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Impact of English Proficiency on Case Reporting And Evidence Dissemination In Vascular And Endovascular Medicine

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ABSTRACT

English has become the dominant language of scientific communication, particularly in high-impact medical and surgical journals. Vascular and endovascular medicine is a rapidly evolving field where timely case reporting, clinical trial publication, and guideline dissemination are crucial for optimizing patient outcomes. However, variability in English proficiency among clinicians and researchers can significantly shape what evidence is produced, how it is reported, and who can access and apply it. This paper explores the impact of English proficiency on case reporting and evidence dissemination in vascular and endovascular medicine, with a focus on mechanisms of linguistic bias, barriers faced by non–English-speaking or English-as-a-second-language (ESL) clinicians, and the downstream consequences for global vascular care. It examines how limited English proficiency may influence the quality and frequency of case reports, restrict participation in multicenter trials and registries, and contribute to citation and publication biases that privilege English-speaking regions and institutions. The paper further discusses the implications for innovation diffusion, guideline development, and equity in access to best practices, especially in low- and middle-income countries where vascular disease burden is rising. Finally, it proposes a set of pragmatic strategies—including capacity-building in scientific English, editorial and peer-review support, multilingual knowledge products, and ethical use of language technologies—to reduce language-related barriers and promote more inclusive, representative evidence in vascular and endovascular medicine.

KEYWORDS: English proficiency, case reports, vascular surgery, endovascular interventions, evidence dissemination, publication bias, scientific communication, language barriers, global health, medical education.

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INTRODUCTION

English has established itself as the primary language of global scientific communication, and this dominance extends strongly into vascular and endovascular medicine. Most high-impact vascular journals, clinical guidelines, multicentre trials, and research repositories publish exclusively in English, making proficiency in the language a prerequisite for visibility and participation in the international scientific community. For clinicians and researchers whose first language is not English, publishing case reports—often the foundation of innovation in vascular specialties—requires not only clinical accuracy but also advanced academic writing skills. This linguistic expectation can influence who contributes to the scientific dialogue and which clinical practices become internationally recognised.

The issue of language-related barriers began gaining scholarly attention as part of broader concerns about reporting and publication bias. McGauran et al. (2010) demonstrated that selective reporting could distort clinical evidence and potentially misguide patient care decisions. Similarly, Haidich (2010) underscored that incomplete or inaccessible research poses a threat to systematic reviews and meta-analyses, which depend on comprehensive datasets to establish best practices. Although these studies did not address language explicitly, they highlighted that any barrier limiting access to research—including linguistic barriers—can reduce the completeness and reliability of evidence used in decision-making.

During this same period, growing discourse in scientific communication research began examining how English-language dominance creates structural inequities. Drubin and Kellogg (2012) argued that while a common scientific language promotes efficiency and global exchange, it disproportionately disadvantages non-native English-speaking researchers. They noted that these researchers must devote additional time and resources to language editing, manuscript restructuring, and technical translation simply to meet standard publication requirements. In specialties like vascular and endovascular medicine—where technical detail, precise anatomical terminology, and clarity in procedural reporting are essential—such additional burdens may discourage submissions, especially for case reports where funding and institutional writing support are limited.

Empirical studies reinforced these concerns. Hanauer and Englander (2011), studying Mexican researchers, found that writing scientific manuscripts in English generated significantly higher levels of stress, effort, and time investment compared to writing in a first language. Although their work was discipline-neutral, the findings are especially relevant for procedural fields, where innovation often begins through case documentation rather than large clinical trials. If vascular specialists experience language-related stress and delay writing, the global literature may fail to reflect clinical diversity, rare pathologies, or region-specific treatment adaptations.

Meanwhile, scholars in scientific publishing highlighted the growing divide between English-language and regional scientific journals. Salager-Meyer (2014) discussed how researchers in non-Anglophone countries often distribute their work between international English-medium journals and domestic-language publications. She noted that while this approach meets local and global communication needs, it also results in valuable research—particularly case reports and observational studies—remaining overlooked because regional journals are less likely to be indexed in major scientific databases. For vascular and endovascular medicine, this means that clinically relevant insights—such as complication patterns in low-resource settings, device improvisations, or culturally influenced treatment pathways—may not reach the international scientific community.

