

Strategies for the Distance Education in Teaching About Chronic Wounds: Scoping Review

Estratégias para a Educação à Distância no Ensino Sobre Feridas Crônicas: Revisão de Escopo

Estrategias para la Educación a Distancia en la Enseñanza Sobre Heridas Crónicas: Revisión de Alcance

RESUMO

Objetivo: Mapear as evidências científicas disponíveis sobre o uso da Educação a Distância (EaD) como estratégia de capacitação de profissionais de saúde no cuidado com feridas crônicas, com ênfase na qualidade, inclusão e acessibilidade. **Método:** Revisão de escopo desenvolvida conforme o JBI Manual for Evidence Synthesis e reportada segundo o Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR). As buscas foram realizadas nas plataformas Scientific Electronic Library Online (SciELO), Literatura Latino-Americana e do Caribe em Ciências da Saúde (LILACS), Base de Dados de Enfermagem (BDENF), PubMed, e Google Scholar. Após a exclusão das duplicatas no software EndNote, os estudos foram triados e selecionados no Rayyan, obedecendo aos critérios de elegibilidade. **Resultados:** Foram incluídos 11 estudos, publicados entre 2015 e 2025, e as estratégias mais recorrentes foram cursos online assíncronos, ambientes virtuais de aprendizagem e uso de metodologias ativas, com ênfase crescente em recursos de acessibilidade e inclusão digital. **Considerações finais:** Os achados reforçam a necessidade de investimentos em tecnologias educacionais adaptadas às diversidades dos profissionais de saúde e em políticas que consolidem a EaD como parte integrante da educação permanente.

DESCRIPTORIOS: Feridas crônicas; Educação a Distância; Capacitação profissional; Inclusão digital; Acessibilidade.

ABSTRACT

Objective: To map the available scientific evidence on the use of Distance Education (DE) as a training strategy for health professionals in the care of chronic wounds, with emphasis on quality, inclusion, and accessibility. **Method:** A scoping review developed according to the JBI Manual for Evidence Synthesis and reported following the Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR). Searches were carried out in the following databases: Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS), Nursing Database (BDENF), PubMed, and Google Scholar. After duplicate removal using EndNote, studies were screened and selected in Rayyan according to eligibility criteria. **Results:** 11 studies, published between 2015 and 2025, were included. The most recurrent strategies were asynchronous online courses, virtual learning environments, and the use of active methodologies, with increasing emphasis on accessibility resources and digital inclusion. **Conclusion:** The findings reinforce the need for investments in educational technologies adapted to the diversity of health professionals and in policies that consolidate DE as an integral part of continuing education.

DESCRIPTORS: Chronic wounds; Distance education; Professional training; Digital inclusion; Accessibility.

RESUMEN

Objetivo: Mapear la evidencia científica disponible sobre el uso de la Educación a Distancia (EaD) como estrategia de capacitación de profesionales de la salud en el cuidado de heridas crónicas, con énfasis en la calidad, la inclusión y la accesibilidad. **Método:** Revisión de alcance desarrollada conforme al JBI Manual for Evidence Synthesis y reportada de acuerdo con el Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews (PRISMA-ScR). Las búsquedas se realizaron en las siguientes bases de datos: Scientific Electronic Library Online (SciELO), Literatura Latinoamericana y del Caribe en Ciencias de la Salud (LILACS), Base de Datos de Enfermería (BDENF), PubMed y Google Scholar. Tras la eliminación de duplicados en el software EndNote, los estudios fueron cribados y seleccionados en Rayyan según los criterios de elegibilidad. **Resultados:** Se incluyeron 11 estudios, publicados entre 2015 y 2025. Las estrategias más frecuentes fueron cursos en línea asincrónicos, entornos virtuales de aprendizaje y el uso de metodologías activas, con un énfasis creciente en los recursos de accesibilidad e inclusión digital. **Conclusión:** Los hallazgos refuerzan la necesidad de inversiones en tecnologías educativas adaptadas a la diversidad de los profesionales de la salud y en políticas que consoliden la EaD como parte integrante de la educación permanente.

DESCRIPTORIOS: Heridas crónicas; Educación a distancia; Capacitación profesional; Inclusión digital; Accesibilidad.

