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RESEARCH ARTICLE

PSYCHIATRY LITERATURE GROWTH CONTRIBUTION INFLUENCE ON SCIENCE AND HUMAN PHYSIOLOGICAL HEALTH

[1]Maryam Moghadami, [2,*]Dr. Senapathy, M., [3]Mohammad Hasanzadeh and [4]Saeed Shokraian

[1]Tarbiat Modares University of Iran, Tehran
[2]Associate Professor, Department of Rural Development and Agricultural Extension, College of Agriculture, Wolaita SodoUniversity, Ethiopia
[3]Associate Professor, Tarbiat Modares University of Iran, Tehran
[4]M.Sc. student, Tabriz University of Medical Sciences

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ABSTRACT

The collection of the literature on the particular discipline will determine the concept of promoting the academic quality of the discipline as well as community in general. Of course, all these intellectual contributions made by the researchers has been changed the both academic and society. The main objective of the study is to investigate the relationship between the literature growth contribution on scientific productivity in the field of psychiatry and mental health. We applied search strategy by using psychiatry term. We narrowed the search to 2000-2012. No language limitation was applied. SCOPUS library software was used to select the articles pertaining to the psychiatry discipline. The result, our search led to 27516 articles. The US, England and Germany were identified as leading countries in producing the psychiatry articles, respectively. Pearson correlation test results indicated that there is a direct correlation between scientific products and mental health index. In one word, the more science increases, the more human well-being rises. With increased scientific productivity, life expectancy increases and decrease mortality. Immunization is also increasing with scientific productivity increase and this is very important in reducing child mortality. This specific research study showed that there is a direct relationship between the growth of science and human welfare. With the growth and development of scientific infrastructure, also improve the people's health. The results of this research study can serve as a guiding document in the field of health and mental health.

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INTRODUCTION

Scientific research has developed significantly thanks to increased resources and sophisticated technology. The use of science can have a considerable impact on several different types of project; scientific trials used in medicine, for example, can dramatically change the way patients are cared for and treated and can potentially save many lives (Development of Science and Technology, 2009). Science offers the possibility of far greater well-being for the human race than has ever been known before. It offers this on certain conditions: abolition of war, even distribution of ultimate power, and limitation of the growth of population (Russell, 1952). Scientific research has already helped to improve treatment for numerous illnesses and serious health conditions.

Corresponding author:* **Dr. Senapathy, M.
Associate Professor, Department of Rural Development and Agricultural Extension, College of Agriculture, Wolaita Sodo University, Ethiopia.

Trials for medications and methods of treatment have improved the care of many patients and helped to make their recovery less distressing and painful. Research enables health care professionals to gain all the necessary information to make well-informed decisions with regard to which methods or treatments to use; this not only implies effective treatment but also improves the efficiency of patient care, as well as saving a huge amount of money. Scientific research has saved millions of lives and continued research will almost certainly save many more in the future (Science and Technology and Health, 2008).

Growth of the Literatures

The knowledge generated by science is powerful and reliable. It can be used to develop new technologies, treat diseases, and deal with many other sorts of problems (What is Science, 2013). The purpose of this study was to investigate the relation between science and mental health.

In the old days importance of science was unknown. But in this years it is very important, because science has an effective role on lives. Science is an instrument. It progress the situation of society. It can decrease the rate of mortality and mental disorders. Also it can increase the rate of fertility or life expectancy. It can improve the well- being. Therefore, we studied the role of science in society. Modern society depends on scientific discovery and applying this new knowledge through technology. However, the role that science plays in our daily lives is often overlooked or taken for granted and public opinion is often only mobilized when research and new discoveries raise ethical questions. For these reasons, the public needs to be properly informed, so that it can make up its mind on the issues (Science Awareness, 2015). Today, scientific production has an impact on all spheres of life. Health is one of the aspects of life. With the increase in scientific productivity will increase people's awareness of healthy life styles. Today, scientific production is considered as an indicator of development. But so far its relation between mental health indicators has not been studied. The science has bilateral impact: good and bad.

