European Journal of Clinical Pharmacy

Print ISSN: 2385-409X **Online ISSN**: 3105-0409

Website: https://farmclin.com/

Original Research Article

Medical Research and its Promotion in the National Context

Article History:

Name of Author:

Nargis Naeem[1], Nazar Malik[2], Syed Adnan Rahmat[3], Pulkit Gairola[4], Majid Ali[5] and Sanjida Akter Suraiya[6]

Affiliation: *[1]Institute of Nursing, CMH Lahore Medical College, Lahore, Pakistan*
[2]Department of Health Sciences, Union Commonwealth University, United States
[3]Cancer Institute, The Fourth Hospital of Hebei Medical University, Shijiazhuang, China
[4]College of Medicine, University of Tennessee Health Science Center, Knoxville / University of Tennessee Department of Public Health, USA.
[5]Lecturer Department of Healthcare Professionals, Faculty of Health and Life Sciences, Management and Science University (MSU), University Drive, Off Persiaran Olahraga, Section 13, 40100 Shah Alam, Selangor, Malaysia.
[6]Department of Business, University of Scholars, Bangladesh.

Corresponding Author:

Nargis Naeem

Received: 17-01-2026
Revised: 30-01-2026
Accepted: 23-02-2026
Published: 26-02-2026

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-Noncommercial-Share Alike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Abstract: With the help of statistical indicators on the volume of scientific production (the number of scientific articles published in indexed journals), bibliometric analyses are currently able to make it feasible to evaluate the effectiveness of medical research. A comparison is made between this performance and national and worldwide collaborations, as well as an analysis of its influence, which is measured by the percentage of papers that are cited with it. There is a substantial lack of visibility and accessibility to published papers on specialized international databases (Scopus, Pubmed, Med Line...), according to bibliometric analyses of medical publications produced by national researchers. These analyses reveal that the work of these academics is very badly indexed in international databases. The purpose of this contribution is to analyze medical production within the national framework. To accomplish this, we will, on the one hand, restore the results of a standardized bibliographic synthesis of the scientific output of the projects on the other hand, the National Programme of Research (PNR) is offering various statistical indications of the volume of output from a few databases, which are as follows: As well as Scopus and SC Imago Journal Rank. ***Results***: According to the findings of a literature analysis on the current condition of medical research, it was discovered that the body of medical researchers is very tiny in comparison to the number of national researchers; in fact, it only accounts for 2.5% of all researchers across the country. Furthermore, research and publication are negatively impacted by a multitude of issues, as stated by researchers from university hospitals who were surveyed. Among these problems, we highlight the absence of training in medical writing and the bad working circumstances that are prevalent in hospitals. The documentary analysis also reveals that out of the 911 projects that were begun under the National Research Programme (PNR), there were 1617 publications published over 15 years (ATRSS, 1997-2011). This equates to 1.7 articles published for each research project, and 1.2 articles published for each researcher during this period. According to the findings of a retrospective bibliometric analysis of medical scientific production in Algeria (SCOPUS database, consulted in July 2017), we have seen that the number of publications has greatly increased from the year 2008. On the other hand, according to the statistics of the DRSDT (2014 to 2016), the analysis of the report: publication/researcher reveals that out of a total of 1336 teachers who were researchers in medicine, there were 1175 publications. This represents a ratio of 0.95 publications per researcher. Furthermore, when it comes to the contribution that medical publications make to scientific research, they only account for 6% on a national scale and 0.02% on a global scale. ***Conclusion***: In conclusion, it was particularly pointed out that there is a limited level of representativeness of the outcomes of health research projects on a worldwide scale, and that the outcomes of the study activity continue to be related to the limitations of valuation and visibility on international databases.

© 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

Keywords: Algeria, medical publications, research project, databases.

INTRODUCTION

Research in the medical field is the most appropriate scientific expression for enhancing services related to patient care, screening, and prevention. This is research that draws from a variety of disciplines and strives to develop information in addition to gaining a deeper understanding of the various types of diseases, both in terms of their specificity and their diversity (Kwan et al., 2022). In the context of the nation, the majority of medical research is still based on epidemiological studies, which are essentially descriptive and pertain to public health. These studies depict the pathologies that are present in a particular population. Additionally, to a lesser extent, researchers also conduct analytical epidemiological studies, which allow for the establishment of a cause-and-effect relationship between risk factors and diseases.

Both the number of scientific publications and the number of citations that are received by such articles are taken into consideration when evaluating the scientific activity of an institution (Gilson et al., 2022). In a climate of global competition, these indicators are significant since institutions require a ranking of their researchers to have a better international placement. This ranking is based on the researchers' reputations in scientific databases. According to Chen et al. (2023) , "bibliometrics helps university authorities to measure the scientific production activity of their researchers, to define emerging research themes, and to position themselves at the national or international level." This is something that can be accomplished through the use of bibliometrics. The majority of the information contained in bibliographic databases in the medical profession is stored in databases (MacLeod & Lewis, 2022).

Problematic in Nature

Our consideration is centered on the fact that the number of scientific medical publications and national specialized medical journals continues to be significantly lower than international standards. Furthermore, these publications typically focus on health issues that are specific to the local community, which hinders their acceptance and their ability to be referenced internationally (Ehrman et al., 2022).

To add insult to injury, the indexing of articles on medical research continues to be quite inadequate in worldwide databases. Moreover, the accessibility of articles published by national researchers in foreign databases is the subject of every single bibliometric study that has been conducted in our country about medical publications (Seifert et al., 2023).

It is also important to be aware that researchers in countries where English is not the primary language and countries with the lowest level of scientific advancement face challenges when attempting to gain access to scientific and technical information (IST). This is the case for scientific publications that are published in national journals, which are primarily written in French (Huhn et al., 2022).

The General Directorate of Scientific Research and Technological Development (DGRSDT) has been evaluating national scientific research (as it does with all other fields of endeavor) for several years. The evaluation focuses initially on new entrants, paying special attention to the budget that has been allotted, the number of researchers, and other factors (De Wit & Merkx, 2023).