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INTRODUCTION

Chronic wounds represent a significant challenge for healthcare systems worldwide, especially in the context of ongoing care for patients with chronic diseases, the elderly, bedridden patients, or those with conditions that compromise healing. These injuries require specialized monitoring, evidence-based protocols, and multidisciplinary actions for their prevention and effective treatment⁽¹⁾. However, many healthcare professionals still have gaps in their technical and practical knowledge about the proper management of these wounds, which compromises the quality of care and patient safety⁽²⁾.

Given the growing demand for professional qualification, coupled with time constraints, travel, and unequal access to continuing education, distance learning (DL) has established itself as a strategic and democratic alternative for developing skills in the field of health. The use of digital resources, interactive platforms, and active methodologies allows professionals to update their knowledge in a flexible, accessible manner that is consistent with their work reality⁽⁴⁾.

However, for distance learning to fulfill its educational role with quali-

ty, it is necessary to consider the principles of inclusion and accessibility in all its aspects, from instructional design to the language used and the form of assessment. Health professionals living in remote areas, with visual, hearing, or internet connection limitations, should also be considered in educational materials designed from an inclusive and universal perspective⁽⁴⁾. In this sense, it is urgent to invest in pedagogical proposals that combine technical excellence, accessible language, and respect for the diversity of learners.

The ongoing training of healthcare professionals is a determining factor in improving the quality of care provided, especially in highly complex areas such as chronic wound care. However, there is still a gap between advances in scientific knowledge and the effective incorporation of this evidence into everyday practice, especially in primary care, where inadequate management of injuries can lead to worsening clinical conditions, avoidable hospitalizations, and increased public costs⁽¹⁻²⁾.

In this context, distance learning (DL) presents itself as a viable and strategic alternative to promote democratic access to knowledge. The

flexibility of schedules, expanded territorial reach, and the possibility of integrating multimedia resources make distance learning a powerful modality for professional training. However, it is necessary to ensure that these initiatives are based on principles of accessibility and inclusion, in order to serve professionals with different levels of digital literacy, physical or sensory disabilities, and unequal sociotechnical conditions⁽⁴⁾.

This article aimed to map the available scientific evidence on the use of distance learning (DL) as a strategy for training health professionals in chronic wound care, with an emphasis on quality, inclusion, and accessibility.

METHOD

This was a scoping review based on the Joanna Briggs Institute (JBI) and reported according to the recommendations of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses extension for Scoping Reviews (PRISMA-ScR). The research question was defined using the Population, Concept, and Context (PCC) mnemonic, where the population was considered to be healthcare profes-

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sionals, the concept was the use of Distance Learning applied to teaching about chronic wounds, and the context was aspects related to quality, accessibility, and digital inclusion.

Studies that addressed the application of Distance Education as a strategy for training health professionals in the care of chronic wounds, considering aspects of quality, accessibility, and inclusion, were included. Different methodological designs were accepted, such as qualitative, quantitative, mixed, quasi-experimental studies, and experience reports, provided they presented empirical data related to the theme. Studies directed exclusively at undergraduate students, face-to-face courses, studies dealing with acute wounds, theoretical essays, editorials, and narrative reviews without data systematization were excluded.

The searches were conducted in June 2025 in the Scientific Electronic Library Online (SciELO), Latin American and Caribbean Health Sciences Literature (LILACS), Nursing Database (BDENF), PubMed, Education Resources Information Center (ERIC), and Google Scholar databases, also including gray literature. Controlled and uncontrolled descriptors

in Portuguese, English, and Spanish, combined by Boolean operators, were used to construct the search strategies.

The references retrieved were organized in EndNote, which allowed the exclusion of duplicates. Next, the unique records were imported into Rayyan, where two reviewers independently screened the titles and abstracts, proceeding to read the potentially eligible texts in full. Disagreements were resolved by consensus or with the participation of a third reviewer. The selection process was presented in a PRISMA-ScR flow diagram, showing the number of studies identified, screened, included, and excluded, as well as the reasons for exclusion.

