

Respect for patient autonomy in choosing medical treatment without blood transfusion

Denissen Fossati da Silva¹

1. Universidad Europea del Atlántico. Santander, Cantabria, Spain.

Abstract

Respect for personal autonomy is the foundation of the patient's right to choose among scientifically supported therapeutic alternatives and to provide informed consent. Using a scientometric approach, this study analyzed the scientific output concerning the autonomy of competent adult patients who choose medical treatments without allogeneic blood transfusion. Articles were retrieved from Scopus, PubMed, SciELO, and Web of Science and analyzed with the Bibliometrix package. The results indicate that only a limited number of authors maintain a continuous research line on this topic. The World Health Organization provides guidelines for the application of bloodless treatments in both elective and emergency contexts; however, gaps remain in rare situations not covered by these guidelines. In Brazil, the 2024 decision of the Supreme Federal Court recognized the right of competent adult patients to refuse blood transfusions on religious grounds, underscoring the bioethical and legal relevance of this issue.

Keywords: Personal autonomy. Bioethics. Patient safety. World Health Organization. Blood transfusion. Human rights.

Resumo

Respeito à autonomia do paciente: tratamentos médicos sem transfusão de sangue

O respeito à autonomia pessoal é o fundamento do direito do paciente escolher entre alternativas terapêuticas com respaldo científico e de fornecer consentimento informado. Com base em uma abordagem cienciométrica, este estudo analisou a produção científica sobre o respeito à autonomia de pacientes adultos e capazes que optam por tratamentos médicos sem transfusões de sangue alogênico. Foram recuperados artigos das bases Scopus, PubMed, SciELO e Web of Science e analisados com o pacote Bibliometrix. Os resultados indicam que ainda há um número restrito de autores dedicados a essa linha contínua de pesquisa. As diretrizes da Organização Mundial da Saúde orientam a aplicação de tratamentos sem sangue tanto em contextos eletivos quanto emergenciais, mas evidenciam lacunas em casos raros não contemplados. No Brasil, destaca-se a decisão do Supremo Tribunal Federal, que reconheceu o direito de pacientes adultos recusarem transfusões por convicção religiosa, reforçando a relevância bioética e jurídica do tema.

Palavras-chave: Autonomia pessoal. Bioética. Segurança do paciente. Organização Mundial da Saúde. Transfusão de sangue. Direitos humanos.

Resumen

Respeto a la autonomía del paciente: tratamientos médicos sin transfusión

El respeto a la autonomía personal constituye la base del derecho del paciente a elegir entre alternativas terapéuticas con respaldo científico y otorgar su consentimiento informado. Mediante un enfoque cienciométrico, este estudio analizó la producción científica relacionada con la autonomía de pacientes adultos y capaces que optan por tratamientos médicos sin transfusiones de sangre alogénica. Se recuperaron artículos de las bases Scopus, PubMed, SciELO y Web of Science, analizados con el paquete Bibliometrix. Los resultados muestran un número limitado de autores que mantienen una línea continua de investigación sobre el tema. Las directrices de la Organización Mundial de la Salud contemplan la aplicación de tratamientos sin sangre en contextos electivos y de emergencia, aunque persisten vacíos en situaciones excepcionales. En Brasil, destaca la decisión del Supremo Tribunal Federal (2024), que reconoció el derecho de los pacientes adultos a rechazar transfusiones por convicción religiosa, subrayando la relevancia bioética y jurídica de la cuestión.

Palabras clave: Autonomía Personal. Bioética. Seguridad del paciente. Organización Mundial de la Salud. Transfusión sanguínea. Derechos humanos.

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Since the adoption of the *Universal Declaration on Bioethics and Human Rights* (UDBHR)¹ by the United Nations Educational, Scientific and Cultural Organization (UNESCO) in 2005, respect for patient autonomy in choosing medical treatment without blood transfusion has become a very frequent issue. The UDBHR states the principle of autonomy and individual responsibility in article 5, reinforcing that people's autonomy to make decisions must be respected, while also taking responsibility for them and respecting the autonomy of others.

This principle reflects the formula used in the *Belmont Report*² on autonomy, which is embodied in two ethical requirements: respect for the autonomy of the patient to make bioethical decisions; and special support for those lacking full autonomy to offer informed consent. This formula, based on autonomy and individual responsibility, may conflict with the principle of beneficence, which focuses on promoting the well-being of others.

