Cyberchondria: A Review
Siberkondria: Bir Gözden Geçirme

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Abstract

Internet has become an important source of health information that enables people to access a large portion of medical information. Cyberchondria is defined as behavior seeking information about health from the internet. It can be mentioned as an internet-mediated version of hypochondriasis. It is emphasized that health anxiety is at the forefront in the etiology. Information pollution on the internet is an important risk factor. There are no diagnostic criteria. It is not included in the DSM classification. Although there are various assessment scales, the most commonly used assessment tool is the Cyberchondria Severty Scale. It is a psychometric scale with 34 questions to measure the level of cyberchondria. Psychoeducation is the main approach in the treatment and no specific pharmacological treatment has been defined.

Keywords: Cyberchondria, health anxiety, internet

Öz

İnternet, tıbbi bilgilerin büyük bir kısmına insanların erişimini sağlayan önemli bir sağlık bilgi kaynağı haline gelmiştir. Siberkondria, internetten sağlıkla ilgili bilgi arayışı davranışı olarak tanımlanmaktadır. Hipokondriyazisin internet aracılı versiyonu olarak söz edilebilir. Etyolojisinde sağlık kaygısının ön planda olduğu vurgulanmaktadır. İnternetteki bilgi kirliliği önemli bir risk faktörüdür. Tanı kriteri yoktur. DSM sınıflaması içerisinde yer almaz. Çeşitli değerlendirme ölçekleri olmakla birlikte en sık kullanılan değerlendirme aracı Siberkondria Şiddet Ölçeği'dir. Siberkondria düzeyini ölçmeye yönelik 34 soruluk psikometrik bir ölçektir. Tedavisinde ise temel yaklaşım psikoeğitim olup belirli bir farmakolojik tedavi tanımlanmamıştır.

Anahtar sözcükler: Siberkondriya, sağlık kaygısı, internet

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CYBERCHONDRIA is a term that has been included more in the literature in recent years with the increasing technology and Internet usage. The internet has become an important source of health information that provides people with access to a great deal of medical information. Some of the internet users frequently search for health information. However, this information is often scattered, of low quality, and contains technical language (Chung 2013). People search for medical information on the internet because access to information is easy, results are achieved quickly, and there are no administrative procedures. Almost all sorts of inquiries can be made without shame. Despite its useful properties, online health information can disturb some users. Repeatedly seeking online health information can further strengthen the anxiety of people worried about their health. The impact of this change in health-related behavior has not yet been fully understood, as this has recently occurred. However, in the field of medical diagnostics and treatment, interactions between people and computers are likely to have significant effects on the patient-physician relationship, and various aspects of healthcare (Starcevic and Berle 2013).

The term cyberchondria was first used in 2002. Cyberchondria is derived from the words cyber and hypochondriasis, and this term indicates that there is a form of hypochondriasis associated with internet use (Taylor et al. 2002). Cyberchondria can be considered a digital version of hypochondriasis. In the fifth edition of the Diagnostic and Statistical Manuel of Mental Disorders (DSM-5), health anxiety disorder, and somatic symptom disorder terms were used instead of the term hypochondriasis (American Psychiatric Association 2013). Hypochondriasis is a controversial term, and there has been a tendency to replace this with health anxiety in recent years. The two terms are not synonymous, and hypochondriasis is often considered a more severe form of health anxiety. In the context of this discussion, cyberchondria appears to characterize both health anxiety and hypochondriasis, but this has not been investigated (Starcevic 2013). Recently, access to the internet has become easier, and this causes people to frequently search the internet for health problems (Doherty-Torstrick et al. 2016). Cyberchondria feeds on health anxiety, and cyberchondria is defined as the search for online health-related information that reinforces certain anxiety (Starcevic and Berle 2013). Cyberchondria points to abnormal behavior and an uncomfortable emotional state (Starcevic and Berle 2015). This study aimed to review the diagnosis, etiology, risk factors, and treatment of cyberchondria, which is one of the health problems that have become increasingly important in recent years, based on current literature findings.

Epidemiology

The frequency of cyberchondria, which is affected by factors such as increased digital information density, may be increasing in societies. Harris Interactive conducted a study in 2002 and reported that 53% of adults use the internet to search for health information (Taylor et al. 2002). In the United States, around 70% of adults reported that they searched health-related information online throughout 2012, and about 35% reported that they use the internet specifically as a diagnostic tool (Fox and Duggan 2013). The proportion of adults in the UK using the internet to search for health information was reported as 18% in 2007 and 51% in 2016 (Prescott 2016). In a study conducted with university students in our country, it was found that 14.2% of the students search for health information on the internet in the presence of a health problem. 83.7% of stu-

dents use mobile phones to access the internet, and 25% search health information once or more a week. Internet knowledge of the participants is correct at 65.4%, with medium and high levels. Besides, students with health problems have higher scores in "cyberchondria total scores" and "misbelief subscale scores for the healthcare professional" (Bati et al. 2018).