Scientometrics Approach

The psychological health is the most important thing in human's life. That is why the policymakers in developed countries dedicate an appropriate budget for psychological health care of countries inhabitant. As the scientific contribution in the subject areas can mirror the research activity of scientists in that subject field (Biglu, S; Biglu M.H and Falk 2011). Therefore, in this paper we attempted to investigate the trend of scientific contribution in the field of Psychiatry during a period of thirteen years. The first part of the paper focused to review of the most active countries, institutions and prolific writers. The second part of the paper focused to the relationship between mental health indicators and science growth. Finally, the third section discusses the implications of findings on scientometrics methodologies and analytics and some recommendations proposed at this respect. In recent years, many researchers have conducted scientometrics analysis in this subject fields. In this article use ofscientometrics approach. Morlino *et al*., (1997) studied Publication trends of papers on schizophrenia. A 15-year analysis of three general psychiatric journals was investigated for this research study. Given the importance of schizophrenia in psychiatric research and practice, it will be useful to regularly monitor the research trends in this specific field (Morlino *et al.*, 1997). Angermeyer, Winkler (2001) analyzed of publications by German authors on socio psychiatric issues in scientific journals. The results showed a substantial proportion of the research in social psychiatry is concentrated on a small number of research institutions (Angermeyer and Winkler 2001). Bignami *et al.* (2000) investigated the impact on the international literature of the scientific production of the Italian researchersin the disciplines of Psychiatry and Psychologyhasbeen analyzed. The results entail the important implications for Italian research in psychology and psychiatry. In general, these analyses appear to be helpful for monitoring scientific production by granting agencies and for comparing different individual researchers. On a more specific level the analysis has identified the leading trends in research of Italian psychiatry and psychology. (Bignami *et al.,* 2000) and Lopez-Munoz, *et al.* (2006) have investigated Bipolar disorder as an emerging pathology in the scientific literature: a bibliometric approach The publications on bipolar disorder and mood stabilizers have undergone exponential growth over the last 25 years, without evidence a saturation point. (Lopez-Munoz *et al.,* 2006) Sharifi *et al*., (2008) The analysis of mental health research in the Islamic Republic of Iran over 3 decades: a scientometrics study. Analysis of research areas showed a proportionate rise in neuroscience research and a decline in mental health service research (Sharifi *et al.*, 2008). This studies showed that mental health is important for an individual to develop his intellectual output of publishing the scientific papers. When we are free of depression, anxiety, excessive stress and worry, addictions, and other psychological problems, we are more able to live our lives to the fullest. Psychological problems also increase the likelihood that people will make poor behavioral choices which can contribute to medical problems. Smoking, excessive alcohol or drug use, poor eating habits, and reckless behavior can all result in severe physical problems and the need for medical services. Excessive anxiety and stress can contribute to physical problems such as heart disease, ulcers, and colitis. Anxiety and stress can also reduce the strength of the immune system, making people more vulnerable to conditions ranging from the common cold to cancer (Useful Psychology Information (Importance of Mental Health 2014). For all of these reasons, a mental health issue is one of the most important challenges facing our society today.

Effect of the Literature Contribution

The particular research studies showed thatthere isa direct relationshipbetweenthe growth of scienceandhuman welfare. With thegrowthanddevelopmentofscientificinfrastructure, also improve the people's health.For example, we review the studiesever done. Hassanzadeh and Akhghar (2014) investigated the relationship between selected development indicators and contribution to the global knowledge in provincial level. Findings showed that there is significant relationship between science infrastructure and developmental indicators and also their contribution to the knowledge. But amongst them relationship between family size and science production was negative. Based on findings we can conclude that scientific progress has its grassroots in developmental programs and in turn, developmental achievements will flourish the science in societies (Hassanzadeh and Akhghar, 2014).