Data extraction was performed using a standardized instrument that included information on authors, year, country, design, target population, type of distance education, accessibility resources, objectives, main results, and gaps. Two reviewers performed the collection independently, and disagreements were resolved by consensus. The extracted data were analyzed descriptively and grouped into thematic areas, which included technological resources, pedagogical

methodologies, accessibility, digital inclusion, and challenges. The results were organized into tables and described through narrative synthesis. As recommended for scoping reviews, no critical assessment of the methodological quality of the included studies was performed.

RESULTS AND DISCUSSION

Initially, 790 records were identified from searches conducted in the SciELO, LILACS, BDENF, PubMed, ERIC, and Google Scholar databases. After excluding 3 duplicates in EndNote software, 786 studies proceeded to the screening phase in Rayyan. At this stage, after reading the titles, 700 studies were excluded, and 86 studies were read in their abstracts, of which 70 studies were excluded for not meeting the eligibility criteria. Sixteen articles remained for full-text reading, of which four were excluded for the following reasons: focus on undergraduate students, approach to acute wounds, lack of direct relationship with distance education, or lack of empirical data. At the end of the process, **11 studies** published between 2015 and 2025 were included in the review.

TABLE 1 – Presentation of scientific findings:

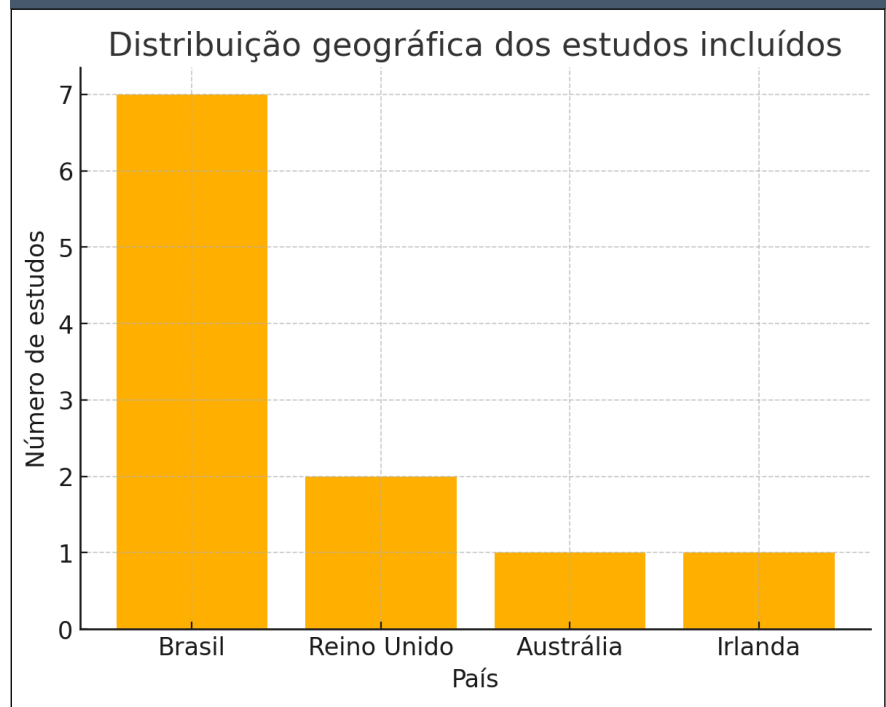
Title	Authors	Journal / Year	Method	Main results/outcomes
Educação continuada em enfermagem à distância para tratamento de feridas em prisões	Cavichioli FC, Blanes L, Garbe GG, Nicodemo D, Ferreira LM ⁵	Acta Paulista de Enfermagem, 2022	Methodological study (online course validated with Delphi)	Moodle course with 6 modules; content validity index 0.98; contributes to the qualification of prison system professionals.
Capacitação online sobre tratamento de feridas para profissionais de saúde	Silva JF, Oliveira AC ⁶	Revista Latino-Americana de Educação Virtual, 2023	Quasi-experimental	Online course significantly improved participants' knowledge scores.
Cursos de capacitação em feridas ministrados à equipe de enfermagem	Costa MC, Araújo PS ⁷	Revista Enfermagem Atual In Derme, 2021	Experience report	Showed good adherence by professionals and improvements in care practices after the training courses.
Validation of an educational book: Educational technology for teaching wounds	Pereira A, Souza D, Lima F ⁸	Research, Society and Development, 2021	Methodological study (validation of educational technology)	Educational book validated as a teaching resource for teaching about wounds; contributes to the standardization of practices.

