



The quality of systematic reviews addressing peripheral nerve repair and reconstruction

Beatrice J Sun^{a,*}, Jonathan D Tijerina^b, Uchenna N Agbim^c,
Gordon K Lee^d, Rahim S Nazerali^d

^aUniversity of California, Irvine School of Medicine, Irvine, CA, United States

^bStanford University School of Medicine, Stanford, CA, United States

^cWright State University Boonshoft School of Medicine, Dayton, OH, United States

^dDivision of Plastic Surgery, Department of Surgery, Stanford University School of Medicine, Stanford, CA, United States

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KEYWORDS

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Quality

Summary While systematic reviews are regarded as the strongest level of medical evidence, inconsistency in the quality and rigor of systematic reviews raises concerns about their use as a tool in guiding quality delivery in evidence-based clinical practice. The objective of this present study was to assess methodological soundness of systematic reviews with a particular focus on peripheral nerve repair and reconstruction.

We performed a comprehensive search using PubMed and Scopus to identify all systematic reviews published on peripheral nerve reconstruction in 9 high-impact surgical journals. Two authors independently performed literature searches, screened abstracts, and extracted data. Discrepancies were resolved by discussion and consensus. The quality of systematic reviews was assessed using AMSTAR criteria.

Initial search retrieved 184 articles. After screening duplicates, titles, abstracts, and conducting full text reviews, 26 studies met inclusion criteria. Of those, 18 (65%) were published by Plastic Surgery, 7 (27%) by Orthopedic Surgery, and 1 (4%) by Occupational Therapy. The total number of systematic reviews published on peripheral nerves each year has shown an increasing trend from 2004 through 2015. The overall median AMSTAR score was 5, reflecting a “fair” quality. There was no evidence of AMSTAR score improvement over time.

Although the number of systematic reviews published on peripheral nerve repair has risen over the last decade, their quality has not exhibited the same increase. This highlights the necessity

* Corresponding author.

E-mail address: beatricejsun@gmail.com (B.J. Sun).

to increase familiarity with and conform to methodological quality criteria in order to improve the integrity of evidence-based medicine in peripheral nerve repair and reconstruction.
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Introduction

The goal of the evidence-based medicine (EBM) movement was to integrate clinical experience and expertise with evidence from well-conducted research in order to provide patients with the best-informed individual care.¹⁻⁴ This movement began gaining traction in medical literature in the 1990s and was formally defined by Sackett et al. in 1996.^{5,6} A departure from the approach of relying on expert opinion or consensus guidelines, EBM instead emphasizes the employment of high-quality systematic outcomes research to make deductions and implement changes in clinical practice.

Peripheral nerve studies are a hallmark area of interest in both plastic surgery and orthopedic surgery research. Both of these fields are increasingly moving towards evidence-based medicine and transparency regarding the level of evidence provided by novel studies. In 2003, the push for EBM in orthopedic surgery began with an initiative by the *Journal of Bone and Joint Surgery* (American volume) for orthopedic researchers to describe and assign a level of evidence to all published clinical studies.⁷ Many other journals of orthopedic literature including *Arthroscopy*, *The American Journal of Sports Medicine*, and *The Journal of Hand Surgery*, have since adopted such a ranking system.⁸⁻¹⁰ A similar initiative was proposed in plastic surgery in 2000 and propagated throughout the plastic surgery literature in 2011; this encouraged plastic surgeons to conduct studies exhibiting higher levels of evidence, including randomized controlled trials, prospective cohort studies, and retrospective studies with control groups.^{11,12} The goal of these initiatives for EBM was to improve the level of evidence in plastic surgery and orthopedic surgery literature, as well as to foster increased awareness of quality care in surgical practices.¹²⁻¹⁴

Level of evidence is a critical component of peer-reviewed literature, and it has been rigorously defined. Level I evidence, the highest tier, consists of well-conducted systematic reviews (SRs) and randomized controlled trials (RCTs).¹⁵ SRs may further carry out meta-analyses by pooling together the results of multiple RCTs in order to establish consensus recommendations. These studies are rapidly becoming the gold standard for developing informed clinical practice guidelines and quality standards. The quality measures established by well-conducted systematic reviews have potential to directly impact both patient care and physician reimbursements, highlighting the importance of evidence-based medicine.^{16,17}