Immanuel Kant's second categorical imperative is the principle of humanity³. The basic idea emphasizes the importance of treating every human being as an end in themselves rather than viewing them merely as instruments to achieve certain goals. He defines autonomy as the ability to act according to the laws that reason itself establishes. This implies that individuals who possess rationality can establish their own ethical principles rather than being obligated to follow laws forced upon them by external sources. By recognizing humanity as an inherent value, we recognize and admire the innate capacity of each individual to make their own choices and decisions. According to Kant³, freedom is not simply the absence of restrictions but the ability to act according to reason. Respecting others as ends in themselves means recognizing their ability to act morally and their dignity as autonomous rational agents.

The development of human rights has been motivated by enlightened concepts that have influenced significant publications such as the *Universal Declaration of Human Rights* by placing emphasis on the inherent dignity and value of every person. Both the *Declaration of Human and Citizen Rights*⁴ of 1789 and the *Universal Declaration of Human Rights*⁵ of 1948 safeguard

the freedom and dignity of individuals, shaping the contemporary understanding and application of human rights. Respect for human dignity is a fundamental principle that underpins the emerging global norms in the field of bioethics⁶, emphasizing the intrinsic value and worth of each individual.

The *Nuremberg Code*⁷ and the *Declaration of Helsinki*⁸ both stress the essential nature of respecting human dignity in research involving human subjects. However, there is a long way until fully developing respect for the individual—the patient. For example, the Italian Court of Termini Imerese (Palermo) convicted a medical doctor of a crime of violent assault for having ordered the administration of a blood transfusion to a patient specifically declining a blood transfusion on religious grounds⁹.

In September 2024, the Brazilian Supreme Court (STF) established, under the system of general repercussion, through Themes 952¹⁰ and 1069¹¹, that competent and fully informed adult patients have the right to refuse medical treatment involving blood transfusion due to religious conviction. The Court held that such refusal must be unequivocal, voluntary, informed, and explicit, including via advance directives. Whenever technically and scientifically feasible, with the consent of the medical team and an unequivocal decision by the patient, the Brazilian Unified Health System (SUS) must provide alternative procedures already available, even if this requires transferring the patient to another location, thereby respecting the patient's right to life and health within the framework of autonomy and religious freedom.

In August 2025, the STF dismissed an appeal filed by the Federal Council of Medicine (CFM), which sought to revisit the Court's position and introduce exceptions for situations of imminent risk of death or when formal patient consent could not be obtained. Gilmar Mendes, the rapporteur, concluded that the CFM lacked standing to appeal and that the issues raised had already been addressed in the original thesis established by the Court. This constitutional framework was later complemented by Law 15,378 of April 6, 2026, which instituted the Statute of Patient Rights¹² and reinforced the legal foundations of patient

autonomy, informed consent, advance directives, and the patient-designated representative.

Regarding minors, the STF has not yet issued a definitive rule. Thus, when an effective and safe alternative treatment is available, according to medical assessment, parents or legal guardians may request such treatment to be used for their children, whether infants, children, or adolescents. Within this framework, medical procedures without blood transfusion may be admitted when supported by technical justification and approved by the medical team, with informed decision-making by the competent patient—and, in the case of minors, submit to medical and judicial evaluation until the Supreme Court issues a final position^{10,11}.

The World Health Organization established World Patient Safety Day¹³ in 2019 to emphasize the importance of patient autonomy and safety, engaging patients on improved safety measures. The theme for 2023, “Engaging Patients for Patient Safety,” highlights the pivotal role of patients, their families, and caregivers in promoting and maintaining patient safety measures. The slogan “Elevate the voice of patients!” calls for all stakeholders to ensure patients are involved in their own treatment. It states four objectives:

1. Active engagement of patients and their families in all settings and at all levels of health care to improve patient safety;
2. Engaging all stakeholders in efforts to engage patients and families;
3. Empowering patients and families to actively participate in their own health care;
4. Encouraging all nations to take immediate action on patient and family engagement in accordance with the *Global Patient Safety Action Plan 2021-2030*¹⁴.

