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Digital Search Trends on Suicide in Türkiye: An Infodemiological Study

Türkiye'de İntihar Konusuna Yönelik Dijital Arama Eğilimleri: İnfodemiyolojik Bir İnceleme

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ABSTRACT

Objective: Infodemiology, as a scientific field studying information flow in electronic environments and its factors, has gained significant prominence in health informatics. This approach, which analyzes digital data sources, offers valuable insights for tracking public health trends and informing health policies. The goal of this study is to identify digital trends in Turkey by analyzing internet users' search behavior related to suicide.

Method: The study was conducted using an infodemiological design. Data were collected in July 2025 with the keyword "suicide" through Google Trends. As part of the screening, data from the past five years (July 2020–July 2025) were analyzed. Türkiye was selected as the country, "all categories" as the category, and "Google Web Search" as the search type.

Results: In Türkiye, interest in digital searches for the keyword "suicide" fluctuated between 2020 and 2025. This pattern indicates a consistent curiosity, concern, or need for information about suicide within society. Examining the search history reveals that users search not only for the term "suicide," but also for related keywords such as "death," "suicide methods," and "suicide note." This suggests that users are seeking information about various aspects of suicide, including methods and emotional content left behind. Therefore, online search behaviors related to suicide reflect a complex curiosity that involves psychological, sociological, and behavioral factors rather than focusing on a single theme.

Conclusion: This study reveals the online information-seeking trends of society regarding suicide. To determine whether search behavior is driven by a desire for information or by a wish to avoid stigma, advanced research supported by qualitative data is needed. Additionally, evaluating factors such as access to mental health services, levels of societal awareness, and media effects through search data can contribute to the development of community-based mental health policies

Keywords: Suicide, infodemiology, Google Trends

ÖZ

Amaç: İnfodemiyoloji, elektronik ortamdaki bilgi akışını ve bunun belirleyicilerini inceleyen bilim dalı olarak sağlık bilişimi içerisinde önemli bir yer edinmiştir. Dijital veri kaynaklarının analizine dayanan bu yaklaşım, halk sağlığına yönelik eğilimlerin izlenmesi ve sağlık politikalarının şekillendirilmesi açısından önemli bilgiler sunmaktadır. Bu çalışmanın amacı, intihar konusuna ilişkin internet kullanıcılarının arama davranışlarını inceleyerek Türkiye'deki dijital eğilimleri ortaya koymaktır.

Yöntem: Araştırma, infodemiyolojik desen kullanılarak gerçekleştirilmiştir. Veriler, Temmuz 2025 tarihinde "intihar" anahtar kelimesiyle Google Trends üzerinden toplanmıştır. Tarama kapsamında son beş yıla (Temmuz 2020-Temmuz 2025) ait veriler incelenmiş; ülke olarak Türkiye, kategori olarak "tüm kategoriler" ve arama türü olarak "Google Web Arama" seçenekleri tercih edilmiştir.

Bulgular: Türkiye'de 2020 – 2025 yılları arasında "intihar" anahtar kelimesine yönelik dijital arama ilgisi dalgalı bir seyir izlemiştir. Bu durum, toplumda intihar konusuna yönelik sürekli bir merak, kaygı ya da bilgi ihtiyacının varlığına işaret etmektedir. Arama geçmişi incelendiğinde, kullanıcıların yalnızca "intihar" terimini değil, aynı zamanda bu konuyla ilişkili olarak "ölüm", "intihar yöntemleri" ve "intihar notu" gibi farklı anahtar kelimelerle de arama yaptığı gözlemlenmiştir. Bu bulgu, kullanıcıların yalnızca intihar kavramına değil, bu kavramın farklı yönlerine örneğin uygulama biçimlerine ve geride bırakılan duygusal içeriklere dair bilgi arayışında olduğunu göstermektedir. Dolayısıyla, intihara ilişkin çevrimiçi arama davranışlarının yalnızca tek bir temada açıklanamayacağı; psikolojik, sosyolojik ve eylemsel bileşenleri kapsayan çok yönlü bir merakı yansıttığı söylenebilir.

Sonuç: Bu çalışma, toplumun intihar konusuna yönelik çevrimiçi bilgi arama eğilimlerini ortaya koymaktadır. Arama davranışlarının bilgi edinme amacı mı yoksa damgalanmadan kaçınma isteğiyle mi gerçekleştiğini belirleyebilmek için nitel verilerle desteklenmiş ileri düzey araştırmalara ihtiyaç vardır. Ayrıca, arama verileri üzerinden ruh sağlığı hizmetlerine erişim, toplumsal farkındalık düzeyi ve medya etkileri gibi faktörlerin değerlendirilmesi, toplum temelli ruh sağlığı politikalarının geliştirilmesine katkı sağlayabilir.