In more recent times, it has been participating in more pertinent evaluation systems, particularly about productivity and the international ranking of scientific production. However, in general, the evaluation methods that are used for the evaluation of scientific production do not have a long-term strategy (Zambonino et al., 2023). This is because it is not sufficient to increase scientific production in every aspect; rather, it is necessary to understand the factors and motivations that influence high-level scientific productivity.

METHODOLOGY:

Our opinion is that the number of publications and the visibility of those articles is the most objective measure for "measuring" the generation of scientific knowledge. The documentary analysis and the bibliometric approach were the two methodologies that we utilized for this purpose. Through the documentary analysis, we have presented the results of a standardized bibliographic synthesis concerning: on the one hand, the National Research Programme (PNR), of the DGRSDT, which is supported by the Universities and by the Institutions of research, on the other hand, the assessment of two decades of research activity carried out by the Thematic Agency for Research in Health Sciences (ATRSS), formerly ANDRS, from 1997 to 2017.

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

Through the use of statistical indicators on the volume of scientific production (the number of scientific articles published in indexed journals), we were able to "evaluate the performance of medical research" thanks to bibliometric analyses (Rudd et al., 2023). The performance was also evaluated in terms of its impact (the percentage of articles that were cited), as well as in terms of the national and international collaborations that were involved. In this particular setting, we conducted a census of publications from the World Bank, the PubMed database, and most importantly, the SCOPUS database, which is owned and operated by the commercial publisher Elsevier. (http://www.scopus.com/), which is widely recognized as one of the most comprehensive databases featuring citations (Cullen et al., 2022).

RESULTS:

An examination of the current condition of medical research, including researchers and research projects, is presented first to lay the groundwork for the promotion of medical research within the context of the national context. Furthermore, we give the findings of an evaluation of university research projects and the topics that they cover, followed by an examination of national medical publications, which includes a brief review for comparison with the medical production in countries that are adjacent to the United States (Hildebrandt, 2022).We also offer some bibliometric data on medical research, which were utilized by the DGRSDT for the classification of research in the context of the national context.

State of Play in Medical Research Actors in Medical Research:

Progress made in the field of medical research People involved in medical research The primary forces behind medical research are comprised of specialists from hospital services, a few teams, and a collection of individuals.

specialized specialists working in the liberal sector, academics reporting to the Ministry of Higher Education and Scientific Research (MESRS), and pharmaceutical laboratories are all examples of individuals who fall into this category (Subrahmanya et al., 2022).

The actors in medical research are mainly distributed among hospital teams of clinicians, in university hospital structures, by teams of specialists organized within the framework of learned societies, and finally, by biologists/geneticists (often grouped within the framework of sectoral research projects of the MESRS), generally located in universities.

Additionally, medical research is carried out by professionals who are stationed in particular institutions that are affiliated with the Ministry of Health (Crawshaw et al., 2022). One example of such a building is the National Institute of Public Health (INSP). Additionally, numerous university field teams that specialize in various subjects (Anthropology of health...) are also responsible for doing medical research (Baker et al., 2023). The body of medical researchers is relatively tiny in comparison to the number of national researchers; it only represents 2.5% of the total. This is shown by an overview of the statistical data that was collected by the DGRSDT in 2018, which pertains to the number of teacher researchers. In addition, there is a low degree of development, with the number of PhD students in medicine being only approximately 9% of all university hospitals (Boland et al., 2022). This is in contrast to the percentage of doctoral students in computer science, which is 33%, and the percentage of doctoral students in physics, which is 37%.

Table 1-The total number of teacher-researchers is listed (DGRSDT-2018).

	Number of teacher-researchers	Number of doctoral students
Medicine	1336	123
Report a %	2,5%	9%
Total national	5400	1100

Information derived from statistics regarding the current state of scientific research, DGRSDT, for the year 2018.Professors in universities and hospitals provide their perspectives on the field of medical research.

There appear to be a great deal of limitations associated with medical research and the encouragement of it by university hospital lecturers. In a study that was conducted among university hospital teachers in Oran, the teachers were asked about their perspectives on medical research and publications in particular. The teachers emphasized that numerous factors have a negative influence on publications and research (Sharma, 2022). The most important of

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

these factors is a lack of training in medical writing, as well as poor working conditions in hospitals. (Table 2) . A significant portion of the university hospital professors in Oran have previously defended their thesis. This is another thing that we have seen about the lack of continuity in research.

Table 2-A list of the factors that hurt publications among university hospital lecturers in Oran is presented.

FACTORS	NUMBER OF RESPONSES
Professional conflict	21
Lack of training in medical writing	38
Couple and family life	14
celibacy	1
Control of administrative tasks	12
Conflicts of interest	08
Poor working conditions	39
Other priorities of the first author	4
Several authors to be responsible for writing the article	3
Study not continued	9
The gap between our health system and current scientific data	33

The National Research Program (PNR)

Under the auspices of the Ministry of Education, Science, and Research (MESRS), the vast majority of research projects have begun. The many universities around the nation are the preferred field for the management of these projects.

Three categories of initiatives are included in the National Research Program:

- Research Training projects (PRFU ex: CNEPRU), launched since 1989, whose health projects are domiciled in the Faculties of Medicine (http://www.cnepru-mesrs.dz);
- Research Development Projects, including the PNR, there are to date 911 projects registered at the level of the Thematic Agency for Research in Health Sciences (Breton et al., 2022).
- And international collaboration projects (Horizon 2020, etc.). The following is a list of the research areas that constitute the health project (Kullo et al., 2022).

The following categories of research are included: clinical research, which accounts for thirty percent of the total; public health, which accounts for twenty-one percent, includes maternal and child health, adolescent health, and occupational health; biological research, which includes immunology and molecular biology, accounts for sixteen percent; and research on pharmaceutical products, which accounts for twelve percent (Dominguez-Oliva et al., 2023).

Hospitals and Other Research Facilities

Laboratories for research are defined as "research entities where scientific activities, clearly identified and translated into task programming forms" are carried out by individuals who possess the necessary scientific expertise. By Decree No. 97-939, which was issued on May 19, 1997, the organization and operational procedures of research laboratories and research units were established. Since the year 2018, the ATRSS has been given the responsibility of managing health research laboratories (Greer et al., 2022), which was initially consolidated with the DGRSDT's administration. At the moment, there are 66 health research laboratories, each of which focuses on a different topic (Andrew John Milat et al., 2013). The number of research projects in clinical medicine is significantly higher, accounting for 41% of all health studies (Cui et al., 2023).