Because of the risks associated with blood transfusions, medical researchers have put considerable resources into developing safe and cost-effective means of treating patients without blood. There are many review articles regarding patient autonomy in choosing medical treatment without blood transfusion. Cummins and Nicoli¹⁵ showed that kidney transplants have similar outcomes regardless of blood transfusion, so it is not ethical to refuse to include a Jehovah's Witness patient on a waiting list for an organ.

Although there is a substantial amount of research on medical treatment without blood transfusion, there is a need for more reports on the current state of knowledge in this field. Scientometric analysis generates clues for policymakers and research funders with evidence-based scientific production.

This article aims to map patterns and trends in patient autonomy in choosing medical treatment without blood transfusion, identifying historical and temporal trends in publications, and listing the most significant journals, authors, and countries producing knowledge on this topic. This study intends to answer the following questions: has the number of scientific articles published each year increased over time? What are the number of papers, citations, and scientific journals until April 2024? How many authors produced these articles as single-authored papers? What is the number of co-authorship per document? Who are the main authors, and how is their productivity over time? Which countries are leading in scientific production? What are the most influential scientific journals for publishing documents? This will provide a more complete and comprehensive view of the international research scenario focused on patient autonomy avoiding blood transfusions.

Method

Database survey

We obtained publications regarding patient autonomy in choosing medical treatment without blood transfusion from Scopus, PubMed, SciELO, and Web of Science databases. Data was retrieved using the following composition of keywords: ethics, bioethics, legislation, law, jurisprudence, paternalism, beneficence, autonomy, directives, informed consent, patient rights, religion, Jehovah's Witnesses, JW, blood, and transfusion. We used the following database search structure: (ethic* OR bioethic* OR legislation OR law OR jurisprudence) AND (paternal* OR beneficence OR autonomy OR directives OR “informed consent” OR “patient rights” OR religion OR jehovah's witnesses OR jw) AND (blood OR transfusion).

The search was conducted throughout the entire publication span of each database, up

until April 2024. The query yielded a total of 6,412 records, and after eliminating duplicates, 5,678 records remained. Duplicates were removed using Bibliometrix package 4.1.3¹⁶, implemented in R version 4.4.0¹⁷. Scientific papers were visually inspected for eligibility, and we excluded reviews, meta-analyses, commentary papers, as well as papers that did not match the scope of our research.

Scientometric analysis

We applied descriptive analyses and science mapping using the Bibliometrix package 4.1.3¹⁶ in R version 4.4.0¹⁷. We collected the following information: number of scientific articles, annual growth rate, mean number of citations, number of single-authored papers, number of scientific journals, and most relevant journals, their production over time, and their performance. We gathered data on the number of authors, authors of single-authored papers, co-authors per document, the most relevant authors,

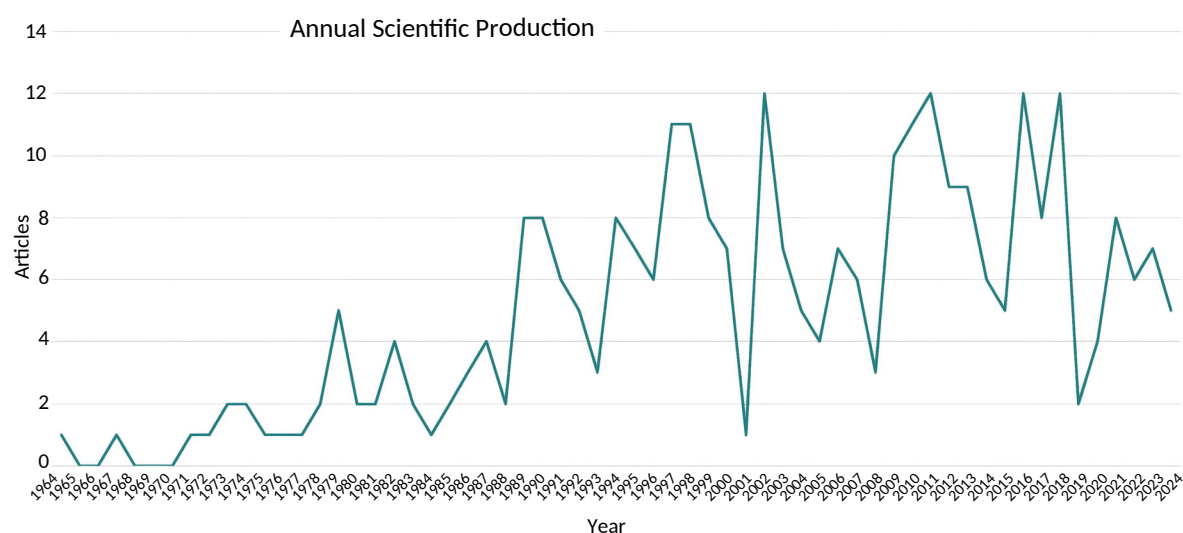
their production over time, countries' scientific production, and their production over time.

