Bibliometric analysis of positive mental health in Scopus

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Abstract:

Background: Positive mental health is the set of faculties that a healthy person has to face the adversities that occur in the daily event. The implementation of this concept in the worker allows a healthy coexistence with his co-workers, subordinates and superiors. To date, there are no bibliometric studies related to positive mental health.

The objective of this study is to perform a bibliometric analysis based on the Scopus database from 1936 to 2020, in order to visualize the productive increase of scientific documentation; and from 2006 to 2020 to analyze the types of documents published, main sources of production, author and year, countries, most cited authors, key concepts and especially about positive mental health at work.

Materials and Methods: Descriptive bibliometric analysis by collecting scientific production using the Scopus database and VOSviewer for graphic elements.

Results: A total of 1256 documents were retrieved from 1936 to 2020. Publications increased significantly from 2006 and reached a record 211 in 2020. The United States, United Kingdom, Australia, Canada have a higher number of publications. For positive mental health applied in the work environment, only 95 papers were extracted in the years 2006 to 2020

Conclusion: The study of positive mental health has been increasing since 2006, however, positive mental health in work areas still lacks preponderance.

Key Word: Positive mental health, Bibliometric analysis, Scientific production.

Date of Submission: 15-06-2021	Date of Acceptance: 30-06-2021

I. INTRODUCTION

The recovery of scientific production on a given topic is the first step in the evaluation of the literature to carry out an evidence-based bibliometric analysis. Therefore, the present study was carried out to obtain bibliometric indicators on positive mental health, a methodology characterized by the use of mathematical methods to analyze published documents in terms of quantity and quality on a specific topic¹⁻³.

From the bibliometric analysis, access is gained to specialized information on a particular topic of study, in this case, "Positive Mental Health" in relation to the growth and impact that has presented the productivity of scientific documents, in addition to the use of maps as a method of visualization of bibliometric indicators⁴.

The first document to present positive aspects in relation to mental health was written by Ruth Strang in 1936, who mentions that Mental Hygiene is an important aspect that should be included in the planning of social programs, covering all fields of behavior leading to a maximum level of personal integration and social adjustment through positive mental health to avoid personal and social breakdown, situations that could lead to mental illness or violations of the law. The author describes that mental hygiene handles a field of indisputable importance. Studies of methods, principles, and results increase the (importance) relevance. The obligation of the researcher is to try to refine research methods to introduce the principles of mental hygiene and positive mental health⁵.

In 1939, Walter Cannon defined "Health as homeostasis" in his book The Wisdom of the Body, where he describes that "health is not measured on the basis of the absence of disease, therefore, it is necessary to work on the development of positive indicators"⁶.

According to the principle of homeostasis, people are within an external environment that depends on the development of the individual and influences them individually as a stimulating source for subsistence, while the internal environment of the organism drives its utilization. It is important to emphasize that both the environment, the development of the individual and the intrinsic rhythm, are possibilities of producing an internal imbalance in the human being.

Thus, homeostasis, through its mechanisms, regulates the functioning to face adversities by responding to the coercion of both the external and internal environment to achieve mental, biological, and cultural stability.

Likewise, Sigerist in 1941 mentions that the person who presents health is not simply the absence of disease, it is something positive, a joyful attitude, and a cheerful acceptance of the responsibilities that life imposes on the individual. It is a physical, biological, and social balance that contributes to the well-being of society⁷.

In 1958, Maria Jahoda expressed for the first time the concept of positive mental health defined as "the goodness or virtues of mentally healthy people" which are: attitudes towards oneself: aspects or components of self-concept emphasizing the importance of self-perception; growth and actualization: self-realization or personal growth; integration: interrelation of all the processes and attributes of the person; autonomy: the relationship of the person in the world; perception of reality: capacity to adequately perceive reality; and mastery of the environment: the capacity to handle oneself in reality⁸.

In 1964, Bradburn stated that positive mental health can be conceptualized as part of the subjectivity of psychological well-being whose effect the environment exerts on the human being's environment which is fundamental to develop subjective well-being⁹.

