

Stick the needle into yourself before you thrust the packing-needle into others: Bibliometric analysis of the stigmatizing term ‘schizophrenic’

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Summary

Background: The term ‘schizophrenic’ can be used in society for the purpose of insult and humiliation. In scientific studies, it can often be used to refer to individuals diagnosed with schizophrenia, although this is not intentional. This usage leads to the normalization and spread of stigmatizing language. In this study, bibliometric analysis of publications containing the term ‘schizophrenic’ was performed.

Subjects and methods: Articles published between 2005 and 2024 that contained the term ‘schizophrenic’ were retrieved from the Web of Science database. Characteristics of the articles (e.g., year, author, institution, country, keyword, scientific category, and citation per article) were analysed. VOSviewer software was used to visualize various bibliographic coupling networks on related data.

Results: The search for the term ‘schizophrenic’ resulted in 34,506 documents in the all fields category at all times. After excluding non-original/review articles, documents not in SCI-E, not in English, and published before 2005, 7,836 articles remained. While the number of articles containing the term ‘schizophrenic’ was 581 in 2005, this number decreased to 126 in 2024. While the number of citations to articles containing the term ‘schizophrenic’ was 279 in 2005, this number increased to 14,689 in 2024. The author with the most articles containing the term ‘schizophrenic’ was Xiang Yang Zhang. Hans-Juergen Moeller’s articles containing the term ‘schizophrenic’ received the most reference. The institutions with the most articles containing the term ‘schizophrenic’ were the University of London, King’s College London, and Harvard University, respectively. The journals that published the most articles containing the term ‘schizophrenic’ were Schizophrenia Research, Psychiatry Research, and Progress in Neuro-Psychopharmacology and Biological Psychiatry, respectively.

Conclusion: This study is the first bibliometric analysis that examines articles containing the term ‘schizophrenic’ with various features. Scholars have a great responsibility in the reduction/prevention of stigmatization in schizophrenia. They should begin by avoiding using the term ‘schizophrenic’ in scientific studies.

Keywords: Bibliometric analyses, schizophrenia, stigma, stigmatization

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INTRODUCTION

Stigmatization that can be defined as “a mark of shame, disapproval, or disgrace that causes someone to be shunned, discriminated against, and excluded from engaging in a variety of society areas” may make it difficult for patients to seek treatment due to negative attitudes about schizophrenia (Al Saif et al., 2019). In general, for a difference to be stigmatized, it must be noticed. Society defines itself with various stereotypes and accuses people who are different due to their individual characteristics of not conforming to these stereotypes. At the core of stigmatization lies negative beliefs and the resulting prejudice. Prejudicial behaviours lead to discrimination, which can occur at three levels including individual, structural, and self-stigmatization. Being stigmatized for any reason leads to a stressful life experience (Corrigan,

2004). Although stigmatization is seen in many situations or phenomena, individuals with mental disorders have been among those most exposed to stigmatization since ancient times (Švab, 2018). Stigmatization causes social withdrawal, limited life opportunities, delayed help-seeking behaviour, and treatment refusal in individuals with mental disorders. Accordingly, the functionality of individuals diagnosed with mental disorders is impaired, their access to treatment is limited, and this results in a vicious circle. Stigmatization can negatively impact not only individuals diagnosed with mental disorder but also their friends, families, and communities (Rüsch et al., 2005). Among mental disorders, individuals diagnosed with schizophrenia are the most exposed to stigmatization (Örum, 2024).

Although schizophrenia can be potentially chronic and debilitating, early intervention with appropriate treatment

approaches can ensure sustainability of recovery. One of the factors that determine the prognosis of schizophrenia, which affects more than 24 million people worldwide, is the stigmatization surrounding the disorder (<https://www.who.int/news-room/fact-sheets/detail/schizophrenia>). Stigmatization in schizophrenia and its prevention/reduction have been the subject of many scholars. Through these studies, important findings about the beliefs of individuals or society have been demonstrated using attitude scales towards schizophrenia (Javed et al., 2021). Ironically, scholars who have emphasized the negative aspects of stigmatization and made efforts to reduce/prevent stigmatization by making suggestions have sometimes used stigmatizing language in the presentation of their articles (Örü̇m, 2024). The most common misuse of scholars who contribute to the literature on schizophrenia, although not consciously, is to use the term 'schizophrenic'. The term 'schizophrenic' is used to insult and humiliate people in social settings, on social media, and even in politics. It is a fact that in scientific studies it is used, although not intentionally, to refer to individuals diagnosed with schizophrenia (Schulze & Angermeyer, 2003). Whatever the reason, this usage leads to the normalization and spread of stigmatizing language.

