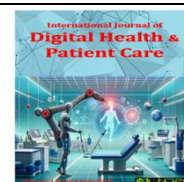




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Cyberchondria: Online Traces of Digital Health Concerns in the World and Turkey

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ABSTRACT

Purpose: This study aims to analyze global and Turkish online search trends for "cyberchondria," a condition where individuals seek health information online, often leading to self-diagnosis due to distrust in healthcare professionals or excessive internet use. **Method:** The analysis was conducted using Google Trends data from January 10, 2020, to January 10, 2025, focusing on the keywords "Cyberchondria" and "Siberchondria" to assess search volumes and patterns. **Findings:** The findings indicate that in Turkey, the most common search queries included "what is cyberchondria?" with notable search spikes in 2020 and 2022, peaking during winter. The regions with the highest search volumes were Ağrı, Kayseri, and Ankara. Globally, "Cyberchondria" was the most searched term, with the Philippines, particularly the Cagayan Valley, leading the interest. Turkey ranked 19th globally, with the highest interest observed in 2022 and 2024, primarily in the spring. **Conclusion:** These insights highlight the need for region-specific digital health strategies and the development of reliable platforms to improve public health literacy and provide accurate health information.

1. INTRODUCTION

It is expected that individuals will seek health information [1]. Today, parallel to the developments in mass communication technology, the sources used to seek health information have undergone significant changes [2]. Health information, which used to be obtained only from physicians and other health professionals, has now become easily accessible from various sources [3,4]. These sources, which are especially free, easy and effortlessly accessible, can eliminate the need to obtain information from health professionals. The internet, which is among the mass communication tools, has become the platform where society searches most for health information [5]. However, seeking health information can sometimes lead to negative results. Especially in individuals with mental health problems, excessive anxiety and worry can trigger an intensive search for health-related information, and this increases the risk of exposure to incorrect information. Information obtained from inappropriate sources can negatively affect individuals' perception of health and cause wrong decisions to be made [6].

When this situation is repeated, it reaches the level of a medical disorder and is called "cyberchondria" in the literature [7]. People diagnosed with cyberchondria try to diagnose their health problems by making repeated internet searches when they experience any health problem. Sometimes they consult a doctor with the information they have obtained, and sometimes they manage their treatments with the information they obtain from the internet [8]. Studies on the prevalence of cyberchondria show that this condition is increasing especially among young adults and university students. For example, in a study conducted in Türkiye, symptoms of cyberchondria were observed in 22.5% of university students. Similarly, studies conducted worldwide also reveal that cyberchondria is a widespread problem. In one study, it was reported that 55.6% of the participants showed symptoms of cyberchondria [9].

Nurses play a critical role in reducing the negative effects of cyberchondria by directing individuals to reliable health information sources. They are important in promoting digital health literacy, which enables patients to make informed health decisions and reduces the psychological

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burden associated with excessive health searches. Nurses contribute significantly to minimizing the risks associated with misinformation and helping individuals effectively navigate digital health resources by providing education and support [10]. In line with this critical role, the aim of this study is to reveal the dimensions of digital information seeking by analyzing global and Türkiye-specific online search trends related to cyberchondria and to evaluate the reflections of these trends in the health field.

2. MATERIALS AND METHODS

2.1. Participants

This infodemiological study does not involve direct human participants but is based on anonymized, aggregated online search data obtained through Google Trends. The analysis reflects the digital behavior of internet users globally and specifically in Türkiye who searched for the term “cyberchondria” between January 2020 and January 2025.

2.2. Research Procedure

The study employed a retrospective design and was conducted using the Google Trends tool. On January 10, 2025, searches were performed for the keyword “cyberchondria”, applying the following filters:

- Search Term: “cyberchondria”
- Geographic Scope: Global and Türkiye-specific
- Time Frame: Last five years (January 2020 to January 2025)
- Category: All categories
- Search Platform: Google Web Search

This procedure allowed for the observation of both regional and temporal search behavior related to cyberchondria.