Across literature published between 2010 and 2014, several themes emerge linking English proficiency with research visibility and evidence integration. First, limited proficiency may reduce not only the quality but the frequency and timeliness of case report submissions from non-English-speaking regions. Second, publishing barriers contribute to geographical representation gaps, where the majority of indexed vascular literature originates from English-dominant academic centres. Third, exclusion of non-English case evidence may indirectly affect guideline development, training curricula, and professional recognition within the specialty.

Despite increasing recognition of language inequities in science during this period, specific research examining English proficiency and publication outcomes in vascular and endovascular medicine remains limited. The absence of focused analysis is notable given the field's dependence on case-based knowledge exchange for advancing clinical techniques, device innovation, and complication management.

Therefore, exploring the impact of English proficiency on case reporting and evidence dissemination is essential to understanding whether language functions as a silent barrier within vascular medicine. Such inquiry may help identify whether current publishing systems unintentionally restrict contributions from diverse clinical settings and whether linguistic inequities shape which knowledge becomes part of global vascular clinical practice.

ENGLISH AS THE LINGUA FRANCA OF VASCULAR AND ENDOVASCULAR SCIENCE

English has emerged as the global language of scientific communication, and its influence is particularly profound in vascular and endovascular medicine. As innovation accelerates and treatment methodologies evolve across geographical boundaries, English serves as the shared linguistic platform that enables collaboration, standardization of knowledge, and unified dissemination of evidence. The dominance of English in high-impact medical journals, international conferences, guidelines, and clinical trials has positioned it as the primary medium through which vascular science advances and reaches diverse professional communities worldwide.

In vascular and endovascular specialties, case reports, clinical innovations, device development, and outcome-based research rely heavily on precision of terminology and clarity of interpretation. English proficiency, therefore, directly affects the ability of researchers and clinicians to document rare or complex cases, participate in international research networks, and contribute to the evolving global evidence base. Practitioners with limited English proficiency may encounter barriers in manuscript preparation, peer review navigation, and conference participation. As a result, valuable clinical insights—especially those emerging from developing regions with high vascular disease burden—often remain unpublished or underrepresented, leading to geographical imbalance in research output.

The role of English extends beyond publication logistics; it influences medical education and professional practice. Most vascular training resources, including procedural manuals, device instructions, operative guidelines, and simulation modules, are produced in English. Internationally recognized professional bodies, such as the Society for Vascular Surgery, European Society for Vascular Surgery, and the Global Vascular Guidelines Consortium, publish their recommendations exclusively in English, reinforcing its central role in shaping clinical decision-making and setting global standards of care.

English proficiency also affects patient safety and ethical reporting. Accurate case reporting in vascular science relies on precise language to describe anatomical structures, procedural steps, complications, and outcomes. Misinterpretation or inadequate translation may lead to ambiguity, reduced reproducibility, or even clinical errors when applying reported techniques across global settings. The clarity provided by shared medical terminology in English supports harmonization of research methodologies across multicenter trials and registries, ensuring data comparability and improving the rigor of evidence-based practice.

At the same time, linguistic centralization creates ethical and academic challenges. Researchers from non-English-speaking countries frequently face editorial and peer-review bias, publication delays, and the financial burden of language editing services. These barriers may discourage contributions from regions where vascular disease is rising rapidly, such as Asia, the Middle East, and South America. As vascular medicine continues to globalize, there is growing recognition of the need to support multilingual dissemination models, inclusive peer-review practices, and language training programs to bridge communication gaps.

English is indispensable as the lingua franca of vascular and endovascular science, facilitating global collaboration and accelerating the spread of innovative clinical knowledge. However, maximizing its benefits requires addressing the linguistic inequities that hinder participation and evidence dissemination among non-English-proficient clinicians and researchers.

IMPACT ON CASE REPORTING

English proficiency plays a significant role in shaping the quality, accuracy, and reach of case reporting in vascular and

endovascular medicine. Case reports serve as an important form of scientific communication, contributing to educational advancement, clinical decision-making, and innovation dissemination. When clinicians face language barriers, especially in specialized medical subfields, the precision and clarity required in case documentation may be compromised. As vascular and endovascular interventions rely on detailed technical descriptions—such as device specifications, procedural steps, imaging interpretation, and outcome reporting—limited English proficiency may hinder the ability to convey essential clinical details comprehensively.