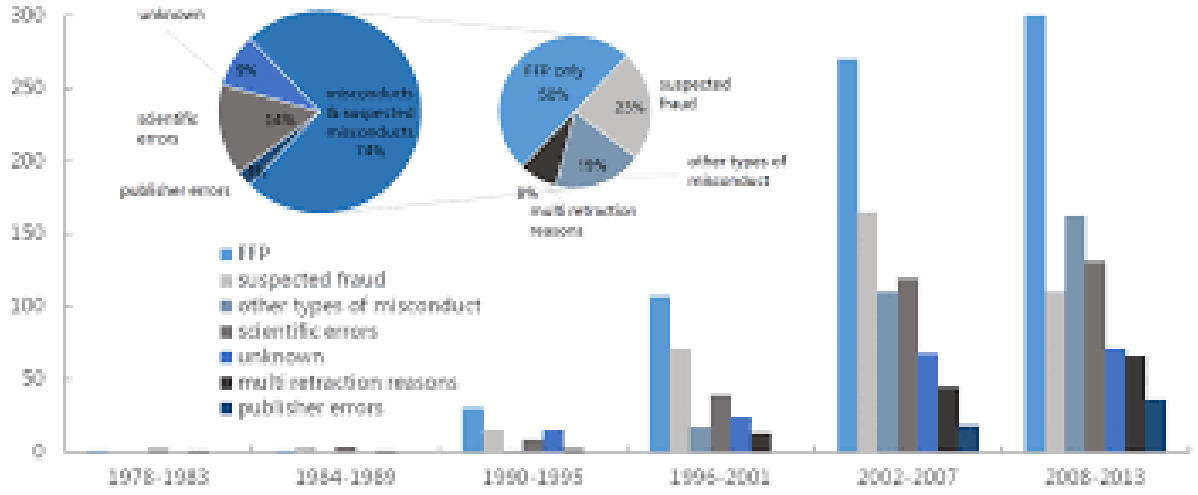
Table 3-Themes Present In Health Research Laboratories Are Outlined (Atrss 2018).

THEMES	NUMBERS	%
BIOLOGY	8	12 %
GENETIC	9	13 %
CLINICAL	27	41 %
Environmental Health	7	10,5 %
DENTAL	4	6,5 %
PHARMACY	4	6,5 %
Miscellaneous	7	10,5 %
TOTAL	66	100 %

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

The Generation of Scientific Knowledge within The Context of Studies and Investigations:
According to the findings of the evaluation of the scientific production of health projects (PNRS) that was carried out by the ATRSS services over twenty years (1997-2011), the distribution of scientific production in the health sector is predominantly controlled by communications that take place in national scientific meetings. Figure 1.

According to the findings of this analysis of medical scientific production within the context of research projects conducted over fifteen years (1997-2011), the following scientific production was discovered for seven hundred health sciences projects (including medicine, biology, pharmacy, and other related fields): 4 patents, 1617 published papers, 24 book chapters, 41 works, 1755 communications overseas, and 3238 communications in Algeria (including 205 within the framework of Days organized by the prior ANDRS) are some of the accomplishments that have been made by the individual.



(Source: Review Of Twenty Years Of Research Effort, ATRSS EX ANDRS, 1997-2011)
Figure 1- Depicts The Scientific Development Of Plant Nutrition Records (PNRS).

Around 300 graduation theses and 96 doctoral theses were prepared and defended with the assistance of various research initiatives, as shown in Figure 1. The synthetic analysis of the publications that were carried out within the framework of these health projects reveals that the 1617 articles that were published between the years 1997 and 2011 are distributed as follows: there were an average of 107 articles published each year for the 700 projects, which also resulted in the publication of 2.5 articles per project and 1.2 articles per researcher during the same period (Eather et al., 2023).

Bibliometric Analysis of Academic Articles In The Medical Field
At the moment, several quantitative approaches are utilized to study and evaluate the generation of scientific knowledge, its transmission, and the utilization of information, particularly about publications, communications, patents, and other similar endeavors.

However, qualitative evaluation is also necessary to determine an article or review's impact on the scientific community. Not all publications are equally well-known or have the same level of visibility overall. An article published in a journal that is consistently ranked highly will typically have more "weight" than an article published in a publication that is either more confidential or less scientific. Through the use of several indices that are determined by the number of publications and citations, several online databases are capable of determining the effect of a researcher, an article, or a journal. These indices include impact factor, h-index, g-index, and hm-index, among others (DeTora et al., 2022).

Publications about medicine Using sources from several national and international databases, search engines (http://scholar.google.com/) presented a quantitative assessment of national medical production. The DGRSDT counted 1198 publications of medical articles (1336 teacher-researchers in medicine), 305 publications in biology, and 7 publications in dentistry between the years 2014 and 2016. This assessment was included in its evaluation of the current state of scientific research. In a bibliometric study of scientific production in the Maghreb countries during the 2000s, and Algeria in particular, we found that the number of publications for medical production (medicine and biology) increased significantly from 2008 (table 4). This was discovered by using the SCOPUS database, which was accessed in July 2017. The number of publications in Algeria has increased by an average of ten percent per year,

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

with the number of publications listed in medicine increasing from seventy-six in 2006 to four hundred twenty-four in 2015 (McGorry et al., 2022).

Table 4-Algeria's Medical Publication Count Over Time Source: July 2017 "Scopus" Database:

Years	molecular	Medicine	Global production
2006	96	76	1824
2007	136	68	2019
2008	111	128	2471
2009	138	210	3111
2010	153	190	3164
2011	157	174	3586
2012	200	251	4276
2013	246	272	4943
2014	263	381	5157
2015	272	424	5443

The Alliance of French-speaking African and Mediterranean Leagues Against Cancer (ALIAM) published the results of a census of publications conducted from the PubMed database in a work titled "Cancers in French-speaking Africa" in June 2017. This information is found in the evaluation of publications by specialty.

