



Bibliometric analysis of psychology literature related to the COVID-19 pandemic

COVID-19'la ilişkili psikoloji alanyazınına ilişkin bibliyometrik bir analiz

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ABSTRACT

Aim: This study aimed to provide a bibliometric and visualization analysis of the studies conducted in the fields of psychiatry and psychology related to COVID-19.

Methods: A total of 21255 studies carried on between 01 January 2020 and 01 September 2021, were obtained from Pubmed database. The studies have been evaluated under four headings: "behaviour and behaviour mechanisms", "psychological phenomena and processes", "mental disorders", and "behavioral disciplines and activities". Studies consisting of papers, book chapters, research, and review articles were mapped with the VOSviewer (version 1.6.16) open-access program, and the most repeated 484 terms out of 6438 key terms found in 21255 studies, were included in the data set. The term clusters that were closest to each other were determined by evaluating the closeness of the most repeated terms and the 51923 links calculated for 6438 terms.

Results: In the first cluster, the topics such as anxiety, mental health, depression, psychological adaptation, psychological risk factors have formed the majority of the studies in the field of psychology-psychiatry related to COVID-19; in the second cluster, studies are concentrated in areas such as telemedicine, infection control, personal protective equipment, and outpatient services. It is observed that the majority of the terms in the third cluster are about COVID-19 and mental disorders, and the fourth cluster consists of terms such as psychological burnout and job satisfaction in the health workforce.

Conclusion: In this bibliometric study, the information is provided about which topics are mainly carried out in psychiatry and psychology studies related to COVID-19.

Keywords: psychology; COVID-19; knowledge management; bibliometrics

ÖZET

Amaç: Bu çalışma, COVID-19 ile ilgili psikiyatri ve psikoloji alanlarında yapılan çalışmaların bibliyometrik ve görselleştirme analizini sunmayı amaçlamaktadır.

Yöntem: 01 Ocak 2020 ile 01 Eylül 2021 tarihleri arasında gerçekleştirilen 21255 çalışma Pubmed platformu kullanılarak değerlendirilmiştir. Ayrıca, bu çalışmalar, "davranış bilimleri ve davranış mekanizmaları", "psikolojik fenomenler", "mental bozukluklar" ve "davranışsal disiplinler ve aktiviteler" olmak üzere dört başlık altında değerlendirilmiştir. Bildiriler, kitap bölümleri, araştırma ve derleme makalelerinden oluşan çalışmalar VOSviewer (versiyon 1.6.16) açık erişim programı ile haritalanmış ve 21255 çalışmada bulunan 6438 anahtar terimden en çok tekrarlanan 484 terim veri setine dahil edilmiştir. En çok tekrarlanan terimlerin yakınlıkları ve 6438 terim için hesaplanan 51923 bağlantıları değerlendirilerek birbirine en yakın terim kümeleri belirlenmiştir.

Bulgular: Birinci kümede anksiyete, akıl sağlığı, depresyon, psikolojik adaptasyon, psikolojik risk faktörleri, yas tutma gibi başlıkların COVID-19'la ilişkili psikoloji – psikiyatri alanında gerçekleştirilen çalışmaların büyük çoğunluğunu meydana getirdiği; ikinci kümede teletıp, enfeksiyon kontrolü, kişisel koruyucu ekipmanlar ve ayaktan tedavi hizmetleri gibi alanlarda çalışmaların yoğunlaştığı görülmektedir. Üçüncü kümedeki terimlerin büyük çoğunluğunun ise COVID-19 ve mental bozukluklar konusunda olduğu ve dördüncü kümenin sağlık iş gücünde psikolojik tükenmişlik ve iş tatmini gibi terimlerden oluştuğu gözlenmektedir.

Sonuçlar: Bu bibliyometrik çalışmada, COVID-19 ile ilgili psikiyatri ve psikoloji çalışmalarında ağırlıklı olarak hangi konuların yürütüldüğü hakkında bilgi sunulmaktadır.

Anahtar kelimeler: psikoloji; COVID-19; bilgi yönetimi; bibliyometri

Introduction

In the human story, many episodes of pandemics have been seen (Stearo et al., 2020). These infectious diseases mostly have the nature of spreading rapidly and leading to negative consequences in many fields such as social, biological, and economic (Srivastasa & Agrawal, 2020). The last viral disease that the whole world has faced is the Coronavirus (COVID-19) pandemic which was occurred in the last period of 2019. It was first seen in Wuhan in China and identified as a severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) and later it was named the COVID-19 (Coronaviridae Study Group of the

International Committee on Taxonomy of Viruses, 2020). In March 2020, COVID-19 was declared as a pandemic by the World Health Organization (WHO) (Sohrabi et al., 2020).