Results

Temporal trends in publication and authorship

Up to April 2024, there were 299 publications addressing respect for patient autonomy in choosing medical treatment without blood transfusion. The first document in our dataset was published in 1964, with an annual growth rate of 2.72%, and publications that tend to increase over time (Figure 1). A limited number of articles were published over the initial decades, and productivity has shown a slight increase since the 1990s. The years with the highest number of publications were 2002, 2011, 2016, and 2018, each featuring 12 articles. Since then, there has been a decrease in production. There were 235 journals, with mean citations per document being 5.76.

Figure 1. The annual number of articles published from 1964 until April 2024



We found 826 different authors, of whom 97 are responsible for producing 108 single-authored documents. The remaining documents were made by 2.94 co-authors per document. We detected that 94.2% of the authors produced only one article from the total set in our theme. This outcome was correctly predicted by Lotka's law¹⁸.

The most productive author was Muramoto O., who published five articles between 1998 and 2000. The second most productive author was Rajtar M. with four articles between 2013 and 2018. The remaining authors produced one or two articles each. In 1964, Denton A. Cooley, E. Stanley Crawford, James F. Howell, and Arthur C. Beali Jr¹⁹

published the first paper in our dataset, which described the use of new cardiopulmonary bypass techniques for open heart surgery using only blood substitutes for priming, which was feasible and acceptable to patients who chose medical treatment without blood transfusion.

Scientific journal performance

The Sankey Diagram²⁰ indicated that the primary focus of scientific production is on the Journal of Medical Ethics. Out of the 20 journals examined, the Journal of Medical Ethics had 13 articles, which was the highest number. Anesthesia and analgesia had five articles, while BMJ (Clinical Research Ed) and Canadian Medical Association Journal had four articles each. Acta Bioethica, American Surgeon, Journal of Extracorporeal Technology, Medicine and Law, Narrative Inquiry in Bioethics, Pediatrics, Revista Medica de Chile, Social Science and Medicine, and The Annals of Thoracic Surgery each had three articles. A & A Case Reports, American Journal of Obstetrics and Gynecology, Anaesthesist, Annales Françaises d'Anesthésie et de Réanimation, AORN Journal,

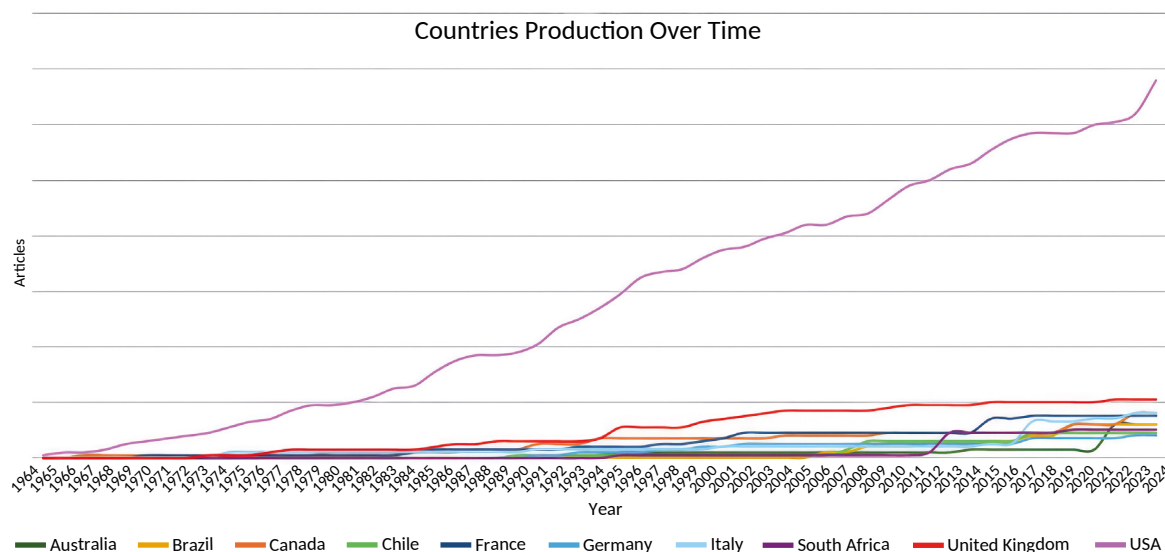
Bioethics, and BMJ Case Reports had two articles each. Based on Bradford's law²¹, we have identified three zones. Zone 1 consists of 36 journals that serve as core sources, whereas Zone 2 includes 101 journals and Zone 3 includes 98 journals.