Anahtar sözcükler: İntihar, ïnfodemiyoloji, Google Trends

Introduction

High-speed internet, powerful processors in computers, mobile and wearable technologies, and tools like social media have permeated almost every aspect of daily life. People, through their interactions in digital spaces, simultaneously live their lives and constantly produce and share data about themselves (Küçükali 2021). These digital traces not only reflect individual behaviors but are also seen as a valuable resource for analyzing collective

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behavioral patterns (Zheng et al. 2025). An increasing number of studies are using this data to develop epidemiological knowledge (Park et al. 2018). Nowadays, individuals often turn to the internet to maintain or improve their health or to find information about diseases (Deniz 2020). This has elevated the importance of digital data sources in health informatics research (Zheng et al. 2025). In this context, infodemiology, first defined by Eysenbach (2009), has emerged as a scientific field that studies how information is distributed in digital environments and its effects on public health (Eysenbach 2009). Infodemiological analyses indirectly uncover health-related behaviors, trends, and risk factors by examining individuals' internet search patterns, social media interactions, and other digital traces (Mavragani and Ochoa 2019, Onur et al. 2024). This approach is especially important for providing early warning signals for critical public health issues, such as infectious diseases, mental health concerns, and suicide (Park et al. 2018).

Suicide, a significant global public health issue today (WHO 2025), is defined as an individual's deliberate act of ending their own life through actions they foresee will result in death (Şevik et al., 2012). According to World Health Organization (WHO) data, more than 720,000 people die each year due to suicide, posing a critical threat, particularly to younger populations (WHO 2025). In Türkiye, 4,460 people committed suicide in 2024, with the crude suicide rate rising from 4.79 per 100,000 in 2023 to 5.22 per 100,000 in 2024 (Turkish Statistical Institute (TUİK), 2025). The causes of suicide are not unidimensional but are shaped by the interaction of social, cultural, biological, psychological, and environmental factors throughout an individual's life (WHO 2025). Mental disorders, social inequalities, economic hardships, and traumatic experiences are among the primary risk factors contributing to suicidal behavior. Furthermore, each completed suicide case indicates the existence of a significantly higher number of suicide attempts, with global estimates suggesting this figure is approximately 20 times higher (WHO 2025). Recent studies indicate that individuals are increasingly turning to online platforms to seek information related to suicide, and these digital behaviors provide significant insights into societal trends (Alptekin and Duyan 2019, Knipe et al. 2021).

In the current digital age, the internet has become a valuable resource by enabling individuals to access information and expertise instantly. At this juncture, search engines such as Google make vast repositories of information accessible through just a few keywords, providing users with insights, guidance, and a sense of confidence (Rapuru and Vellapandian 2025). Additionally, Google shares data related to searches, such as time, frequency, and geographical location, in visual and report formats with users. Google Trends (GT), which enables the analysis of such data, stands out as a significant platform for making this information publicly available (Sak and Uslu 2023).

GT, a publicly accessible repository of Google searches, is among the popular and widely used infodemiological tools for evaluating changes in the use of health-related information. For instance, it has been utilized to investigate changes in public perception and expectations regarding vaccination, HIV, COVID-19, epilepsy, mental health, and depression (Samaras et al. 2012, Jena et al. 2013, Lin et al. 2020, Sahoo and Sahoo 2022). GT data can be considered a useful tool for monitoring trends related to mental health disorders. In a study, the seasonal variations of various mental health-related terms on the platform were analyzed separately. This analysis revealed that all searches related to mental disorders follow a distinct seasonal cycle (Moccia et al. 2016, Sak and Uslu 2023). Furthermore, it has been emphasized that monitoring online search behaviors can provide decision-makers in healthcare planning with a cost-effective and efficient resource (Sak and Uslu 2023). In this context, GT data, in particular, offers a valuable tool for monitoring public interest and awareness regarding sensitive issues such as mental health and suicidal behaviors. Since traditional statistical data are often published with a delay, online search trends can serve as an early warning indicator. In this regard, GT is gaining importance as an innovative method that can contribute to the early identification of risky trends in mental health, the timely planning of preventive interventions, and the development of policies (Knipe et al. 2021).

Several studies in Türkiye have examined the phenomenon of suicide from sociodemographic, psychological, and epidemiological perspectives (Alptekin and Duyan 2019, Yıldırım et al. 2024, Tabur and Sonmez 2024, Han Yekdeş et al. 2025). However, studies evaluating online search behaviors related to suicide are quite limited. Within this context, the study conducted by Ekinci and colleagues (2023) focused on evaluating the potential relationship between national suicide rates and suicide-related terms derived from Google Trends (Ekinci et al. 2023). However, the study does not address the temporal, spatial, and thematic dimensions comprehensively. This study aims to contribute something new to the literature by examining digital search trends related to suicide in Türkiye across these three dimensions.

In this context, the research aims to address the following questions:

1. Do online search trends related to "suicide" in Türkiye exhibit temporal increases during specific periods?

2. Do these search trends vary spatially across different regions of Türkiye?
3. What kind of distribution do the search terms used in relation to "suicide" exhibit?
4. Do the findings derived from online search behaviors have the potential to reveal patterns of societal interest and perceptions regarding suicide?

Method

This research was conducted using an infodemiological approach and employs a retrospective research design. As this study utilised secondary data available through open access (Google Trends data), ethical committee approval and institutional permission were not required.