The COVID-19 has caused many vulnerabilities in the fields of health, social relations, economics, and psychology. Especially because of the social, biological, and economic uncertainties, the prevalence of psychological disorders has increased during the COVID-19 period (González-Sanguino et al., 2020; Vindegaard & Benros, 2020). From the beginning of this pandemic, so many studies were done to understand and determine the consequences and effects of the COVID-19 on

mental health and behavioural mechanisms all over the world (González-Sanguino et al., 2020; Groarke et al., 2020).

For analyzing and evaluating the studies quantitatively and objectively in the literature, in recent years especially the bibliometric analysis technique has been broadly preferred (Akintunde et al., 2021; Aristovnik et al., 2020; Chahrour et al., 2020). The bibliometric analysis offers to visualize the methodologies, topics, and frameworks of the scientific studies. It is a systematic statistical analysis method in which the publications from research articles, books, reviews, and conference proceedings could be evaluated.

The first part of this study includes the literature on the subject; the second part includes the method; the third part includes the findings and the last part gives the discussion on the results.

Literature review

In the literature, there are several COVID-19 related bibliometric studies. While in some of these studies the COVID-19 related researches were examined from a general perspective (Akintunde et al., 2021), in some other studies comparisons between the countries were made (Fan et al., 2020). In addition, some bibliometric studies include publications only from a single country (Vasanth Raju & Patil, 2020). It is possible to mention that in the vast majority of bibliometric studies, mostly the geography where the publications related to COVID-19, the dominant publication type, and journals have been researched (Al-Zaman, 2020; Dehghanbanadaki et al., 2020; De Felice & Polimeni, 2020; Fan et al., 2020; Farooq et al., 2021). The results obtained in these studies present that most of the published studies are in the article type and the highest number of publications is in China and the United States (Al-Zaman, 2020; Dehghanbanadaki et al., 2020; De Felice & Polimeni, 2020). In addition to these, it is observed that in some studies, the scientific fields have been determined in which the studies related to Coronavirus are focused. According to a study conducted in this context, it was detected that the number of medicine-related papers in the Web of Science database is higher than others (Al-Zaman, 2020). In another study reaching similar results, studies in the first half of 2020 were examined based on the Scopus database, and it was observed that health sciences ranked first in terms of the number of relevant publications and total citations. Furthermore, this study illustrated that psychology is one of the most relevant subject-area classifications in the area of the social sciences and humanities (Aristovnik et al., 2020).

In addition, it is seen that many of the bibliometric studies used specific keywords. For instance, in a study conducted by Ahmad et al. (2021), bibliometric analysis was performed for the COVID-19 vaccine. In another research investigating the keywords included in the publications, it was observed that COVID-19, the novel coronavirus, pandemic, pneumonia, epidemiology, public health, outbreak, epidemic, China, infection, and treatment words are used mostly (Farooq et al., 2021). By another research reaching similar results, except for these words, the most frequent terms were listed as patient, SARS-CoV, case, nCoV, outbreak, Wuhan, Coronavirus, virus, Coronavirus disease, transmission, study, data, country (Dehghanbanadaki et al., 2020).

Specifically, in one of the studies focusing on bibliometric studies on mental health, the most frequently used keywords are classified into four categories: mental health during isolation, impact on the mental health of medical workers, public mental health care during COVID-19, and outbreak-related mental

health issues (Chen et al., 2021). Besides, it can be observed that insomnia, depression, anxiety, and stress are related to psychopathology among the whole words in these clusters. Additionally, the study conducted by Ho et al., (2021) examining bibliometric analysis on COVID-19 in the context of psychology, illustrated that clinical psychology is the area having the highest representation of articles, and COVID-19, pandemic, coronavirus, mental health, and anxiety are the top five keywords. Moreover, in the same study, it was discovered that the most worrying issues in psychology are stress, mental health, and depression. In this study, for the purpose of getting a wide knowledge about the studies in the field of Psychiatry and Psychology, all the titles of the main index "F" from the MeSH were included. In the "F" category, the terms related to mental and behaviour disorders are described. Therefore, by using the keywords from this category, the studies regarding psychiatric and psychological disorders could be evaluated in this bibliometric analysis.

