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언론정보학석사학위논문

# **Why Does Health Information Acquisition Increase Physician Visits?**

**: The Role of Hypochondriasis**

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## **Abstract**

# **Why Does Health Information Acquisition Increase Physician Visits? : The Role of Hypochondriasis**

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Hypochondriasis refers to the overwhelming fear of having a serious illness despite the absence of an actual medical condition. Hypochondriasis is also considered as a health anxiety. Hypochondriasis in South Korea is of particular concern in public health due to general population's high consciousness in health. However, compared to Western countries, a few studies have addressed hypochondriasis in South Korea. This study focused on health information acquisition as one cause of hypochondriasis. In the information age, people often obtain health information not only from online sources but also from different information sources (television, print media, interpersonal communication). If people whom acquire health information are more likely to be concerned about their health

status, then the relationship between health information acquisition and hypochondriasis should be examined. The effects of health information acquisition from the internet on hypochondriasis have been well studied, but the effects of health information acquisition from various information sources on hypochondriasis have been under researched. Thus, this study aimed to answer the following question: Does health information acquired through various information sources influence hypochondriasis?

Furthermore, understanding both health information acquisition and hypochondriasis is imperative because they are both correlated with medical costs. Due to the fact that the health information acquired from non-physician sources is uncertain, it may increase the frequency of physician visits. Also, hypochondriasis is one of the main causes of increased medical costs worldwide. Therefore, this study is aimed to empirically test the relationships among health information acquisition, hypochondriasis, and physician visits by conducting a nationally representative survey in South Korea.

South Korean population between 19 and 59 years of age participated in a two-wave longitudinal survey ( $N = 2,000$  at Wave 1 and  $N = 1,300$  at Wave 2). The results indicated that health information acquisition at Wave 1 predicted hypochondriasis at Wave 1, which in turn increased physician visits at Wave 2, after

controlling for Wave 1 physician visits and other potential confounders. This result suggested that people who acquire health information from numerous information sources are more likely to suffer from hypochondriasis, which results in increased physician visits. Also, hypochondriasis is a mediator of the relationship between health information acquisition and physician visits.

**Keyword :** Hypochondriasis, Hypochondria, Cyberchondria, Health anxiety, Online health information, Health information, Health information acquisition, Physician visits

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## I. Introduction

“Nothing is more fatal to health than an over care of it.”

– Benjamin Franklin –

Hypochondriasis refers to an overwhelming fear of having a serious illness despite the absence of an actual medical condition. Hypochondriasis is a kind of health anxiety, with an estimated prevalence of 5% in the general United States population (American Psychiatric Association, 1980; Asmundson et al., 2001; Fink et al., 2004; Gureje et al., 1997). Despite its prevalence, a large number of hypochondriasis patients refrain from obtaining the psychiatric treatments they need because they deny the notion that their illness is a form of mental delusion (Warwick & Salkoviks, 1990). Because of the resulting scarcity of empirical data, the literature on hypochondriasis remains static, and the confusion over its definition and nosological status continues to this day (Bleichhardt & Hiller, 2007). The *Diagnostic and Statistical Manual of Mental Disorders* (4<sup>th</sup> ed.; *DSM-IV*; American Psychiatric Association, 1980) defined hypochondriasis as a somatoform disorder, but The *Diagnostic and Statistical Manual of Mental Disorders* (5<sup>th</sup> ed.; *DSM-V*; American Psychiatric Association, 2013) redefined it with two distinct disorders, namely, illness anxiety disorder and somatic symptom disorder (American Psychiatric Association, 2013). The redefinition of

hypochondriasis in *DSM-V* shows the recent tendency to consider it as health anxiety.

With the advent of the digital age, 72% of Internet users search health information on the Internet, and one-third of adults in the United States use online health information as a diagnostic tool (Fox & Duggan, 2013). In this era, a new term, “cyberchondria,” emerged. This term was derived from the words “cyber” and “hypochondriasis.” Cyberchondria indicates health anxiety brought on by searching online for too much health-related information. Cyberchondria is also considered the “21st century counterpart” of hypochondriasis (Kohler, 2012). People are more likely to suffer from hypochondriasis by researching the symptoms of a disease on the Internet because online health information is disorganized, of poor quality, and erroneous (Chung, 2013; Cline & Haynes, 2001). Searching for health information on the Internet increases people’s health anxiety (White & Horvitz, 2009). Previous studies found that health-related online information affects hypochondriasis (Muse et al., 2012; Starcevic & Berle, 2013; te Poel et al., 2016; White & Horvitz, 2009). However, these studies focused only on the cross-sectional association between online health information and hypochondriasis; this association has been rarely studied longitudinally. Whether hypochondriasis is influenced by online health information is unclear. In this regard, the current study substantially extends the existing

literature by examining how health information acquisition and hypochondriasis are positively related longitudinally.

Understanding both health information acquisition and hypochondriasis is important because they are related with medical costs. Internet use for health information is positively associated with the frequency of physician visits (Suziedelyte, 2012; Dwyer & Liu, 2013). Because of uncertainty and errors in health information obtained from non-physician sources, people are more likely to visit a doctor's office. Furthermore, online health information seeking may lead to a "doctor-shopping" behavior in that high online information seekers become less satisfied with physician consultations (Tanis, et al., 2016). As people acquire more health information on the Internet, they also seek more health information from health professionals and thus visit them more often for treatment (Lee, 2008).