The Cochrane Reviews are internationally recognized as the most rigorous evidence-based medicine, with a team of experts in performing systematic reviews, meta-analyses, and statistical analyses. However, although systematic reviews are regarded as the strongest level of medical evidence, not all systematic reviews are equally reliable. Several studies have demonstrated variability in the qual-

ity of published systematic reviews.^{18,19} This inconsistency raises concerns about their utility in guiding evidence-based clinical practice. One tool that may be used to evaluate the methodological quality of systematic reviews is A Measurement Tool to Assess Systematic Reviews (AMSTAR). AMSTAR measures this quality in a validated and quantitative manner by using a checklist of 11 criteria to assess parameters such as selection bias, measurement bias and conflict of interest.²⁰

In our study, we analyze the quality of systematic review literature focused on peripheral nerve repair and reconstruction. The goals of our study include: (1) to identify SRs on peripheral nerve repair and reconstruction in 9 selected high impact journals, (2) to assess the methodological integrity of SRs using the 11-point AMSTAR scale, (3) to evaluate publication trends in this topic of SRs, and (4) to observe the trend in methodological quality of SRs over time.

Materials and methods

Literature search

A comprehensive literature review was performed using PubMed and Scopus to identify all systematic reviews published on peripheral nerve reconstruction through June 2016 in 9 relevant journals as selected by the senior author. The following journals were included: *Journal of Microsurgery*; *Journal of Reconstructive Microsurgery*; *Annals of Plastic Surgery*; *Plastic and Reconstructive Surgery*; *Journal of Plastic, Reconstructive and Aesthetic Surgery*; *Journal of Hand Surgery* (American volume); *Journal of Hand Surgery* (European volume); *Journal of Bone Joint Surgery*; and *Bone and Joint Journal*. Journals were selected by the senior author based on their subjective relevance to peripheral nerve reconstruction and their overall impact factor. Neurosurgery journals were excluded as they tend to focus primarily on central nerves rather than peripheral nerves. Articles were retrieved using the following search strategy: "(Title of Journal)" [journal] AND "systematic" [subset] AND "nerve" [text word]. These articles were then compiled and duplicates were removed.

Two authors independently screened titles and abstracts using a predetermined search strategy to ensure that each article was written as a systematic review with high relevance to peripheral nerve repair. Full-text articles were reviewed if the title and abstract did not provide sufficient information about whether the study met inclusion criteria. All literature searches, abstract screening, data extraction and quality assessments were performed independently by at least two separate reviewers. Discrepancies were resolved by discussion and consensus.

Table 1

<i>Title</i>	<i>Journal</i>	<i>Category</i>	<i>1st Author Specialty</i>	<i>1st Author Country</i>	<i>Year</i>
A meta-analysis of randomized controlled trials comparing endoscopic and open carpal tunnel decompression	Plastic and Reconstructive Surgery	UE	Plastic Surgery	Canada	2004
A Systematic Review of Contralateral C7 Transfer for the Treatment of Traumatic Brachial Plexus Injury: Part 1. Overall Outcomes.	Plastic and Reconstructive Surgery	UE	Plastic Surgery	China	2015
A Systematic Review of Outcomes of Contralateral C7 for the Treatment of Traumatic Brachial Plexus Injury: Part 2-Donor-site morbidity of contralateral C7 transfer for traumatic brachial plexus injury	Plastic and Reconstructive Surgery	UE	Plastic Surgery	China	2015
A systematic review of outcomes reporting for brachial plexus reconstruction.	Journal of Hand Surgery (Am)	UE	Orthopedic Surgery	US	2015
A Systematic Review of Reviews Comparing the Effectiveness of Endoscopic and Open Carpal Tunnel Decompression	Plastic and Reconstructive Surgery	UE	Plastic Surgery	Canada	2004
A Systematic Review of the Outcomes of Replantation of Distal Digital Amputation	Plastic and Reconstructive Surgery	UE	Plastic Surgery	US	2011
A Systematic Review on the Use of Fibrin Glue for Peripheral Nerve Repair	Plastic and Reconstructive Surgery	UE & LE	Plastic Surgery	Canada	2011
Accuracy of in-office nerve conduction studies for median neuropathy: a meta-analysis.	Journal of Hand Surgery (Am)	UE	Orthopedic Surgery	US	2011
An Evidence-Based Structured Review to Assess the Results of Common Peroneal Nerve Repair	Plastic and Reconstructive Surgery	UE	Plastic Surgery	UK	2014
Anterior transposition compared with simple decompression for treatment of cubital tunnel syndrome. A meta-analysis of randomized, controlled trials.	Journal of Bone and Joint Surgery	UE	Orthopedic Surgery	US	2007
Assessment of sensibility after nerve injury and repair: A systematic review of evidence for validity, reliability and responsiveness of tests	Journal of Hand Surgery (Eu)	UE	Occupational Therapy	UK	2005
Breast sensation after breast reconstruction: a systematic review	Journal of Reconstructive Microsurgery	Trunk	Plastic Surgery	US	2010
C5 nerve root palsy following decompression of the cervical spine	Bone and Joint Journal	UE	Orthopedic Surgery	US	2014
Comparison of nerve transfers and nerve grafting for traumatic upper plexus palsy: a systematic review and analysis.	Journal of Bone and Joint Surgery	UE	Orthopedic Surgery	US	2011
Comparisons of outcomes from repair of median nerve and ulnar nerve defect with nerve graft and tubulization: a meta-analysis.	Journal of Reconstructive Microsurgery	UE	Plastic Surgery	US	2011