Also in some studies, the publications were examined from specific databases. For instance, in some studies, the publications from the WoS database (Ahmad et al., 2021; Al-Zaman, 2020; Akintunde et al., 2021; Chen et al., 2021; Ho et al., 2020; Soytaş, 2021) were used, or from the Scopus database (Dehghanbanadaki et al., 2020; De Felice & Polimeni, 2020; Fan et al., 2020) the data was obtained. In addition, the database of Pubmed was also preferred to get the data (Chahrour et al., 2020; Gong et al., 2020).

Present study

When the studies focusing on the reflections of the pandemic on mental health are examined, it comes to the fore that there is an increase in depression, stress, and anxiety levels and associated psychopathology due to the secondary effects of COVID-19 such as social isolation, loneliness, and quarantine (Bäuerle et al., 2020; Brooks et al., 2020; Dymecka et al., 2021; Wang & Zhao, 2020). Hence, it is possible to mention that the bibliometric analyzes conducted in the field of psychology have similarly reached the keywords related to mental health issues, which can be considered as considerable disorders in the context of psychopathology, and also these analyzes have illustrated that the studies in the literature generally focus on these problems (Chen et al., 2021). In general, even though the results about psychopathology are mentioned in these researches, it is obvious that there is an insufficiency to detect the situations or factors that may be related to these mental problems, especially from the perspective of clinical psychology. For this reason, the present study planned to examine the studies post COVID-19 in the literature in terms of four headings: behavioural sciences and behavioural mechanisms, psychological phenomena, mental disorders, and behavioural activities and by considering the clusters consisting of the most frequently repeated words. Since this study includes not only the psychopathology clusters most frequently examined in the studies but also the keywords related to or included in these clusters, it differs from the similar studies in the literature. This allows determining the current situation by evaluating the change in the direction of the post-COVID-19 studies in the field of psychology and the areas concentrated on during the pandemic. On the other hand, in addition to the effects in the academic context, it is considered that the current study presents important results in terms of understanding the effects of COVID-19 on the mental health of the general population, especially with the evaluation of the titles within the scope of clinical psychology, and planning interventions that may be

parallel with these. In addition, it is seen that the bibliometric studies include a limited number of publications since they were done in the last period of 2020. For example, the study conducted by Chen et al. (2021) includes the publications which were done between December 1, 2019, and November 13, 2020. In the study done by Ahmad et al. (2021), the studies before January 2021 were investigated. Akintunde et al. (2021) used the data from the studies published before June 27, 2021. However, from the beginning date of the pandemic up to now, new waves of COVID-19 have existed and the effects of the pandemic are still lasting. Therefore, for highlighting the content of the studies related to COVID-19 and psychology, and providing a broadly recent visualization for the literature, this study was performed. Moreover, considering the infrequency of bibliometric studies that is specific to mental health versus general reviews, the present study may contribute to the current literature by providing remarkable findings.

Methods

Data were collected from Pubmed database, which comprises biomedical and life sciences literature. Search criteria was set as all of the topics of the "F" main index in MeSH (F01, F02, F03, F04). These topics include the subheadings such as "behaviour and behaviour mechanisms (F01)", "psychological phenomena and processes (F02)", "mental disorders (F03)", and "behavioral disciplines and activities (F04)". The document type was set as studies consisting of papers, book chapters, research, and review articles, and the publication language was set as "English". Finally, a total of 21255 studies carried on between 01 January 2020 and 01 September 2021 were obtained. 8502 studies were conducted in 2020 and 12753 studies were conducted in 2021. All studies were downloaded as a TXT format file, including titles, MeSH codes, authors, abstracts, descriptors, etc.

VOSviewer (version 1.6.16) was used to perform visualization and bibliometric analysis. The visualization maps

created by the most repeated terms in the studies mainly consist of nodes and links. The most repeated terms were represented with the nodes. The lines between two nodes represent a cooperation, a co-occurrence. The sizes of nodes show the frequency of occurrence and the colors of nodes and lines represent different clusters. To provide ease of expression in the maps, the minimum number of occurrences of a term was set to 50. As a result, of the 6438 terms, 484 terms meet the threshold. The proximity index (relationship strength) approach presented by van Eck and Waltman (2010) was used to determine the relationships between the terms. According to the approach, the frequency of re-occurrence of each term in studies with other terms is calculated, and the value obtained is compared with the theoretically estimated frequency of occurrence together. The term clusters that were closest to each other were determined by evaluating the closeness of the most repeated terms and the 51923 links calculated for 6438 terms. The minimum number of terms required to create a cluster was determined as 10, and it was determined that the terms in the studies were collected in 9 different clusters in total.