Conhecimento de acadêmicos de enfermagem sobre avaliação de feridas	Martins RS, Alves P ⁹	Revista Enfermagem Atual In Derme, 2022	Cross-sectional study	Identified significant gaps in academics' knowledge of wound assessment, reinforcing the need for strategies such as distance learning.
Feridas crônicas na atenção primária à saúde	Ramírez JC, Torres G ¹⁰	Revista Caribeña de Ciencias Sociales, 2020	Narrative review	Highlighted challenges in the management of chronic wounds and pointed to distance learning as a possibility for training in primary health care.
Podcasting for education in enterostomal therapy during the COVID-19 pandemic	Santos VLCG, <i>et al.</i> ¹¹	Estima – Brazilian Journal of Enterostomal Therapy, 2021	Experience report	The podcast proved to be an accessible and inclusive resource for professional development in stoma therapy during the pandemic.
Inovação na educação em feridas e curativos em UTI: protocolos, tecnologias e capacitação profissional	Oliveira R, Souza A ¹²	Revista Cognitus, 2022	Experience report	Implementation of online protocols and training in the ICU; promoted evidence-based practices.
A digital education intervention for wound care knowledge: randomized controlled trial	Santamaria N, <i>et al.</i> ¹³	International Wound Journal, 2022	Randomized clinical trial	Digital intervention significantly increased professionals' knowledge of wounds, confirming the effectiveness of distance learning.
A web-based education program for wound care: protocol	Gray TA, <i>et al.</i> ¹⁴	JMIR Research Protocols, 2019	Study protocol	Proposed a web-based program for wound care training, with a focus on evaluating future effectiveness.
E-learning in wound care education: randomized controlled trial	Moore Z, <i>et al.</i> ¹⁵	International Journal of Nursing Studies, 2020	Randomized clinical trial	Distance learning demonstrated effectiveness comparable to face-to-face teaching in knowledge about chronic wounds.

Source: Research data, 2025.

The scoping review identified 11 studies that investigated the use of distance learning as a training strategy for healthcare professionals in chronic wound care. A methodological diversity was observed, including randomized clinical trials, methodological validation studies, quasi-experimental studies, cross-sectional studies, and experience reports. The productions included both structured digital technologies, such as online courses and virtual learning environments, and innovative and accessible resources, such as podcasts and digital teaching materials. In general, the studies showed significant gains in professionals' knowledge, in addition to the validation of effective educational resources that can be adapted to different care contexts. However, challenges remain regarding the longitudinal evaluation of the effectiveness of interventions and the incorporation of distance learning as a consolidated practice of continuing education in health.

GRAPH 1 – Geographic distribution of studies:



Source: Research data, 2025.

It should be noted that most studies

were conducted in Brazil, which may be related to the significant national

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scientific production on wounds and the inclusion of distance learning as a strategic policy for continuing education in health. Despite this, research was also identified in countries such as the United Kingdom, Australia, and Ireland, demonstrating that the topic is internationally relevant and has been explored in different contexts of training and professional practice. This geographical diversity reinforces the importance of distance learning as a resource applicable to different realities, respecting local needs.

The most common strategies were asynchronous online courses, often supported by virtual platforms such as Moodle, reflecting the consolida-

tion of this format as a flexible and accessible learning tool. Complementary resources, such as digital materials and interactive protocols, proved to be relevant for the standardization of conduct, while innovative experiences, such as podcasts, showed potential for increasing inclusion and accessibility. To a lesser extent, interactive web programs demonstrated possibilities for immersion, and dynamic learning. This overview suggests that distance learning in chronic wounds is evolving from traditional models to more diverse and inclusive proposals, aligned with contemporary demands in health education.

accessible way, especially for professionals facing travel and time constraints⁽¹¹⁾. Other experience reports showed positive adherence by professionals to digital training programs and direct impacts on clinical practice, such as the implementation of protocols in intensive care units^{7,12}.