2.3. Data Collection Tools

Data were collected using the Google Trends platform, which provides normalized values of search interest ranging from 0 to 100. A value of 100 indicates peak popularity of the term during the specified period, while a value of 0 means there was insufficient data for that term in the given timeframe, not that no searches occurred. The index is calculated by dividing the search volume of the keyword by the total volume of Google searches during the same period. Thus, the scores represent relative not absolute search intensity.

2.4. Statistical Analysis

The collected data were analyzed under three main dimensions:

Temporal and Seasonal Trends

Weekly search volume data were averaged to produce monthly trends. Annual variation was examined by calculating the mean monthly values for each year. Seasonal trends were identified by averaging the months corresponding to each season.

Location Trends

Google Trends provides search interest data by country and region. This study examined which countries and cities, both globally and within Türkiye, showed the highest levels of search interest for “cyberchondria.”

Information Search Trends

Google Trends identifies related search queries and ranks them based on relevance and frequency. These related queries were analyzed to determine the most common information needs and changing interests over time related to the keyword.

3. RESULTS

Based on the Google Trends data, the temporal distribution of the search term “cyberchondria” across Türkiye is presented in Figure 1. The findings indicate a marked increase in search interest between spring 2021 and winter 2023. However, following this period, a noticeable decline is observed, with interest levels remaining consistently low—below a relative score of 25—from early 2023 to the present [Figure 1].

The worldwide temporal and seasonal search results for the term “cyberchondria” are presented in Figure 2. The data indicate that the increase in search volume is irregular, with a noticeable spike in autumn 2022, and the search volume reaching its peak in summer 2024 [Figure 2].

The locational search volume trends across Türkiye are presented in Figure 3, categorized by province. According to the data, the highest spatial search density for the term “cyberchondria” is observed in Ağrı. This is followed by the provinces of Kayseri, Ankara, and Istanbul, respectively [Figure 3].

The distribution of global search volume by country is illustrated in Figure 4. As depicted, the highest locational search density for the term was

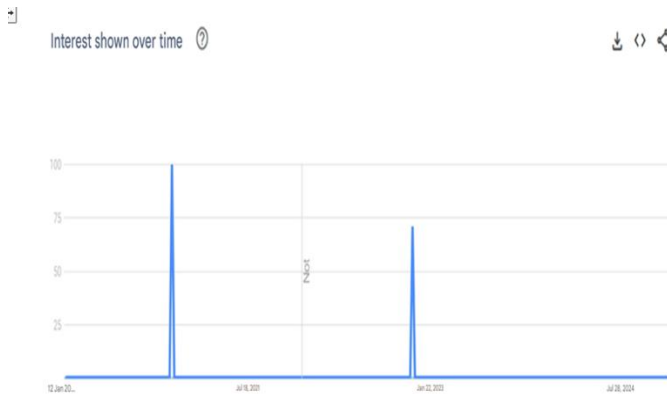


Figure 1: Temporal and seasonal trend of the search volume of the term cyberchondria in Turkey

observed in the Philippines. This is followed by Pakistan, Lithuania, and Nepal, indicating a notable concentration of interest in these regions [Figure 4].

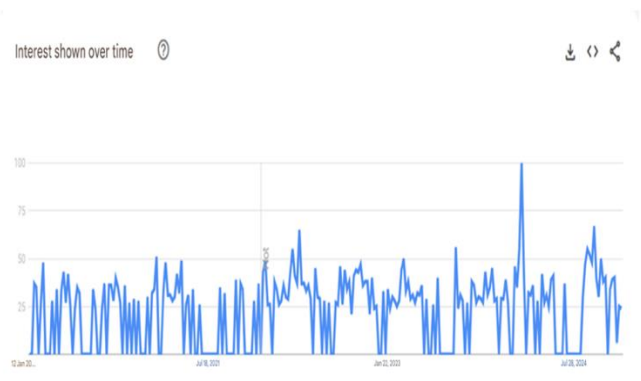


Figure 2: Temporal and seasonal trend in search volume for the term cyberchondria worldwide