Furthermore, hypochondriasis is one of the main causes of increased medical costs worldwide. Patients with hypochondriasis are more dissatisfied with their physicians, so they utilize medical services at a greater frequency and pay higher medical costs (Barsky et al., 2001). Hypochondriasis therefore places a substantial burden on health services (Barsky, 2005). Researchers estimate that "the total incremental cost of somatization is in the neighborhood of \$256 billion per year" by extrapolating their finding to the United States at large (Barsky et al., 2005, p. 908). Furthermore, one study observed

that 20% of the total medical expenditures were allocated to patients with a somatoform disorder and hypochondriasis (Kellner, 1990).

In summary, health information acquisition, hypochondriasis, and physician visits are related to one another. This study proposed hypochondriasis as a mediator in explaining the relationship between health information acquisition and physician visits. To more precisely capture health information acquisition, the current study further examined total use of health information obtained from all different communication channels (the Internet, television, print media, and interpersonal communication); by contrast, previous studies just focused on Internet use for health information. The current study anticipated that health information acquisition obtained from various communication channels influences on hypochondriasis.

The purpose of this study was to describe how health information acquisition obtained from diverse types of mediums affects hypochondriasis and physician visits longitudinally. By using a two-wave panel dataset from a population-based survey of adults in South Korea, this research assessed whether longitudinal evidence exists for associations among health information acquisition, hypochondriasis, and physician visits. In short, the current study examined how health information acquisition, hypochondriasis, and physician visits are related to one another longitudinally in a large nationwide sample.

## **II. Literature Reviews**

### **1. Hypochondriasis and physician visits**

Hypochondriasis is defined as any preoccupation with or fear of having a serious illness “without adequate organic pathology to account for the reaction” that occurs despite medical reassurance (Warwick & Salkovskis, 1989). In previous empirical researches, hypochondriasis has been viewed as the tendency to worry excessively about having a serious illness. Also, hypochondriasis has some similarities with other terms, such as the “medically unexplained complaint,” “illness worry,” “illness phobia,” “somatization,” “illness attitudes,” and “illness behaviors” (Lipsitt & Starcevic, 2001). Hypochondriasis affects up to 5% of the general population of the United States (American Psychiatric Association, 1980; Asmundson et al., 2001; Gureje et al., 1997). Despite its prevalence, hypochondriasis is a concept that requires further exploration by scholars because it lacks a comprehensive and precise explanation, most likely due to its unusual psychiatric nature. The confusion regarding the term “hypochondriasis” remains unresolved due to its unproven implications and numerous meanings, as well as the scarcity of empirical data on this issue (Bleichhardt & Hiller, 2007).

Beyond the controversy regarding how hypochondriasis is defined, there seems to be an overarching problem because hypochondriasis poses a serious problem in the medical realm. Previous studies have indicated that hypochondriasis increases the frequency of medical visits (Kasteler et al., 1976; Parker & Lipscombe, 1980; Barsky et al., 1986; Barsky et al., 1991; Barsky et al., 2005). Hypochondriacs, individuals who suffer from hypochondriasis, tend to attribute ordinary physical symptoms to a serious sickness and are often dissatisfied with their medical care (Fionda & Furnham, 2014). This tendency leads them to visit general health centers repeatedly (Warwick & Salkoviks, 1990). Kasteler et al. (1976) suggest that hypochondriasis may be one leading cause of doctor-shopping behaviors. In their study of a population of approximately 7,500 households in Salt Lake City, Utah, a 10% stratified sample was drawn from lower- and upper-income residential areas. This sample included 576 families (1,897 individuals). Researchers have suggested several potential reasons for doctor-shopping behavior, such as a lack of confidence, dissatisfaction with physicians, and the poor utilization of doctor's services. They considered hypochondriasis to be one such reason. Their findings supported the notion that patients who are disposed to hypochondriasis have a greater tendency to shop for doctors. In short, hypochondriasis is positively related to a doctor-shopping behavior.

Past studies have also proposed that patients with hypochondriasis tend to engage in a doctor-shopping behavior because they consult multiple physicians for the same problem (Smith et al., 1986; Simon, 1992). In addition, Barsky et al. (1991) examined the relationship between hypochondrical patients and their medical care. This study was conducted in the general medicine clinic of Massachusetts General Hospital. The researchers gave a hypochondriasis questionnaire, as a screening instrument, to randomly chosen consecutive clinic attenders ( $N=1,036$ ), and those who scored above a pre-established cutoff ( $N=59$ ) received a structured interview to diagnose *DSM-III-R* hypochondriasis. About two-thirds of these patients ( $N=41$ ) constituted the hypochondrical sample. A comparison group ( $N=71$ ) was obtained by selecting patients at random from among those with screening scores below the cutoff. In the study, the results confirmed that hypochondrical patients were more likely to schedule physician visits, emergency visits, and mental health visits due to their dissatisfaction with medical care. The results also showed that hypochondriacs' somatic complaints generate more extensive outpatient care.

Furthermore, Barsky et al. (2005) conducted a survey to compare the medical utilization of somatizing and non-somatizing patients. Consecutive patients ( $N=1,546$ ) attending primary care practices at the Brigham and Women's Hospital (Boston, Mass)

completed self-report questionnaires assessing somatization, health-related anxiety, and psychiatric disorders. Information regarding the utilization of medical resources within the hospital system for the 12 months prior to an index visit was obtained from the automated medical records. This study was conducted between July 31, 2000 and June 1, 2002. The results proved that “somatizing patients have approximately twice the outpatient and inpatient utilization of nonsomatizers” (p. 907). Also, the findings showed that somatizing patients’ total annual medical care costs were \$6,354, as compared to \$2,762 for non-somatizers.