Data Collection Strategy

In this study, data were collected in July 2025 using the "Google Trends" tool (https://trends.google.com/trends/). During the search process, the location was set to Türkiye, the time range to the last five years (July 2020–July 2025), the category to "all categories," and the platform to "Google Web Search." The sole search term used was the word "suicide." In addition, in the "related queries" section of Google Trends, the "most relevant" option was selected, and the concepts automatically provided by the platform ("death," "methods of suicide," "suicide note," etc.) were also included within the scope of the analysis. This method, relying on algorithmic suggestions rather than manual selection, reduces researcher-induced bias and ensures that the data are obtained in a more objective manner.

Data Analysis

Google Trends data are automatically normalised based on the total search volume in order to compare variations in search terms across different regions and time periods. Google Trends presents search volumes on a scale ranging from 0 to 100, where 100 represents the peak popularity of the respective search term, while a value of 0 does not indicate the complete absence of searches for that term but rather signifies insufficient data (Deyirmenci 2020, Hoşgör and Hoşgör 2024). The normalisation process is based on the ratio of the number of searches for a specific keyword to the total number of searches conducted on Google during the same period. Therefore, a high value does not indicate a high absolute number of searches but rather reflects that the term was searched at a relatively higher rate compared to all other queries (Yaşa 2024).

All data analyses and graphing procedures in the study were conducted using Microsoft Excel. Within the scope of this study, Google Trends (GT) data were categorised and evaluated under the following three main headings:

1. Temporal Trends: GT presents the temporal variations of search terms on a weekly basis (Yaşa 2024). Under this heading, the fluctuations in search interest for the keyword "suicide" over the years were examined. The obtained data reveal increases or decreases during specific periods, thereby reflecting the digital trends that emerge over time.
2. Spatial Trends: GT displays regional search intensities both globally and at the country level (Yaşa 2024). In this study, only data pertaining to Türkiye were considered, and the analysis focused on identifying the cities where online interest in the term "suicide" was most concentrated nationwide. These data reveal the spatial patterns of search interest in terms of geographical distribution.
3. Information-Seeking Trends: GT presents the topics or keywords most frequently searched by users alongside a specific term, classifying the related queries according to their popularity and rate of increase (Yaşa 2024). In this study, the other concepts of interest to users searching for the term "suicide" were examined, with the ranking criterion in this analysis based on "relevance." Thus, the thematic diversity of digital information-seeking related to suicide was assessed.

Results

The temporal changes in Google search interest for the term "suicide" in Türkiye between July 2020 and July 2025 are illustrated in Figure 1, and the statistics regarding the search interest scores are presented in Table 1

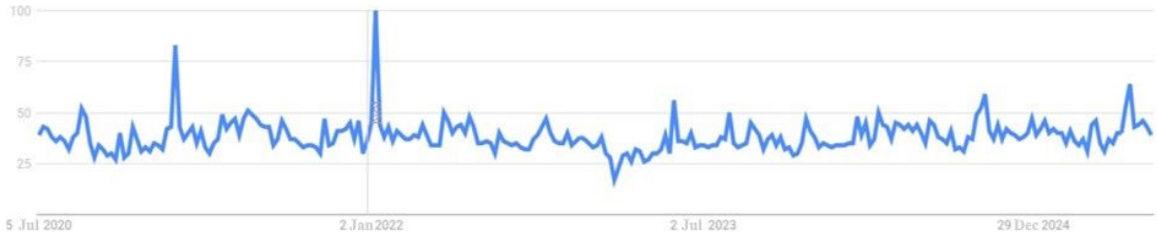

Figure 1: Temporal trend of the term "Suicide"

Table 1. Statistics of Google Trends search interest scores					
Keyword	**Mean±SD**	**Min.**	**Max.**	**Top date**	**Bottom date**
Suicide	35.5±7.43	16	100	09.01.2022	05.02.2023

SD: Standard Deviation; Min.: Minimum; Max.: Maximum.

Over the five-year period, according to Google Trends data, the digital search interest for the keyword "suicide" in Türkiye exhibited a fluctuating yet continuous pattern (Figure 1). The search interest was generally concentrated within the 25 to 50 point range, with a mean of 35.5 ± 7.43 (min.=16; max.=100). During this period, notable periodic increases and decreases were observed. The highest search interest was recorded on 9 January 2022 (100 points), whereas the lowest was observed on 5 February 2023 (16 points) (Table 1).

The spatial distribution of searches for the term "suicide" on Google Trends is illustrated in Figure 2. According to the findings, although search intensities across provinces were generally similar, relatively higher levels of search interest were observed in certain regions. Sivas, Tunceli, Samsun, Muş, and Bayburt emerged as the provinces with the highest search scores for this term.