Antonovsky in 1979 proposed a salutogenic model in which he mentions that the ability to face adversity is through optimism consistent with the acceptance of reality as it is and generates confidence in personal growth¹⁰.

Veenhoven in 1984, defines subjective well-being as the degree to which a person judges his life in a general global way in positive terms, according to the level of satisfaction with the life he leads according to social aspects such as economic, political, educational conditions, occupation, family and friendships; and individual aspects such as physical, emotional health, abilities, activities, lifestyle¹¹.

Leighton and Murphy in 1987 defined different personality types and their coping strategies. They proposed the theory that states that people have different coping strategies, however some can be detrimental mental health to people¹².

Although these authors do not mention positive mental health, they provide key concepts to understand the coping capacity of human beings in adverse situations, as well as the diversity of strategies that individuals can generate according to the external environment where they develop, which can be harmful, such as alcoholism, drug addiction, aggressiveness, etc., which after all are evasive strategies.

Within this gap, regarding positive mental health, the "Multifactorial model of positive mental health" was created in 1999 by Maria Teresa Lluch, taking as a basis the aspects proposed by Maria Jahoda in 1958 with the purpose of being able to evaluate positive mental health in a quantitative way. The positive aspects are based on six factors which are personal satisfaction, prosocial attitude, self-control, autonomy, problem solving and self-actualization and interpersonal relation skills¹³.

From this perspective, based on positive mental health, health promotion can be carried out to strengthen and develop optimal attitudes for the life of the human being persevered, an attraction of the ideal world in relation to the reality in which one is born, lives, grows and dies, endowed with positive and negative feelings which allow maintaining the capacity for social and individual functioning as well as the continuity of the construction of an adequate physical, mental and social state, thus being strongly interconnected and fluctuating dynamic states throughout life¹⁴.

In relation to the scientific production on positive mental health, the World Health Organization (WHO) in 2004, added positive aspects to define mental health in the following terms "health is a state of complete physical, mental and social well-being and not merely the absence of disease, including subjective well-being, autonomy, competence, intergenerational dependence and recognition of the ability to realise oneself intellectually and emotionally by coping with the normal stresses of life, to work productively and prosperous, and to contribute to their communities"¹⁵.

The WHO in 2019, promotes recommendations around mental health with positive perspectives according to intervention programs that have a three-pronged approach:

- protect mental health by reducing work-related risk factors;
- promoting mental health by developing the positive aspects of work, as well as the qualities and capabilities of staff, and
- addressing mental health problems, regardless of their cause¹⁶.

As discussed below, the concept of "Positive Mental Health" has had a significant growth in terms of scientific production, however, the study of the subject in laborious areas still lacks preponderance, which allows emphasizing the relevance of the present study and the development of research in the field of occupational health.

II. MATERIAL AND METHODS

The present investigation is a bibliometric, descriptive and retrospective study of the scientific production on positive mental health and the work of Scopus from 1936 to 2020. All scientific documents were included, making up a total sample of 1256 scientific documents.

The study variables or production indicators are the following: scientific production by years from 1936 to 2020 including document typologies, countries and authors with the highest scientific production, most cited articles, main sources of production by means of SJR and SNIP parameters and keywords.

Procedure, data collection and statistical analysis

The Scopus database published by Elsevier was used as a source of information since it is recognized as the largest specialized database of citations and abstracts of peer-reviewed literature covering a wide range of topics with a total of 19000 titles from more than 5000 international publishers.

VOSviewer, a free software tool for building and visualizing bibliometric networks developed by Centre for Science and Technology Studies (CWTS), was furthermore used.