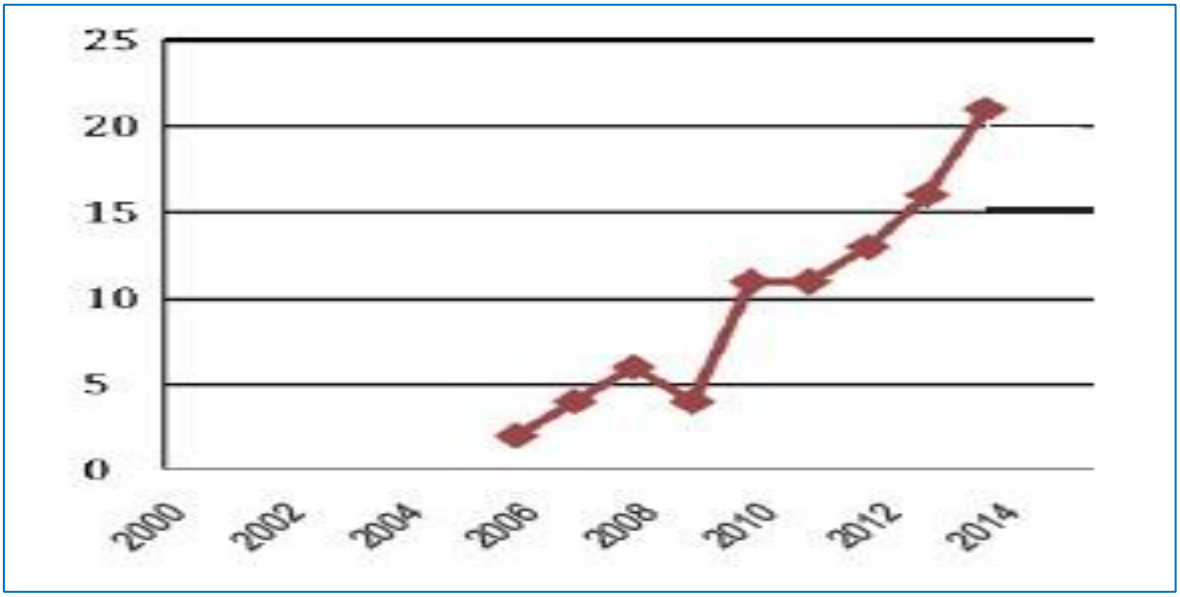


Figure 2- PubMed database

PubMed, ALIAM, Paris June 2017 is the source for **FIGURE 2**, which depicts the progression of the number of publications about "cancer" in Algeria during a period of 10 years, from 2005 to 2015.

We observe the same pattern of publications, with an increase in the number of publications on cancer in Algeria, which appears to be satisfactory, with a steady increase also since 2006 (figure 2). This is something that we notice via the findings of this study on the development of cancer publications.

A comparative analysis of the medical production carried out in the countries of the Maghreb A macro analysis that was conducted to compare the entire scientific production of Algeria to that of the countries of the Maghreb was able to supply us with comprehensive information regarding the contribution of each nation to the manufacture of medical goods. The purpose of this study is to examine the similarities and differences between the three countries that make up the Maghreb region. These countries share the same socio-cultural background and publish their works in the same language (Taylor & Colet, 2023).

At the end of the 1980s, the level of scientific production was low and relatively similar in each of the three Maghreb countries, according to the sources that were used from WOS (Thomson Reuters) and SCI Expanded (Saggar et al.,

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

2022). The level of scientific production ranged between 500 and 600 references per country and year. Subsequently, this output will go through opposing developments, beginning with a steady evolution from the beginning of the 2000s, followed by a large increase, with an almost doubling of production during the years 2004-2006 and 2013-2015 in the three countries .

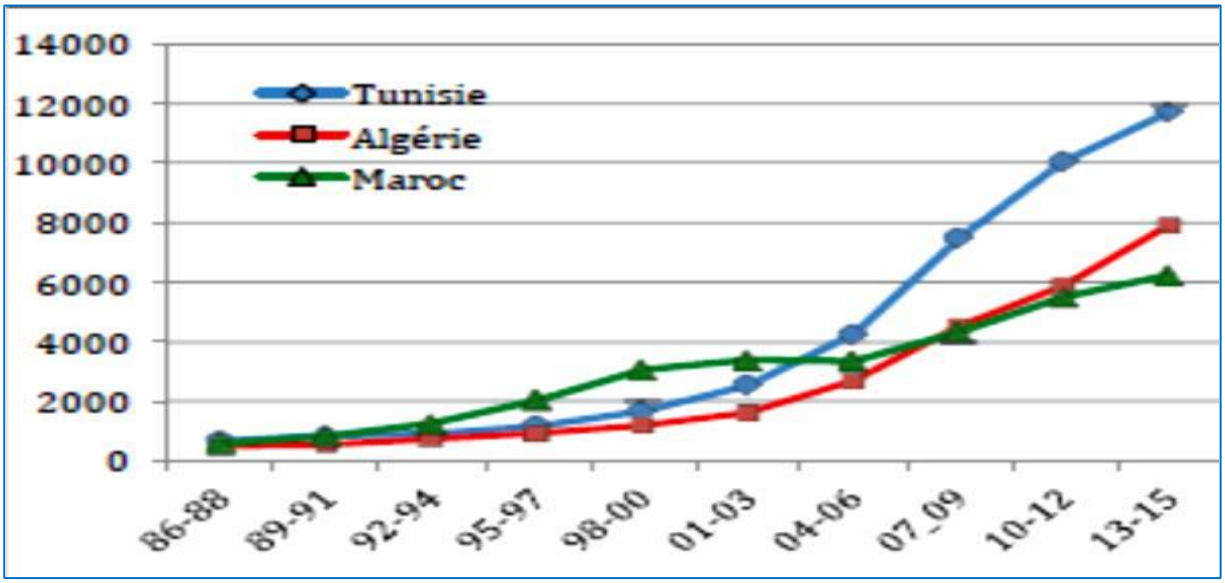


Figure 3- depicts the progression of production (publications) from the three countries that make up the Maghreb.