One primary impact of limited English proficiency on case reporting is underrepresentation in global literature. Many clinicians, particularly from non-English-speaking regions, choose not to submit case reports despite significant clinical experience or innovation due to the perception that high-impact journals demand near-native fluency. Consequently, valuable clinical insights, early complication detection, and region-specific trends remain undocumented in global databases. This linguistic gap creates geographical publication bias, where English-proficient regions disproportionately shape guidelines and academic conversations. Accuracy and clarity of terminology are also affected. The vocabulary required for vascular and endovascular medicine is highly technical, and misuse of terminology or syntactic errors may lead to misinterpretation of procedural outcomes, device performance, or adverse events. Even when translation tools are used, they may lack contextual relevance, particularly for novel devices or experimental techniques. This technical miscommunication can reduce manuscript acceptance rates and weaken the perceived credibility of the research.

Furthermore, limited English proficiency may restrict interdisciplinary collaboration. Case reporting often requires interaction with journal reviewers, statisticians, and editorial teams. Clinicians with lower English confidence may struggle during revision cycles, leading to delays or manuscript withdrawal. Additionally, collaborative quality—such as the inclusion of high-quality images, structured summaries, and standardized reporting frameworks like CARE guidelines—may be inconsistently applied without adequate language support.

The implications extend to evidence dissemination and knowledge transfer. If fewer clinicians contribute to published medical evidence, global understanding of rare vascular conditions, complications, or emerging techniques becomes skewed. This lack of diversity in clinical documentation may slow advancements in endovascular device innovation, guideline development, and treatment personalization. English language proficiency thus becomes an indirect determinant of how quickly new findings reach the global clinical community.

Finally, the psychological impact of language barriers cannot be ignored. Clinicians may experience reduced confidence, hesitation in presenting cases at conferences, and dependency on intermediaries such as translators or professional editors. While such support can improve reporting quality, it introduces cost barriers and may limit participation from resource-constrained environments.

English proficiency significantly affects the comprehensiveness, accessibility, and global visibility of case reports in vascular and endovascular medicine. Addressing this gap through language support programs, structured reporting frameworks, and multilingual publication initiatives could improve equity in scientific communication while strengthening global evidence dissemination.

IMPACT ON EVIDENCE DISSEMINATION AND UPTAKE

The impact of English proficiency on evidence dissemination and uptake in vascular and endovascular medicine is profound and multifaceted. As English remains the dominant language of scientific communication, limited proficiency can hinder researchers, clinicians, and institutions in non-English-speaking regions from effectively contributing to global scientific discourse. This language barrier influences the visibility, credibility, and uptake of research findings, ultimately affecting clinical guidelines, policy development, and patient care outcomes.

One of the most significant consequences of limited English proficiency is the underrepresentation of valuable regional clinical data in high-impact journals. Vascular and endovascular medicine rely heavily on global evidence due to variations in disease patterns, genetic predispositions, and health system capacities. However, researchers with limited language skills may struggle to prepare manuscripts that meet international publication standards, reducing their chances of acceptance. As a result, knowledge generated in regions with diverse patient populations remains localised, limiting the generalisability of global evidence and slowing scientific progress.

The dissemination gap also affects clinicians' ability to stay current with evidence-based practice. English-language publications dominate major indexing platforms such as PubMed, Scopus, and Web of Science. Clinicians with limited English proficiency may encounter delays or barriers in accessing updated procedural guidelines, new device safety data, or emerging interventional techniques. In fast-evolving fields such as vascular stenting, thrombectomy, and aortic repair, delayed uptake of clinical evidence can translate into reduced procedural efficacy, limited innovation adoption, and compromised patient outcomes.

Furthermore, English proficiency affects participation in global academic forums, conferences, and multicentre trials. Presenting research or engaging in collaborative debates requires more than technical expertise—it demands linguistic confidence. Professionals who lack fluency may avoid presenting orally or may not be invited to contribute to expert consensus statements and guideline development. This exclusion perpetuates a cycle in which only native or highly proficient English speakers shape the scientific agenda, marginalising perspectives from low- and middle-income regions.

Language-related barriers can also influence medical education and continuing professional development. Training modules, device manuals, standard operating protocols, and virtual simulation resources are predominantly English-based. For early-career vascular specialists and trainees from non-English backgrounds, navigating technical terminology without adequate language support may result in misinterpretation of critical information, affecting learning and skill acquisition.

However, technology-enabled solutions such as AI-based translation tools, multilingual publishing policies, and open-access platforms are beginning to mitigate these challenges. Journals adopting bilingual submission models and offering editorial language support have significantly improved inclusivity. Likewise, dissemination strategies such as multilingual abstract repositories, subtitled webinars, and translated clinical guidelines enhance accessibility and uptake across regions.