Jerome Karle (1985) describedthe Role of Science and Technology in Future Design. Hepointed outin his article that "There is no question that science and society will continue to co-evolve. The nature of this evolution will certainly be affected by the extent to which governments set funding priorities. Societies whose governments recognize the dependence of the development of successful novel technologies on broadly supported basic research are more likely to be healthier and economically prosperous in the future than those that do not. Because of the unpredictability of the details of the new science and technology that will evolve, the details of social evolution are also unpredictable" (Karle, 2015) Bilsel and Oral (1995) investigated Role of Education, Science and Technology in Developing Countries. Findings showed that in developing countries economic growth can mainly be enhanced by a science and technology policy. However, science and technology can play their role in development only when the integrity of the whole enterprise-research institutions, universities, publications research priorities and emphasis and the education of creative scientists, as well as those active in

science is preserved. Thus, the simplest strategy in developing countries is first of all, to increase the percentage of GNP that is to be devoted to universities and research institutions. Developing countries should understand the fact that perceiving investment in sciences as a time-consuming, wasteful and costly activity will bring further limitations on their economic growth. That it is a political decision on the part of those who decide on the future of developing countries to take proper steps toward creating, mastering and utilizing the resources of science and technology (Bilsel, Oral, 1995).

José Goldemberg (2003) inan article titled "What is the Role of Science in Developing Countries?" discussed the role of science in developing countries. His studyshowed that the transition of a country from developing to developed is a complex process that requires facing up to the established interests in society. The impetus for this has to come not only from scientists but from other sectors of the society as well. In a world where globalization and competitiveness are the rule, progress requires that developing countries find areas in which they are significantly better than their competitors because of a better trained work force, favorable natural resources, or scientific and technological capabilities. Science and scientists can play an important role in determining those choices and implementing development strategies. Review of the literature shows so far the relationship between Scientific Products in Psychiatry and health indicator did not investigate (Goldemberg, 2003).

METHODS

On very initial stage of the investigator has started to search the articles from Scopus. The time period2000 to 2012 was taken into consideration.

Search Strategy

The analysis based on the publications indexed in Scopus, the world citation database. We also formulated questions based on key word strategy, limited the results to title abstract and keywords. We narrowed the search to 2000-2012. No language limitation was applied. We selected life expediency, birth rate, mortality rate, immunization indicator; fertility as mental health indicators for extraction of the relevant health indicators was used. The World Bank database was used in order to find out the potential indicators. For top 10 countries were taken into consider for extracting the health indicators by choosing them from indicators part.

Data Analysis and Interpretation of the Study

To examine relationship between development indicators and science indicators, we carried out a Pearson correlation using SPSS 19.0 and for more visualization of the correlation pattern we have depicted it by scatter plot.

RESULTS

With the help of the Scopus database that we found 27516 record paper, in psychiatry field in 2000-2012 period of time. For survey of countries, the result of research limit of the country field. 141 countriescontributed in publication of publication. 10 country of the first list, select as active countries.