Literature indicates the existence of a similar problem in articles published by scholars from different institutions and countries in various scientific categories. The expressions 'schizophrenic' and 'schizophrenic patients' can be encountered in the title, abstract, keyword, and text of these articles. Bibliometric analysis which enables us to unpack the evolutionary nuances of a specific field is a practical method for examining large volumes of scientific data. Scholars may use bibliometric analysis to uncover emerging trends in journal performance and collaboration patterns and to explore the intellectual structure of a particular field in existing literature (Donthu et al., 2021). The characteristics of the articles in which the term 'schizophrenic' is preferred have not yet been examined. In this study, a bibliometric analysis of worldwide publications containing the term 'schizophrenic' was performed.

SUBJECTS AND METHODS

In this bibliometric analysis study, the methodological flow of studies with similar research designs were followed (9). The data were obtained from the Web of Science (WoS) (Thomson Reuters, Philadelphia, PA, USA) database by EA on December 14, 2024. Since the data were taken from a single database, there were no duplicate data.

WoS is a leading citation database and contains records of articles from the highest impact journals worldwide. It has ten indexes containing information gathered from thousands of scholarly journals, books, book series, and conferences. Science Citation Index-Expanded (SCI-E) is a large database of approximately ten thousand journals with high-impact citations. It is the latest journal citation system and database offered by the WoS, covering many fields, including arts, humanities, and social sciences (Altunisik et al., 2023). The H-index was introduced by Jorge Hirsch from the University of California in the USA in 2005. It is one of the bibliometric data in the scientific world. While the number of publications a researcher has made and the citations made to these publications are important, Hirsch's invention created a balance between the number of publications produced and the number of citations received. An author has an H-index of h if h of their papers have $\geq h$ citations each. For example, if an author has 10 articles and 6 of these 10 articles have received six or more citations, the H-index value for that researcher is accepted as 6 (Shanmugasundaram et al., 2023).

The inclusion criteria were determined as follows: (I) English language articles, (II) published between January 2005 and December 2024, (III) original and review articles, (IV) Science Citation Index-Expanded (SCI-E) category according to WoS indexing.

The search term 'schizophrenic' was typed into the search bar in the WoS database. Data on the determined articles were obtained using the 'create citation report' and 'analyse results', exported in tab-delimited file format, and transferred to VOSviewer, a freely-available software for bibliometric analysis (www.vosviewer.com) (Altunisik et al., 2023). Web mapping was performed to identify the links and density between the characteristics of articles including authors, institutions, countries, scientific categories, keywords, journals, and publication years. On the network map, a larger sized ring and a thicker line between the nodes represent a greater network and strength of links between the queried items.

The data are presented using descriptive statistics and no statistical significance test was performed. Ethics committee approval was obtained for this study (Adiyaman University, Date: April 16, 2024; Number: 2024/4-31).

RESULTS

The search for the term 'schizophrenic' resulted in 34,506 documents in the all fields category at all times. The title of 13,302 documents, the abstract of 21,210 documents, and the keywords of 5,887 documents contained

the term 'schizophrenic'. Excluding the abstracts, letters, editorials, book chapters, and amendments, there were 28,107 documents containing the term 'schizophrenic'. After excluding non-original/review documents, documents not in SCI-E, not in English, and published before 2005, 7,836 articles remained.

While the number of articles containing the term 'schizophrenic' was 581 in 2005, this number decreased to 126 in 2024. There was a steady decrease in the number of articles containing the term 'schizophrenic' almost

every year. Figure 1 reveals the trend in articles containing the term 'schizophrenic' over the last 20 years.

While the number of citations to articles containing the term 'schizophrenic' was 279 in 2005, this number increased to 14,689 in 2024. While there was a gradual increase in the citation chart until 2021, there was a steady decrease after 2021 (Figure 2).