English proficiency significantly influences evidence dissemination and uptake in vascular and endovascular medicine, affecting research visibility, clinical decision-making, professional engagement, and equitable knowledge sharing. Addressing linguistic barriers is essential to fostering a more inclusive scientific community where evidence emerges from diverse populations and contributes to improved global vascular care outcomes.

SPECIFICITIES IN VASCULAR AND ENDOVASCULAR MEDICINE

Vascular and endovascular medicine represents a rapidly advancing subspecialty characterized by a unique combination of diagnostic precision, interventional expertise, and multidisciplinary collaboration. Unlike many conventional medical domains, this field requires not only clinical skills but also the ability to interpret, communicate, and document highly technical procedures, imaging findings, and outcomes with accuracy. These specificities create a strong dependence on clear scientific communication—particularly in English, which functions as the global medium for medical publishing.

One distinguishing feature of vascular and endovascular medicine is its procedural complexity. Techniques such as angioplasty, stent grafting, thrombolysis, and embolization require the use of standardized terminology, device nomenclature, and outcome classifications such as TASC II, CEAP, and Rutherford scales. When physicians lack proficiency in English, they may face barriers in accurately reporting procedural details, perioperative complications, or long-term follow-ups in academic literature or case reporting systems. This can result in underrepresentation of valuable clinical data, especially from non-English speaking regions where disease burden may be high.

Another specificity lies in the dependence on advanced biomedical imaging. Case reporting in this specialty often requires detailed radiological interpretation, including CT angiography, Doppler ultrasound, intravascular ultrasound (IVUS), and digital subtraction angiography (DSA). Clear descriptions of vascular anatomy, anatomical variations, device positioning, restenosis patterns, or procedural endpoints depend on precise technical vocabulary. English language limitations can hinder adequate imaging interpretation and communication, affecting the clarity of case reports and potentially limiting clinical learning exchange among practitioners globally.

Vascular and endovascular research also requires adherence to international reporting standards, such as CONSORT, STROBE, and MOOSE guidelines. These frameworks ensure consistency in reporting outcomes, adverse events, and statistical interpretation. English proficiency becomes essential for complying with these standards, participating in multicenter trials, and disseminating emerging evidence. Limited language skills may discourage clinicians from contributing to peer-reviewed literature, despite having rich clinical experience or rare case insights.

Furthermore, vascular medicine evolves quickly with constant innovation in biomaterials, catheter designs, robotics, artificial intelligence, and hybrid surgical approaches. Accessing this knowledge requires engagement with English-language conferences, global society guidelines (EJVES, SVS, ESIR), and real-time scientific updates. Insufficient English proficiency can therefore create disparities in professional development and adoption of new technologies.

The specificities of vascular and endovascular medicine—including high procedural complexity, reliance on advanced imaging, strict adherence to reporting guidelines, and rapid technological evolution—make effective communication essential. English proficiency plays a critical role in shaping case reporting, research output, and evidence dissemination. Strengthening language competency among practitioners, especially in regions with high vascular disease prevalence, is not merely an academic concern but a necessary step toward global equity in vascular health knowledge and practice.

CONSEQUENCES FOR EQUITY AND PATIENT OUTCOMES

The impact of English language proficiency on case reporting and scientific communication in vascular and endovascular medicine presents significant implications for equity and patient outcomes. As English continues to dominate the publication, reporting, and global dissemination ecosystem in medical science, clinicians and researchers with limited English proficiency face substantial barriers. These barriers hinder the visibility of their clinical experiences, particularly from low- and middle-income countries where vascular disease burden, including peripheral artery disease, diabetic limb ischemia, and venous thromboembolism, is often disproportionately high. As a result, the underrepresentation of diverse patient populations in published evidence contributes to skewed clinical guidelines, limited context-based treatment protocols, and global inequities in vascular care delivery.

One critical consequence is the lack of diverse data representation in the evidence base. When English-language barriers prevent clinicians from non-Anglophone nations from contributing case reports, emerging procedural innovations, or complication trends,

the international literature becomes biased toward experiences from English-speaking academic centers. This imbalance leads to clinical recommendations shaped primarily by Western cohorts, devices, and practice norms, which may not apply to regions with different socio-genetic, environmental, or healthcare infrastructure variables. Consequently, patient outcomes may be adversely affected in regions where clinicians rely on guidelines not fully aligned with their patient realities.