Again, in a study conducted with 173 people working in a university in Turkey, the rate of those who discontinued the treatment started by their doctor due to the information they read on the internet was 5.8%. The rate of those who think that they can follow their health with the information obtained from the internet has been reported as 13.8%. The rate of those who insist that they need medicines or medical interventions (e.g., laboratory analysis, x-ray, biopsy, surgical intervention) they read on the internet was 38.7%, the rate of those who researched about this on the internet before applying to a hospital or a doctor was 85.5%. 12.1% of the participants reported that with the information they read on the internet, they diagnosed their disease and started the drug. In addition, 86.1% of the participants stated that they researched on the internet before applying to the physician regarding the health problem, and 68.2% stated that they researched on the internet before starting the drug or treatment recommended by the physician. 34.1% reported that researching the signs and symptoms of the disease on the internet negatively affect their family or social life. In comparing the Cyberchondria Severity Scale-15 (SSS-15) scores, it was reported that those who found the information obtained from social networks reliable, who found the health information obtained from health-related sites on the internet reliable and who used the internet frequently for health-related issues received significantly higher SCS-15 scores (Altındiş et al. 2018). Nearly 40% of people searching health-related information on the internet reported increased health anxiety as a result of their search behavior (White and Horvitz 2009a).

Etiology

Literature data on etiology has not been clarified. Some opinions argue that excessive anxiety about one's health causes excessive online search, and that is more closely related to health anxiety disorder. Furthermore, there is another view that compulsive research on obtaining health information leads to an excessive increase in health anxiety (Starcevic and Aboujaoude 2015). The causality aspect of the relationship between online health-related searches and health anxiety can vary from one person to another. In some cases, maybe often increasing health anxiety is primary, and this is the reason for online health-related searches to reduce anxiety. However, these searches only cause more distress and increase health anxiety even more (Muse et al. 2012).

According to a cognitive-behavioral perspective, health anxiety is created by several factors. These factors increase physiological arousal in response to feeling anxious (for example, increased heart rate), a bias in the way processing health information (cognitive factor, e.g., sensitivity to bodily sensations), and security seeking behavior (behavioral factor, such as checking the physical condition) (Abramowitz and Moore 2007). The most effective factor is security seeking behavior, and people who are worried about their health feel that they need to seek assurance to reduce their health anxiety and uncertainty. One way to provide this assurance is to search for health information on the Internet (Salkovskis 2002). According to the cognitive-behavioral model, people who are worried about their health are more likely to seek online health information as a search for confi-

dence. Previous studies have shown that people who are concerned about their health are more often online to find health information. For example, Muse et al. revealed that people with high health anxiety levels are online more often and longer. However, these repetitive searches to alleviate anxiety related to health cause anxiety to become more severe (Muse et al. 2012). Also, if the person thinks that the internet is the best way for the answer to any health problem, this may cause the person to search more online. Selective attention to online health-related information can contribute to an increase in health anxiety, and people can use the internet repeatedly to reduce anxiety (Starcevic 2017).

Despite the theoretical and empirical overlap between cyberchondria and health anxiety, some studies show that they are separate. For example, cyberchondria is also reported to be associated with other anxiety-related disorders, such as obsessive-compulsive disorder (Fergus and Russell 2016). In cyberchondria, the internet can be overused for other purposes. Thus, cyberchondria may show high comorbidity with internet use disorder (Starcevic and Berle 2013).

Risk factors

Conditions such as technical language on the internet, lack of quality information, and abundant negative information can increase people's health anxiety (White and Horvitz 2009b). The risks and disadvantages of researching health information online can be particularly crucial for people who are more prone to health anxiety. Health anxiety can range from mild non-pathological concerns to pathological anxiety in the hypochondriac sense (Barke et al. 2016). Baumgartner and Hartmann detailed the relationship between health anxiety and health information seeking behavior online. They reported that the higher a person's health anxiety, is the more often they would be prone to doing health-related searches and much more troublesome after the search (Baumgartner and Hartmann 2011).