The author with the most articles containing the term 'schizophrenic' in total was Xiang Yang Zhang with 71 articles. Hans-Juergen Moeller's articles containing the

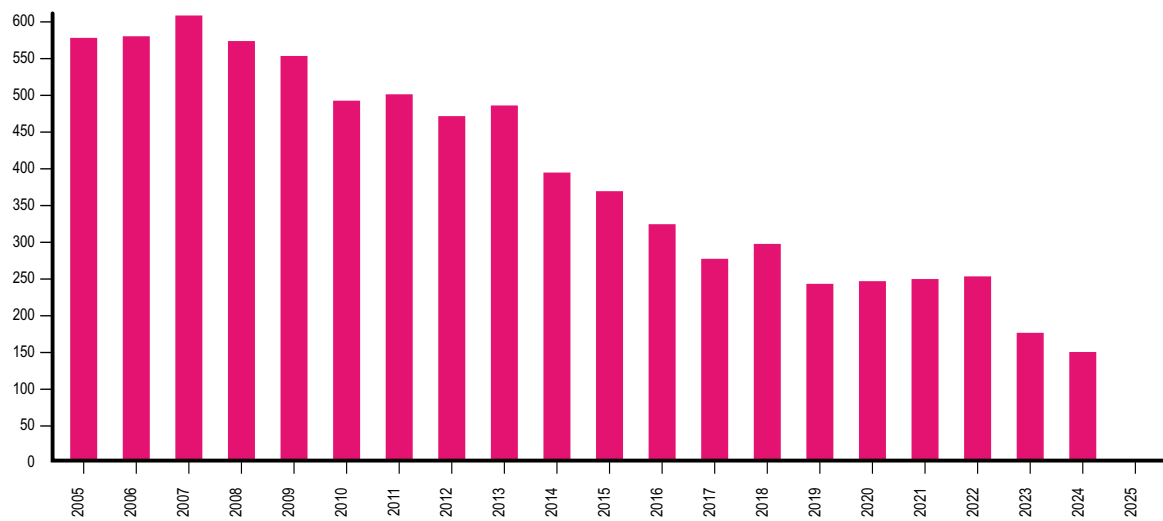


Figure 1. Articles Containing the Term 'Schizophrenic' Between 2005 and 2024

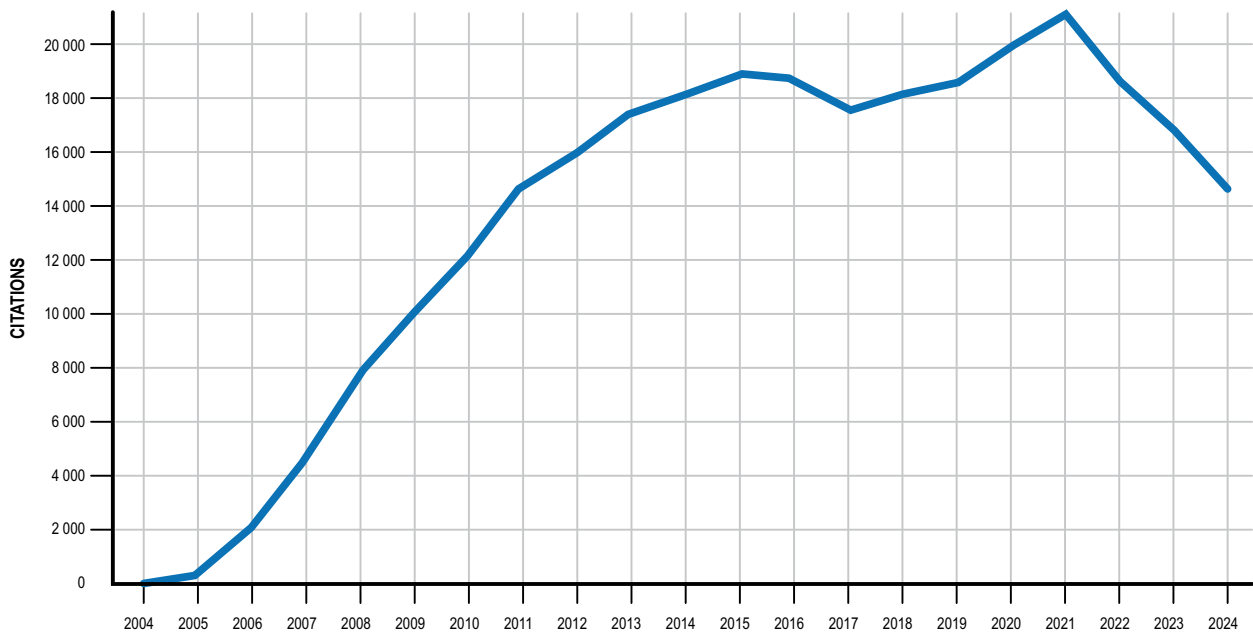


Figure 2. Annual Citation Count for Articles Containing 'Schizophrenic'(2005–2024)