The initial search strategies in the Scopus platform were as follows:

- To Select *Article title*, *Abstract, Keyword* to obtain documents that included the concept of positive mental health;
- To Specify *Published all year to present added to Scopus any time*, to obtain the first documents present in the Scopus database up to the present (2020), and Describe "Positive* Mental* Health*" with quotation marks and asterisks to obtain precise results.
- To Select *Document type* to include the typologies of scientific literature which were: original articles, review articles, book chapter, session paper, book, editorial, note, short survey, letter, erratum, conference review, scholarly article and undefined.
- To Select *Analyze search* results within the period 2006 to 2020 to visualize the results of countries with the highest number of published papers, main authors, most cited articles and keywords since during this period there is a higher growth of published papers on positive mental health.
- Select *Analyze search* results for the year 2020 in terms of the production of institutions worldwide to visualize the current scientific production.
- Select *Keyword* to visualize the descriptors in health sciences related to positive mental health.
- The journals with the highest impact were selected and analyzed in the *Source title* section to analyze the country of origin, number of articles published, citations obtained, SJR and SNIP during 2020 for their current assessment of positive mental health.

The SJR is an indicator that includes journals from the information contained in the Scopus database. It is calculated as a 3-year citation window and restricts a journal's self-citations to a maximum of 33%. The value is affected by the quality and reputation of the citing journal, citations are weighted according to SJR¹⁷.

The SNIP is an indicator of the contextual impact in journals and is defined as the ratio between the citations per paper of a journal and the potential citations in the discipline; that is, the denominator is the estimate of the average number of citations that a paper can expect to receive relative to the average for the subject field¹⁸.

The results analyzed by means of VOSviewer were the study variables or indicators of countries and authors with the highest scientific production and keywords, in order to graphically illustrate the results obtained from Scopus.

Frequencies and percentages were used to analyze the data obtained from Scopus.

III. RESULT

Scientific production by year and type of documents

A total of 1256 documents referring to positive mental health were extracted. As an important fact, the oldest document registered in the Scopus platform is an original article entitled: "Chapter VII: Technics and instruments of mental hygiene" written in 1936. The peak of scientific production on positive mental health was during the years 2006 to 2020 with a total of 1064 published documents. Of these, 893 are original articles, 82 review articles and 58 chapters of a book. The most productive year was in 2020 reaching 211 published papers. The distribution according to the category of the document is organized mainly by original articles with 82.5%, review articles with 7.9% and book chapters with 4.6% (Table 1).

Variable	Years							
Typology	1936 -	1950 -	1964 -	1978 -	1992 -	2006 -	f	%

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	1949	1963	1977	1991	2005	2020		
Original articles	1	4	24	33	81	893	1036	82.5
Review articles	0	0	0	0	16	82	99	7.9
Chapter of a book	0	0	0	0	0	58	58	4.6
Session document	0	0	0	0	4	18	22	1.7
Book	0	0	0	0	0	10	10	0.8
Editorial	0	0	0	0	1	6	7	0.6
Note	0	0	0	0	0	7	7	0.6
Short survey	0	0	0	0	0	5	5	0.4
Letter	0	0	0	0	0	5	5	0.4
Erratum	0	0	0	0	0	3	3	0.2
Conference review	0	0	0	0	0	1	1	0.1
Academic article	0	0	0	0	0	1	1	0.1
Undefined	0	0	0	0	0	2	2	0.1
Total documents	1	4	24	33	102	1064	1256	100

Highest scientific production countries

Since 2006, scientific production regarding positive mental health has grown significantly in North America, Europe and Asia. The countries with the highest number of publications were the United States (418 papers), United Kingdom (173 papers), Australia (133 papers), Canada (105 papers), Germany (67 papers), Netherlands (65 papers), India (45 papers), China (37 papers) and Ireland (36 papers).

At the Hispanic American level, Mexico is the only country to demonstrate participation with other countries in relation to the research topic. The VOSviewer software tool was used to graphically display the bibliometric results.

Similarly, Figure 2 illustrate the collaboration presented at United States (yellow color) collaborating mainly with Israel, South Korea, Iran and China; the United Kingdom (blue color) in collaboration with Canada, the Netherlands and Taiwan; Australia (purple color) in collaboration with Turkey and Brazil; India in collaboration with Poland, New Zealand, South Africa, Switzerland and Japan; and Ireland with Italy, Belgium, Portugal, Hungary, Spain and Mexico.