Ethical aspect of research

In this study, no human-related studies have been conducted that are the subject of the ethics committee. Bibliometric analysis has been carried out for the studies in the psychology literature related to Covid-19 pandemic.

Results

The network relations of the key terms discussed in the study are given in Figure 1. Accordingly, the studies related to COVID-19 with young adults and middle-aged people, and also the studies with the sample of the U.S., draw the attention. As a result, it is determined that studies have focused on depression and anxiety; and the studies are carried out on various subjects such as psychological adaptation, social support, mental health services, and telemedicine.

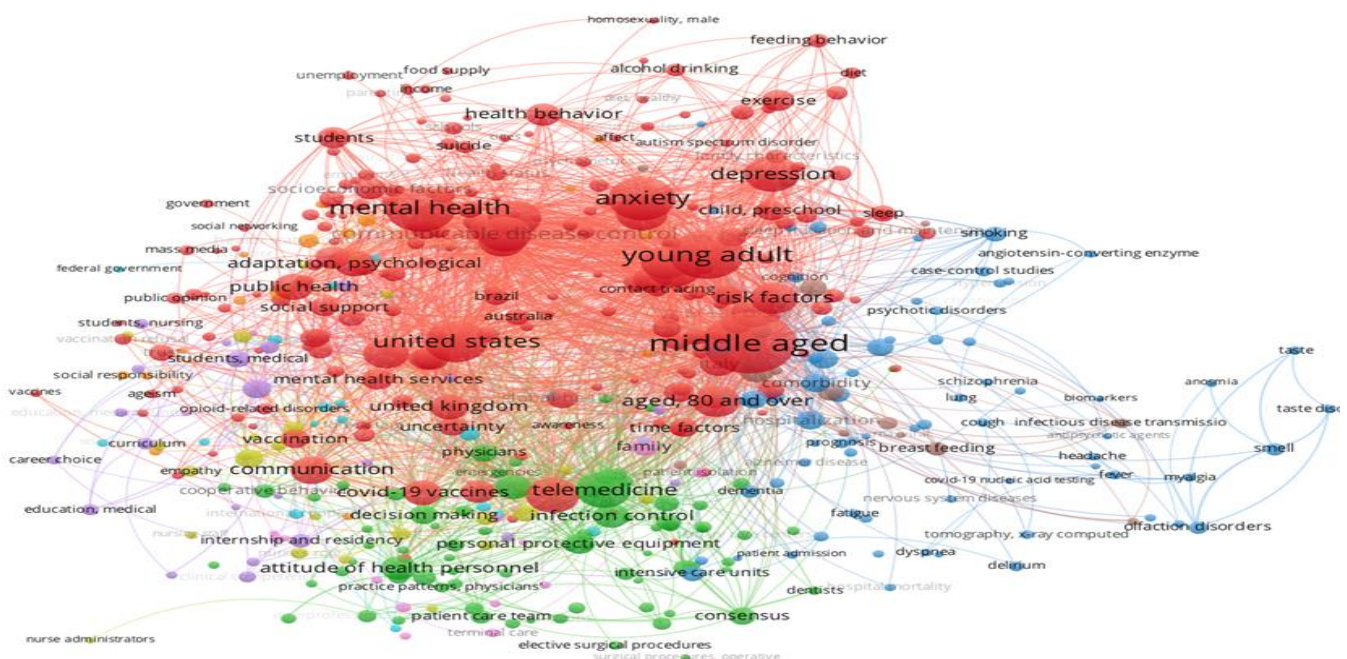


Figure 1. MeSH codes network representation

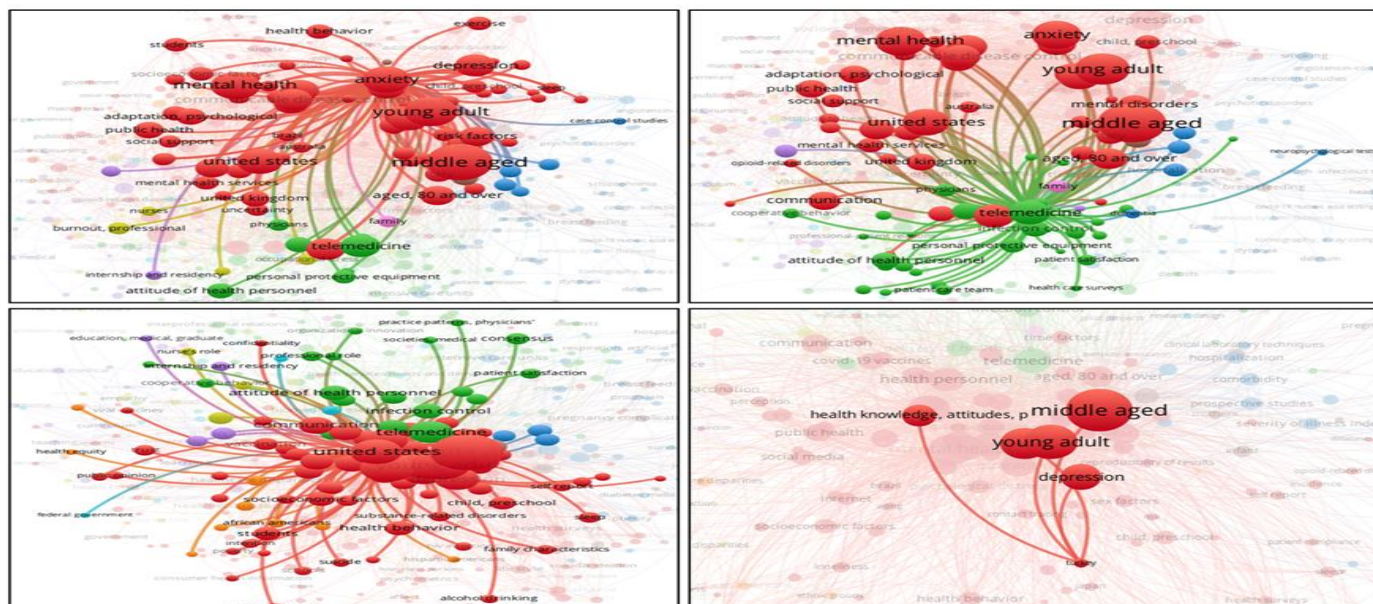


Figure 2. Network map of the most repeated key terms

Analysis of keywords used in the studies related to COVID-19 research

The network maps created according to the proximity index of the words selected among the most frequently repeated key terms are given in Figure 2. As a result, it was determined that terms such as anxiety and telemedicine are in connection with many key terms in different clusters, in other words, it is seen that the specified fields of study are correlated with fields of study in different clusters. Therefore, it can be said that the key terms that are close to each other in the figure are closely related fields. Similarly, the studies carried out with the USA sample are related to many fields of study; however, the studies conducted with the sample of Türkiye are only on the subjects of middle-aged people, young adults, health information and depression, which are defined only in cluster 1.

When we look at the most frequently repeated key terms in the studies, the distribution of terms according to the clusters formed can be seen in Table 1, with the most frequently repeated key term in the first. Accordingly, it is determined that the topics such as anxiety, mental health, depression, psychological adaptation, and psychological risk factors have formed the majority of the studies in the field of psychology-psychiatry related to COVID-19, that were carried out with middle-aged and young adults in the first cluster.

When studies on people aged 80 and over are examined, it has been observed that topics such as loneliness, recovery, sedentary life, and social isolation are frequently discussed. It has been determined that the studies on the unemployed individuals, chronic diseases, sleep disorders, and disabled individuals which are indicated in italics in the table, are less studied than other studies.

