "Virtual classroom" OR "Integration of ICT" OR "ICT" OR "Internet use" [MeSH] OR "Computer User Training" [MeSH]) **AND** ("Access to ICT" OR "Use of ICT" OR "Capacity of use" OR "Perceived usefulness" OR "Confirmation of expectations" OR "Student satisfaction" OR "Health knowledge, attitudes, practice" OR "Health Knowledge, Attitudes, Practice" [MeSH]OR "Student engagement" OR "Academic Success" [MeSH] OR "Learning" OR "Professional Competence" [MeSH] OR "mental competency" [MeSH] OR "Skills")

This strategy will be adapted to be used in the ERIC, EPISTEMONIKOS and CINAHL bibliographic databases.

**18. \* Condition or domain being studied**

The rapid development of information and communication technologies (ICT) in recent years has led to the development of applications used in daily life and in all sectors of activity (Poyet, 2014). Faced with this development, the integration of ICT has become essential in education systems (Riyami, 2016).

A good integration of ICT in the education system has several advantages, including improved teaching-learning. ICT improves the quality of education in different ways. They facilitate the acquisition and appropriation of knowledge through better accessibility to educational resources, an enrichment of these resources, more stimulating educational relationships and greater involvement of learners in the learning process. (Youssef & Rallet, 2009).

For various reasons, the use of ICT in education has grown exponentially. Faced with this, researchers have taken an interest in this phenomenon. A review of the literature reveals that several aspects of the integration of ICT in all education systems have been discussed. However, few studies have investigated the effects of interventions using information and communication technologies in the training of nurses and midwives in nursing and midwifery training institutions in low and middle countries. This research could help policymakers, teachers and students to improve the effectiveness of the use of ICTs in nursing and midwifery teaching and learning in general.

**19. \* Participants/population**

Students in nursing and students in obstetrics.

**20. \* Intervention(s), exposure(s)**

Interventions using information and communication technologies to improve learning of nursing and midwifery in low and middle countries.

**21. \* Comparator(s)/control.**

No exposure to this type of intervention

**22. \* Types of study to be included**

* **Inclusion**: Studies on the effectiveness or effects of the use of information and communication technologies including e-learning in the learning of nurses and midwives. Qualitative, quantitative or mixed methods designs.
* **Exclusion**: Editorials, commentaries and literature reviews. However, we will consult the bibliographic references of all relevant literature reviews in order to identify additional relevant original articles.

**23. Context**

Not applicable.

**24. \* Main outcome(s)**

* Access to ICT
* Capacity of use
* Use of ICT
* Perceived usefulness
* Confirmation of expectations
* Student satisfaction with use
* Health knowledge, attitudes, practice
* Student engagement

Timing and effect measures

Not applicable.

**25. \* Additional outcome(s)**

Not applicable.

Timing and effect measures

Not applicable.

**26. Data extraction (selection and coding)**

Titles and abstracts will be subject to selection by two reviewers. The full text of potentially relevant articles will be further analyzed to determine if it is eligible. When this is done, a review of the selection process will be made after reviewing 10% of the items identified to ensure consistency. We will search the full text of relevant publications and analyze it according to the defined eligibility criteria.

Data will be extracted by two researchers using a form and Rayyan software. The data extraction form will be tested before use for all included studies.

Additional research will be carried out in the bibliography of research articles. Manual searches will be performed in trade journals to identify other relevant studies. We will also do research in gray literature. To do this, we will consult databases specific to gray literature such as GreyLil.org, OpenGrey, Google Scholar.

**27. \* Risk of bias (quality) assessment**

We will examine each article by emphasizing the risks of bias. Also, the scientific rigor will be controlled through the methodology that will identify problems that may affect the quality of the analysis.

**28. \* Strategy for data synthesis**

The results of the selected studies will be described using a PRISMA flowchart. A summary plan of key findings will be developed. We will conduct a meta-analysis of quantitative data and a qualitative analysis of qualitative data.

**29. \* Analysis of subgroups or subsets**

Not applicable

**30. \* Type and method of review**

Type of review

Systematic review: Yes.

Another one is no.

Health area of the review

Education: Yes

**31. Language**

There is no summary in English.

**32. Country**

Burkina Faso

**33. Other registration details**

Not applicable.

**34. Reference and/or URL for published protocol**

Give the citation and link for the published protocol, if there is one.

Not applicable.

Give the link to the published protocol.

Non applicable.

Alternatively, upload your published protocol to CRD in pdf format. Please note that by doing so you are consenting to the file being made publicly accessible.

No, we will not make this file available to the public until the systematic review is completed.

Please note that the information required in the PROSPERO registration form must be completed in full even if access to a protocol is given.

Okay.

**35. Dissemination plans**

A presentation of the results of this systematic review will be offered to administrative officials, teachers and students of the institution. In addition, the results will be transmitted in the form of a report to the administrative authorities of the ministry in charge of higher education and that in charge of health. In addition, the results will be used for scientific communication during conferences and seminars but also for scientific publication.

Do you intend to publish the review on completion?

Yes.

**36. Keywords**

Nurses and midwives, information and communication technologies, learning, low and middle countries, Systematic review.

**37. Details of any existing review of the same topic by the same authors**

Not applicable.

**38. \* Current review status**

Systematic review in progress.

**39. Any additional information**

Not applicable.

**40. Details of final report/publication(s)**

Not applicable.