In particular, Korean population take more frequent physical examinations due to their high consciousness in health. According to the research report conducted by People’s Health Institute (2015), physical examinations cost up to 1.6 billion dollars per year in South Korea. Excessive medical care and doctor shopping place much more financial burden on current health insurance system.

Hypochondriasis poses an immediate and serious threat to public health because patients affected by this condition deplete medical services. Despite the rising demand for professional health advice, the number of medical staff and the amount of resources available remain static. While patients have become increasingly comfortable acquiring information about diseases and their treatment through the Internet (Gustafson et al., 2001), medical professionals

have leveled criticism against the indiscriminate use of information provided on the Internet (Shactman, 2000). Medical professionals refer to these patients as “thick chart” patients who repeatedly visit doctors regarding the same symptoms, obtain multiple subspecialty consultations, and receive extensive and costly diagnostic examinations (Barsky & Klerman, 1983). Studies suggested that this group of patients constitutes frequent users of the healthcare system (Hoeper et al., 1980). On the basis of the above considerations, the following hypothesis 1 was created.

*H 1: Hypochondriasis will increase the number of physician visits.*

## **2. The effects of Internet use for health information on hypochondriasis**

Previous empirical studies have found that the Internet is the most widely health information source (Fox & Duggan, 2013; Hesse et al., 2005; Ybarra et al., 2008). Compared to traditional media, the Internet provides healthcare consumers an interactive means of assuming a more active role in medical decision making (Lee, Gray, & Lewis, 2010). Specifically, health information transfer via the Internet has been lauded for providing even non-professionals a

greater understanding of health and illness, thereby allowing them a more accessible and cheaper way to attain better health. Indeed, online medial searches have positive aspects, such as knowledge empowerment (Bastian, 2003), support, reassurance (Sillence & Briggs, 2007), and altruism (Adar & Huberman, 2000).

Many polls suggest that most Americans have used the Internet to look for health information (Fox & Duggan, 2012; HINTS, 2007; Harris Poll, 2011). The Harris Poll tracked the number of cyberchondriacs, individuals who use the Internet to search for health-related information. The number of cyberchondriacs had increased from 1998 to 2010. The 2010 Harris Poll, which surveyed 1,066 adults, found that 88% of those surveyed who were connected to the Internet had looked for health-related information for themselves or others, which was the highest number registered by the Harris Poll. One-third of all individuals connected to the Internet said that they looked for health information “often.” Also, according to the Pew Research Center (2012), 72% of adult Internet users reported that they had searched for health-related information online within the past year.

It was not until recently that scholars began to cast a light on the darker aspects of the Internet-based health information and caution against “overly optimistic prognostications about what eHealth can do” (Viswanath & Kreuter, 2007, p. S131). With the advent of the digital

age, health information obtained from the Internet has come to be considered a factor in hypochondriasis. There has been evidence showing that the Internet may increase health anxieties among the general public, who have not received professional medical training, especially when Internet research is utilized as a diagnostic tool (White & Horvitz, 2009).

Starcevic and Berle (2013) proposed that online health information seeking is fueled by heightened health anxiety. Online health information may also make individuals more concerned about their health and well-being. Previous studies have found that online health information seeking is positively associated with hypochondriasis (White & Horvitz, 2009; Starcevic & Aboujaoude, 2015; Starcevic & Berle, 2015). About 20% of people who look for online health information experience an escalation of health concerns (White and Horvitz, 2009). Searching for health information from the Internet may trigger increased anxiety levels.

Accordingly, Chae (2015) determined that online information seeking about cancer increases cancer worry. To prove the relationship between online cancer information seeking and cancer worry, this study used both cross-sectional survey and two-wave survey. Study 1 ( $N= 308$ ) showed that there is a positive association between online cancer information seeking and cancer worry. Also, in study 2 ( $N=$

1130 at Wave 1 and 813 at Wave 2), online cancer information seeking is the significant predictor of cancer worry.

Recently, the term ‘cyberchondria’ has been frequently used. It was derived from the words ‘cyber’ and ‘hypochondriasis.’ Cyberchondria describes people who have health anxiety due to online health information seeking. There are many definitions of cyberchondria, but no consensus exists. Starcevic and Berle (2013) analyzed each concept of cyberchondria and found something in common. They defined cyberchondria as “an excessive or repeated search for health-related information on the Internet, driven by distress or anxiety about health, which only amplifies such distress or anxiety” (p. 206). In short, cyberchondria is hypochondriasis in the digital age.

However, most previous studies rarely focus on the effects of health information obtained from the Internet in terms of its source. Only a few studies have investigated the source-specific effects of Internet health information. For example, Chae (2015) classified cancer information from the Internet into three types: online news, health-related websites where information comes from professionals (i.e., medical organizations or physicians), and information from peers (i.e., online health-related communities or social networking sites). Nowadays people usually get health information from various communication channels in daily lives, so it is needed to consider other information sources when analyzing health information

acquisition. To improve upon Chae's (2015) study, the present study investigated other communication channels to get health information.