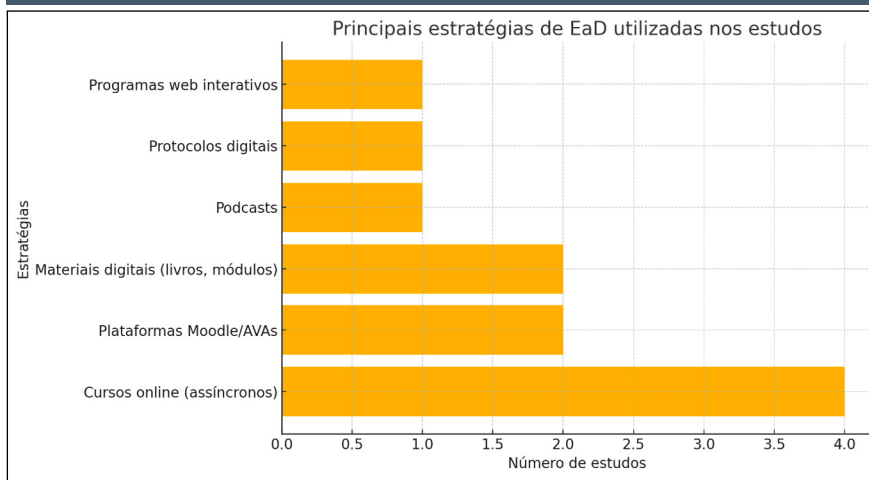
Randomized clinical trials have provided robust evidence on the effectiveness of distance learning, showing that digital interventions can achieve results comparable to face-to-face teaching, including superior potential in certain situations^{13,15}. These findings support the viability of distance learning not only as an emergency alternative but as a lasting strategy for continuing health education. However, gaps remain in relation to the longitudinal assessment of knowledge retention and the real impact of training on patient clinical outcomes.

The literature also highlights the need to expand the accessibility of educational resources, considering barriers such as digital literacy, connectivity, and diversity of professional profiles^{9,10}. In this sense, the incorporation of principles of digital inclusion and accessible instructional design is essential for distance learning to be truly democratic and effective. In summary, the results of this review corroborate distance learning as a strategic tool for the qualification of chronic wound care, but also signal the urgency of public and institutional policies that encourage investment in accessible, sustainable educational technologies aligned with the real demands of health services.

FINAL CONSIDERATIONS

This scoping review mapped the available evidence on the use of distance learning as a strategy for training health professionals in chronic wound care, highlighting a scenario of growing interest and application of this teaching modality. The 11 stud-

CHART 2 – Strategies used in distance learning on chronic wounds:



Source: Research data, 2025.

The analysis of the included studies shows that distance learning has established itself as a promising strategy for training health professionals in chronic wound care. Several methodological designs were identified, including randomized clinical trials, methodological validation studies, quasi-experimental studies, cross-sectional studies, and experience reports, demonstrating the plurality of approaches used to explore the potential of educational technologies.

Online courses, especially in asyn-

chronous format, have proven to be recurrent and effective in increasing professionals' knowledge, reflecting statistically significant gains after the intervention^{5,6}. In addition, methodological studies that validated educational materials, such as digital books and structured modules, reinforce the role of distance learning in standardizing and disseminating good care practices⁸.

Innovative initiatives, such as the use of podcasts during the pandemic, also stood out for expanding access to updated content in an inclusive and

ies analyzed revealed that different formats of distance learning, such as online courses, virtual learning environments, digital materials, and innovative resources such as podcasts, have contributed to expanding access to knowledge, promoting digital inclusion, and strengthening continuing education in health.

The findings reinforce that distance learning is not only an emergency alternative in the face of face-to-face restrictions, but also a viable,

flexible, and sustainable resource for professional qualification, capable of positively impacting clinical practice and the standardization of care procedures. Nevertheless, challenges remain related to full accessibility, the heterogeneity of professionals' digital profiles, and the need for longitudinal studies that evaluate not only immediate cognitive gains but also the practical application of acquired knowledge in patients' clinical outcomes.

In this sense, it is essential to invest in educational technologies adapted to the diversity of the target audience and in institutional policies that consolidate distance learning as an integral part of continuing education strategies in the field of health. Strengthening these initiatives can contribute to more inclusive, accessible, and quality training, directly impacting the improvement of care for people with chronic wounds.