Figure 3: Locational trend of the search volume of the term cyberchondria in Turkey



Figure 4: Locational trend of search volume for the term cyberchondria worldwide

As the global leader in search volume, the Philippines exhibits notable regional variations, as illustrated in Figure 5. Among the cities, Cagayan Valley ranks highest in search intensity, followed closely by the Zamboanga Peninsula, indicating region-specific interest within the country [Figure 5].

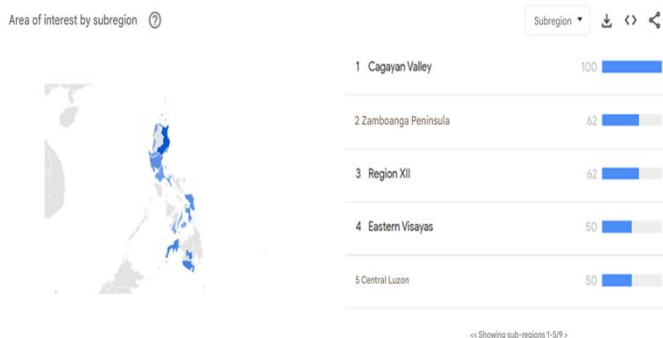


Figure 5: Locational trend of search volume for the term cyberchondria across the Philippines

When the information seeking tendencies of users in Turkey are examined, it is seen that the tendencies are in the theme of understanding cyberchondria and getting information on the subject. Users mostly searched for answers to questions such as 'What is cyberchondria? what is cyberchondria disease? and what do people with cyberchondria experience?' [Figure 6].

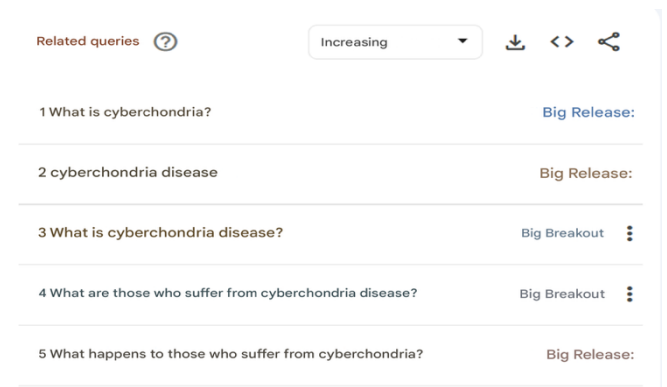


Figure 6: Trend in getting information about the term cyberchondria in Turkey.

When the information seeking tendencies of users around the world are examined, it is seen that the tendencies are concentrated in line with the

symptoms of cyberchondria, anxiety and its relationship with the Internet [Figure 7].

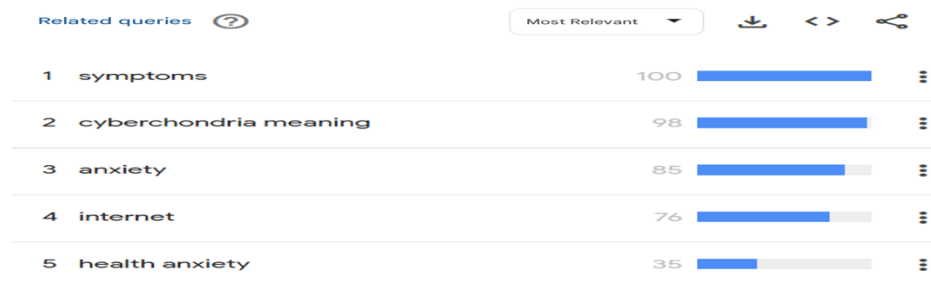


Figure 7. Trend in information seeking for the term cyberchondria worldwide

4. DISCUSSION

This study provides important findings by examining information seeking trends on the concept of cyberchondria. Analysis using Google Trends data revealed both temporal and spatial differences and showed that these trends can be affected by various sociocultural and digital factors.