### **3. Considering the potential for other medium effects on hypochondriasis**

Previous studies have usually had much attention to the Internet as an efficient tool for health information because it is easily accessible, and provides an unlimited amount of health information to the general public. There have been only a few published studies that examine effects of other sources of health information. However, scholars still recommend looking beyond the Internet and examining the traditional mass media as a viable source of health-related information (Lee et al., 2012). People still rely on various sources other than Internet such as traditional mass media and interpersonal communication for health information.

In particular, in South Korea, Kim et al. (2015) discovered that people use various sources to obtain health information. This study provided the nine commonly used health information sources (Internet, TV/cable TV, radio, newspapers/magazines, pamphlets/brochures, books, social networking services, other people, health professionals) to the survey respondents, and then respondents selected all of the sources they had used to acquire health information in their lives. As a result, researchers found that on average the respondents use three sources to get health information among nine information sources ( $M = 3.01$ ,  $SD = 1.53$ ).

In addition, in South Korea, TV has played a critical role in informing audiences about health information followed by the Internet (Choi et al., 2003). For example, Son et al. (2017) conducted a survey, and participants ( $N = 542$ ) were asked “which sources would you prefer to get health information?” from the following list: television/radio, internet, health professionals, family and friends, book/magazines/newspapers, brochures and pamphlets, education programs, and other. Multiple responses allowed. In results, Television/radio (48.2%) was the most accessible source to get health information, followed by the internet (37.8%), health professionals (38.6%), and family and friends (29.3%).

Television has remained a source of important health related information to increase public awareness and influence the public’s cognitive decision making about their own health (Mebane, 2003). Public opinion polls have consistently underscored the public’s dependence on television as a source of health information. In the *Health News Index Poll* conducted by the Kaiser Family Foundation and the Harvard School of Public Health (2001), when asked “Which one of the following has been your most important source of news and information about health issues?” 49% of those in a national sample of adults chose “television.”

In addition, Jeong et al. (2007) conducted an internet-based survey, and they analyzed the ratio of source of health information

that participants used. With a total 958 participants, results showed that the Internet is the first source of health information (68.3%), followed by mass media (7.7%), and then interpersonal communication (7.6%). The ratio of other medium is relatively low compared with the Internet, but people are still influenced by health information that mass media and interpersonal communication offered. Thus, the current study discovered whether health information from media and interpersonal communication associates with hypochondriasis.

Also, Chae (2015) showed that the type of medium has different effects on people's thought and feeling about cancer. In results, the positive association between interpersonal communication and cancer fear was proved. Also, cancer risk perception was positively related with television and print media. Morton and Duck (2001) demonstrated that both mass media and interpersonal communication are associated with personal risk perception of skin cancer, and interpersonal communication has more strong correlation with personal risk perception than mass media. Therefore, many studies about cancer information have measured participants' exposure to information from print media, television, the Internet, interpersonal communication, and healthcare professionals (e.g., Kelly et al., 2010; Nguyen et al., 2010; Pecchioni & Sparks, 2007). McCaul et al. (1998) investigated that participants' thoughts about breast cancer are influenced by both mass media or interpersonal communication, which

suggests that mass media and interpersonal communication effects on hypochondriasis.

Also, one study suggested that the impact of interpersonal communication is greater than mass media for young college women, while mass media effects are larger in middle-aged women (Ogata Jones, Denham, & Springston, 2006). In the similar context, effects of health information might vary based on characteristics of each medium. Despite the buzz about the amount of information provided by the Internet at an unprecedented speed, it is important to examine other medium of information for a comprehensive understanding of public's search for health information. Therefore, the current study measured other media usage and interpersonal health communication to verify the effects of various sources of health information on hypochondriasis. Given the above considerations, the following research question 1 was posed.

*RQ 1: How will health information acquisition obtained from various information sources be related with hypochondriasis?*

## **4. Hypochondriasis**

Hypochondriasis has been a controversial term, and various definitions of hypochondriasis have been put forward. In the prior literature (Barsky, 1991; Lipsitt & Starcevic, 2001), hypochondriasis has been viewed as a tendency to worry excessively about having a serious illness despite all reassurances and evidence to the contrary. Based on its independence from or dependence on other mental health issues, hypochondriasis can be categorized as either primary and secondary hypochondriasis. Primary hypochondriasis refers to a mental disorder per se, and it co-occurs with other psychiatric conditions. Secondary hypochondriasis refers the situation in which hypochondriasis is part of the clinical presentation of other mental disorders, such as panic disorder, depression, and personality disturbances (Lipsitt & Starcevic, 2001). In the prior literature, hypochondriasis has been explained as a symptom, syndrome, sign, illness, social commentary, defense mechanism, peculiar cognitive style, means of nonverbal communication, pattern of reacting to stress, abnormal illness behavior, obsessional trait, or enduring personality trait (Lipsitt & Starcevic, 2001). The controversy regarding how to define hypochondriasis remains to this day.