(continued on next page)

Table 1 (continued)

Title	Journal	Category	1st Author Specialty	1st Author Country	Year
Complications related to harvest of the proximal end of the fibula: a systematic review.	Microsurgery	LE	Plastic Surgery	US	2014
Decellularized Nerves for Upper Limb Nerve Reconstruction: A Systematic Review of Functional Outcomes.	Journal of Reconstructive Microsurgery	UE	Orthopedic Surgery	Korea	2015
Lipofibromatous Hamartoma of the Median Nerve: A Comprehensive Review and Systematic Approach to Evaluation, Diagnosis, and Treatment	Journal of Hand Surgery (Am)	UE	Plastic Surgery	Canada	2013
Median and ulnar nerve injuries: a meta-analysis of predictors of motor and sensory recovery after modern microsurgical nerve repair	Plastic and Reconstructive Surgery	UE	Plastic Surgery	Netherlands	2005
Predictors of Surgical Outcomes Following Anterior Transposition of Ulnar Nerve for Cubital Tunnel Syndrome: A Systematic Review	Journal of Hand Surgery (Am)	UE	Orthopedic Surgery	Canada	2011
Primary Nerve Repair for Obstetrical Brachial Plexus Injury: A Meta-Analysis	Plastic and Reconstructive Surgery	UE	Plastic Surgery	Canada	2015
Radial nerve palsy associated with fractures of the shaft of the humerus: a systematic review	Bone and Joint Journal	UE	Orthopedic Surgery	UK	2005
Simple decompression versus anterior subcutaneous and submuscular transposition of the ulnar nerve for cubital tunnel syndrome: a meta-analysis	Journal of Hand Surgery (Am)	UE	Plastic Surgery	Canada	2008
The positive effect of neurolysis on diabetic patients with compressed nerves of the lower extremities: A systematic review and meta-analysis	Plastic and Reconstructive Surgery	LE	Plastic Surgery	US	2013
Vascularized proximal fibula epiphyseal transfer for distal radius reconstruction in children: A systematic review	Microsurgery	LE	Plastic Surgery	Canada	2015
What is evidence based in the reconstruction of digital nerves? A systematic review.	Journal of Plastic, Reconstructive and Aesthetic Surgery	UE	Plastic Surgery	Netherlands	2012

List and characteristics of systematic reviews meeting inclusion criteria. UE = Upper extremity; LE = Lower extremity.

Data extraction

In addition to assessing the AMSTAR criteria for the quality of each article, descriptive data points were also collected. These included: publication year, journal name, peripheral nerve category, first author specialty affiliation, institutional affiliation, and country of affiliation.

Inclusion and exclusion criteria

Articles were included if they were written as a systematic review or meta-analysis, and discussed peripheral nerve repair as a primary topic. Articles were excluded if they were

not in the form of a systematic review (i.e., letters, expert opinions, discussions, summaries, case reports) or if articles only briefly mentioned peripheral nerve repair. Publications with a focus on orthopedic tendon and bone repair were excluded. A list of included studies is shown in [Table 1](#).