Another key implication is delayed dissemination of innovations and rare case insights. Vascular and endovascular medicine is a rapidly evolving specialty, where device iteration cycles, protocol improvements, and complication reporting inform real-time clinical decision-making. When language limitations impede timely submission or peer review navigation, potentially life-saving information may remain localized instead of contributing to shared global learning. This delay can translate into preventable complications, persistent procedural variability, and slower adoption of best practices—ultimately affecting survival, limb salvage, and quality-of-life outcomes.

Inequity is further reinforced in professional advancement, research funding, and academic representation. Limited English proficiency may reduce the likelihood of publication in high-impact journals, thereby restricting visibility, citation impact, and cross-border collaboration. Over time, these disparities influence leadership representation in guideline committees, trial steering groups, and continuing medical education platforms. The absence of multilingual perspectives can create an intellectual feedback loop where English-speaking voices dominate research priorities and policy formation, compounding systemic inequity across generations of vascular specialists.

At the patient level, consequences are both direct and indirect. If clinicians lack access to evidence synthesized in a linguistically accessible format, treatment decisions may be based on outdated or incomplete information. This challenge is particularly pronounced for novel endovascular procedures, complex antithrombotic regimens, and device-specific complication profiles. Additionally, inequitable research dissemination may influence patient recruitment into clinical trials, leading to insufficient representation of non-English-speaking populations and reduced external validity of treatment outcomes.

Addressing these consequences requires structured international support systems, including multilingual peer review, translation-supported submission pathways, accessible continuing education, and culturally contextualized vascular guidelines. By reducing language-based barriers in vascular and endovascular medicine, the field can move toward greater knowledge justice and improved global patient outcomes.

STRATEGIES TO MITIGATE THE IMPACT OF LIMITED ENGLISH PROFICIENCY

Limited English proficiency (LEP) creates significant barriers in vascular and endovascular medicine, particularly in case reporting, clinical documentation, and evidence dissemination. To mitigate these challenges, targeted strategies are required to ensure that healthcare professionals with varying language skills can contribute effectively to global scientific communication.

One effective approach is the establishment of multilingual medical writing support units within hospitals and academic institutions. These units can provide editing, translation, and formatting support to clinicians involved in case documentation and research publishing. Additionally, using artificial intelligence–based language assistants—designed specifically for medical terminology—can enhance clarity, accuracy, and international publishing standards.

Developing standardized templates for case reporting, operative summaries, and evidence-based reviews reduces linguistic complexity and supports consistency. These templates can include predefined terminology aligned with international vascular registries and reporting guidelines such as SVS/ESVS frameworks. Incorporating visual tools like annotated images, diagrams, and procedural videos further supports communication by reducing dependence on written language.

Capacity building through structured English for Medical Purposes (EMP) training programs is another critical strategy. Customized modules focused on vascular terminology, research methodology, and academic publishing can significantly enhance proficiency. Institutions can partner with global vascular education societies to offer certification pathways that encourage greater participation in scientific dialogue.

Finally, fostering collaborative authorship models—where multilingual teams co-develop manuscripts—strengthens interdisciplinary learning and ensures content accuracy. This model benefits early-career clinicians with limited English proficiency by providing mentorship and exposure to best practices.

Collectively, these strategies promote linguistic equity, increase research visibility, and ensure that valuable regional clinical insights contribute to the global advancement of vascular and endovascular medicine.

CONCLUSION

In vascular and endovascular medicine, where innovation is rapid and the consequences of delayed or incomplete evidence can be serious, language should not be an invisible barrier to participation in scientific dialogue. English proficiency profoundly shapes who can report novel cases, which experiences are visible in the global literature, and how evidence is disseminated and applied in daily practice.

Limited English proficiency among clinicians and researchers does not reflect lesser clinical skill or insight; rather, it reflects historical, educational, and systemic factors. When left unaddressed, it can contribute to geographic, socioeconomic, and

epistemic inequities, particularly for regions carrying a high burden of vascular disease but limited representation in the English-dominated literature.

By recognizing language as a modifiable determinant of evidence production and dissemination, stakeholders across the vascular and endovascular community can take concrete steps to foster a more inclusive and representative body of knowledge. Strengthening scientific English capacity, providing editorial and institutional support, embracing multilingual dissemination, and using language technologies responsibly can help ensure that the global vascular community benefits from the full diversity of clinical experience and innovation. Ultimately, improving the equity and quality of scientific communication is not only an academic concern; it is a matter of improving patient care and outcomes worldwide.

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