Countries scientific production

The following countries have the highest proportion of published articles: The United States of America accounts for 45.48% of the total, followed by the United Kingdom with 7.02%, Canada with 5.35%, Italy with 5.35%, France with 5.02%, Australia with 4.01%, Brazil with 4.01%, South Africa with 3.34%, Chile with 3.01%, and Germany with 2.68%.

The United States produced 35 papers in 1990 and 65 papers in 1999, which continued to increase, reaching 100 papers in 2013 and 120 papers in 2021. The United Kingdom began to produce more than 10 papers in 1998, and more than 20 papers in 2016. Canada produced more than 10 papers in 2020. Italy began to produce more than 10 papers in 2018; France in 2016; Australia in 2022; and Brazil in 2020. Figure 2 shows their annual scientific production.

Figure 2. Countries' scientific production over time



Discussion

The studies on the exercise of autonomy by patients who decide not to undergo medical

treatment with allogeneic blood transfusion have increasingly merged different disciplines to explain both ethical and legal implications²²⁻²⁵. Before that, studies mostly aimed to verify

the feasibility of applying technical options to transfusions. The results unequivocally demonstrate that there are several options for treatment with strong scientific evidence that are safe and effective while also providing a good cost-benefit ratio²⁶⁻²⁹.

The World Health Organization issued the Global Patient Safety Action Plan 2021-2030¹⁴, explaining the extent to which patients must exercise autonomy. This is patient empowerment, a process in which patients understand their role and are given the knowledge and skills by their health-care provider to perform a task in an environment that recognizes community and cultural differences and encourages patient participation. So, patient engagement is defined as the facilitation and strengthening of the role of those using services as co-producers of health, and health care policy and practice.

These efforts are directed toward patient safety, understood as a framework of organized activities that create cultures, processes, procedures, behaviors, technologies, and environments in health care that consistently and sustainably lower risks, reduce the occurrence of avoidable harm, make errors less likely, and reduce the impact of harm when it occurs¹⁴.

The patient-centered care approach emphasizes the importance of involving patients in their care, considering their preferences, values, and needs, and fostering a partnership between patients and healthcare providers³⁰. This approach honors patient autonomy and involves them in decision-making processes regarding their care, respecting their individual preferences and values. This also promotes a strong partnership between patient and healthcare provider, ensuring open communication, shared decision-making, and collaboration to align care with the patient's values and goals³¹.

The implementation of a patient blood management (PBM) program closely relates to patient autonomy³². The primary goal of PBM is to improve patient outcomes while using fewer healthcare resources and lowering costs. An example occurred in Australia between 2008 and 2012. It was a government-sponsored initiative that intended to establish a consistent standard of care throughout all tertiary hospitals in the country. All patients who require medical

or surgical treatment, adhere to this standard. This program was responsible for significant improvements in outcomes, cost savings amounting to millions of dollars, and a substantial decline in blood product utilization³³. The World Health Assembly Resolution WHA63.12 endorsed PBM in 2010³⁴.

What do we learn from the international research scenario on patient autonomy in declining medical treatment with allogeneic blood transfusion?

The annual publication of scientific articles shows a progressive increase, with a consistent expansion of 2.72% per year, which tends to rise over time. During the 2000s, productivity experienced notable growth. The *Universal Declaration on Bioethics and Human Rights*¹, which was adopted by UNESCO in October 2005, has generated a growing interest in patient autonomy.