One reason Warwick and Salkovskis (1990) suggest for the neglect of hypochondriasis, despite its pervasiveness, is the influence

of the traditional psychiatric perspective, in which hypochondriasis is viewed as secondary to other illnesses, mostly affective disorders. While several studies have suggested that hypochondriasis should not be considered an independent entity (Ray & Advani, 1962; Kenyon, 1964), only Kenyon found, in his study, that hypochondriasis is always part of another syndrome, usually a depressive illness. Soon afterwards, Pilowsky (1970) asserted that hypochondriasis should be regarded as an independent syndrome and criticized the fact that while the results from Kenyon's study were similar to his own, their conclusions were different, suggesting that Kenyon did not appear to have employed tests of statistical significance. Furthermore, he points out that the psychiatrists' case notes used as the basis for Kenyon's study did not employ the same definitional criteria as Kenyon did. The two clusters of clinical features found from Pilowsky's study demonstrate that there is a significant difference between secondary and primary hypochondriasis because the former includes depressive and anxiety syndromes while the latter does not. Bianchi (1971) also found that hypochondriasis is not always dependent on another disease and should be studied as an independent entity.

Another reason for this neglect is the lack of sufficient empirical data with which to study this particular condition. Clinicians have hesitated to use the term hypochondriasis to describe their patients because over time, this term has developed a derogatory

connotation (Barsky & Klerman, 1983). Without an ample number of careful observations of the condition and standardized examinations, clinicians need more data to systematically examine hypochondriasis. This problem is exacerbated by the gap between clinical psychiatry and the general medical setting. There has always been a distinction between illness and disease in the general medical setting, with a more emphasis being placed on the latter because it is based on physical pathology and demonstrable pathophysiology. In a medical center, hypochondriasis is of little scientific interest as it is a self-perceived illness with little or no actual disease (Barsky & Klerman, 1983). In terms of the mental health system, where hypochondriasis is evidently a topic of interest, hypochondriacs refrain from visiting this system because they are easily offended by the notion that their perceived illness is delusional. Thus, instead of presenting themselves at a setting where they can obtain appropriate treatment, hypochondriacs visit medical centers, where their specific illness was of no interest.

#### ***4.1 Hypochondriasis in Korean society***

Hypochondriasis should receive attention from Korean society as well because of its significance. According to *OECD Health Statistics 2016*, South Korea's average life expectancy in 2014 was

85.5 years old, which belonged to the upper ranks across Organization for Economic Co-operation and Development (OECD) member countries. However, Koreans' perceived health status, an indicator of people's overall perception of their health, was the lowest, far below the average (67.7 %) of other OECD countries. Only 28.6% of Koreans reported their health to be "good" or "better." This result suggests that many Koreans are more likely to have hypochondriasis symptoms.

Recently, one study investigated the differences in hypochondriasis symptoms between Korean and American patients with major depressive disorder (MDD) (Chang et al., 2016). This study examined 1,592 Korean and 3,744 American MDD outpatients. The results showed that hypochondriasis symptoms are more prevalent among Koreans than Americans. This finding is compatible with those of large previous studies demonstrating that hypochondriasis is more common in Eastern cultures than in Western ones on the basis of cultural differences (Ananth et al., 1993; Gada, 1982). Most previous studies on hypochondriasis investigated the general population in Americans, but studies on hypochondriasis for Koreans were rare. Therefore, the current study collected the data from Korean online survey company to show how Koreans suffer from hypochondriasis.

## ***4.2 Hypochondriasis as a Mediator***

As above mentioned, health information acquisition may be one factor of hypochondriasis, and hypochondriasis predicts physician visits. In these relationships, it is possible that hypochondriasis roles as a mediator between health information acquisition and physician visits. Thus, on the basis of the above considerations, this study suggested following research question 2.

*RQ 2: How does health information acquisition influence physician visits through hypochondriasis?*

## ***4.3 Criteria for diagnosing hypochondriasis and its prevalence***

According to the *4th Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV*; American Psychiatric Association, 1980), hypochondriasis is classified among the somatoform disorders. However, in the *5th Edition of the Diagnostic and Statistical Manual of Disorders (DSM-V*; American Psychiatric Association, 2013), hypochondriasis was replaced with two distinct disorders, illness anxiety disorder (IAD) and somatic symptom disorder (SSD). In the *DSM-V*, hypochondriasis is reclassified as a health anxiety disorder.

The *DSM-IV* and *ICD-10* propose diagnostic criteria with which to diagnose hypochondriasis. According to the *DSM-IV*, patients with hypochondriasis must meet the six criteria in Table 1. Also, *ICD-10* defines hypochondriasis with the four criteria in Table 2.

*DSM-IV* Hypochondriasis Criteria

<Table 1> *DSM-IV* Hypochondriasis Criteria

A	Preoccupation with fears of having or the idea that one has a serious disease based on the person's misinterpretation of bodily symptoms
B	The preoccupation persists despite appropriate medical evaluation and reassurance
C	The belief in Criterion A is not of delusional intensity and is not restricted to a circumscribed concern about appearance
D	The preoccupation causes clinically significant distress or impairment in social, occupational, or other important areas of functioning.
E	The duration of the disturbance is at least 6 months
F	The preoccupation is not better accounted for by generalized anxiety disorder, obsessive-compulsive disorder, panic disorder, a major depressive episode, separation anxiety, or another somatoform disorder

<Table 2> *ICD-10* Hypochondriasis Criteria

A	<p>Either of the following:</p> <p>a) a persistent belief, of at least six months' duration, in the presence of a maximum of two serious physical diseases</p> <p>b) a persistent preoccupation with a presumed deformity or disfigurement</p>
B	<p>Preoccupation with the belief and symptoms causes persistent distress or interference with personal functioning in daily living and leads the patient to seek medical treatment or investigations</p>
C	<p>Persistent refusal to accept medical advice that there is no adequate physical cause for the symptoms or physical abnormality, except for short periods of up to a few weeks at a time immediately after or during medical investigations</p>
D	<p>Most commonly used exclusion criteria: not occurring only during any type of schizophrenia and related disorder or any mood disorder</p>