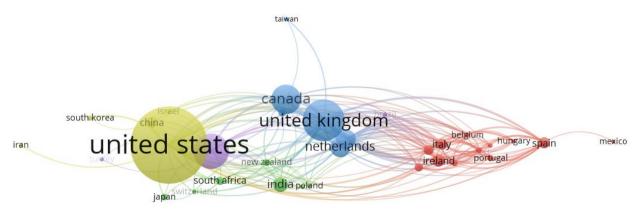


Figure 1: Countries with the highest output from 2006 to 2020.

Highest scientific production authors

In relation to the countries with the highest productivity, the authors with the highest scientific production as of 2006 belong to the European continent, which are: Margraf, J. from Germany (39 papers), Keyes, C. L. M. from the United States (29 papers), Brailovskaia, J. from Germany (23 papers) and Bohlmeijer, E. T. from the Netherlands (19 papers); however, the most cited authors are Paradies, Y. of Australia (4 papers)

and 1510 citations), Stewart-brown, S. of the United Kingdom (11 papers and 1432 citations), Keyes, C. L. M. of the United States (27 papers and 1430 citations), Weich, S. of the United Kingdom (2 papers and 1253 citations), and Tennant, R. of the United Kingdom (3 papers and 1220 citations).

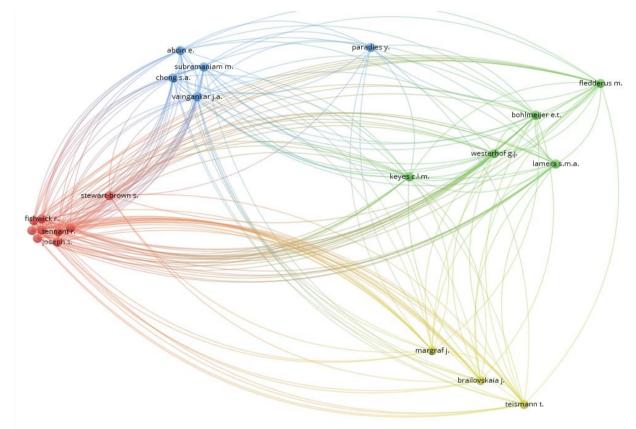


Figure 2.: Authors and collaborators with the highest scientific score from 2006 to 2020. VOSviewer.

Highest scientific production articles

In this section present the significance that the United Kingdom has had in recent years during the period 2006-2020 on the subject of positive mental health, obtaining as results the following articles: The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation, with 1235 citations; Implications of resilience concepts for scientific understanding, with 682; and Flourishing Across Europe: Application of a New Conceptual Framework for Defining Well-Being, with 436 citations. This is followed by Australia with A systematic review of empirical research on self-reported racism and health with 925 citations and Racism as a determinant of health: A systematic review and meta-analysis with 434 citations. Last is Canada with the article Transformational Leadership and Psychological Well-Being: The Mediating Role of Meaningful Work with 459 citations.

Title	Authors	Country	Journal	Quotes	Year
The Warwick-Edinburgh mental well-being scale (WEMWBS): Development and UK validation	Tennant, R. et al. (8)	United Kingdom	Health and Quality of Life Outcomes	1235	2007
A systematic review of empirical research on self-reported racism and health	Paradies, Y.	Australia	International Journal of Epidemiology	925	2006
Implications of resilience concepts for scientific understanding	Rutter, M.	United Kingdom	Annals of the New York Academy of Sciences	682	2006

Table 2: Top	10 most cited articles	from 2006 to 2020.
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Transformational Leadership and Psychological Well-Being: The Mediating Role of Meaningful Work	Arnold, K. A. et al. (4)	Canada	Journal of Occupational Health Psychology	459	2007
Flourishing Across Europe: Application of a New Conceptual Framework for Defining Well- Being	Huppert, F.A.	United Kingdom	Social Indicators Research	436	2013
Racism as a determinant of health: A systematic review and meta- analysis	Paradies, Y. et al (8).	Australia	PLoS ONE	434	2015
Resilience and mental health	Davydov, D.M.	Russia	Clinical Psychology Review	403	2010
Evaluating the psychometric properties of the mental health Continuum-Short Form (MHC- SF)	Lamers, S.M.	Netherlands	Journal of Clinical Psychology	379	2011
Mental health promotion and problem prevention in schools: What does the evidence say?	Weare, K.	United Kingdom	Health Promotion International	339	2011