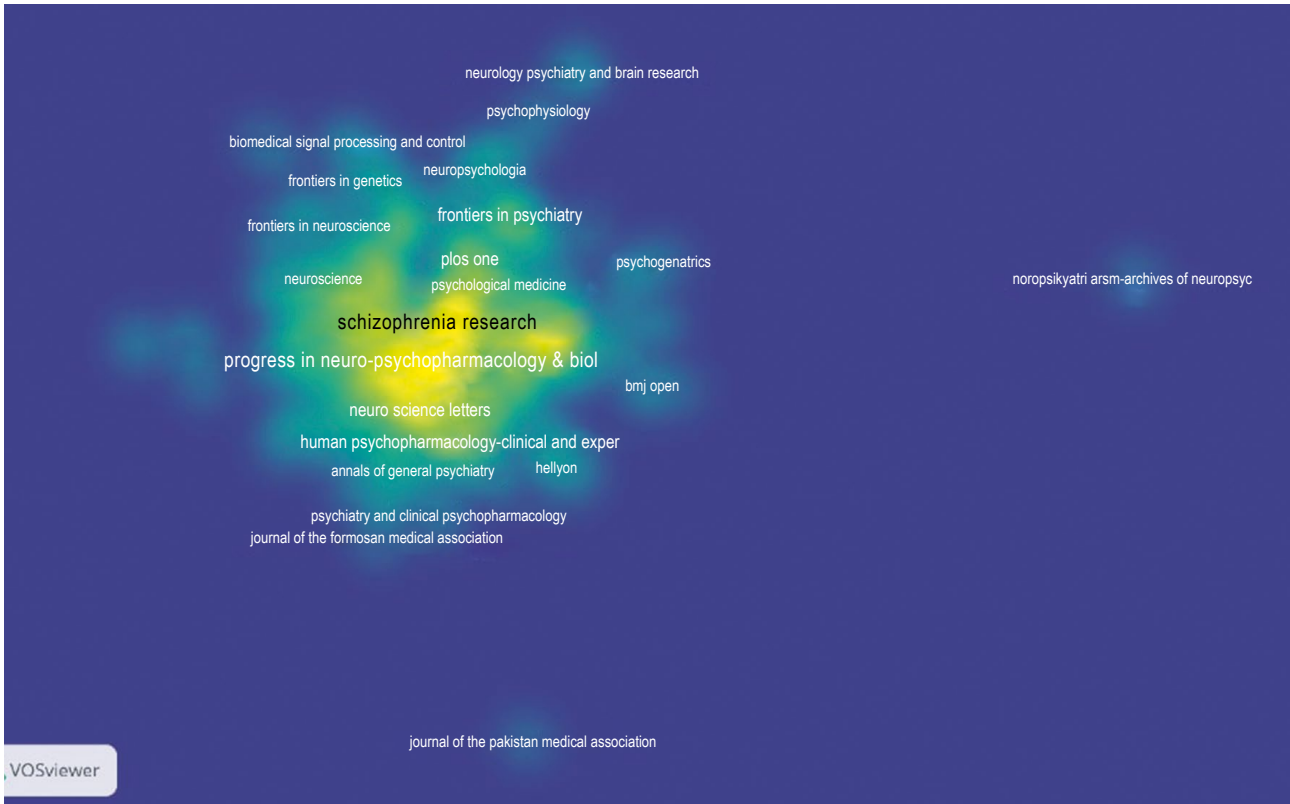


Figure 7. Journal Density Mapping

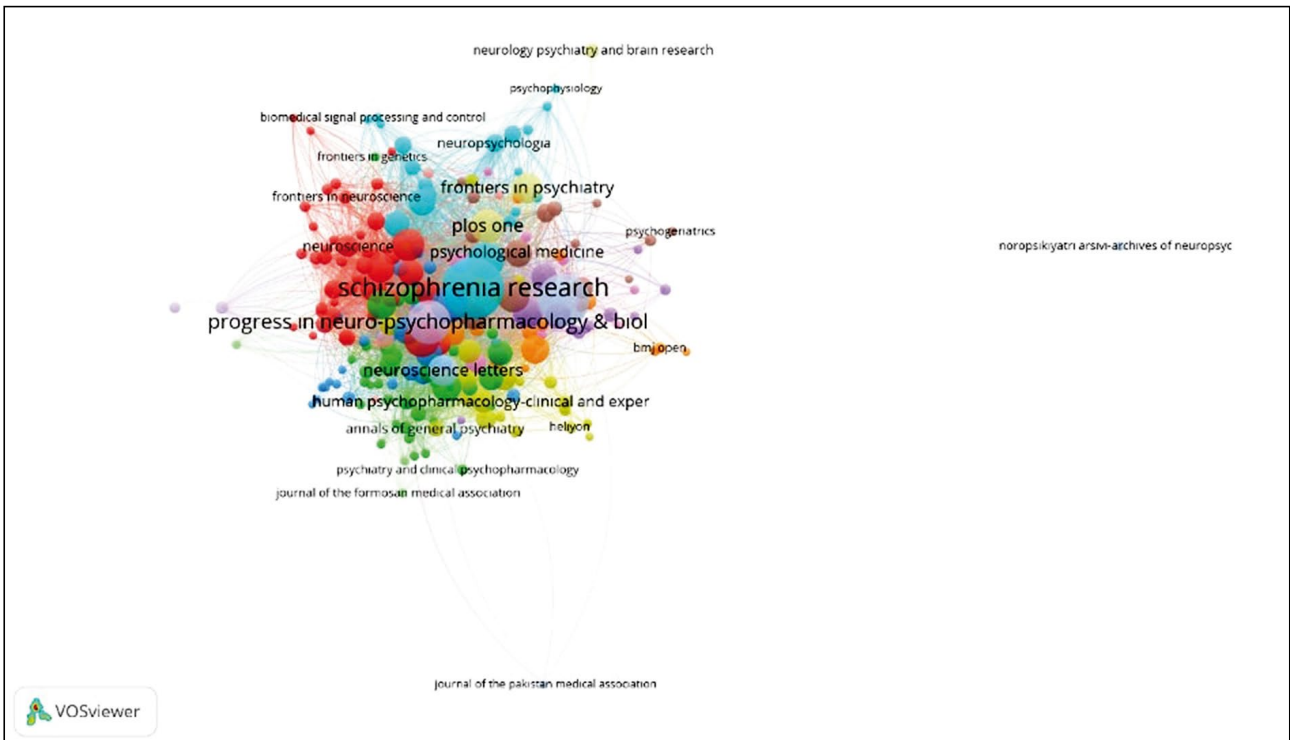