Quality assessment

The quality of each systematic review was assessed using the 11-point AMSTAR (A Measurement Tool to Assess Systematic Reviews)²⁰ checklist ([Table 2](#)). AMSTAR was selected due to its reliability and validity as a measurement tool specifically designed to assess the methodological quality

Table 2 AMSTAR Checklist, a measurement tool to assess the methodological quality of systematic reviews.

1. Was an 'a priori' design provided? The research question and inclusion criteria should be established before the conduct of the review.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
2. Was there duplicate study selection and data extraction? There should be at least two independent data extractors and a consensus procedure for disagreements should be in place.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
3. Was a comprehensive literature search performed? At least two electronic sources should be searched. The report must include years and databases used (e.g., Central, EMBASE, and MEDLINE). Key words and/or MESH terms must be stated and where feasible the search strategy should be provided. All searches should be supplemented by consulting current contents, reviews, textbooks, specialized registers, or experts in the particular field of study, and by reviewing the references in the studies found.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
4. Was the status of publication (i.e., grey literature) used as an inclusion criterion? The authors should state that they searched for reports regardless of their publication type. The authors should state whether or not they excluded any reports (from the systematic review), based on their publication status, language etc.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
5. Was a list of studies (included and excluded) provided? A list of included and excluded studies should be provided.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Can't answer <input type="checkbox"/> Not applicable
6. Were the characteristics of the included studies provided? In an aggregated form such as a table, data from the original studies should be provided on the participants, interventions and outcomes. The ranges of characteristics in all the studies analyzed e.g., age, race, sex, relevant socioeconomic data, disease status, duration, severity, or other diseases should be reported.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
7. Was the scientific quality of the included studies assessed and documented? 'A priori' methods of assessment should be provided (e.g., for effectiveness studies if the author(s) chose to include only randomized, double-blind, placebo controlled studies, or allocation concealment as inclusion criteria); for other types of studies alternative items will be relevant.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
8. Was the scientific quality of the included studies used appropriately in formulating conclusions? The results of the methodological rigor and scientific quality should be considered in the analysis and the conclusions of the review, and explicitly stated in formulating recommendations.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
9. Were the methods used to combine the findings of studies appropriate? For the pooled results, a test should be done to ensure the studies were combinable, to assess their homogeneity (i.e., Chi-squared test for homogeneity, I^2). If heterogeneity exists a random effects model should be used and/or the clinical appropriateness of combining should be taken into consideration (i.e., is it sensible to combine?).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
10. Was the likelihood of publication bias assessed? An assessment should include a combination of graphical aids (e.g., funnel plot, other available tests) and/or statistical tests (e.g., Egger regression test).	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable
11. Was the conflict of interest stated? Potential sources of support should be clearly acknowledged in both the systematic review and the included studies.	<input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Cannot answer <input type="checkbox"/> Not applicable

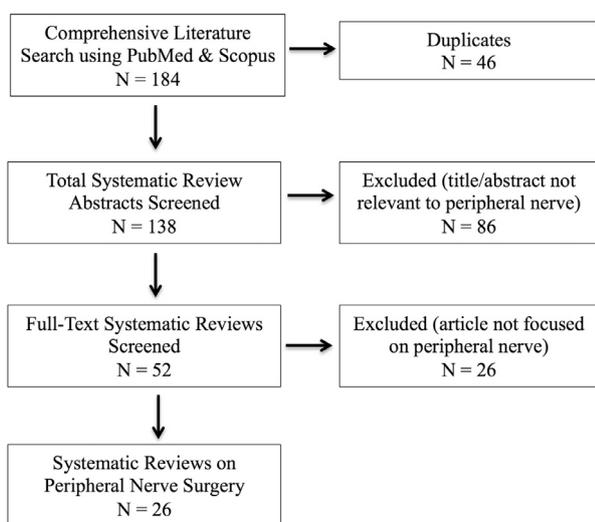


Figure 1 Flowchart of articles selected for inclusion. This flowchart illustrates the process of evaluating literature for inclusion in this study. Initial literature search retrieved 184 articles; 46 duplicates were removed; 86 articles were excluded based on titles and abstracts; and 26 articles were excluded after full-text reviews, leaving 26 systematic reviews for analysis.