The 299 articles published in 235 different journals indicate an interdisciplinary approach in which the research involves multiple fields of study. The average citation per document is not exceptionally high, but it's not low either. This suggests that the healthcare community is actively engaging with and referencing the research in this specific area, indicating a certain degree of influence.

Out of the 826 authors, 97 wrote 108 single-authored articles. Almost three co-authors contributed to the remaining articles. Individual authors produce a significant number of papers, but small teams of collaborators produce the majority. This balance likely supports a rich and diverse research output, combining the strengths of independent expertise with the benefits of collaborative efforts. Data reveals a skewed authorship distribution, with a select few authors being more productive than the majority. Lotka's Law¹⁸ suggests a typical research community structure, with a core group of authors driving most research output and a peripheral group contributing less frequently.

Due to the limited number of authors producing a series of scientific studies on patient autonomy in refusing blood transfusions, it is necessary to stimulate increased interest among the academic community. Research in this field

should address how to educate patients, promote their active involvement in decision-making, and ensure that healthcare professionals respect well-founded choices in the most up-to-date evidence-based medicine³⁵.

The United States of America is the leader of the top publishing countries, with almost half of the annual scientific output. It has significant funding for medical research from both governmental and private sources, as well as extensive academic and professional networks that foster research collaboration, dissemination, and publication. All the other top nine countries have stable production with little growth, maybe because they focus on different healthcare challenges, leading to less research output in the areas of patient autonomy and non-transfusional therapies.

Further research on those nine countries and other countries is necessary due to the cultural factors involved. Implementing PBM involves a shift in attitude and behavior, making structural modifications to health service delivery, and reallocating limited resources³⁶.

The distribution of articles across various journals shows a concentration in a few key journals. The Journal of Medical Ethics is the primary focus of scientific production, with 13 papers. It is followed by Anesthesia and Analgesia with five papers, BMJ (Clinical Research Ed), and the Canadian Medical Association Journal with four papers. According to Bradford's Law, 36 journals are considered core sources for the subject area.

Institutions and funding agencies can utilize this knowledge to strategically allocate resources to implement additional research to meet the Global Patient Safety Action Plan 2021–2030. Some additional questions could provide a deeper understanding of the dynamics and the field of patient autonomy in choosing medical care without blood transfusion: How has the distribution of publications across journals and countries changed over time? Are there any specific topics that are more prevalent in certain journals or among authors from certain countries? How has PBM program implementation pushed

researchers to further study patient education in order to enable them to exercise autonomy with responsibility?

Final considerations

Using a scientometric approach, we showed a background with patterns and trends in patient autonomy in choosing medical treatment without blood transfusion. The number of scientific articles published every year has increased over time, of which the United States is the leading country and many scientific journals contribute to the field. Nevertheless, there are still few authors producing a continuous series of scientific studies.

We suggest further research in many countries, across both public and private institutions, to better engage and empower patients in emergency or elective situations while respecting their diverse cultures, beliefs, and choices. This recommendation aligns with the World Health Organization's support for programs such as Patient Safety and PBM³⁷, which have significantly and cost-effectively reduced risk factors, benefiting millions of medical and surgical patients worldwide.

Furthermore, note that, in Brazil, the 2024 decision of the STF legally consolidated the right of competent adult patients to refuse blood transfusions on religious grounds, requiring the Unified Health System (SUS) to provide technically available alternatives. This judicial milestone reinforces the relevance of the issue for contemporary bioethics, particularly because the application of this right to children and adolescents remains without definitive normative guidance, and any future parameters for its extension will depend on further review by the Supreme Court.

Therefore, the bioethical discussion on patient autonomy must consider not only scientific evidence and patient safety policies but also the evolving regulatory and jurisprudential landscape, which now plays a decisive role in the international debate on dignity, religious freedom, and medical responsibility.

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Denissen Fossati da Silva – Master's student – denissenfossati@gmail.com

 0009-0005-2082-9419

Correspondence

Denissen Fossati da Silva – Av. João Ferreira Jardim, 140, casa 64. CEP 91180-290. Porto Alegre/RS, Brasil.

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