Temporal and Seasonal Trends

Cyberchondria in Turkey between the spring of 2021 and the winter of 2023 coincides with the periods when individuals experienced health anxiety and their tendency to search for information on the internet intensified during the pandemic period. The need for individuals to benefit more from online health information during the pandemic process may have led to an increase in situations such as cyberchondria. When studies evaluating internet addiction during the pandemic process in the literature are examined, it has been determined that individuals' internet addiction levels increased during the pandemic process, and their frequency and duration of internet use increased [11-13]. In addition to these findings, there are research results in the literature emphasizing the effects of an increase in internet search addiction on the psychological states of individuals in different sample groups. Indeed, in the study by Robertson et al. [14], it was found that there was a negative significant effect between psychological resilience and internet addiction and that a high level of psychological resilience was a strong protective factor for reducing the level of internet addiction; Likewise, in the studies of Onat Kocabıyık and Donat Bacioğlu [15], it is reported that as young adults' social media addiction levels increase, their psychological resilience decreases. However, it is thought that more qualitative data and research is needed on why trends are more intense in certain seasons.

Positional Differences

The high number of cyberchondria searches in Ağrı across Turkey may be related to factors such as the educational status of individuals in these regions, e-health literacy levels, internet access and access to health services. According to the results of research examining the relationship between cyberchondria and educational status, the level of cyberchondria increases as the level of education decreases. In Deniz [16] research, the level of cyberchondria was found to be lower in those with a bachelor's degree or higher than in those with an associate's degree, and lower in those with an associate's degree than in those with a high school degree or lower. Studies have reported that users who search the web to diagnose any health problem may have increased concerns if they do not have appropriate medical education or training [17]. When the research results on the relationship between health literacy and cyberchondria in the literature are examined, it has been found that the increase in the level of e-health literacy, although low, also causes an increase in the level of cyberchondria [18,19]. On the other hand, it is thought that the prominent search volume in the Philippines worldwide is related to the fact that the Philippines has one of the highest amounts of social media and internet usage in the world. In 2021, Hootsuite and We Are According to a report published by the Social partnership, the Philippines is the country with the highest social media and internet usage [20]. The results of this report also support our research findings.

Information Seeking Trends

It has been observed that information seeking tendencies in Turkey and around the world show fundamental differences. While individuals in Turkey generally tend to seek basic information about the definition of cyberchondria and the disease, individuals around the world have sought more in-depth information about the symptoms

and the relationship between this condition and anxiety. It is thought that this situation is due to individuals' lack of knowledge about Cyberchondria [21]. For individuals for whom cyberchondria is a new concept, it is likely that they have first searched to learn what this condition is and how it is defined.

5. Conclusion

This study is limited to Google Trends data and that this data only covers a certain period of time. Furthermore, the lack of qualitative data has limited the in-depth examination of the psychological and sociocultural reasons behind individuals' search behavior. Future studies can provide a more comprehensive analysis by combining qualitative and quantitative methods.

Finally, optimizing search engine algorithms to reduce the spread of misinformation and highlighting accurate sources of information can be a critical step for both individual health and public awareness.

Conflict of Interest

No conflict of interest is declared by the authors. In addition, no financial support was received.

Ethics Committee

Since this research is based on open access secondary data, ethics committee approval and institutional permission were not required.

Author Contributions

Study Design: FKE, GÖ; Data Collection: FKE, GÖ; Statistical Analysis: FKE, GÖ; Data Interpretation: FKE; Manuscript Preparation: FKE, GÖ; Literature Search: GÖ. All authors have read and agreed to the published version of the manuscript.

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