Thomson Reuters SCI Expanded, 2016 is the source of this information.
According to the same sources, comparative research reveals that the number of medical publications in Algeria increased by a factor of five between the years 2001-2003 and 2013-2015, surpassing the number of publications in Morocco from the years 2007-2009. Since the beginning of the 2000s, Tunisia has also witnessed a significant rise in the number of publications it has produced. The output of medical goods in this country has expanded by a factor of seven throughout the subsequent fifteen years.

Sources from SCImago Journal Rank, which is a measure of the scientific influence of academic journals and which takes into account both the number of citations obtained by the journal and the importance of the journals from which these citations come, indicate that the amount of medical research conducted in the countries of the Maghreb region continues to be relatively low in comparison to the amount of research conducted from other countries around the world (Organization, 2024).

Table 5-Scientific publications in the Maghreb countries (Source: Scimago Jr,2006-2015)

	ALGERIA	MOROCCO	TUNISIA	EGTPYH
Number of scientific publications	42 456	40 737	58 769	118 569
Number medical articles	2300	8978	12871	28 353
Number of Hb	40 M	34 M	11 M	90 M
Health expenditure per capita in dollars	362	190	305	178

According to the same source, the study of the gradation of the figures of scientific publications according to the number of inhabitants and according to health expenditure places Egypt in the first position (118,569 publications), followed by Tunisia (58,769) in the second place, Algeria (42,456), and Morocco (40,737). Egypt is the country with the highest number of publications.

On the other hand, Morocco's rating is higher when it comes to medical publications during the same period. Morocco produced 8978 articles throughout this period, while Algeria only published 2300 articles (Table 5).

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

It is also important to highlight that these numbers show a clear contradiction to the traditional correlation that exists between scientific production, population, and the amount of money spent on healthcare. By the same sources, we have observed that Tunisia, which has a population that is three times lower than that of Morocco or Algeria, generates a greater number of publications. Comparative analysis of co-signatures with researchers from the Maghreb (Organization, 2023).

An indicator that is most frequently used to quantify the intensity of international scientific collaborations is the scientific publication that has been signed by several authors from their respective nations. This type of publication is known as an international co-publication.

Using data from a survey that was administered to researchers in Algeria, Cai et al. (2023) make the following comments:

Tunisia and Morocco, the latter countries have a limited amount of collaboration with one another (Andrew J Milat et al., 2013). In addition, this study indicates the rising significance of Egypt in regional medical research, as well as the important location of Saudi Arabia within the Arab regional research network. A similar study was undertaken by Landini and Al in 2015, and it similarly highlights the low degree of scientific integration that exists in the region.

An Assessment of The Ratio of Total Publications to Total Researchers:
The ratio of the number of publications produced by each researcher is now one of the metrics that is considered to be the most accurate in determining the level of knowledge-based economic activity. Contemplation of the report: a lot of publications and researchers in the medical field.

In the national context, the study of the ratio: of publication/researcher reveals that for 1336 medical teacher-researchers, 1175 publications were recorded, which is equivalent to a ratio of 0.95 publications per researcher over 15 years. This information is based on statistics from the DGRSDT, which were collected between the years 2000 and 2016 (Priestley et al., 2022). In the field of dentistry, this ratio is significantly lower, with approximately 0.07 publications being produced by each dental researcher. It is estimated that there are around 3

DISCUSSION AND ANALYSIS OF THE BIBLIOGRAPHIC CITATIONS:

In practice, the "quality" of research is analyzed using indicators that reflect either the extrinsic qualities of a scientific production or its internal qualities, which can be evaluated by analyzing the methodological features of a publication. In other words, the indicators measure the quality of the study. Based on the principle that a single publication by a researcher can have a much greater impact than ten publications, we use several methods to evaluate the potential of scientific production and its impact. These methods include bibliographic citations and impact factors. The purpose of these methods is to highlight the intrinsic quality of publications (Ashfaq et al., 2025).

The universal bibliometric indicators of scientific productivity are currently comprised of these revolutionary assessment concepts that were first presented by Garfield in the year 1955. "an excerpt of text that we borrow from an article to illustrate, expand, or complete certain elements of a work on which we wish to support using an argument of authority," is what the bibliographic citation is defined as (Haakenstad et al., 2022). The number of citations for publishing doctors is on the order of 2.4, and it is likewise 2.4 in biology and 3 in dentistry, according to the study of statistics on the "state of scientific research" that was developed by the DGRSDT (Okan et al., 2023). For example, the number of citations for researchers in the field of dentistry is three.

Indirectly evaluating the visibility of a journal is the impact factor, which can also be abbreviated as FI or IF. Additionally, the impact factor is related to several indicators.

The impact factor can be defined as "the difference between the average number of citations to articles published in a journal and the total number of articles published by the journal." Therefore, the impact factor makes it feasible to "assess the notoriety of a journal about other journals in the same field of study," as stated in the previous sentence (Oladipo et al., 2022).

As an indicator for measuring research performance, the h index, also known as the Hirsch index, quantifies "the scientific production of a researcher." This is accomplished by calculating the link between the total number of publications that a researcher has produced and the number of times those publications have been cited in journals (Nutbeam & Kickbusch, 1998). By the same DGRSDT sources, the h index is excellent for researchers publishing in the fields of biology and pharmacotoxicology, with respective values of 62 and 38. However, the h index is relatively low for our medical researchers, with values on the order of 16 (Bareis & Katzenbach, 2022).

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

A Critical Analysis of The Important Role That Medical Research Plays :

The many bibliometric characteristics are also utilized in the process of developing a ranking of researchers, universities, and countries in the domains of knowledge, according to the themes that they study and the periods that they study. As a result, the global share of publications of a country is determined by calculating the ratio between the number of publications created in the country and the total number of publications produced in the globe during the same year, as reported in the databases (ElSayed et al., 2023).