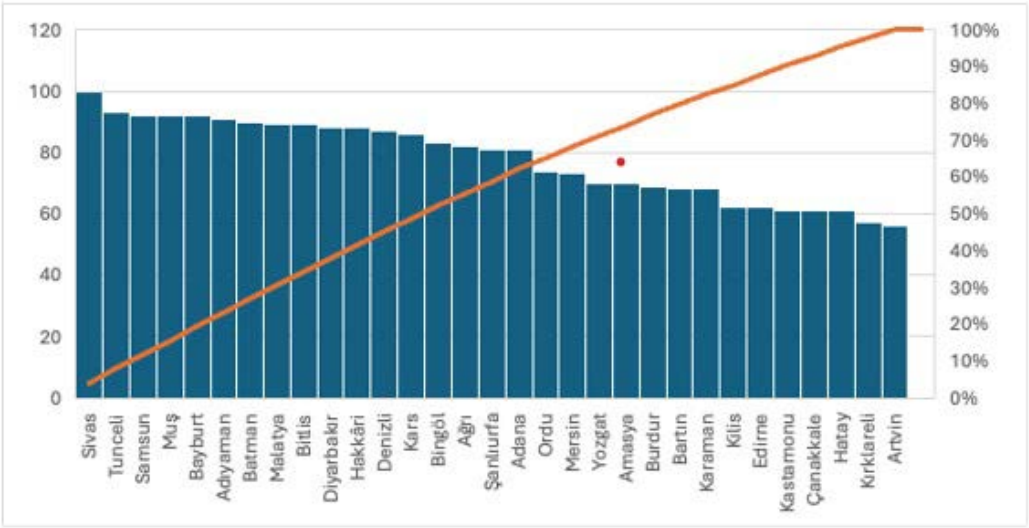

Figure 2. Spatial trend of the term suicide

According to Google Trends data, the other topics most frequently associated with searches for "suicide" in Türkiye between July 2020 and July 2025 were also analysed. These data indicate the issues that users tended to explore when searching for suicide (Figure 3).

Figure 3 demonstrates that digital interest was largely concentrated around the keyword "suicide," whereas more detailed, specific, or contextual terms were searched at considerably lower levels. Among the other terms less frequently searched in association with the concept of "suicide," the prominent ones include "death," "youth," "police," "letter," "sin," "methods of suicide," and "suicide note."

Within the scope of Google Trends data, an examination of user queries conducted in Türkiye between July 2020 and July 2025 alongside the keyword "suicide" revealed that searches were not limited solely to the term "suicide" (Figure 4). Among the queries presented in the graph, alongside general informational expressions such

as “suicide cases,” “latest suicide,” and “suicide news,” geographically and event-focused terms such as “suicide train,” “police suicide,” “Ankara suicide,” “Istanbul suicide,” “Izmir suicide,” and “Adana suicide” also stand out (Figure 4).