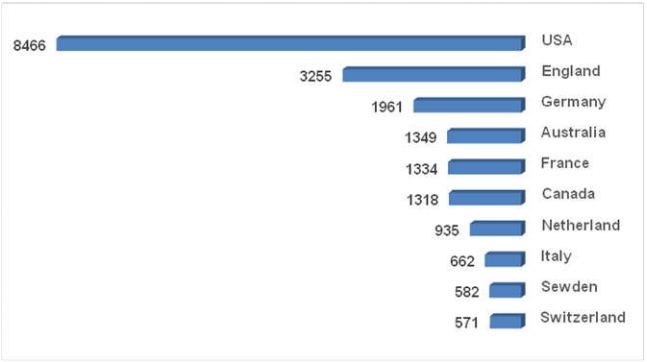

Figure 1. Geographical distribution of Psychiatry productions

Growth of Literatures

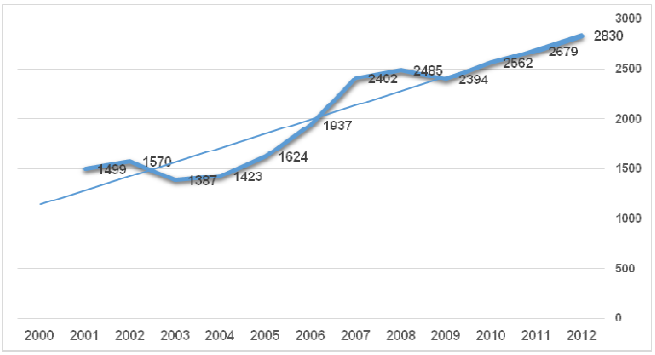

Figure 2. Growth rate of Psychiatry literature

According to Figure2 Psychiatry literature production has grown exponentially during this period and arrive of 1499 articles in 2000 to 2830 articles in 2012. Scientific production in this area in 2003 has decreased. But since 2004 has started to grow. Scientific production decreased in 2009 compared to 2008, but since 2010 has continued to grow upward. Most of the Scientific production in this area is in 2012 (2830 article). This graph shows the scientific production in Psychiatry growth in the period of time in this research.The growth rate of scientific production in this years is different.It is negative in some years. For example, the growthof productionin 2009-2010 isequal to-0.9, that indicate scientific productionhas been muchreduced andthenegative amount. Between2002-2003 therate of growth of literature is -1.83. This amount between 2007-2008 equal to 4.65 and it has highest level inallthe years. The growthrate of literature production at the beginning of2000is 0.71, which eventually reached 1.51 in 2012. As a resultof scientific production in the field of Psychiatryhas been associatedwith slow growth.

Authors' Productivity

Table 1. Most Prolific Authors in Psychiatry

S. No.	Authors	Number of Papers	Countries	H-index
1	Biederman	57	United States	126
2	Birmaher	54	United States	69
3	Vitiello	49	United States	66
4	Findling	46	United States	63
5	Walter	46	Australia	25
6	Verhulst	45	Netherlands	69
7	Angermeyer	42	Italy	70
8	Reynolds	38	United States	84
9	Sourander	38	Finland	38
10	Esmile	38	United States	47

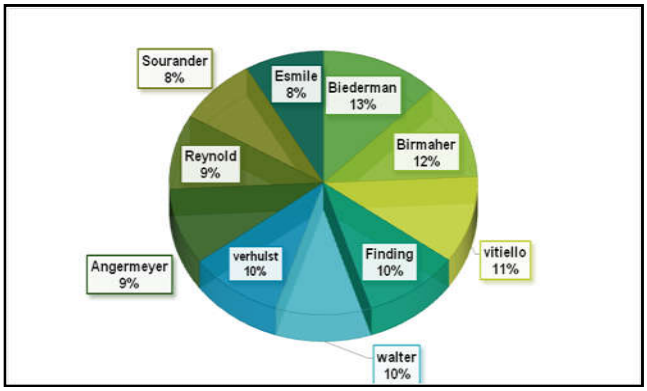

Figure 3. Prolific authors in Psychiatry Literature production

Top 10prolific authorswas found. Authors' productivity is studied based on their contributions in the field. . The details are provided in Table 1. According to the Figure3, the most prolific author is Biderman, with 57 papers (13%). After his, Birmaher with 54 papers (12%) and Vitiellowith 49 papers (11%) are most prolific authors in psychiatry.As expected, the prolific authors have produced the most papers, and make more impact in the present study, prolific authors only from USA, Australia, Netherlands,Italy and Finland. This also indicates that prolific authors from developed countries like USA and Australia also play an important role in the scientific productivity as well as the impact of research. The average productivity for USA is slightly high in comparison to all other countries under study. The h-index is based on a list of publications ranked in descending order by the Times Cited count. The value of h is equal to the number of papers (N) in the list that have N or more citations (h-index 2012) among the authors, Biedermanhas the highest-index (What is an H-Index, 2015).

Affiliating Institution

To limit to, Organization field, 10 active institutions were founded. Table 2 shows the ten top ranking Institutions of the world in terms of the number of contribution in Psychiatry literature.

Table 2. Prolific institutions in Psychiatry

Ranks	Categories of Affiliation	No. of Contribution on Descending Order
1	Kings College of London	565
2	VA Medical Center	534
3	Harvard Medical School	289
4	University of Toronto	283
5	New York State Psychiatric Institute	233
6	Massachusetts General Hospital,"	227
7	University of Melbourne	226
8	University of California, San Diego	224
9	Columbia University in the City of New York	220
10	No Affiliation ID found],"	201
11	Duke University School of Medicine	200