When the second cluster is examined, it is seen that studies are centred upon the fields such as telemedicine, infection control, personal protective equipment and outpatient services, and it is followed by emergency-health workforce planning, clinical decision support and occupational exposure studies. In addition, it was also found that the fields such as triage, patient education, and remote care services were studied less intensively.

Table 1. The most frequently repeated key terms and clusters*

Cluster	Most frequently repeated key terms	Number of key terms in the set
1	Middle-aged, young adults, anxiety, mental health, depression, psychological adaptation, risk factors, grieving, people aged 80 and over, loneliness, OCD, occupational stress, psychometry, recovery, sedentary lifestyle, sexual behaviour, social isolation, suicidal thoughts, COVID-19 vaccines, <i>unemployment, chronic diseases, cognitive behavioural therapy, sleep disorders, disabled individuals.</i>	221
2	Telemedicine, infection control, personal protective equipment, outpatient care, emergency planning and management, clinical decision support, health workforce planning, international collaboration, occupational exposure, <i>patient education, patient safety, patient selection, primary care, triage, remote care-consultation.</i>	78
3	Perception disorders, delirium, Alzheimer's, comorbidity, intensive care units, dyspnea, <i>nervous system diseases, myalgia, pain, Parkinson's disease, respiratory diseases, psychotic diseases, smoking, loss of taste and smell, schizophrenia, paralysis.</i>	70
4	Psychological burnout, empathy, health workforce, job satisfaction, health personnel, <i>occupational diseases, self-care, teleworking, workforce planning, workplace organization.</i>	25
5	Career planning, clinical competence, problem-oriented learning, <i>distance learning, medical students, volunteer studies, feasibility studies.</i>	22
6	International collaboration, research design, <i>metric development, World Health Organization policies.</i>	19
7	Ethnic groups, minority groups, ethics, human rights, social justice, social responsibility, <i>stereotype studies, health care inequalities, social support groups.</i>	17
8	Newborns, pregnant women, prenatal period studies, <i>postpartum adaptation process</i>	16
9	Long-term care services, palliative care, patient isolation, patient-centered treatment, <i>terminal care, spirituality studies, home care services</i>	16