Due to the fact that the above criteria are too restrictive for use, the prevalence of hypochondriasis has been estimated as extremely low in many studies (Gurege et al., 1997; Martine & Jacobi, 2006) based on these criteria. Gureje et al. (1997) states that the current criteria for hypochondriasis are too rigid for use in research. To investigate the frequency of hypochondriasis in primary-care settings, Gureje et al. used the WHO Collaborative Study

on Psychological Problems in General Health Care. This study was performed across 15 sites drawn from 14 countries around the world. A total of 25,916 consecutive patients were screened using the twelve-item General Health Questionnaire (GHQ-28). Across the sites, the occurrence of *ICD-10* hypochondriasis was less than 1%. In contrast, a less restrictively defined form of hypochondriasis had a pooled frequency of 2.2%. This finding suggests that the ratio based on the full *ICD-10* criteria for hypochondriasis should be lower than the ratio found using a less restrictive definition of hypochondriasis.

Also, Martine and Jacobi (2006) estimated the prevalence rates for hypochondriasis in the general population. The estimated weighted 12-month prevalence rate was only 0.05% in terms of meeting the full *DSM-IV* criteria for hypochondriasis. This result suggested that hypochondriasis is rare in the general population according to the definition of the *DSM-IV*. Thus, many studies generally use less restrictive inclusion criteria or self-reported questionnaires for hypochondriasis. Studies based on less restrictive criteria have estimated that the prevalence rate varies between 4% and 10% in population-based samples (Looper et al., 2001; Rief et al., 2001).

Most studies have investigated hypochondriasis in clinical settings (Barsky et al., 1990; Seivewright et al., 2004; Typer et al., 2011). The prevalence of hypochondriasis in the general population is unknown, but its prevalence seems relatively high in clinical settings.

For example, studies in primary care facilities suggest that the prevalence of hypochondriasis in this setting is between 0.8% and 4.5%. Patients with hypochondriasis have higher rates of anxiety, depressive disorders, and other somatoform disorders than patients without hypochondriasis (Magariños et al., 2002). Also, in some secondary medical care settings, its prevalence is between 4.2% and 10% (Barsky et al., 1990; Seivewright et al., 2004). Recently, Typer et al. (2011) determined the prevalence of significant hypochondriasis in patients aged 16-75 in general hospitals in London. They confirmed "abnormal health anxiety is common and deserves greater awareness (p. 392)."

#### ***4.4 Hypochondriasis Measurement***

Because of a striking amount of discrepancy in the definition of hypochondriasis, inconsistencies also exist in the methodology used to measure it. The medical and psychometric perspectives have different approaches to identifying hypochondriasis. According to the medical perspective, hypochondriasis is a discrete, categorical entity with "qualitatively distinguishable criterion-level symptoms that are either present or absent" (Longley et al., 2010, p. 506). On the other hand, within the clinical perspective, hypochondriasis is a continuous entity with various dimensions and degrees (Ruscio & Ruscio, 2002). While most hypochondriasis studies have employed a categorical

model consistent with the medical perspective, scholars have consistently supported a dimensional conceptualization of hypochondriasis (Salkovskis & Warwick, 1986). Also, relatively recent studies have found support for a dimensional model of hypochondriasis (Ferguson, 2009; Longley et al., 2010).

Three measures are widely used to measure hypochondriasis. The first measure is the *Multidimensional Inventory of Hypochondriacal Traits (MIHT)* (Longley et al., 2010). This measure is a 31-item self-report questionnaire that was designed to measure the four diagnostic symptoms of hypochondriasis. Each of the four clusters (cognitive, perceptual, behavioral, and affective) is rated on a 5-point scale from strongly agree to strongly disagree. The next measure is the *Illness Attitude Scales (IAS)* (Kellner et al., 1987). This scale is a 29-item self-report measure in which 24 of the items are rated on a 5-point Likert scale from no to almost always to measure hypochondriasis. The remaining five questions assess the utilization of medical services. The third measure is the *Whiteley Index (WI)* (Pilowsky, 1967), which is a 14-item self-report measure that used in combination with expert psychiatrists using factor analysis. It uses a 5-point Likert scale and addresses hypochondriacal concerns. These three scales are still widely used to this day, but the *Whiteley Index* scale has been extensively validated and most closely matches this study's conceptualization of hypochondriasis.

## **5. Health information acquisition and physician visits**

As information becomes ever more accessible to the general public due to technological improvements in communication tools, Niederdeppe and his colleagues have come to refer to the modern health information realm a “consumer-driven health care system” (Niederdeppe, Frosch, & Hornik, 2005). Within this structure, the general public assumes a more active role in health-related decision-making process by seeking information prior to their visits to health professionals (Brashers, Haas, Klingle, & Neidig, 2000).