Figure 8. Journal Network Mapping

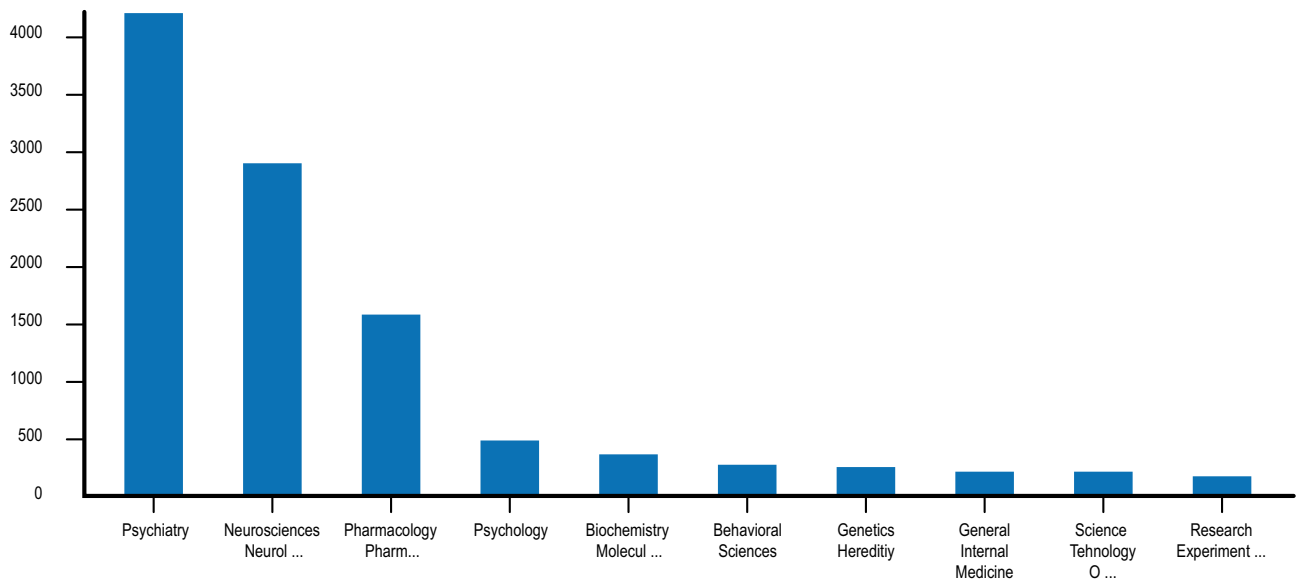


Figure 9. Top 10 Categories Containing the Term ‘Schizophrenic’