*Note: In the table, the most frequent repetitions of the key terms that form the clusters are given, the key terms stated in italics are the words that are determined as the least repeated words in the cluster.

According to the key terms in the third cluster, it was determined that the majority of the studies in this cluster were related to COVID-19 and mental disorders. In addition, while the studies in the third cluster also focused on psychology – psychiatry, comorbid disorders, intensive care units and dyspnea, it is seen that the studies in the fields such as psychotic disorders, schizophrenia, loss of taste and smell were investigated less intensively. In the studies in the fourth cluster, terms such as psychological burnout and job satisfaction in the health workforce are taken attention. The eighth and ninth clusters have the smallest cluster volume, and newborns, pregnant women, long-term care services, palliative care, patient isolation and spirituality studies are determined in these clusters.

Analysis of journals, countries and universities

The distribution of studies included the key terms discussed in this study, according to journals, countries and universities are given in Table 2.

The top journal that includes the highest number of articles related to the key terms in the topics of F in MeSH, is determined as PLoS One (n=1184, 5.57%). It is detected that the second top journal is the International Journal of Environmental Research and Public Health (n=1050, 4.94%). As a result of the analysis, it is seen that there was a significant decrease in the number of publications after the third journal. The first two journals (PLoS One and International Journal of Environmental Research and Public Health) are seen to contain more than 10% of all articles including the key terms related to mental health, while the other journals include less than 2% of all articles. As a result of analysis, it is determined that the most productive country is China (n=5846), followed by the USA (n=5342). It is found that the third most productive country is the UK with a number of 4658 co-authored articles. After the third country, it is seen that the number of co-authored articles decreased.

Harvard University was the top institution with 218 co-authored articles, followed by the University of Toronto with 144 co-authored articles. It is determined that six of the top 14 institutions with 624 co-authored articles belonging to the USA; four of the institutions with 204 co-authored articles belonging to China.

Discussion

In this study, it was aimed to provide a bibliometric and visualization analysis of the studies conducted in the fields of psychiatry and psychology related to COVID-19. In this regard, the studies consisting of the keywords which are included in all of the topics of the "F" main index in MeSH (F01, F02, F03, F04) were analysed. In addition, the top countries, institutions and journals that contributed to the studies related to COVID-19 in psychiatry and psychology, were determined. Key terms analysis could show the research directions in a special discipline (Zou et al., 2018). As a result of the analysis in which the studies mapped, it is found that the most repeated terms are collected in 9 different clusters in total with a minimum number of 10 terms in each cluster. Due to this result, it can be said that during pandemics, the studies focus on nine main fields. The clusters were sorted according to the most repeated terms that they include. When the first cluster is examined, it is seen that the most repeated keywords that were used in the studies in the fields of psychiatry and psychology are "middle-aged, young adults, anxiety, mental health, depression,

Table 2. The top journals, countries and universities that contributed to the studies related to COVID-19 researchs

Rank	Journals ^a	Number of Articles (percentage)	Country ^b	Number of co-authored articles	University / Institution ^c (Country)	Number of co-authored articles
1	PLoS One	1184 (5.57%)	China	5846	Harvard University (USA)	218
2	International Journal of Environmental Research and Public Health	1050 (4.94%)	USA	5342	University of Toronto (Canada)	144
3	Psychiatry Research	336 (1.58%)	UK	4658	Stanford University (USA)	129
4	Frontiers in Public Health	281 (1.32%)	Italy	2143	University of Michigan (USA)	101
5	The Asian Journal of Psychiatry	261 (1.23%)	Australia	1611	University of Oxford (UK)	93
6	Journal of Medical Internet Research	244 (1.15%)	Spain	1410	Yale University (USA)	86
7	BMJ Open	208 (0.98%)	Canada	1402	Kaohsiung Medical University (Taiwan)	79
8	Journal of Affective Disorders	204 (0.96%)	India	1305	University of Macau (China)	77
9	Brain, Behavior, and Immunity	136 (0.64%)	France	1179	Renmin Hospital of Wuhan University (China)	65
10	BMJ	134 (0.63%)	Germany	944	University of Pittsburgh (USA)	47
11	Lancet Psychiatry	128 (0.60%)	Singapore	899	University of Houston (USA)	43
12	BMC Public Health	118 (0.54%)	Brazil	813	National University of Singapore (Singapore)	41
13	Nutrients	112 (0.52%)	Japan	795	The Hong Kong Polytechnic University (China)	36
14	Psychological trauma	112 (0.52%)	Türkiye	464	University of Chinese Academy of Sciences (China)	26