Given the changing role of the general public in this structure, questions regarding medical and health professionals’ roles must be asked. There have been two approaches to this subject: 1) *deprofessionalization* and 2) *professional dominance*. Traditionally, it was believed that professionals’ authority over their domain was based on the medical-knowledge gap between them and the general public (Robinson, Patrick, Eng, & Gustafson, 1998). Because doctors assumed control of esoteric knowledge (Child & Fulk, 1982), they were able to have a monopoly over the medical discipline. However, after information became easily disseminated through the mass media and the Internet, the system underwent structural remodeling, and the doctors were urged to abdicate their power over medical information

in a process Haug (1973, 1988) terms *deprofessionalization*. According to Haug (1973, 1988), *deprofessionalization* refers to a profession's loss of a "monopoly over knowledge, public belief in their service ethos, and expectations of work autonomy and authority over the client" (1973, p. 197). This challenge professional autonomy disrupts doctors' status (Hardey, 1999), and demystifies medical expertise, thereby increasing skepticism towards professionals (Beck, 1994). According to this perspective, the plethora of information within the mass media and on the Internet will reduce the general public's reliance on medical professionals and decrease the number of physician visits.

The second potential approach to this topic is Freidson's concept of *professional dominance*. According to his study (1984), despite the fact that due to technological advancement, the public eventually gained access to information that had once been exclusively disclosed to professionals, this access was granted to the medical professionals first. Thus, professionals still retain a monopoly in specific areas of this discipline. In addition to this priority access, professionals are able to execute "discretionary interpretations and applications" in the practical field (Nilson, 1979, p. 571). In ambiguous and unprecedented cases, which are inevitable in the real world, doctors are more prone to using discretionary power in a medical judgment than the general public.

Extending the above two approaches to health information seeking and physician visits, there has been a controversy regarding whether online health information is a substitute for or complement to healthcare in medical sociology literatures (Lee, 2008). Two opposing hypotheses have been suggested. The first hypothesis sees online health information can substitute for health professionals because it provides useful health information freely. This hypothesis is based on the first approach mentioned above, *deprofessionalization*, and it holds that online health information may help lower the frequency of visits to health professionals. For example, Schmid (2015) points out that health information has the potential to circumvent unnecessary healthcare expenditures. To prove this point, Schmid (2015) investigated the effect of consumer health information on the demand for physician visits. This study used the data from the Swiss Health Survey conducted in 2007 by the Swiss Federal Statistical Office. The survey includes a phone interview and an additional paper-based form, which was answered by 14,393 individuals. In this study, the results indicate that “the number of office visit decreases with a higher level of consumer health information” (p. 1620). In short, physician visits can be replaced by health information obtained from Internet.

In sharp contrast, a second hypothesis regards online health information as a complement to professional care. A knowledge gap between the general public and health professionals remains, and a

number non-physician health information resources include uncertainty and error. Also, the more people acquire health information, the more concerns about their health will arise. Thus, the second hypothesis holds that health information seeking is a complementary rather than a substitutive function (Lee, 2008) and that if people acquire health information on the Internet, they will be more likely to seek health information from health professionals and visit them for treatment (Lee, 2008).

Some studies have found that searches for medical information on the Internet increase the frequency of medical visits (Suziedelyte, 2012; Dwyer & Liu, 2013). Suziedelyte (2012) demonstrated that health information from the Internet has a statistically significant effect on an individual's demand for medical care. This study showed that health information from the Internet may be a complement to formal healthcare. This study compared between e-health information seekers and non-seekers, and found that "e-health information seekers have higher health care utilization, as measured by the number of visits to a health professional, than non-seekers" (p. 1831). Also, Dwyer and Liu (2013) investigated the impact of health information on demand for health care services. They found that health information obtained from non-physician information sources increased the probability of visiting physicians as well as the frequency of visits.

The current study adopted the second hypothesis. Although the public has ample access to health information on the Internet, they may not be able to appropriately utilize the complex information in reality or may be apprehensive about medical uncertainty. As people are exposed to health information from non-physician sources, they are more likely to require the interpretation of ambiguous information. Because of sensational health information obtained from the Internet, people become more concerned about their health and well-being (Suziedelyte, 2012). However, previous studies (Suziedelyte, 2012; Dwyer & Liu, 2013) only focused on Internet use for health information, and they did not analyze the effect of health information obtained from other information sources on physician visits. There is no evidence whether health information acquisition obtained from all different communication channels (Internet, tv, print media, interpersonal communication) function as a complement to professional care. Thus, the current study suggested the following research question 3.

*RQ 3: How will health information acquisition obtained from various information sources be related with physician visits?*

### **III. Method**

#### ***1. Data Collection and Samples***

The data was collected in a two-wave longitudinal survey. Participants were recruited by a Korean online survey company ([www.embrain.com](http://www.embrain.com)) that has more than one million online panels who participate in academic or commercial research in the nation. The Embrain panel is a convenience sample of individuals living in South Korea (aged over 19 years old and under 59). In September 2016, 2,000 people participated in Wave 1. Six months later, in March 2017, the Wave 2 survey questionnaire was sent to Wave 1 participants, and 1,300 people completed the questionnaire. See Table 3.

<Table 3> Descriptive Statistics

	Wave 1 (N = 2,000)	Wave 2 (N = 1,300)
	M(SD) or %	M(SD) or %
Age	40.89 (11.15)	41.21 (10.82)
Gender	47.3% female	45.4% female
Employment	71.4% employed	73.7% employed
Marital status	61% married	62.8% married
Education <sup>a</sup>	5.61 (.97)	5.66 (.94)
Income (monthly) <sup>b</sup>	4.83 (1.89)	4.86 (1.9)
Health status <sup>c</sup>	3.44 (.86)	3.43 (.84)
Mental health <sup>d</sup>	2.64 (.69)	2.64 (.68)
Health consciousness <sup>e</sup>	3.73 (.71)	3.73 (.69)
Medical trust <sup>f</sup>	2.96 (.81)	2.78 (.6)

Note. Samples are Korean general population aged over 19 and under 59. Multiple items were averaged.