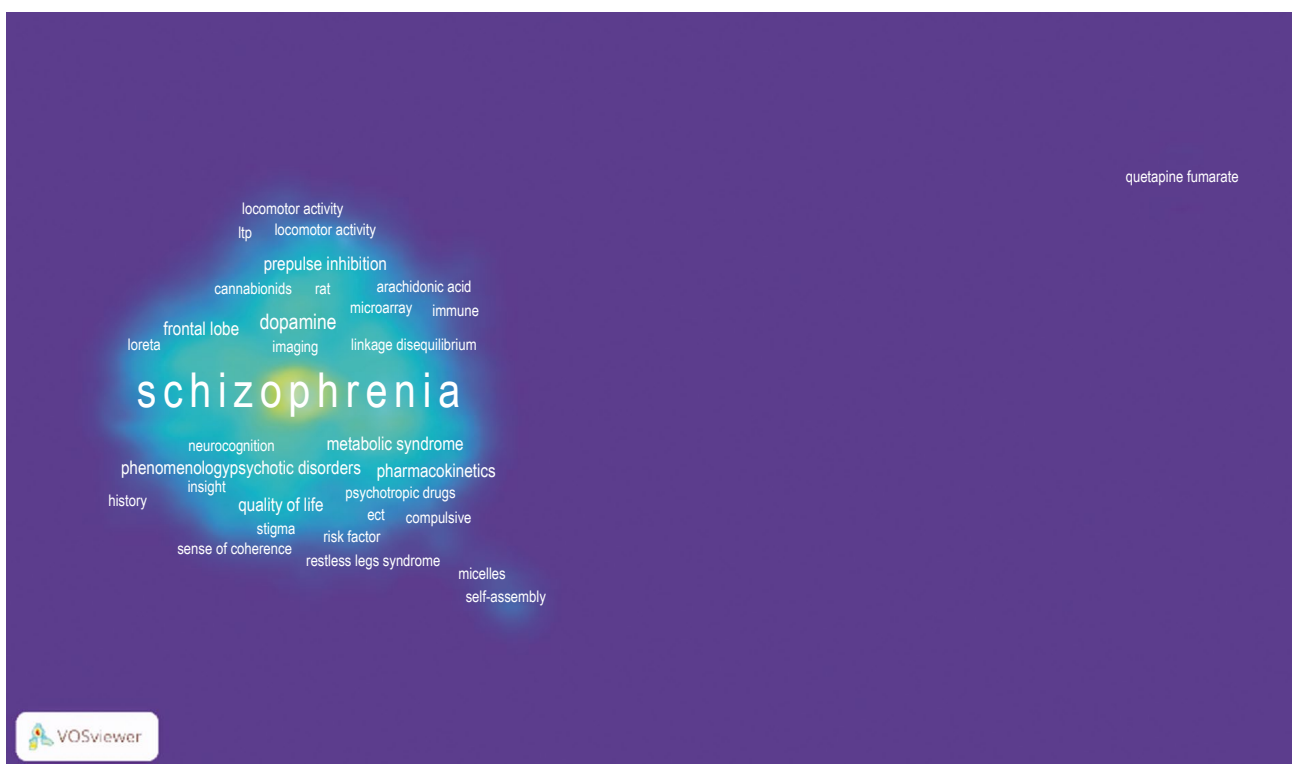


Figure 10. Keyword Density Mapping

Pharmacology Pharmacy category. Figure 9 shows the top 10 categories in which articles containing the term ‘schizophrenic’ were most frequently identified.

When the keywords of the articles containing the term ‘schizophrenic’ were examined, it was seen that the most

frequently used keywords were ‘schizophrenia’ with 4,181 times, ‘antipsychotics’ with 363 times and ‘psychosis’ with 335 times. Keyword density is demonstrated in Figure 10.

DISCUSSION

This study examined various characteristics of original and review articles containing the term 'schizophrenic'. To our best knowledge, this is the first study in this field. While 34,506 documents published between 2005 and 2024 contained the term 'schizophrenic', 7,836 articles were included in this study according to the inclusion criteria.