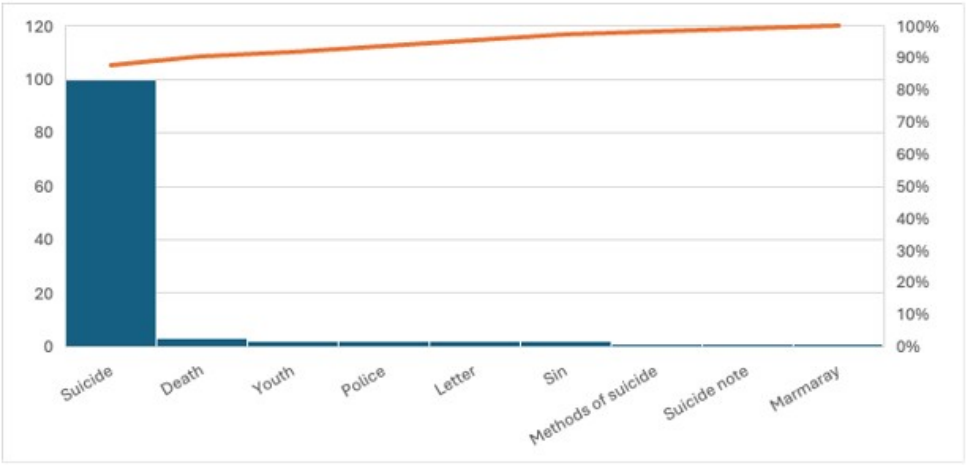

Figure 3. Other topics related to the term suicide

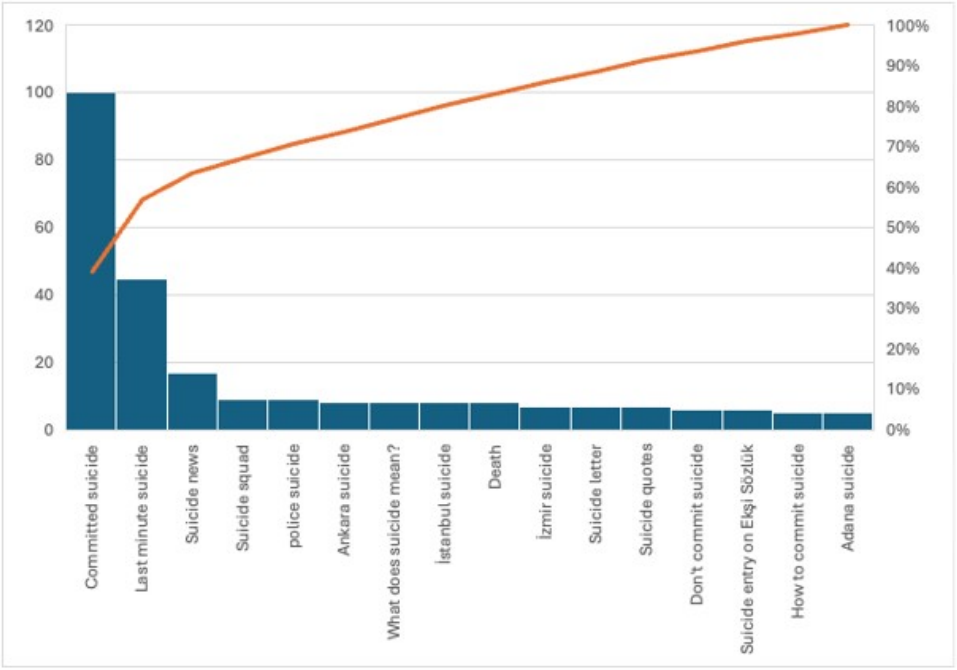

Figure 4. Information-seeking trend related to the term suicide

Discussion

The findings of this study indicate that online search interest in the concept of suicide in Türkiye exhibited a fluctuating pattern over the five years. This directly addresses the first research question: “Do online search trends related to the concept of suicide in Türkiye show increases during specific temporal periods?” The occasional sudden increases and decreases observed align with trends reported in the literature, which have been associated with social events, media coverage, or large-scale disasters (Halford et al. 2020, Hung et al. 2024). However, it should be noted that Google Trends data reflect only search interest and do not indicate causality (Tran et al. 2017). Therefore, the obtained results should be interpreted not as direct determinants of suicidal behaviors but as potential indicators for public health surveillance and early warning mechanisms in the field of mental health (Ginsberg et al. 2009, Kristoufek et al. 2016).

The pandemic period serves as a notable example of changes in digital search trends. A significant rise in online

interest in the term "suicide" was observed, especially from the second half of 2020 onward. This increase can likely be linked to the COVID-19 pandemic. During this time, factors such as heightened loneliness, economic uncertainty, social isolation, and grief negatively impacted people's mental health. A study in Taiwan by Hung and colleagues (2024) showed that loneliness levels increased during the first year of COVID-19 and were strongly associated with suicide risk. Similarly, Hoerger and colleagues (2020) highlight that individuals, particularly those lacking social support, face substantial difficulties in coping with psychosocial challenges. These findings are also supported by Halford and colleagues (2020), who reported rising suicide risk factors and information-seeking behaviors in the United States during the pandemic. Therefore, pandemics are not only a health crisis involving viral transmission, illness, and death but also societal crises with social and economic effects that heavily strain mental health (Ahmed 2024).

The findings of the study also provide an answer to the second research question: "Do these search trends display spatial variations across different regions of Türkiye?" The data indicate that the provinces with the highest search interest were concentrated in the Eastern Anatolia, Southeastern Anatolia, and Black Sea regions (e.g., Sivas, Tunceli, Muş, Bayburt). These provinces have long been grappling with socioeconomic challenges such as migration, poverty, employment issues, and a sense of hopelessness among the youth (UNDP 2022). It is noteworthy that only a few provinces from relatively more developed regions, such as Marmara and Aegean, ranked among the top. This finding suggests that digital search trends are not merely driven by individual curiosity but also reflect regional mental health burdens and social vulnerabilities (Alptekin and Duyan 2019, Erdem et al. 2024, Tabur and Sonmez 2024, Han Yekdeş et al. 2025).

The research findings reveal that users searched not only for the term "suicide" but also for multidimensional concepts such as "death," "methods of suicide," "suicide note," "youth," "police," and "sin." This finding addresses the third research question and indicates that the observed diversity encompasses digital interest in the phenomenon of suicide across religious, ethical, social, and planned behavioural dimensions (Bragazzi 2013, Tana et al. 2018). The fact that sensitive terms such as "methods of suicide" and "suicide note" were searched suggests that individuals at risk of suicide may leave digital traces in online environments that function as calls for help (McCarthy 2010, Mavragani and Ochoa 2019). Furthermore, event- or location-focused searches such as "Marmaray" and "police suicide" coinciding with widely publicized media cases indicate that online search behavior is influenced by media coverage (Çetin 2023, Cumhuriyet 2025). These findings are consistent with the results of Sisask and Värnik (2012) and Lazer and colleagues (2014), which emphasize the need for careful presentation of suicide-related news.

The results obtained address the fourth research question and show that online search behaviors can reveal patterns of public interest in and perception of suicide. The findings indicate that online interest in the topic of suicide never fell to zero, suggesting that suicide has become a continuous societal mental health indicator in the digital environment (Barros et al. 2019, Lee 2020). Searches that spike during crisis periods or times of intense media coverage indirectly reflect patterns of societal concern and curiosity.