^a Note 1: In the table, the journals with the highest number of publications are listed.

^b Note 2: Co-authored studies from different countries were also included.

^c Note 3: It was formed by the studies which were carried out between 01-01-2020 and 01-09-2021. For multi-author studies, the studies carried out with different units of the same university/institute were counted as once.

psychological adaptation, risk factors, grieving, people aged 80 and over, loneliness, OCD, occupational stress, psychometry, recovery, sedentary lifestyle, sexual behaviour, social isolation, suicidal thoughts and COVID-19 vaccines" from 221 key terms. According to this result, it can be said that the studies related to anxiety, depression, OCD, and mental health are conducted mostly with middle-aged and young adults and people aged 80 and over. In addition, it can be claimed that the studies were mostly conducted related to loneliness, grieving, sedentary lifestyle, social isolation, and suicidal thoughts which can be thought as a consequence of the pandemic.

During the pandemic, it is known that a wide range of fields such as social, biological and economic were affected negatively (González-Sanguino et al., 2020; Vindegaard & Benros, 2020). Due to the uncertainties caused by pandemics, the possibility of the prevalence of many psychological disorders has been increased. It can be said that because of this reason and for determining the level of the effect of the pandemic on people's mood and psychological states, many researchers have examined the relationship between COVID-19 and psychological disorders such as anxiety, OCD, post-traumatic stress disorder, panic disorder and depression (Choi et al., 2020; Hyland et al., 2020; Mazza et al., 2020). Moreover, social isolation that many governments have applied as a precaution to protect the population from the COVID-19 virus, makes people feel lonelier which is also a risk factor for psychological disorders (Groarke et al., 2020; Li & Wang, 2020). It is seen that in many studies, the researchers also investigated the effect of loneliness due to social isolation, on people (Rumas et al., 2021). As a result, it was determined that being infected or suspicious of being infected led people to feel loneliness, fear, and anxiety more intensively (Brooks et al., 2020; Ornell et al., 2020).

In the first cluster, whereas they were used rarely also the key terms "unemployment, chronic diseases, cognitive behavioural therapy, sleep disorders, disabled individuals" were listed. It means that in the literature, the studies related to chronic diseases, sleep disorders, and unemployment which could be associated with the pandemics, were conducted by a majority. According to results, it can be said that during the pandemics, the studies especially related to cognitive behavioural therapy, were carried out mostly.

In the second cluster, it is found that the key terms "telemedicine, infection control, personal protective equipment, outpatient care, emergency planning and management, clinical decision support, health workforce planning" which are related to especially precautions against COVID-19, were listed. With the onset of the pandemic, it has been observed that there has been a significant increase in the number of patients in hospitals in many countries due to COVID-19, and inpatient services remained incapable and insufficient to meet the needs of patients, unfortunately (Jen et al., 2021). In addition, by telemedicine, exposure to other severely ill patients could be prevented, and mildly ill patients have been protected (Portnoy et al., 2020). For this reason, many governments have encouraged health services to give online social and health support remotely for the less severely ill people. Also, during the pandemic, due to the fact that face-to-face therapy could not be carried out in accordance with staying safe during the COVID-19 period, the number of online therapy sessions was increased (Sampaio et al., 2021).