Production sources

Based on manifesting the quality of the journals that publish on positive mental health at present, the results from 2020 are presented by means of the indicators that are country, number of published articles, citations per published article, SJR (Scimago Journal Rank) and SNIP (Source Normalized Impact per Paper). The main popular science journals with high citation rate per published article according to positive mental health in 2020 were Journal of Affective Disorders from Netherlands, Plos One from United States. The following journals belonging to the United Kingdom are as follows: Aging and Mental Health, BMC Public Health and Health Promotion International and Frontiers in Psychology from Switzerland (Table 3).

		Documents			ents
Journal	Country	No.	Quot es	SJR	SNIP
Journal of Affective Disorders	Netherland	17	6.6	1.945	1.673
Plos One	United States	15	5.2	1.023	1.205
Aging and Mental Health	United Kingdom	10	4.3	1.053	1.642
BMC Public Health	United Kingdom	18	3.9	1.198	1.473
Health Promotion International	United Kingdom	11	3.3	0.787	1.183
Frontiers in Psychology	Switzerland	20	3.2	0.914	1.200
Journal of Public Mental Health	United Kingdom	11	0.7	0.304	0.481
Community Mental Health Journal	United States	8	2.4	0.647	0.938

 Table 3: Main sources of production in 2020

Highest scientific production institutions

The United States and the United Kingdom stand out in producing scientific literature on positive mental health during the year 2020, however, in this section we obtain that Ruhr-Universitat Bochün from Germany presents a significant number of publications (43 documents) in turn, Emory University from the United States (33 documents), University of Twente from the Netherlands (27 documents), University of Melbourne from Australia (23 documents) and the University of Warwick from the United Kingdom (19 documents).

Institution	Country	Number of documents published during 2020
Ruhr-Universität Bochum	Germany	43
Emory University	United States	33
University of Twente	Netherlands	27
University of Melbourne	Australia	23
University of Warwick	United Kingdom	19
King's College London	United Kingdom	17
Singapore Institute of Mental Health	Singapore	16
Chinese University of Hong Kong	China	15
Queensland University of Technology	Australia	15
Harvard Medical School	United States	14

Table 4: Most productive institutions worldwide during the year 2020.

Keywords of positive mental health

The co-occurrence analysis is based on the keywords of the articles. The keywords give meaning to the central content of the articles, in such a way that they account for the research topics and the frontiers of knowledge of the research. Among the results obtained by the VOSviewer program, female, male, adult, Psychology, adolescent and middle aged stand out.

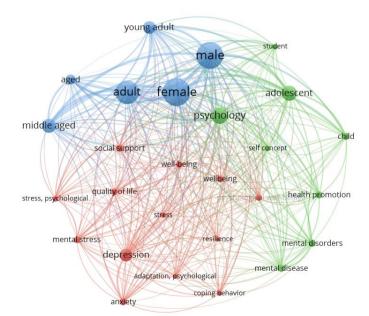


Figure 3: Keywords in relation to positive mental health from 2006 to the present. VOSviewer

Positive mental health at work

Referrer the scientific production of positive mental health focused on workplaces, 95 documents were obtained during the period from 2006 to 2020, of which 20 correspond to the United States, 14 to Australia, 11 to the United Kingdom, 13 to Canada and 8 to Japan, with Canada having the highest number of citations with a total of 483 (Table 5).

Country	Documents	Quotes	Total bond strength
United States	20	274	334
Australia	14	213	373
Canada	13	483	421
United Kingdom	11	91	697
Japan	8	100	68
Germany	4	101	666
Ireland	4	17	582
Netherland	4	61	557
Spain	4	25	533
France	3	12	695

Table 5: Main countries on scientific production of Positive Mental Health at work from 2006 to 2020.

Positive mental health collaboration countries

In terms of the impact of collaboration with other countries, the United Kingdom has the greatest impact with a total of 697 links, followed by France with 695 and Germany with 666 (Figure 4).