Cyberchondria may be associated with difficulty in distinguishing between reliable and unreliable sources of online information. This situation can also be affected by the individual's education level, ability to process information, and technological knowledge (Starcevic and Aboujaoude 2015). It may be more difficult to distinguish reliable and unreliable sources of information on the internet compared to the real world. Therefore, information obtained through potentially less reliable websites can be handled in the same way as information found on potentially more reliable websites and can create confusion and anxiety if their content is inconsistent (McManus et al. 2014).

The internet provides not only contradictory, ambiguous, or false information, but also provides potential anxiety-boosting information such as little-known diseases (Starcevic 2017). As people search on the internet, people who are worried about their middle-high level of health increase their complaints, and they do not experience relief (Doherty-Torstrick et al. 2016). At the same time, these people are reported to have a low tolerance for uncertain situations. As tolerance decreases, health scans on the internet and anxiety about health conditions increases (Fergus 2013). There are no comprehensive studies on the age of onset and gender distribution of cyberchondria.

Diagnosis and clinical appearance

Cyberchondria is not included in the DSM classification. Although there is a dominant

view that cyberchondria is a part of hypochondriasis and health anxiety, a conceptual consensus has not yet been formed on this issue (Starcevic and Aboujaoude 2015). There are no diagnostic criteria. The Cyberchondria Severity Scale (SSS) developed by McElroy is most often used as an assessment tool. It is a psychometric scale developed in 2014 to measure the level of cyberchondria consisting of 34 items. The short form of SSS is SSS-15, which consists of 15 items. It is a five-dimensional scale. These five dimensions are compulsion, distress, excessiveness, reassurance, and mistrust of medical professionals. The compulsion points to an undesirable aspect of performing online health searches. Distress indicates negative emotional states and physiological reactions associated with online health research, such as sleep difficulties and anxiety. Excessiveness is about the time-consuming and repetitive qualities of online health searches. Seeking assurance means seeking assurance from a medical professional. Mistrust of medical professionals means an internal conflict over whether a person should trust their doctor or the results of internet searches. SSS-15 consists of 15 items in 5-point Likert type, and the person can get a score between 15 and 75. The high scores obtained from the scale without cutoff values also indicate the high severity of cyberchondria (Uzun et al. 2017), (McElroy and Shevlin 2014). The scale was adapted to Turkish by Selvi et al. in 2018. (Selvi et al. 2018).

In 2019, a short-form version of the SSS was developed by removing the mistrust subscale. Cyberchondria Severity Scale-12 (SSS-12), consisting of 12 items, is a reliable and valid scale on excessive online health research (McElroy et al. 2019).

In Turkey, the Cyberchondria Scale (SS) developed by Batıgün et al. has a five-factor structure called anxiety-enhancing factors, compulsion/hypochondria, anxiety-reducing factors, doctor-patient interaction, and dysfunctional internet use. The first sub-dimension, anxiety-enhancing factors, is an increase in anxiety due to many factors such as the content and reliability of the website and descriptions of medical terminology. The second sub-dimension, compulsion/hypochondria, is defined as the prolongation of internet research by evaluating a common symptom caused by anxiety as a sign of a severe disease. The third sub-dimension, anxiety-reducing factors, indicates an individual's health anxiety reduction by searching the internet, considering reliable sources, and reading web pages shared by people in similar conditions. In this sub-dimension, it should not be forgotten that the behaviors provide temporary relief, and this relaxation causes the continuation of such behaviors, and in the long term, it keeps the individual away from treatment and leads to cyberchondria. The fourth sub-dimension, physician-patient interaction, implies a good relationship between the physician and the patient at first glance, thereby eliminating anxiety. However, the individual's search for information about health on the internet takes the person to the doctor with the desire to discuss all the information with the doctor. This sub-dimension can cause a disrupted physician-patient relationship. The last and fifth sub-dimension, dysfunctional internet use, refers to using the internet in a way that suggests a severe disease diagnosis. The increase in the scores obtained from the total score or each of the sub-dimensions indicates increase in the level of cyberchondria. Validity and reliability values were found to be appropriate. Consisting of 27 items, SS is a valid and reliable scale that can be used for an adult study population in our country (Batıgün et al. 2018).

A scale named Cyberchondria Tendency Scale (STS) was developed by Tatli et al. in Turkey. A structure consisting of 30 items and consisting of two dimensions called reflection and information seeking was obtained. The scale can be used to determine

whether both patients and internet users generally regard the internet as a primary source of information when health problems arise (Tatli et al. 2019).