This study demonstrates that online search trends related to the topic of suicide in Türkiye exhibit temporal, spatial, and conceptual diversity, revealing a multidimensional reflection of the public's digital interest in suicide. The findings suggest that digital search data can be considered a complementary indicator for public health surveillance and early warning systems. It should be noted that Google Trends data alone are insufficient to establish causality; however, they can serve as a complementary indicator for public health surveillance when official statistics are delayed (Ginsberg et al. 2009, Kristoufek et al. 2016, Tran et al. 2017).

In future research, time-series analysis, geographic information system (GIS)-based spatial analyses, integration of data into artificial intelligence based early warning models, and mixed-method approaches could be employed. Through these methods, it is recommended to integrate online search trends with official statistics, clinical data, and socioeconomic indicators; to conduct detailed analyses of search behaviors emerging during crisis periods and under media influence; and to examine behavioral patterns observed across different demographic and regional groups.

This study has certain limitations due to its design being based on an infodemiological approach. The primary limitation is that the study encompasses only search trends within the borders of Türkiye, and the demographic and clinical characteristics of the individuals conducting the searches, such as age, gender, marital status, occupation, any history of mental health diagnoses, or previous suicide attempts, are unknown. Therefore, the data reflect digital trends only at the societal level and do not allow for inferences regarding individual characteristics. Furthermore, although Google is the most widely used search engine, the inability to access queries conducted on other platforms (e.g., Bing, Yahoo) limits the generalisability of the study. This situation may lead to deviations in the graphical analysis of search volume and trends, as well as narrow the scope of

digital interest. In addition, the analyses employed in this study remained at a descriptive level; the statistical significance of the fluctuations or the correlation between search trends and suicide rates was not tested. Therefore, it is not possible to draw direct causal inferences from the data. It should be borne in mind that the relationship between online search volumes and actual suicidal behaviors may not always be linear; therefore, Google Trends data should be considered solely as an indirect indicator of public interest and awareness. In future studies, conducting comparative time-series and correlation analyses with official statistics could help overcome this limitation.

Within this framework, search data, which cannot directly measure suicidal behaviors, can serve as an alternative and complementary indicator for estimating societal mental vulnerability levels, particularly when official statistics are delayed (Ginsberg et al. 2009, Kristoufek et al. 2016). However, as emphasized by Tran and colleagues (2017), cultural context and methodological limitations must be carefully considered when analyzing such data (Tran et al. 2017).

Conclusion

The findings of this study reveal that online searches for the term "suicide" in Türkiye over the past five years (July 2020-July 2025) reflect a fluctuating yet continuous pattern of digital awareness. These results, obtained based on Google Trends data, are consistent with previous studies reported in the literature (Yang et al. 2011, Kristoufek et al. 2016, Barros et al. 2019, Lee 2020). The findings indicate that factors such as the COVID-19 pandemic, major disasters like earthquakes, seasonal variations, widely publicised events in the media, shifts in public interest, as well as users' region of residence, psychosocial status, religious beliefs, and ethical values influence digital search behaviour (Brownstein et al. 2009, Ayers et al. 2013, Aslan 2023).

The variation in digital search intensity at the local level highlights the need for regional and targeted intervention strategies. Within this context, the accessibility of mental health services should be enhanced in socioeconomically disadvantaged regions, and intervention capacity should be strengthened through tools such as mobile psychological support teams, online counseling services, and suicide prevention hotlines. In regions with a high concentration of young populations, it is recommended that psychological resilience, stress management, and crisis management training be provided from primary through secondary education; that artificial intelligence based alert systems capable of detecting suicide risk be implemented on social media and messaging platforms frequently used by youth; that online psychological support lines or e-counselling links be automatically offered during searches; that peer support groups be established in schools and universities to enable young people to share experiences in a safe environment; and that informative content on suicide prevention, mental health awareness, and available support resources be disseminated across the digital platforms commonly used by young people.

Furthermore, this study demonstrates that digital data sources such as Google Trends can serve as a potential monitoring tool for understanding suicide trends and indicators of societal mental health. In this regard, it is recommended that online search behaviors be integrated into public health surveillance systems. Sudden increases in digital search volumes related to high-risk topics such as suicide, depression, and anxiety should be interpreted by health authorities as early warning signals, prompting the enhancement of psychosocial support services during these periods.

Considering sensitive terms frequently searched in relation to suicide, such as "methods of suicide," "suicide note," and "death," the content filtering and guidance systems of digital platforms should be re-evaluated. The development of algorithms that directly guide users to psychological support and assistance resources during such searches presents a significant opportunity for intervention from a public health perspective. In this context, establishing protocols to facilitate collaboration between search engines, social media platforms, and public institutions is recommended. Given the significant role of media influence on search behaviors, it is also important to update ethical publishing guidelines for media organizations. Presenting suicide-related news in a manner that is deliberate and preventive rather than sensationalized can both raise public awareness and mitigate potential triggering effects.