of systematic reviews. AMSTAR consists of 11 criteria for evaluation, and articles were scored as follows: each article was given a score of “1” for each AMSTAR criteria met, and a score of “0” for each AMSTAR criteria that was not met or was not applicable to the study. Therefore, scores range from 0 to 11, with higher scores reflecting better quality of systematic reviews. Articles with an AMSTAR score of 4 or lower were considered less than fair quality, scores of 5-8 were considered fair quality, and scores of 9 or higher were

considered to be of good quality.²⁰ Several studies have shown both high reproducibility and high external validity using AMSTAR criteria.²¹⁻²³

Results

The initial literature search retrieved 184 articles. Forty-six duplicates were removed, and 138 remained for review. After screening titles and abstracts, 86 articles were excluded. Another 26 articles were excluded after conducting full-text reviews, leaving 26 systematic reviews for analysis. A flowchart outlining the literature search process is shown in [Figure 1](#).

Of the studies that met inclusion criteria, 18 (69%) were published by Plastic Surgery, 7 (27%) by Orthopedic Surgery, and 1 (4%) by Occupational Therapy. The vast majority (20; 77%) focused on upper extremity nerves only, whereas 4 (15%) focused on lower extremity nerves only, 1 (4%) addressed both upper and lower extremity nerves, and 1 (4%) focused on nerves of the trunk. The total number of systematic reviews published on peripheral nerves per year showed an increasing trend from 2004 through 2015, although the median AMSTAR score remained relatively stable. These publication trends are shown in [Figure 2](#). The overall median AMSTAR score during this period was 5, reflecting a “fair” quality, with scores ranging between 3 and 11.

The greatest number of peripheral nerve SRs were published in *Plastic and Reconstructive Surgery* (n=10), followed by *Journal of Hand Surgery, American volume* (n=5), and *Journal of Reconstructive Microsurgery* (n=3). No SRs were identified in *Annals of Plastic Surgery*. The number of publications by journal is represented in [Figure 3](#). The majority of SRs were published by authors in the United States (n=10), followed by authors from Canada (n=8), United

Peripheral Nerve Publication Trends

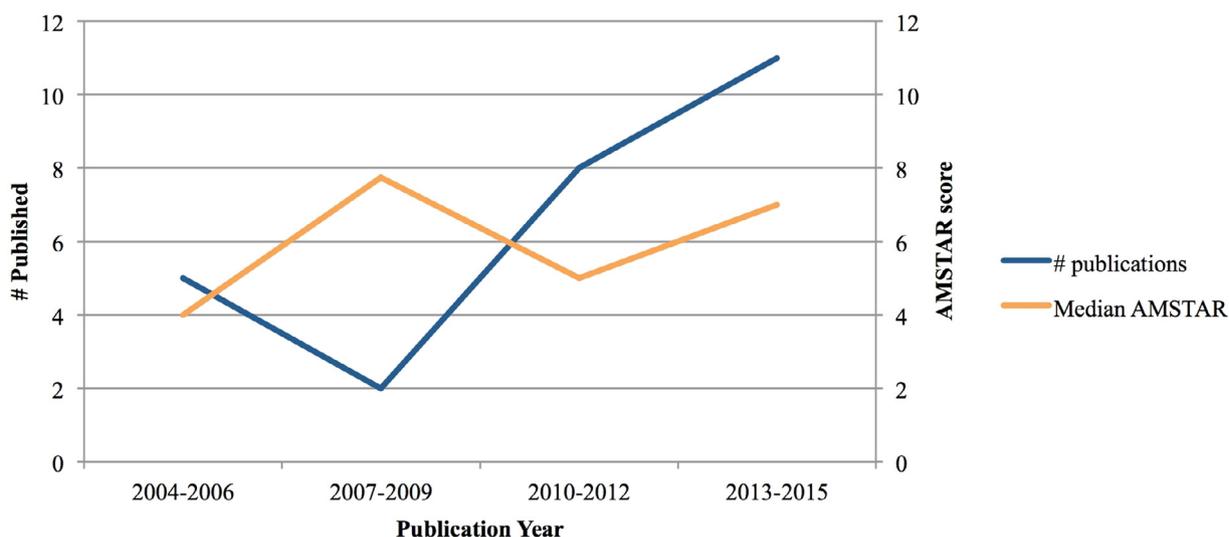


Figure 2 Trends in median AMSTAR scores and number of systematic review publications over time. The annual totals of peripheral nerve systematic reviews published demonstrated an increasing trend from 2004 to 2015, although the median AMSTAR score remained relatively stable.