As an illustration, the United States of America was responsible for producing more than twenty-six percent of the world's scientific papers in the year 2014. After them comes China (12.6%), the United Kingdom (5.3%), Germany and Japan (5.1% each), and France in sixth place (3.6%). China is the country with the highest percentage of people. During the years 2014-2016, the DGRSDT established a classification system for publications that was based on the scientific field. This classification was implemented in the national context. It is important to note that the technological sciences have the highest scientific contribution on a national scale, whereas the contribution of medical publications only accounts for 6% on a national scale and 0.02% on a worldwide scale. This is something that we have observed in this ranking (Sebastian et al., 2023).

Table 6-Contribution of medical research in 2014 and 2016

Domain scientist	Contribution nationale	Contribution mondiale
SCIENCE AND TECHNOLOGY	91 %	0,02 %
MEDICINE	6 %	0,02 %
SOCIAL SCIENCES	3 %	0,20 %

DISCUSSION:

In the first part of this contribution to medical research and its promotion in the national context, we presented an analysis of the current state of medical research. In this analysis, we found that the number of teacher-researchers in medicine is inadequately represented, accounting for only 2.5% of the total number of researchers in the country (they represent 1,336 out of 54,500). Several variables have a detrimental impact on the rarely disseminated and exploited, and the doctorate researchers themselves are not encouraged to continue their research, according to the findings of a study that looked at the point of view of university hospital researchers on their scientific productivity (Singh et al., 2022). In the National Research Programs (PNR), health projects are not adequately represented. This is also true concerning all of the topics that are being investigated by the research projects that are being piloted by the DGRSDT. It is worth noting that out of 1528 online research projects, there are only 232 health projects, which is only around fourteen percent (Green et al., 2022).

In the course of our investigation into the scientific production of health projects, we discovered that there were a total of 1617 articles published over fifteen years, beginning in 1997 and ending in 2011. This comes out to an average of 107 articles published annually for the 700 health science projects. wellbeing. Once more, this equates to the publication of 2.5 publications for each project, and 1.2 articles for each researcher during the same period.

The examination of the ratio: of publication/researcher reveals that over 15 years, a ratio of 0.95 publications per researcher was recorded for medical teacher-researchers (Abernethy et al., 2022). This information is derived from the same source. In the field of dentistry, this ratio is even lower, accounting for only 0.07 papers per researcher. In the field of pharmacotoxicology, on the other hand, this ratio is approximately 3.4 publications per teacher-researcher.

We note, however, that there has been a consistent progression in the number of medical publications since the beginning of the 2000s, and that they have practically doubled between the years 2010 and 2015 (Petrigna & Musumeci, 2022). This is something that we observe in an evaluation of the overall medical scientific production on a national scale that is based on international databases. Citation analysis, according to SCImago Journal Rank sources on medical research, shows that for countries in the Maghreb, the level of scientific production remains low, compared to that of economically poorer countries (Egypt), but with an English-speaking tendency, thus raising the problem of English as a universal vehicle of science, in fact penalizing the productions scientists in French-speaking journals (Giulio de Belvis et al., 2022).

International bibliometric methods give rise to a multitude of issues concerning their utilization in the measurement of scientific research in countries where English is not the primary language(Kumar et al., 2024). This is because the vast majority of indexed journals are written in English, which runs the danger of excluding publications from French-speaking

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

countries (Beidas et al., 2022).In addition, when it comes to the human sciences, several studies have shown that worldwide databases are more effective in promoting the visibility of fundamental research than they are in promoting the visibility of applied sciences. This is because basic research generates a greater number of papers and citations (Safranek et al., 2023).

Finally, according to the classification that was developed by the DGRSDT for publications, in the scientific field, from 2014 to 2016, we observe that the contribution of medical publications represents only 6% on a national scale. This is a significant distance behind the technological sciences, which have the highest scientific contribution (91%) on a national scale.

CONCLUSION

It is important to point out that this modest attempt at quantitative and qualitative analysis of medical research constitutes only a certainly incomplete evaluation of all the scientific work that has been carried out within the context of the national context. The lack of visibility of the numerous national medical journals that are not indexed is also connected to this methodological constraint. Additionally, the fact that many authors of articles publish their work without indicating the keywords that are necessary for their identification and their membership in the databases of data is also connected to this limitation.

In addition, when it comes to the human sciences, several studies have shown that worldwide databases are more effective in promoting the visibility of fundamental research than they are in promoting the visibility of applied sciences. This is because basic research generates a greater number of papers and citations.

Finally, according to the classification that was developed by the DGRSDT for publications, in the scientific field, from 2014 to 2016, we observe that the contribution of medical publications represents only 6% on a national scale. This is a significant distance behind the technological sciences, which have the highest scientific contribution (91%) on a national scale.

In conclusion, it is important to point out that this modest attempt at quantitative and qualitative analysis of medical research constitutes only a certainly incomplete evaluation of all the scientific work that has been carried out within the context of the national context. The lack of visibility of the numerous national medical journals that are not indexed is also connected to this methodological constraint. Additionally, the fact that many authors of articles publish their work without indicating the keywords that are necessary for their identification and their membership in the databases of data is also connected to this limitation.

REFERENCES:

1. Abernethy, A., Adams, L., Barrett, M., Bechtel, C., Brennan, P., Butte, A., Faulkner, J., Fontaine, E., Friedhoff, S., & Halamka, J. (2022). The promise of digital health: then, now, and the future. *NAM perspectives*, *2022*, 10.31478/202206e.
2. Ashfaq, M. H., Khan, A. R. A., Magsi, S. K., & Kumar, S. (2025). REVOLUTIONIZING REHABILITATION: THE ROLE OF ARTIFICIAL INTELLIGENCE IN MODERN PHYSIOTHERAPY. *Journal of Medical & Health Sciences Review*, *2*(2).
3. Baker, P., Smith, J. P., Garde, A., Grummer-Strawn, L. M., Wood, B., Sen, G., Hastings, G., Pérez-Escamilla, R., Ling, C. Y., & Rollins, N. (2023). The political economy of infant and young child feeding: confronting corporate power, overcoming structural barriers, and accelerating progress. *The Lancet*, *401*(10375), 503-524.
4. Bareis, J., & Katzenbach, C. (2022). Talking AI into being: The narratives and imaginaries of national AI strategies and their performative politics. *Science, Technology, & Human Values*, *47*(5), 855-881.
5. Beidas, R. S., Dorsey, S., Lewis, C. C., Lyon, A. R., Powell, B. J., Purtle, J., Saldana, L., Shelton, R. C., Stirman, S. W., & Lane-Fall, M. B. (2022). Promises and pitfalls in implementation science from the perspective of US-based researchers: learning from a pre-mortem. *Implementation Science*, *17*(1), 55.
6. Boland, J., Banks, S., Krabbe, R., Lawrence, S., Murray, T., Henning, T., & Vandenberg, M. (2022). A COVID-19-era rapid review: using Zoom and Skype for qualitative group research. *Public Health Research and Practice*, *32*(2), e31232112.
7. Breton, E., Le Bodo, Y., Diallo, D., Sherlaw, W., Harpet, C., & Hudebine, H. (2022). The contribution of health promotion research to advancing local policies: new knowledge, lexicon and practice–research network. In *Global Handbook of Health Promotion Research, Vol. 1: Mapping Health Promotion Research* (pp. 399-414). Springer.
8. Cai, W., Liu, L., Shi, X., Liu, Y., Wang, J., Fang, X., Chen, Z., Ai, D., Zhu, Y., & Zhang, X. (2023). Alox15/15-HpETE aggravates myocardial ischemia-reperfusion injury by promoting cardiomyocyte ferroptosis. *Circulation*, *147*(19), 1444-1460.
9. Chen, X. H., Tee, K., Elnahass, M., & Ahmed, R. (2023). Assessing the environmental impacts of renewable energy sources: A case study on air pollution and carbon emissions in China. *Journal of Environmental Management*, *345*, 118525.

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

10. Crawshaw, A. F., Farah, Y., Deal, A., Rustage, K., Hayward, S. E., Carter, J., Knights, F., Goldsmith, L. P., Campos-Matos, I., & Wurie, F. (2022). Defining the determinants of vaccine uptake and undervaccination in migrant populations in Europe to improve routine and COVID-19 vaccine uptake: a systematic review. *The Lancet Infectious Diseases*, *22*(9), e254-e266.
11. Cui, Y., Ma, Z., Wang, L., Yang, A., Liu, Q., Kong, S., & Wang, H. (2023). A survey on big data-enabled innovative online education systems during the COVID-19 pandemic. *Journal of Innovation & Knowledge*, *8*(1), 100295.
12. Cullen, L., Hanrahan, K., Farrington, M., Tucker, S., & Edmonds, S. (2022). *Evidence-based practice in action: Comprehensive strategies, tools, and tips from University of Iowa Hospitals & Clinics*. Sigma Theta Tau.
13. De Wit, H., & Merkx, G. (2023). The history of the internationalization of higher education. In *The handbook of international higher education* (pp. 23-52). Routledge.
14. DeTora, L. M., Toroser, D., Sykes, A., Vanderlinden, C., Plunkett, F. J., Lane, T., Hanekamp, E., Dormer, L., DiBiasi, F., & Bridges, D. (2022). Good Publication Practice (GPP) guidelines for company-sponsored biomedical research: 2022 update. *Annals of Internal Medicine*, *175*(9), 1298-1304.
15. Dominguez-Oliva, A., Hernández-Ávalos, I., Martinez-Burnes, J., Olmos-Hernandez, A., Verduzco-Mendoza, A., & Mota-Rojas, D. (2023). The importance of animal models in biomedical research: current insights and applications. *Animals*, *13*(7), 1223.
16. Eather, N., Wade, L., Pankowiak, A., & Eime, R. (2023). The impact of sports participation on mental health and social outcomes in adults: a systematic review and the 'Mental Health through Sport'conceptual model. *Systematic reviews*, *12*(1), 102.
17. Ehrman, J. K., Gordon, P. M., Visich, P., & Keteyian, S. J. (2022). *Clinical exercise physiology: exercise management for chronic diseases and special populations*. Human kinetics.
18. ElSayed, N. A., Aleppo, G., Aroda, V. R., Bannuru, R. R., Brown, F. M., Bruemmer, D., Collins, B. S., Hilliard, M. E., Isaacs, D., & Johnson, E. L. (2023). 1. Improving care and promoting health in populations: standards of care in diabetes—2023. *Diabetes care*, *46*(Supplement_1), S10-S18.
19. Gilson, A., Safranek, C., Huang, T., Socrates, V., Chi, L., Taylor, R. A., & Chartash, D. (2022). How does ChatGPT perform on the medical licensing exams? The implications of large language models for medical education and knowledge assessment. *medRxiv*, 2022.2012. 2023.22283901.
20. Giulio de Belvis, A., Meregaglia, M., Morsella, A., Adduci, A., Perilli, A., Cascini, F., Solipaca, A., Fattore, G., Ricciardi, W., & Maresso, A. (2022). *Italy: health system review* (Vol. 24). World Health Organization. Regional Office for Europe.
21. Green, C. L., Lamming, D. W., & Fontana, L. (2022). Molecular mechanisms of dietary restriction promoting health and longevity. *Nature Reviews Molecular Cell Biology*, *23*(1), 56-73.
22. Greer, S. L., Rozenblum, S., Fahy, N., Brooks, E., Jarman, H., de Ruijter, A., Palm, W., & Wismar, M. (2022). *Everything you always wanted to know about European Union health policies but were afraid to ask*. European Observatory on Health Systems and Policies Copenhagen.
23. Haakenstad, A., Irvine, C. M. S., Knight, M., Bintz, C., Aravkin, A. Y., Zheng, P., Gupta, V., Abrigo, M. R., Abushouk, A. I., & Adebayo, O. M. (2022). Measuring the availability of human resources for health and its relationship to universal health coverage for 204 countries and territories from 1990 to 2019: a systematic analysis for the Global Burden of Disease Study 2019. *The Lancet*, *399*(10341), 2129-2154.
24. Hildebrandt, S. (2022). *The anatomy of murder: Ethical transgressions and anatomical science during the Third Reich*. Berghahn Books.
25. Huhn, S., Axt, M., Gunga, H.-C., Maggioni, M. A., Munga, S., Obor, D., Sié, A., Boudo, V., Bunker, A., & Sauerborn, R. (2022). The impact of wearable technologies in health research: scoping review. *JMIR mHealth and uHealth*, *10*(1), e34384.
26. Kullo, I. J., Lewis, C. M., Inouye, M., Martin, A. R., Ripatti, S., & Chatterjee, N. (2022). Polygenic scores in biomedical research. *Nature Reviews Genetics*, *23*(9), 524-532.
27. Kumar, S., Ashfaq, M. H., Ririe, A. K., Rusho, M. A., Hafeez, N., Agyapong, I. D., Shelke, G. S., & Rafique, T. (2024). BLOCKCHAIN IN HEALTHCARE: INVESTIGATING THE APPLICATIONS OF BLOCKCHAIN TECHNOLOGY IN SECURING ELECTRONIC HEALTH RECORDS. A BIBLIOMETRIC REVIEW. *Cuestiones de Fisioterapia*, *53*(03), 429-456.
28. Kwan, B. M., Brownson, R. C., Glasgow, R. E., Morrato, E. H., & Luke, D. A. (2022). Designing for dissemination and sustainability to promote equitable impacts on health. *Annual Review of Public Health*, *43*(1), 331-353.
29. MacLeod, R., & Lewis, M. J. (2022). *Disease, medicine and empire: perspectives on Western medicine and the experience of European expansion*. Routledge.
30. McGorry, P. D., Mei, C., Chanen, A., Hodges, C., Alvarez-Jimenez, M., & Killackey, E. (2022). Designing and scaling up integrated youth mental health care. *World Psychiatry*, *21*(1), 61-76.
31. Milat, A. J., King, L., Bauman, A. E., & Redman, S. (2013). The concept of scalability: increasing