According to Table 2, the literature contribution was arranged descending order that Kings College London contributed 565 paper is followed by VA Medical Centerwith 534 paper, Harvard Medical School with 289 and University of Toronto with 283. In addition to, the Universities and education institutions, hospitals involved in the production of articles in the field of Psychiatry. Kings College London has Collaborating affiliations with UCL 3,620 paper, Imperial College London 1,943 paper, Guy's Hospital 1,820 paper , University of Oxford 1,709 paper and University of Cambridge 1,636 paper. That published 63 articles in 2012, 53aricle in 2011 and 57 article in 2010. After that, VA Medical Center with 534 article has a high rank in scientific production. This affiliation has collaborating withUniversity of California, San Francisco 5,888 paper, University of California, San Diego 5,718 paper, David Geffen School of Medicine at UCLA 4,409, University of California, Los Angeles 3,657& Stanford University School of Medicine 3,466. The top 10 most cited papers obtained from SCOPUS is listed in Table 4. A paper entitled "NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC- IV): Description, differences from previous versions, and reliability of some common diagnoses" by Shaffer *et al.,* published in American Journal of Psychiatry in the year 2000 has received the highest citation count 1588.Most of the articles published in American magazines. It shows that America has the highest quality of scientific output (Shaffer *et al.,* 2000)

Results showed that there is significant relationship between scientific production and mental health indicators. And naturally, increase in the number of articles with the increase in the number of mental health indicators. The Pearson Correlation test is equal to 0.954. The SIG test error rate is equal to 0, which is less than 0.05, there is a significant correlation between the two variables. Therefore, we can conclude that has a direct correlation between articles published in the field of Psychiatry and health indicators.

RESULTS AND DISCUSSION

Relationship between science productivity and mental health indicators is significant. With the increase of scientific production, increase the life expectancy and decrease the mortality rates. In addition, by increasing awareness of the importance of immunization of children increases the safety and reduce the mortality of children. There is a study that similar to this study. Hassanzadeh, M and Akhghar B, (2014) Investigated the relationship between selected development indicators and contribution to the global knowledge in provincial level. What is ultimately obtained from this study is that science has a constructive influence on the fundamentals of human life. So that he saved from the social concerns and disease and promise her (his) life expectancy. In addition to weight reducing mortality by increasing the life span. Between 1990 and 2011, death rates from all cancers fell from 216 per 100,000 Americans to 168.7—a 22% decrease. At the same time, the number of people surviving cancer and living longer more than doubled, from 6.5 million to 13.8 million (Hassanzadeh and Akhghar, 2014).

Medical Transformation led to Medical Innovation

Nearly everyone places a high value on living longer. While it's hard to put a price tag on life, economists have developed ways of calculating how increased life expectancy affects national income, as measured by Gross Domestic Product (GDP). Indeed, the increase in our life expectancy has increased GDP. In fact, over the past half-century, the added value of longer life has been tremendous.

Table 2. Correlation coefficient papers and mental health indicators

Pearson correlation	0.954
sig (2-tailed)	0

*Correlation is significant at the 0.05 level (2-tailed)

Table 3. List of Most Cited Papers

Article Titles	JournalTitles	CitedBy
NIMH Diagnostic Interview Schedule for Children Version IV (NIMH DISC- IV):	American Journal of Psychiatry	1588
Psychometric properties of the strengths and difficulties questionnaire	Journal of the American Academy of Child and Adolescent Psychiatry	1470
A review of MRI findings in schizophrenia	Journal of the American Academy of Child and Adolescent Psychiatry	1470
The prevalence and correlates of adult ADHD in the United States: Results from the National Comorbidity Survey Replication	American Journal of Psychiatry	1251
Sertraline treatment of major depression in patients with acute MI or unstable angina	Journal of the American Medical Association	931
Prevalence, correlates, disability, and comorbidity of DSM-IV alcohol abuse and dependence in the United States…	Archives of General Psychiatry	872
Clinical practice guideline.	Pediatrics	751
Prevalence and treatment of mental disorders, 1990 to 2003	New England Journal of Medicine	716
Pervasive developmental disorders in preschool children	Journal of the American Medical Association	659
Childhood sexual abuse and adult psychiatric and substance use …	Archives of General Psychiatry	655