Figure 4: Collaboration with other countries from 2006 to 2020. VOSviewer.

IV. DISCUSSION

The analysis of scientific production is a reliable and universal study within the research process, which has become a tool to qualify the quality of scientific literature and the impact of this process in the scientific environment¹⁹. Bibliometric analysis not only allows retrospective analysis of the growth of scientific advances and its evaluation of the research potential of the institutions involved, but furthermore allows characterizing the development of scientific disciplines and their lines of research, and scientific publications in an area of knowledge, their obsolescence and dispersion²⁰.

According to the results obtained in the present research, it is possible indicate that the country that contributes the main production of scientific literature related to the topic of "Positive Mental Health" is the United States; likewise, European countries have joined in the creation of studies, highlighting the United Kingdom, the Netherlands and Ireland; as well as Asian countries, highlighting India and China. It should be noted that the most cited authors, institutions and articles are located in the United Kingdom, which refers to the impact that this country has had on the subject of "Positive Mental Health" in recent years (2006-2020).

The scientific literature is published mainly in high impact journals distributed in European countries such as the United Kingdom, the Netherlands, and Switzerland, in addition to the United States as a North American country, with English as the main language.

It is necessary to specify that the participation and collaboration of countries of Hispanic speech have void participation on a global scale with the topic of the positive mental health, with the exception of Mexico, which has a collaboration only with Spain, without leaving of side small access that is had to publish in the journals that they integrate the database of scopus, for Spanish-speaking authors, which it makes necessary to realize furthermore the exercise of the analysis bibliometric derived from other databases that as well expire with quality criteria in the production of knowledge.

The study of positive mental health can be derived to different disciplinary fields of study, whether within the social sciences, the field of health, diversifying the objects of study such as gender issues, resilience, childhood, adolescence, health promotion, mindfulness and mental health issues such as personality disorders, and especially the field of occupational health.

The concept of mental health has been in constant growth and consequently also in relation to positive mental health; studies increase with the passage of time and the current trend, based on the concept of the World Health Organization in 2004, these are directed to focus attention on working on the positive aspects of human beings and the environment that surrounds them whether school, social, clinical and occupational¹⁵.

Commencing from the labor issue, it is possible to highlight that the country that provides the main production of scientific literature on the subject of "Positive Mental Health at work" is the United States. At the same time, European countries, concerned about the positive aspects of the health and behavior of human beings in the workplace, have joined in the creation of studies. It is possible to highlight the collaborative impact so far: the United Kingdom, Ireland, the Netherlands, Spain, Italy, Sweden, France and Germany, however, the articles presented in the Scopus database are not significant regarding "Positive Mental Health at work", since there are only 95 documents worldwide in the entire period of analysis (1936 - 2020).

Rana, M. (2015) from India highlights the importance that positive mental health at work should have since, by implementing it, it means creating a relatively pleasant and productive environment. This also means creating a work schedule that is not conducive to emotional and physical distress in addition to the fact that hope and altruism provide a positive work environment that influences the moods and attitudes of workers²¹. Similarly, it is necessary to encourage positive emotions at work to help reduce or eliminate problems of a personal and group nature through a better attitude with feelings such as joy, faith, enthusiasm, and many others that could predispose us better to various conflicts²².

V. Conclusion

In conclusion, the reality is that we continue to focus on preventing negative aspects instead of investing in promoting healthy lifestyles, increasing emotional aspects such as companionship, the humane treatment of supervisors to subordinates, offering healthy spaces and better working hours, as well as teamwork by making valid the opinion of workers.

A joint work requires eliminating imaginary hierarchies and aim at equality of thought exercised by people by asserting their needs, implementing programs that include aspects that improve working conditions in continuous study with human and labor laws, moreover their skills to develop better companies, better managers, better superiors that result in better workers.

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Fabiola Abigail González Hernández, et. al. "Bibliometric analysis of positive mental health in Scopus." *IOSR Journal of Humanities and Social Science (IOSR-JHSS)*, 26(06), 2021, pp. 30-39.