The number of scientific studies conducted in the individuals diagnosed with schizophrenia is gradually increasing thanks to the efforts of scholars working in this field. In contrast to the increasing studies in the field of schizophrenia, the number of articles containing the term 'schizophrenic' has been observed to decrease steadily over the years (581 articles in 2005, 126 articles in 2024). It can be assumed that this decrease is a product of efforts to reduce/prevent stigmatization in the individuals diagnosed with schizophrenia. Over the years, using the term 'schizophrenic' may have been equated with stigmatization and the level of awareness of scholars may have increased. On the other hand, a significant increase has been observed in the number of citations of these articles containing the term 'schizophrenic'. Considering that scientific knowledge increases in a snowball fashion, this increase can be considered normal.

The authors who used the term 'schizophrenic' the most in their articles were examined. This misuse was detected in 71 articles in which Xiang Yang Zhang was the author or co-author. The H-index value, which reflects the productivity of the authors according to their publication and citation records, shows that Xiang Yang Zhang is among the publications with high impact value (WoS core collection metrics of the author: H-index=57; publications=664; sum of times cited=14.232; citing articles=10.301; sum of times cited by patents=23; citing patents=21). It was observed that the term 'schizophrenic' was used in the titles (Zhang et al., 2010) and texts (Zhang et al., 2013) of the articles in which the author was listed as the first name. Some of these articles were published in 2010 and later (Zhang et al., 2010; Zhang et al., 2013). When the author's articles, especially in recent years, were examined, it was seen that the author was listed as the senior author in almost all of the articles. This situation may have resulted in the author not being familiar with the content of the articles. In addition, it was observed that the term 'schizophrenic' was included in the titles of some of the articles in which the author was involved. Considering that any author receives personal e-mails regarding the articles involved (e.g., authorship notification, authorship confirmation), it cannot be assumed that this author has no knowledge of the current

situation. This situation shows that neither this author nor the other authors in the same articles perceive the term 'schizophrenic' as a stigmatizing word. Regardless of the reason for using the term 'schizophrenic', these articles with high impact value reach a large number of scholars. This may contribute to the normalization and perpetuation of this stigmatizing use. Although the current topic has been discussed based on a single author, it should not be forgotten that there are many authors who prefer this incorrect use. The aim here is to discuss the possible effects of the current situation based on a single author.

It was determined that Hans-Juergen Moeller was the author whose articles containing the term 'schizophrenic' were cited the most (2,037 citations in total). When the author's WoS profile was examined, it was seen that he was a very productive author and that the number of citations was quite high (WoS core collection metrics of the author: H-index=84; publications=854; sum of times cited=25,525; citing articles=21,043; sum of times cited by patents=243; citing patents=202). It is understood that the author was deemed worthy of the 'Highly Cited Researcher in the field of Psychiatry and Psychology' award in 2018 and 2019 consecutively. It has been determined that Hans-Juergen Moeller used the term 'schizophrenic' in the titles (Scheuerecker et al., 2009), abstracts (Schmitt et al., 2012) or texts (Henkel et al., 2004) of the articles in which the author was the first author – or even the sole author (Möller, 2001) – and co-author (Scheuerecker et al., 2009; Schmitt et al., 2012; Henkel et al., 2004). Some of these articles were published after 2010 (Lieb et al., 2014). It is undeniable that articles written by authors with such a high number of citations can easily reach scholars all over the world. The aim here is not to target any scholar, but to emphasize how widely the articles containing the term 'schizophrenic' reach a readership.

It is known that the United States of America, European Union member countries and China are leaders in almost every scientific field and that the scientific parameters are increasing (<https://nces.nsf.gov/pubs/nsb20206/>). The number of studies conducted increases in direct proportion to the development level of the countries. Kiraz and Demir (Kiraz & Demir, 2021) examined the global scientific outputs of schizophrenia publications from 1975 to 2020 with a bibliometric analysis and found a linear relationship between the number of schizophrenia publications and the development level of the countries. On the other hand, studies report that stigmatization towards mental disorders is lower in developed countries compared to underdeveloped countries (Krendl & Pescosolido, 2020; Lauber & Rössler, 2007). This study reported that the articles containing the term 'schizophrenic' were published the most in the United States of America, Germany,

and China. This finding suggests that awareness that the term 'schizophrenic' is a stigmatizing expression has not yet been clearly established. A similar discussion can be made regarding the characteristics of the institutions in the articles. It is a striking finding that this incorrect use, 'schizophrenic', still continues in articles conducted within the most prestigious universities in the world.