In conclusion, there is a need for further interdisciplinary research on suicide behaviors and online information-seeking trends in Türkiye. Studies conducted through the collaboration of fields such as health sciences, psychology, sociology, and data science will facilitate the generation of more robust and actionable indicators in the field of digital epidemiology. Furthermore, to gain a deeper understanding of the motivations underlying individuals' online search behaviors, the use of mixed-method research designs supported by qualitative interviews is recommended.

References

Ahmed Z (2024) Loneliness and suicidal behaviors: A fresh mental health concern in post COVID-19 pandemic period. In: Determinants of Loneliness (Ed. Z Ahmed):9. London, Intech Open.

Alptekin K, Duyan V (2019) What was the distribution of suicide rates by socio-demographic factors between 2007 and 2016 in Turkey? Journal of Psychiatric Nursing, 10:270-276.

Aslan A (2023) Afetler ve göç: Kahramanmaraş depremleri. İzmir Katip Çelebi Üniv Sağlık Bilimleri Fakültesi Dergisi, 8:787-789.

Ayers JW, Althouse BM, Allem JP, Rosenquist JN, Ford DE (2013) Seasonality in seeking mental health information. Am J Prev Med, 44:520-525.

Barros JM, Melia R, Francis K, Bogue J, O'Sullivan M, Young K et al. (2019) The validity of Google Trends search volumes for behavioral forecasting of national suicide rates in Ireland. Int J Environ Res Public Health, 16:3201.

Bragazzi NL (2013) Infodemiology and infoveillance of multiple sclerosis in Italy. Mult Scler Int, 2013:924029.

Brownstein JS, Freifeld CC, Madoff LC (2009) Digital disease detection-harnessing the web for public health surveillance. N Engl J Med, 360:2153-2157.

Cumhuriyet (2025) Marmaray'da intihar! Açıklama geldi. https://www.cumhuriyet.com.tr/turkiye/marmaray-da-intihar-aciklama-geldi-2411747 (Accessed 04.08.2025).

Çetin B (2023) Werther etkisi yaklaşımı ve Türkiye'de intihar haberlerinin dijital gazetecilik bağlamında değerlendirilmesi. Turkish Studies Social Sciences, 18:393-416.

Deniz S (2020) Bireylerin e-sağlık okuryazarlığı ve siberkondri düzeylerinin incelenmesi. İnsan ve İnsan, 7:84-96.

Deyirmenci B (2020) Pazarlama harcamaları ile Google Trends hacmi arasındaki nedensellik ilişkisinin incelenmesi: Turkcell örneği (Doktora tezi). İstanbul, İstanbul Gelişim Üniversitesi.

Ekinci O, Gencay FB, Koyuncu AN, Soy FN, Çetin O, Yüce F et al. (2023) Assessment of the relationship between Google Trends search data and national suicide rates in Türkiye. Annals of Medical Research, 30:767-773.

Erdem M, Kesgin B, Zengin O (2024) İntihar riski olan bireylerde varoluşsal analiz ve logoterapinin etkililiği. Toplum ve Sosyal Hizmet, 35:445-465.

Eysenbach G (2009) Infodemiology and infoveillance: Framework for an emerging set of public health informatics methods to analyze search, communication and publication behavior on the internet. J Med Internet Res, 11:e11.

Ginsberg J, Mohebbi MH, Patel RS, Brammer L, Smolinski MS, Brilliant L (2009) Detecting influenza epidemics using search engine query data. Nature, 457:1012–1014.

Halford EA, Lake AM, Gould MS (2020) Google searches for suicide and suicide risk factors in the early stages of the COVID-19 pandemic. PLoS One, 15:e0236777.

Han Yekdeş D, Çağlayan M, Yekdeş AC, Takir Stewart S, Selçuk EG, Çelikkalp U et al. (2025) Trends and socio-demographic determinants of suicide-related mortality in Türkiye: An epidemiological study from 2009 to 2022. Int J Soc Psychiatry, 71:188-198.

Hoerger M, Alonzi S, Perry LM, Voss HM, Easwar S, Gerhart JI (2020) Impact of the COVID-19 pandemic on mental health: Real-time surveillance using Google Trends. Psychol Trauma, 12:567-568.

Hoşgör HK, Hoşgör DG (2024) Sağlık alanında Google trendler analizinin kullanıldığı araştırmalar üzerine bir inceleme. Journal of Academic Value Studies, 10:72-90

Hung WC, Wu CY, Lee MB, Chan CT, Chen CY (2024) Loneliness and suicide risks in the general population before and during first year COVID 19 in Taiwan. J Formos Med Assoc, 123:510-516.

Jena AB, Karaca-Mandic P, Weaver L, Seabury SA (2013) Predicting new diagnoses of HIV infection using internet search engine data. Clin Infect Dis, 56:1352-1353.

Kim K, Kim J, Jung S, Kim HW, Kim HS, Son E et al. (2025) Global prevalence of seasonal affective disorder by latitude: A systematic review and meta-analysis. J Affect Disord, 390:119807.

Knipe D, Gunnell D, Evans H, John A, Fancourt D (2021) Is Google Trends a useful tool for tracking mental and social distress during a public health emergency? a time-series analysis. J Affect Disord, 294:737-744.