Table 4. Average of Health Indicators

Life Expectancy	Immunization indicator	Fertility	Birth rate	Mortality rate	Countries
77	91	2	14	8	USA
78	85	1.8	12	10	England
78	96	1.3	8	10	Germany
81	94	1.8	13	7	Australia
80	88	2	13	9	France
80	94	1.5	11	7	Canada
79	96	1.8	11	8	Netherland
81	89	1.3	10	10	Italy
81	96	1.8	12	10	Sweden
81	87	1.4	10	8	Switzerland

Living longer has a payoff in today's global economy, too. Mortality rates have fallen faster in poorer countries, thus helping to reduce the income inequality gap. These changes have been more dramatic than projections suggested. In fact, the added income is equal to at least half of the total growth in income between 1960 and 2010. As life expectancy increases, so does economic growth, making investments in cancer innovation a good bet for economic outlook. As we've seen, the general population is living longer thanks to medical innovation. This leads to greater prosperity and better quality of life. Findings of this research will contribute scientometrics community with insight which has come from real world Application of Such an approach to scientometrics studies not only will improve the effectiveness of this kind of investigations, but also will attract attentions from executive and decision making community to them as well. We should not forget that the ultimate goal of the science is creating the most prosperous future for human being (Life Expectancy, 2010). The good news is that those with cancer are living longer, too. If we multiply the average increase in life expectancy by the number of cancer survivors since 1990 (a figure that has doubled in that time frame), we learn that 43 million life-years have been saved from cancer (The Role of Science and Technology in Society and Governance 2015).

Thanks to medical innovation, people with cancer are living longer. Just as the increase in life-expectancy from other illnesses increased economic growth, the life-years saved from cancer adds income too. In fact, between 1990 and 2013, the 43 million life-years saved from cancer has generated about $4.7 trillion in added income. (Tan, Ong, 2002). Today's medical technology is more advanced, more effective, and in many cases, more costly than ever before. Furthermore there is an ever increasing demand for high technology diagnostic and therapeutic health care facilities and their availability may come into conflict with medical necessity, social justice and cost effectiveness. Rapidly changing medical technology and availability of high technology diagnostic and therapeutic equipment together with changing practice pattern of doctors has revolutionized the way health care is being Without doubt, medical technology is indispensable delivered today. For people's health and better quality of life in some areas; and contributes billions of dollars to the economy (Tan, Ong, 2002). The influence of science on people's lives is growing. While recent benefits to humanity are unparalleled in the history of the human species, in some instances the impact has been harmful or the long-term effects give causes for serious concerns. A considerable measure of public mistrust of science and fear of technology exists today. In part, this stems from the belief by some individuals and communities that they will be the ones to suffer the indirect negative consequences of technical innovations introduced to benefit only a privileged minority. The power of science to bring about change places a duty on scientists to proceed with great caution both in what they do and what they say. Scientists should reflect on the social consequences of the technological applications or dissemination of partial information of their work and explain to the public and policy makers alike the degree of scientific uncertainty or incompleteness in their findings. At the same time, though, they should not hesitate to fully exploit the predictive power of science, duly qualified, to help people

cope with environmental change, especially in cases of direct threats like natural disasters or water shortages.

Conclusion

The scientific literature contribution reflects the knowledge dissemination of the particular discipline to the academic society. The proliferation of the articles and research outputs will bring a lot of change in the academic professionals. In the same way, the scientists and research stations are accountable to deliver the useful information and intellectual contribution to the community in general. The research divide between the community and the scientists have reduced gap of the new inventions in particular.

Scientists and Scientific institutions should

- promote multidisciplinary approaches to research, encourage cooperation between the social and natural sciences, and draw lessons from the humanities, local knowledge systems and aboriginal wisdom
- encourage a holistic approach to problem solving that takes into account a realistic range of socioeconomic conditions and effects, as well as multiple time and space scales, where appropriate;
- carefully explain the implications and the inherent limitations of their research findings to the public
- fully exploit the predictive power of science to serve social needs with candid awareness of the limitations of scientific predictions
- promote the inclusion of scientists from resource-poor countries in international cooperative projects and maximize their access to information and technology
- Encourage the creation of science-coordination mechanisms at the highest level of the United Nations, fully involving the governments of all countries, as a way to promote integrated responses to global problems (The Role of Science and Technology in Society and Governance 2015).

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