Although it is known that the articles constituting the schizophrenia literature are published in journals serving in many different fields, it is a fact that the body of the literature consists of schizophrenia-specific journals. Kiraz and Demir's (Kiraz & Demir, 2021) study showed that 51,117 articles on schizophrenia were published in 3,317 different journals, between 1975 and 2020. The top three journals that produced the highest number of publications were Schizophrenia Research, Psychiatry Research, Schizophrenia Bulletin, respectively (Kiraz & Demir, 2021). This study found that the journals with the highest number of articles containing the term 'schizophrenic' were Schizophrenia Research and Psychiatry Research. On the one hand, it is striking that these journals, which have the highest contribution to the literature on schizophrenia, also use stigmatizing term 'schizophrenic' so widely. When the research categories are examined, this misuse is encountered more, probably due to the fact that more publications are made in the field of psychiatry. Since the term 'schizophrenic' is related to schizophrenia, it is reasonable that the most frequently used keywords in articles containing this term are schizophrenia, antipsychotic, and psychosis.

Schizophrenia is a mental disorder that can be recovered with appropriate interventions and functionality can be preserved to varying degrees (Molstrom et al., 2022). One of the biggest obstacles to treatment in schizophrenia is stigmatization. Stigmatization can be encountered in many social environments. Scholars have been conducting studies for a long time to reveal the current situation regarding stigmatization and to offer solutions (Economou et al., 2020; Rüşch et al., 2005). Unfortunately, scholars can lead to stigmatization due to the language they prefer in presenting the findings of their studies (Sobolevskaia et al., 2021). The use of the term 'schizophrenic' in scientific studies is the most striking stigmatizing use (Zhang et al., 2010; Zhang et al., 2013; Scheuerecker et al., 2009; Schmitt et al., 2012; Henkel et al., 2004; Möller, 2001; Lieb et al., 2014). It is estimated that scholars do not prefer this term for stigmatizing purposes. It can be said that scholars' level of awareness about the stigmatizing meaning of the term 'schizophrenic' is insufficient. Another possible reason for the continuation of this incorrect use in scientific studies may be the condition referred to in English as 'mumpsimus' (traditional custom obstinately

adhered to however unreasonable it may be) and in Turkish as 'galat-ı meşhur' (the situation in which a word or phrase is commonly used incorrectly and is replaced by a correct one). With plagiarism, it is possible that not only useful knowledge but also incorrect usage has been passed from one publication to another. It should not be forgotten that scholars should have some responsibilities while contributing to science. Not causing stigmatization is one of these responsibilities. Otherwise, it may not be appropriate to criticize society for some issues that scholars do not pay enough attention to. This situation can be best expressed with the proverb "stick the needle into yourself before you thrust the packing-needle into others". In other words, we should first consider about the effect that a small hurtful action will have on us, and then decide whether it is right to apply a more severe one to someone else.

In order to deal with the current problem, we should change and improve the way we talk about schizophrenia. Public service announcements should be made and public awareness should be increased using all available communication channels, including the internet, social media, print media, radio, television, and podcasts, in order to promote the use of appropriate language. Activities related to education and training should incorporate the proper use of language. The public should be made aware that schizophrenia is not as severe a condition as is commonly believed. Scholars should use expressions such as 'participant with schizophrenia', 'person with schizophrenia', or 'individual with schizophrenia' in non-clinical studies, or in clinical studies 'patient diagnosed with schizophrenia' instead of the term 'schizophrenic'. To avoid overlooking such and similar stigmatizing uses, all authors are encouraged to read the final versions of their articles carefully. In some journals that have contributed significantly to the literature on schizophrenia, the term 'schizophrenic' has been rarely used. This situation shows that journals have responsibilities in this regard, as much as authors. While this misuse is frequently seen in some high-impact journals, it is rarely seen in others, which may be related to the editorial processes of the journals. It is suggested that journals invest specifically in proofreading, which can be defined as the final step in the writing process that checks for spelling, grammatical, and formatting errors. During the proofreading process of articles accepted for publication in journals, a text containing points to be considered can be directed to the corresponding authors. In this text, words/phrases (person/participant/individual/patient with/diagnosed with schizophrenia) that can be used instead of the term 'schizophrenic' can be presented. In addition, reviewers who take part in the peer-review process of articles also have important duties in eliminating this stigmatizing language.

CONCLUSION

Even one word has the power to change people's perspectives, positively or negatively. Including the expression 'person/participant/individual/patient with/diagnosed with schizophrenia' instead of the term 'schizophrenic' in scientific studies could have a significant impact on preventing the language of stigmatization. In order to completely eliminate the use of the term 'schizophrenic' in scientific studies, authors, reviewer and editors need to work in cooperation. This study was written with the aim of increasing the awareness of scholars involved in studies on schizophrenia regarding the stigmatization through the use of the term 'schizophrenic'.

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