Publications by Journal

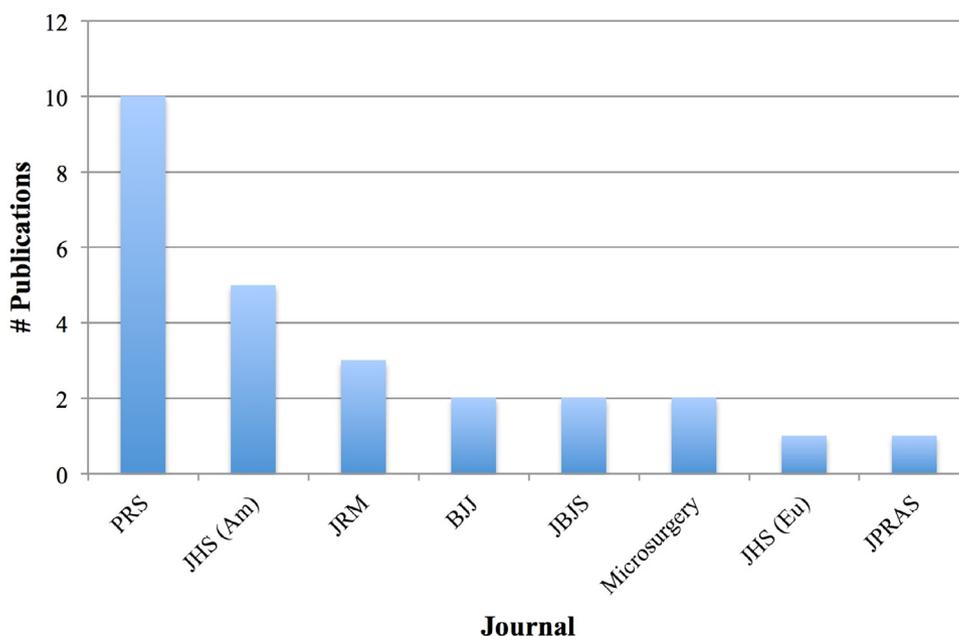


Figure 3 Trends in number of systematic review publications by journal. Nine journals were searched for systematic reviews on peripheral nerve surgery. *Plastic and Reconstructive Surgery* ($n = 10$) yielded the highest number of peripheral nerve systematic reviews, followed by *Journal of Hand Surgery, American volume* ($n = 5$), and *Journal of Reconstructive Microsurgery* ($n = 3$). PRS = Plastic and Reconstructive Surgery; JHS (Am) = Journal of Hand Surgery, American volume; JRM = Journal of Reconstructive Microsurgery; BJJ = Bone and Joint Journal; JBJS = Journal of Bone and Joint Surgery; JHS (Eu) = Journal of Hand Surgery, European volume; JPRAS = Journal of Plastic, Reconstructive and Aesthetic Surgery.

Kingdom ($n = 3$), China and Netherlands ($n = 2$), and Korea ($n = 1$) (Figure 4).

Nearly all systematic reviews that met inclusion criteria provided a list of included studies ($n = 22$) and their characteristics ($n = 21$). The vast majority of studies also outlined a strategy to perform a comprehensive literature search ($n = 21$) and disclosed pertinent conflicts of interest ($n = 19$). The largest areas of deficiency included using publication status (e.g. grey literature) as inclusion criteria ($n = 7$), and assessing for publication bias ($n = 8$). These findings are represented in Figure 5.

Discussion

As Level I evidence, well-conducted systematic reviews can facilitate the successful integration of high-quality scientific research into clinical practice. Because systematic reviews in peripheral nerve reconstruction have the potential to inform clinical decision-making as well as influence medical policies, such as physician reimbursements for plastic and orthopedic surgeons, they must be rigorously and reliably evaluated for methodological quality.^{12,24,25}

Our analysis demonstrates an increase in the number of SRs published in peripheral nerve reconstruction literature during the study period. This is consistent with the growing interest in publishing SRs in medical literature at large.²⁶⁻²⁸ The trend also mirrors the increased interest in microsurgical techniques over recent decades.²⁹ Consistent with previous literature demonstrating North America and Europe as

the largest contributors of SRs in plastic surgery and hand surgery, our study shows that North America (United States and Canada) and Europe (United Kingdom and Netherlands) also published the greatest proportion of SRs in peripheral nerve repair and reconstruction (Figure 4).^{26,30}