In the third cluster, it is seen that one of the most used key terms is "perceptual disorders" which is under the subheading of nervous system diseases in MeSH and related to cognitive

disability to perceive the nature of objects through the sense organs. In addition, from Table 1, it is thought that the studies with key terms such as "delirium, Alzheimer's, comorbidity, intensive care units, dyspnea, nervous system diseases, myalgia, pain, Parkinson's disease, respiratory diseases, psychotic diseases, smoking, loss of taste and smell, schizophrenia, paralysis" were conducted mostly during the pandemic. It can be said that the key terms "comorbidity, intensive care units, respiratory diseases, smoking, loss of tastes and smell" could be used in the studies associated with COVID-19. When Table 1 is examined, it is observed that there is a decrease in the number of key terms after the third cluster. Due to this result, it can be said that the number of the studies that include the key terms which are in the clusters of 4,5,6,7,8, and 9, is less than the studies which include the key terms related to COVID-19. As a result, Table 1 shows that during the pandemic, the studies with the middle-aged and young adults and with the vulnerable population aged 80 and over that are related to anxiety, depression, OCD and mental health, had the greatest emphasis in the field of psychiatry and psychology. In a study of a systematic review conducted by Salari et al. (2020), there are findings that support the results of our study. Also, the studies related to psychological burnout, empathy, health workforce, career planning, clinical competence, newborns, pregnant women, long-term care services, palliative care seemed to be focused on less.

The analysis of journals, countries, and universities/institutions demonstrate that PLoS One is the journal that has the highest number of studies during the pandemic with a percentage of 5.57%. The country which has the highest number of articles is China with a number of 5846. According to our results, Harvard University is the top university that has the highest number of publications with 218 articles (Table 2). Compared to the studies conducted by Chen et al. (2021), Akintunde et al. (2021), Fan et al. (2020), Dehghanbanadaki et al. (2020) and Farooq et al. (2021), there is a significant increase in the number of studies conducted in the field of psychiatry from the beginning of the pandemic until now. Also, in many studies (Akintunde et al., 2021; Al-Zaman, 2020; Chen et al., 2021) at the beginning of the pandemic, the top of the country that had the most publication related to COVID-19 was determined as the USA. However, in our study, the top country is detected as China. Also, the top journal is determined as PLoS One, different from early bibliometric analysis (Akintunde et al., 2021; Chen et al., 2021; El-Hawary et al., 2020). In our study, the top institution that contributed to the studies related to COVID-19 is found as Harvard University as the same results in the studies of Akintunde et al. (2021). However, in the studies that include the publications before August 1, 2020 (Farooq et al., 2021) and April 20, 2020 (De Felice & Polimeni, 2020) the top institution was determined as Huazhong University of Science and Technology. Therefore, when comparing the results of our study with the bibliometric studies conducted before, it is seen that the top country, top journal and top institution that have the most publications related to COVID-19 has been changed.

When the studies conducted in Türkiye were examined, it was determined that mostly the middle-aged people and young adults were included in the studies. In addition, mostly related to health information and depression which are defined in only cluster 1, were investigated. Also, it is seen that among the studies related to Covid-19 in Türkiye, it includes approximately

5% of the publications in the field of psychiatry and psychology (Günay, 2021). In this respect, it could be said that the scientific publications in the field of psychiatry and psychology in Türkiye were generally focused on specific and limited fields. Therefore, it is thought that this study could provide an important contribution to the Turkish literature.

Limitations of the study

In our study, key terms that were used can be thought of as the main limitation because psychology and psychiatry studies coded differently from the main index of the MeSH code "F" and alternative terms (coronavirus, corona, pandemic, etc.) coded for pandemics which are different from the key term "COVID-19". In addition, in our study, the studies on the relevant subject were obtained by using the Pubmed database and it can be thought of as a limitation also. However, since there is no word limit keywords and the Pubmed database is being updated daily whereas the updating is done in WoS weekly, in Scopus 1-2 times weekly, and in Google Scholar monthly and also Pubmed provides optimal recent published articles, it can be claimed that it is an optimal tool for keyword search in biomedical studies (Falagas et al., 2008). From this perspective, using the Pubmed database can be considered as the strength of the study.

Conclusion

To realize and show the effects of the COVID-19 clearly, on public health, future studies can be offered when the pandemic is over. In addition, this bibliometric study provides information on which topics of psychiatry and psychology studies are mainly carried out. Thus, it is thought that our study could be an important resource for researchers for their future studies.

Conflict of Interest

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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Ethics Committee Approval

In this study, no study was conducted on the subject of the ethics committee. Bibliometric analysis has been carried out for the studies in the psychology literature related to COVID-19 pandemic.

Peer-Review

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Author Contributions

G.B.: Conceptualization, Writing-Original Draft, Writing-Review & Editing.

Ü.T.Y.: Conceptualization, Writing-Original Draft, Writing-Review & Editing.

M.F.E.: Investigation, Methodology, Formal Analysis, Writing-Review & Editing.

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