

INPLASY

Systematic Review Protocol on Women in Neurosurgery

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ADMINISTRATIVE INFORMATION

Support - No support.

Review Stage at time of this submission - Completed but not published.

Conflicts of interest - None declared.

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Amendments - This protocol was registered with the International Platform of Registered Systematic Review and Meta-Analysis Protocols (INPLASY) on 16 September 2026 and was last updated on 16 September 2026.

INTRODUCTION

Review question / Objective What research themes have been addressed in the existing literature on women in neurosurgery, and how have these research themes changed over time?

Rationale Women remain underrepresented in neurosurgery, and an increasing body of literature has examined issues related to the participation, professional development, and career progression of women in the field. However, the existing literature encompasses a broad range of research topics, including education, leadership, mentorship, research productivity, barriers, recruitment, and retention, and the distribution of these research themes may have changed over time. A systematic synthesis of the existing literature is therefore needed to characterize the scope of research on women in neurosurgery and to identify areas that have been extensively studied as well as those that remain insufficiently explored.

This review will systematically map the research themes addressed in the literature and examine their distribution and temporal trends.

Condition being studied The condition or field of interest is women in neurosurgery. This review focuses on the participation, education, academic development, career progression, leadership, mentorship, research productivity, recruitment, retention, and gender-related barriers experienced by women in the field of neurosurgery.

METHODS

Search strategy Electronic searches will be conducted in PubMed and Scopus from database inception to August 5, 2026, without language restrictions.

The search strategy will be developed based on previous literature concerning women in neurosurgery and will combine terms related to women, gender, diversity, and neurosurgery.

PubMed:

"women in neurosurgery" OR "female neurosurgeon" OR "women neurosurgeon" OR (gender AND neurosurgery) OR (diversity AND neurosurgery)

Scopus:

"women in neurosurgery" OR "female neurosurgeon" OR "women neurosurgeon" OR (gender AND neurosurgery) OR (diversity AND neurosurgery)

In addition to the electronic database searches, the reference lists of included studies will be manually screened using a snowballing approach to identify potentially relevant studies not retrieved through the database searches.

Participant or population The population of interest comprises women who aspire to, are training in, or practice neurosurgery. This includes medical students or other individuals considering a career in neurosurgery, neurosurgical trainees, residents, fellows, and practicing neurosurgeons, where women in neurosurgery constitute the primary focus of the study.

Intervention Not applicable. This systematic review is not designed to evaluate a specific intervention or intervention effect. Instead, it aims to systematically characterize the existing literature on women in neurosurgery and examine the distribution and temporal trends of research themes.

Comparator Not applicable. No comparator or comparative intervention will be specified because this review is not intended to evaluate the effects of an intervention. The review will characterize and classify the existing literature on women in neurosurgery.

Study designs to be included Original research articles, survey studies, observational studies, qualitative studies, mixed-methods studies, narrative reviews, and systematic reviews will be included.

Eligibility criteria Studies will be eligible if women in neurosurgery are the primary focus of the research. Studies will be excluded if they are conference abstracts, editorials, commentaries, or letters without original data, or if women in neurosurgery are not the primary focus. No language restrictions will be applied. Duplicate publications will be removed before screening.

Information sources The following electronic databases will be searched from their respective inception dates to August 5, 2026: PubMed and Scopus. No language restrictions will be applied.

In addition, the reference lists of included studies will be manually screened using a snowballing approach to identify potentially relevant studies not retrieved through the electronic database searches. No trial registries, grey literature databases, or direct contact with study authors will be used.

Main outcome(s) The primary outcome is the distribution of research themes in the existing literature on women in neurosurgery. Each included study will be classified into one of seven predefined themes: Education, Leadership, Mentorship, Research Productivity, Barriers, Recruitment, and Retention. The number and proportion of studies within each theme will be summarized descriptively. The distribution of research themes by publication year and temporal changes in the number of studies addressing each theme will also be examined. No effect measures or quantitative effect estimates will be calculated.

Quality assessment / Risk of bias analysis A formal quality assessment or risk-of-bias assessment will not be performed. This review is intended to characterize and map the distribution and temporal trends of research themes in the literature on women in neurosurgery rather than to estimate intervention effects or synthesize quantitative effect measures. Therefore, formal assessment of methodological quality or risk of bias is not considered applicable to the primary objective of this review.

Strategy of data synthesis The extracted data will be synthesized descriptively. Included studies will be classified into one of seven predefined research themes: Education, Leadership, Mentorship, Research Productivity, Barriers, Recruitment, and Retention. The number and proportion of studies in each theme will be summarized. The distribution of research themes by publication year will be examined to identify temporal trends. Study characteristics, including country or region, study design, study population, and research perspectives, will also be summarized. The content of studies within each theme will be qualitatively compared to characterize the scope and evolution of research on women in neurosurgery. No statistical meta-analysis or quantitative pooling of effect estimates will be performed.

Subgroup analysis No formal subgroup analyses are planned. The review aims to describe the overall distribution and temporal trends of research themes rather than compare intervention effects between predefined subgroups.

Sensitivity analysis No sensitivity analysis is planned because this review will not perform quantitative meta-analysis or statistical pooling of effect estimates. The analysis will consist primarily of descriptive and qualitative synthesis of the included literature.

Language restriction No language restrictions will be imposed.

Country(ies) involved Japan.

Keywords women in neurosurgery; female neurosurgeons; gender; diversity; neurosurgery; career development; leadership; mentorship; recruitment; retention.

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