Despite initiatives to promote evidence-based medicine in plastic surgery and orthopedic surgery, this study demonstrates no significant difference in quality of SRs in peripheral nerve reconstruction over the years. It is interesting to note that while the total number of SRs does increase during the study period, the methodological quality, as represented by median AMSTAR score, remains relatively stable (Figure 2). This increased interest in publishing SRs may be attributed to the EBM movements in both surgical specialties encouraging surgeons to publish research with a higher level of evidence; however, methodological quality is not necessarily examined.^{7,10} Thus, care must be taken in drawing conclusions from systematic reviews and meta-analyses with low methodological quality, as results may be misleading.

Within AMSTAR criteria, the most common areas of deficiency in the SRs evaluated were: publication status as a criterion for inclusion (only performed in 27% of studies), and assessing the likelihood of publication bias (only performed in 30% of studies) (Figure 5). Without appropriate strategies for evaluating and addressing publication bias, SRs may have much lower validity, as research with negative findings may not be included appropriately.^{20,21} Similarly, the exclusion of grey literature may lead to selection bias and result in inaccurate findings.³¹ In contrast, the majority of

Publications by Country

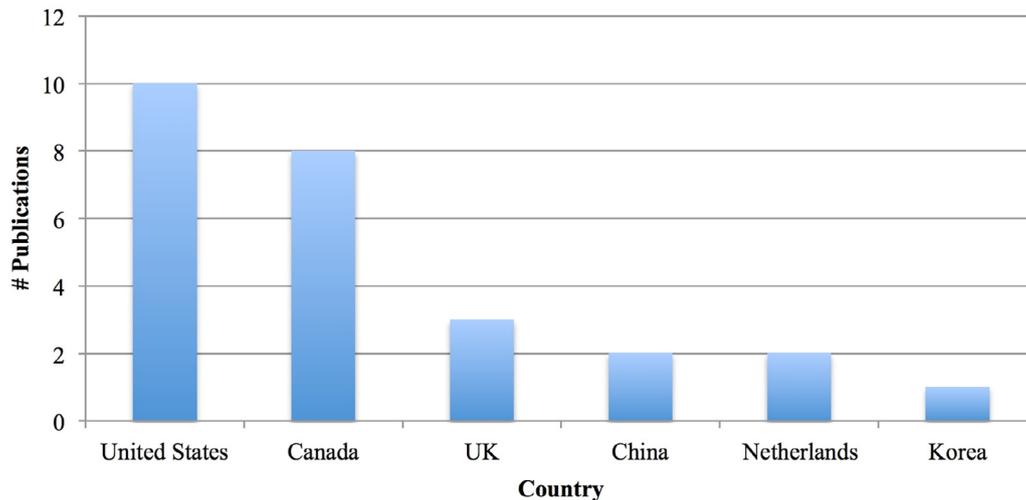


Figure 4 Trends in number of systematic review publications by country. The majority of SRs were published by authors in the United States ($n=10$), followed Canada ($n=8$), the United Kingdom ($n=3$), China and the Netherlands ($n=2$), and Korea ($n=1$).