Kristoufek L, Moat HS, Preis T (2016) Estimating suicide occurrence statistics using Google Trends. EPJ Data Sci, 5:32.

Küçükali H (2021) İnfodemiyoloji, dijital epidemiyoloji ve teleepidemiyoloji. Sağlık Düşüncesi ve Tıp Kültürü, 59:40-41.

Lazer D, Kennedy R, King G, Vespignani A (2014) The parable of Google flu: Traps in big data analysis. Science, 343:1203-1205.

Lee JY (2020) Search trends preceding increases in suicide: A cross-correlation study of monthly Google search volume and suicide rate using transfer function models. J Affect Disord, 262:155-164.

Lin YH, Chiang TW, Lin YL (2020) Increased internet searches for insomnia as a sensitive indicator for global mental health during the COVID-19 pandemic: Multinational longitudinal study. J Med Internet Res, 22:e22181.

Mavragani A, Ochoa G (2019) Google Trends in infodemiology and infoveillance: Methodology framework. JMIR Public Health Surveill, 5:e13439.

McCarthy MJ (2010) Internet monitoring of suicide risk in the population. J Affect Disord, 122:277-279.

Moccia M, Palladino R, Falco A, Saccà F (2016) Google Trends: New evidence for seasonality of multiple sclerosis. J Neurol Neurosurg Psychiatry, 87:1028-1029.

Onur B, Demirtaş HB, Gülmez A (2024) Sağlık trendlerinin belirlenmesinde dijital platformlardan elde edilen verilerin rolü. Journal of Medical Sciences, 5:178-179.

Park HA, Jung H, On J, Park SK, Kang H (2018) Digital intervention to recognise and manage early warning signs of relapse in schizophrenia (EMPOWER). Healthc Inform Res, 24:253-262.

Rapuru R, Vellapandian C (2025) Exploring infodemiology: Unraveling the intricate relationships among stress, headaches, migraines, and suicide through Google Trends analysis. Front Big Data, 7:1365417.

Sahoo S, Sahoo S (2022) An infodemiological study of worldwide Google search volumes for major depressive disorder and persistent depressive disorder. J Affect Disord Rep, 7:100277.

Sak FG, Uslu E (2023) Google trend verileri kapsamında infodemiyolojik bir çalışma: Şizofreniye ilişkin bilgi arama eğilimi. Abant Sağlık Bilimleri ve Teknolojileri Dergisi, 3:23-31.

Samaras L, García-Barriocanal E, Sicilia MA (2012) Syndromic surveillance models using web data: The case of scarlet fever in the UK. Inform Health Soc Care, 37:106-124.

Sisask M, Värnik A (2012) Media roles in suicide prevention: A systematic review. Int J Environ Res Public Health, 9:123-138.

Soreni N, Cameron DH, Streiner DL, Rowa K, McCabe RE (2019) Seasonality patterns of Internet searches on mental health: Exploratory infodemiology study. JMIR Ment Health, 6:e12974.

Şevik AE, Özcan H, Uysal E (2012) İntihar girişimlerinin incelenmesi: Risk faktörleri ve takip. Klinik Psikiyatri Dergisi, 15:218-225.

Tabur A, Sönmez FT (2024) Turkish suicide patterns: Longitudinal analysis of suicide trends in Türkiye (2000-2022). Medicine Science, 13:911-920.

Tana JC, Kettunen J, Eirola E, Paakkonen H (2018) Diurnal variations of depression-related health information seeking: Case study in Finland using Google Trends data. JMIR Ment Health, 5:e43.

Tran US, Andel R, Niederkrotenthaler T, Till B, Ajdacic-Gross V, Voracek M et al. (2017) Low validity of Google Trends for behavioral forecasting of national suicide rates. PLoS One, 12:e0183149

TÜİK (2025) Türkiye İstatistik Kurumu intihar istatistikleri. https://data.tuik.gov.tr/Search/Search?text=intihar&dil=1 (Accessed 02.10.2025).

UNDP (2022) Human Development Report 2022: Uncertain Times, Unsettled Lives-Shaping Our Future in a Transforming World. New York, United Nations Development Programme.

WHO (2025) Suicide Worldwide in 2025: Global Health Estimates. Geneva, World Health Organization.

Yang AC, Tsai SJ, Huang NE, Peng CK (2011) Association of internet search trends with suicide death in Taipei City, Taiwan, 2004-2009. J Affect Disord, 132:179-184.

Yaşa H (2024) Internet haber siteleriyle ilişkili kullanıcı arama sorgularının keşfi: Google Trends. Ordu Univ Sosyal Bil Enst Sosyal Bil Arastirmalari Derg, 14:1386-1403.

Yıldırım MS, Akçan R, Gül NNA (2024) University student suicides in Türkiye: Insights from two decades of media reports. Health Sciences Quarterly, 4:305-315.

Zheng X, Wang Z, Guo J, Xu Z, Zhang Z (2025) Diverse behavior clustering of students on campus with macroscopic multi-source digital data. Sci Rep, 15:15763.

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