A scale called the Short Cyberchondria Scale was also developed in Croatia in 2019 and has been reported as a satisfactory tool for measuring cyberchondria (Jokić-Begić et al. 2019). In addition to increased online searches, these people post more health-related questions to online forums. People with health concerns report that they feel more scared and anxious, based on the health information they find online. Symptoms and negative information about diseases that these people may encounter online increase their health anxiety levels (Baumgartner and Hartmann 2011). Although online information provides reassurance at first, the effects are usually short-term for people who are concerned about health. Indeed, the search for reassurance can raise awareness of bodily sensations, thereby strengthening health anxiety (Abramowitz and Moore 2007).

There are some apparent titles that individuals are looking for when they access health sites. These include a specific disease or medical problem (63%), a specific medical treatment or procedure (47%), diet, nutrition and nutritional supplements (44%), drug or alcohol problem (8%), smoking cessation (6%). In a study, 57% of those seeking health information online say that they are doing it for someone else. In addition, 75% of those who search for health information on the internet does not evaluate whether these sites are valid. For these reasons, people may experience anxiety due to misinformation in cyberchondria (Fox 2006). Anxiety, depression, and seeking self-treatment are negative consequences in cyberchondria. Also, conflicts with specialists, developing extreme symptoms, and developing symptoms that do not exist are other clinical features (Criddle 2010).

Cyberchondria has some effects on the patient and doctor relationship. Lo and Parham, who examined the effect of the internet on the doctor-patient relationship, reported that when more medical information was available on the internet, the information gap between patients and doctors decreased. This decrease in gap creates both a positive and negative unusual situation for doctor-patient communication dynamics. The advantages of patients who are knowledgeable about the internet include a more knowledgeable patient, a shared burden of responsibility, and improved communication. On the other hand, there are some difficulties associated with patients who have received information from the internet. These include questionable accuracy of online health information, intervention in the development of the doctor-patient relationship, unnecessary office visits, and requests for unnecessary tests/procedures (Lo and Parham 2010).

In a study, cyberchondria has been shown to be associated with increased functional impairment and healthcare use. This study provides support for the definition of cyberchondria as a series of clinical symptoms that can create a significant public burden. Cyberchondria can contribute to a significant deterioration in a person's psychosocial function above and beyond overlapping with health anxiety (Mathes et al. 2018).

Treatment approaches

Studies examining treatment interventions for cyberchondria have not yet been conducted. It has been suggested that cyberchondria can be treated in the context of health anxiety interventions (Starcevic and Berle 2013). The basic approach in the treatment of cyberchondria is psychoeducation. There is no defined pharmacological treatment. The patient should be trained on how to recognize information pollution on the internet,

how to get accurate information about health and how to evaluate the information obtained from these sites. The internet is not a place where a person can diagnose on his own, and he/she cannot find answers to every question, and the person is provided to grasp this (Muse et al. 2012).

Instead of promoting the idea of avoiding online health information, treatment approaches to cyberchondria should have two main goals. The first is to enable people to use the internet for health-related purposes without any high health concerns. The second is to reduce the time spent online for health-related purposes so that other activities are not neglected. If people are exposed to health-related online materials in a progressive and controlled manner, it will be possible to achieve these goals if they learn that online health information is not naturally threatening.

A careful case formulation that defines all factors is required in each individual. Regardless of specific factors, psychoeducation about cyberchondria is the most critical part of any treatment package. Psychoeducation includes the development of online health information literacy that focuses on several issues. The first is to distinguish between what the internet can and cannot do, the second is to distinguish between reliable and unreliable sources of online health information, and the third is to evaluate the results of online health research critically. First and foremost, individuals with cyberchondria need to learn that the internet is only a way to obtain health-related information and not an all-knowing tool with answers to all health-related questions (Starcevic 2017). As a preventive measure, we think that drawing attention to this subject in informatics lessons in schools and adding the subject to the curriculum will contribute to the recognition of the problem at an early age and to combat the problem.

Conclusion

With the ever-increasing digital technology, health information search behavior will increase over time as a result of more available access to the internet. As a result of this increased health information-seeking behavior, the incidence of cyberchondria is also expected to increase. Despite these expectations, there is a limited number of current literature on cyberchondria. Cyberchondria can often be overlooked in the outpatient and clinical setting. We think that these people also apply to outpatient clinics other than psychiatry. The increase of our epidemiological, etiological, and treatment knowledge about cyberchondria will help correct approaches. Thus, we think that the quality of individuals' lives and the quality of clinicians' work will increase in cyberchondria.

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