AMSTAR Criteria Breakdown

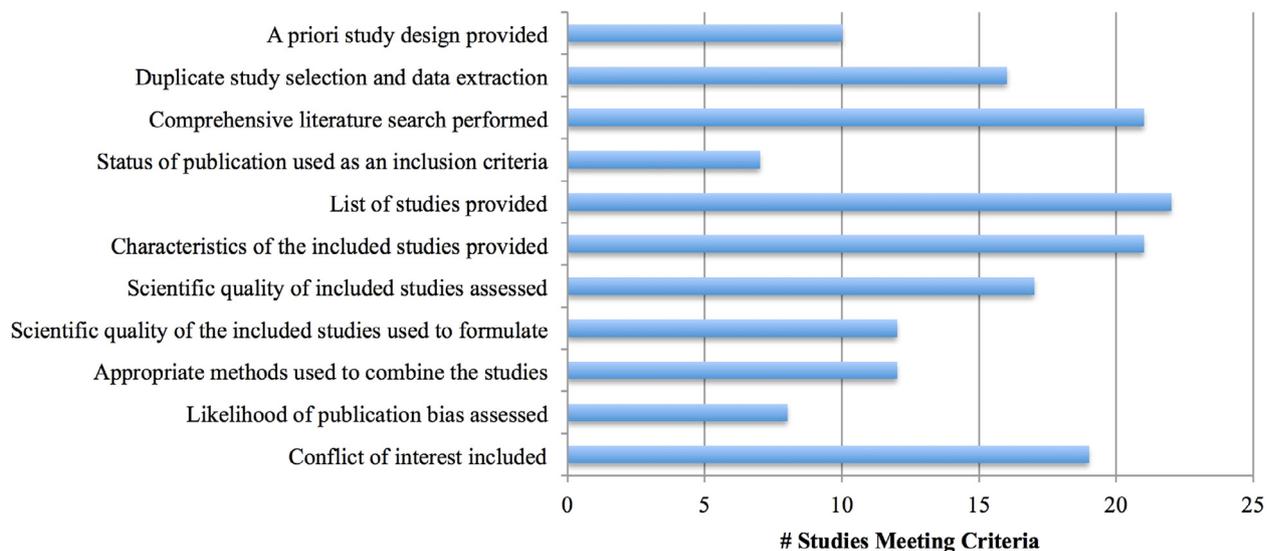


Figure 5 AMSTAR Criteria Breakdown. A list of included studies ($n=22$) and their characteristics ($n=21$) were provided by most included peripheral nerve systematic reviews. The vast majority of studies also outlined a strategy to perform a comprehensive literature search ($n=21$) and disclosed pertinent conflicts of interest ($n=19$). Relatively few studies addressed the problems of using publication status as an inclusion criterion ($n=7$), and assessing for publication bias ($n=8$).

included SRs performed comprehensive literature searches, provided a list of included studies and their characteristics, and disclosed relevant conflicts of interest. These parameters allow for the assessment of potential sources of bias and create transparency in level of evidence provided by these SRs.^{32,33}

The AMSTAR criteria were produced by a panel of experts in methodological quality assessment and systematic reviews by synthesizing components of the well-developed Overview of Quality Assessment Questionnaire (OQAQ), developed by Oxman and Guyatt³⁴ and an instrument developed by Sacks et al.³⁵ The original 34-item check-

list that resulted was applied to over 150 systematic reviews and meta-analyses, allowing researchers to arrive at a consensus on components identified by explanatory variable analysis.²⁰ The external validity, reliability and inter-observer agreement of the AMSTAR criteria have been upheld by several studies.^{22,23}

The AMSTAR criteria was specifically selected for this study due to its wide acceptance as a reliable guideline for quality assessment.²¹⁻²³ An advantage of implementing a validated assessment tool of this nature is that it may indirectly increase the reliability of conclusions drawn from SRs, because it maintains a consistent standard for high-

quality reviews. Nevertheless, the AMSTAR checklist represents only one of several methods for evaluation of systematic reviews. Other notable instruments include the Overview of Quality Assessment Questionnaire (OQAQ) and the Newcastle-Ottawa Scale (NOS).^{34,36} The use of these alternative sources of assessment could potentially yield new results regarding the trends and quality of systematic reviews addressing peripheral nerve reconstruction. Consequently, conclusions drawn from the study should be interpreted cautiously.

We acknowledge several limitations to this study. First, the small sample size ($n=26$) of articles meeting eligibility criteria in this study suggests that results may not be generalizable. Because our literature search was limited to several high-impact journals relevant to plastic, reconstructive and orthopedic surgeons, some systematic reviews relevant to peripheral nerve repair may not have been captured. Future studies assessing the quality of systematic reviews may benefit from using a larger source of surgical journals, which may increase the number of articles that meet inclusion criteria and therefore the power of the study. Finally, our study evaluated SRs for inclusion only up to June 2016, and it is plausible that new or undetected trends may exist in the publications since the end of our study period.

Conclusion

While the total number of systematic reviews published on peripheral nerve repair has risen over the last decade, their quality has unfortunately not exhibited the same increase. It is therefore important to increase familiarity with and conform to methodological quality criteria to improve the integrity of evidence-based medicine in peripheral nerve repair and reconstruction. Future systematic reviews should meet or exceed expectations as outlined by AMSTAR or other quality assessment tools.

Disclosure

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Conflict of interest

None.

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