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved

the scale and potential adoption of health promotion interventions into policy and practice. *Health promotion international*, *28*(3), 285-298.
32. Milat, A. J., Laws, R., King, L., Newson, R., Rychetnik, L., Rissel, C., Bauman, A. E., Redman, S., & Bennie, J. (2013). Policy and practice impacts of applied research: a case study analysis of the New South Wales Health Promotion Demonstration Research Grants Scheme 2000–2006. *Health Research Policy and Systems*, *11*, 1-15.
33. Nutbeam, D., & Kickbusch, I. (1998). Health promotion glossary. *Health promotion international*, *13*(4), 349-364.
34. Okan, O., Messer, M., Levin-Zamir, D., Paakkari, L., & Sørensen, K. (2023). Health literacy as a social vaccine in the COVID-19 pandemic. *Health Promotion International*, *38*(4), daab197.
35. Oladipo, H. J., Tajudeen, Y. A., Oladunjoye, I. O., Yusuff, S. I., Yusuf, R. O., Oluwaseyi, E. M., AbdulBasit, M. O., Adebisi, Y. A., & El-Sherbini, M. S. (2022). Increasing challenges of malaria control in sub-Saharan Africa: Priorities for public health research and policymakers. *Annals of Medicine and Surgery*, *81*, 104366.
36. Organization, W. H. (2023). *Regulatory considerations on artificial intelligence for health*. World Health Organization.
37. Organization, W. H. (2024). *Working for a brighter, healthier future: how WHO improves health and promotes well-being for the world's adolescents*. World Health Organization.
38. Petrigna, L., & Musumeci, G. (2022). The metaverse: A new challenge for the healthcare system: A scoping review. *Journal of functional morphology and kinesiology*, *7*(3), 63.
39. Priestley, M., Hall, A., Wilbraham, S. J., Mistry, V., Hughes, G., & Spanner, L. (2022). Student perceptions and proposals for promoting wellbeing through social relationships at university. *Journal of Further and Higher Education*, *46*(9), 1243-1256.
40. Rudd, R. E., Anderson, J. E., Oppenheimer, S., & Nath, C. (2023). Health literacy: an update of medical and public health literature. In *Review of Adult Learning and Literacy, Volume 7* (pp. 175-204). Routledge.
41. [Record #1349 is using a reference type undefined in this output style.]
42. Saggar, S., Mir, P. A., Kumar, N., Chawla, A., Uppal, J., & Kaur, A. (2022). Traditional and herbal medicines: opportunities and challenges. *Pharmacognosy Research*, *14*(2), 107-114.
43. Sebastian, G., George, A., & Jackson Jr, G. (2023). Persuading patients using rhetoric to improve artificial intelligence adoption: experimental study. *Journal of medical Internet research*, *25*, e41430.
44. Seifert, R., Emmett, L., Rowe, S. P., Herrmann, K., Hadaschik, B., Calais, J., Giesel, F. L., Reiter, R., Maurer, T., & Heck, M. (2023). Second version of the prostate cancer molecular imaging standardized evaluation framework including response evaluation for clinical trials (PROMISE V2). *European Urology*, *83*(5), 405-412.
45. Sharma, S. (2022). *Nursing research and statistics-e-book*. Elsevier Health Sciences.
46. Singh, V., Kumar, A., & Gupta, S. (2022). Mental health prevention and promotion—A narrative review. *Frontiers in Psychiatry*, *13*, 898009.
47. Subrahmanya, S. V. G., Shetty, D. K., Patil, V., Hameed, B. Z., Paul, R., Smriti, K., Naik, N., & Somani, B. K. (2022). The role of data science in healthcare advancements: applications, benefits, and future prospects. *Irish Journal of Medical Science (1971-)*, *191*(4), 1473-1483.
48. Taylor, K. L., & Colet, N. R. (2023). Making the shift from faculty development to educational development: A conceptual framework grounded in practice. In *Building teaching capacities in higher education* (pp. 139-167). Routledge.
49. Zambonino, M. C., Quizhpe, E. M., Mouheb, L., Rahman, A., Agathos, S. N., & Dahoumane, S. A. (2023). Biogenic selenium nanoparticles in biomedical sciences: properties, current trends, novel opportunities and emerging challenges in theranostic nanomedicine. *Nanomaterials*, *13*(3), 424

 © 2026 European Journal of Clinical Pharmacy; Volume: 8: Issue: 1| All Right Reserved