REFERENCES

1. Silva RF, Mendes MA, Oliveira AC, Lima TL, Batista AR. Tratamento de feridas crônicas: atualização sobre práticas clínicas baseadas em evidências. *Revista Cuidarte*. 2020;11(1):e1287. <https://doi.org/10.15649/cuidarte.1287>
2. Souza AR, Oliveira MF, Guedes HM. Educação continuada e manejo de feridas crônicas: percepção de profissionais da atenção primária. *Revista Brasileira de Enfermagem*. 2022;75(2):e20210534. <https://doi.org/10.1590/0034-7167-2021-0534>
3. Barros CA, Nascimento RM, Teixeira MA. Educação a distância e formação em saúde: potencialidades e desafios. *Revista Brasileira de Educação Médica*. 2021;45(1):e062. <https://doi.org/10.1590/1981-5271v45.1-20200228.ING>
4. Fernandes LP, Lima RC, Costa JL. Design inclusivo em cursos online de saúde: uma revisão integrativa. *Revista de Educação em Saúde*. 2023;4(2):1-12. <https://doi.org/10.51234/res.v4i2.669>
5. Cavichioli FC, Blanes L, Garbe GG, Nicodemo D, Ferreira LM. Educação continuada em enfermagem à distância para tratamento de feridas em prisões. *Acta Paul Enferm*. 2022;35:eAPE01945. Disponível em: <https://www.scielo.br/j/ape/a/9ggxxKZ7K4Lkrtc95JFRW8c/>
6. Silva JF, Oliveira AC. Capacitação online sobre tratamento de feridas para profissionais de saúde. *Rev Latino-Am Educ Virtual*. 2023;4(2):55-64. Disponível em: <https://periodicos.newsciencepubl.com/LEV/article/view/5507>
7. Costa MC, Araújo PS. Cursos de capacitação em feridas ministrados à equipe de enfermagem. *Rev Enferm Atual In Derme*. 2021;95(33):e1075. Disponível em: <https://mail.revistaenfermagematual.com.br/index.php/revista/article/view/1075>
8. Pereira A, Souza D, Lima F. Validation of an educational book: Educational technology for teaching wounds. *Res Soc Dev*. 2021;10(12):e512101220935. Disponível em: <https://rsdjournal.org/index.php/rsd/article/view/20935>
9. Martins RS, Alves P. Conhecimento de acadêmicos de enfermagem sobre avaliação de feridas. *Rev Enferm Atual In Derme*. 2022;100(34):e2456. Disponível em: <https://www.revistaenfermagematual.com.br/index.php/revista/article/view/2456>
10. Ramírez JC, Torres G. Feridas crônicas na atenção primária à saúde. *Rev Carib Cienc Soc*. 2020;11(2):77-89. Disponível em: <https://revistacaribena.com/ojs/index.php/rccs/article/view/3111>
11. Santos VLCCG, et al. Podcasting for education in enterostomal therapy during the COVID-19 pandemic. *Estima Braz J Enterostomal Ther*. 2021;19:e1021. Disponível em: <https://www.revistaestima.com.br/estima/article/view/1207>
12. Oliveira R, Souza A. Inovação na educação em feridas e curativos em UTI: protocolos, tecnologias e capacitação profissional. *Rev Cognitus*. 2022;2(1):59-68. Disponível em: <https://ojs.editoracognitus.com.br/index.php/revista/article/view/59>
13. Santamaria N, et al. A digital education intervention for wound care knowledge: randomized controlled trial. *Int Wound J*. 2022;19(5):1025-1036. Disponível em: <https://onlinelibrary.wiley.com/doi/10.1111/iwj.14219>
14. Gray TA, et al. A web-based education program for wound care: protocol. *JMIR Res Protoc*. 2019;8(3):e12488. Disponível em: <https://www.researchprotocols.org/2019/3/e12488/>
15. Moore Z, et al. E-learning in wound care education: randomized controlled trial. *Int J Nurs Stud*. 2020;109:103635. Disponível em: <https://www.sciencedirect.com/science/article/abs/pii/S0020748919303190>