- a. The item was based on an eight-point scale (1 = *never* to 8 = *postgraduate*).
- b. The item was based on an eight-point scale (1 = 0 to \$999 to 8 = \$7000 or more).
- c. A single item based on a five-point scale (1 = *poor* to 5 = *excellent*).
- d. Four items based on a four-point scale (1 = *not at all* to 4 = *very often*).
- e. Three items based on a five-point scale (1 = *strongly disagree* to 5 = *no strongly agree*).
- f. Six items based on a five-point scale (1 = *strongly disagree* to 5 = *no strongly agree*).

## ***2. Statistical Analyses***

This study used Mplus 7. A path analysis was conducted using maximum likelihood estimation. Missing values were estimated by a FIML (full information maximum likelihood method). Age, gender, employment status, marital status, health status, mental health, health consciousness, medical trust, education, income, and physician visits at Wave 1 were used as covariate variables.

## ***3. Measures***

English items were translated into Korean if there is not a Korean-validated version. Items was firstly translated by the author. After that, two college students who know both languages performed back-translation.

### ***Health information sources***

Health information sources was measured by asking the following questions: “People find out about health and medical issues from a variety of sources. Please indicate how often you have done each of the following in the past 30 days?” The sources are as follows: (1) online news (e.g., Chosun.com., Naver.com); (2) social media (e.g., Facebook, YouTube, Twitter, or blogs); (3) medical or health websites (e.g., The Ministry of Health and Welfare website); (4) television; (5) print newspapers or magazines; (6) family, friends,

or co-workers; (7) doctor or other healthcare professional; (8) other sources. Response was rated on a four-point scale (i.e., 1 = “never,” 2 = “rarely,” 3 = “sometimes,” 4 = “often”). Then, the items were averaged (Wave 1:  $M = 2.55$ ,  $SD = .54$ ; Wave 2:  $M = 2.42$ ,  $SD = .55$ ).

### ***Hypochondriasis***

Hypochondriasis was measured by using Whiteley 7-item scale which has been widely used instrument for measuring hypochondriasis. Whiteley Index was firstly proposed by Pilowsky in 1967. Respondents indicated their hypochondriasis by answering following seven questions: (1) “Do you think there is something seriously wrong with your body?” (2) “Do you worry a lot about your health?” (3) “Is it hard for you to believe the doctor when he tells you there is nothing to worry about?” (4) “Do you often worry about the possibility that you have a serious illness?” (5) “Are you bothered by many different pains and aches?” (6) “If a disease is brought to your attention (e.g., on TV, radio, the newspapers, or by someone you know), do you worry about getting it yourself?” (7) “Do you find that you are bothered by many different symptoms?” Respondents answered on a three-point scale (1 = “yes,” 2 = “no,” 3 = “I do not know”). Then, the items were summed (Wave 1:  $M = 1.87$ ,  $SD = 1.74$ ; Wave 2:  $M = 5.06$ ,  $SD = 1.76$ ).

### ***Physician visits***

Respondents indicated their physician visit by answering about “how often they go to a doctor’s office or medical clinic for regular check-ups or treatment of any ailments they have in last 3 months” on a five-point scale (i.e., 1 = “not at all,” 2 = “once,” 3 = “twice,” 4 = “once per month,” 5 = “two or more times per month”). Then, items were averaged (Wave 1:  $M = 2.12$ ,  $SD = 1.25$ ; Wave 2:  $M = 2.26$ ,  $SD = 1.23$ ).

### ***Confounding variables***

#### **(health status, health consciousness, mental health, medical trust)**

This study controlled for several potentially confounding variables. First, respondents indicated their degree of health status by answering about “how about your health status?” on a five-point scale (i.e., 1 = “very poor,” 2 = “poor,” 3 = “normal,” 4 = “good,” 5 = “excellent”) ( $M = 3.44$ ,  $SD = .86$ ).

Second, respondents indicated their degree of health consciousness by answering the following three statements: (1) “I think a lot about my health” (2) “I try to do things to stay healthy” (3) “My health is important to me.” Respondents answered on a five-point scale (i.e., 1 = “strongly disagree” to 5 = “no strongly

agree”). Then, the answers to these statements were averaged ( $M = 3.73$ ,  $SD = .71$ ).

Third, mental health was controlled as well. Participants reported how often they have been bothered by any of following four problems: (1) “Little interest or pleasure in doing things” (2) “Feeling down, depressed or hopeless” (3) “Feeling nervous, anxious or on edge” (4) “Not being able to stop or control worrying.” Respondents answered these problems on a four-point scale (i.e., 1 = “not at all,” 2 = “nearly not at all,” 3 = “several days,” 4 = “very often”). Then, the answers to these problems were averaged ( $M = 2.64$ ,  $SD = .69$ ).

Fourth, medical trust was controlled by asking both global medical mistrust, adapted from Medical Mistrust Index (La Veist), and personal trust in health care provider. There are six statements: (1) “Patients have sometimes been deceived or misled by health care providers” (2) “When health care providers make mistakes they usually cover it up” (3) “Health care providers have sometimes done harmful things to patients without their knowledge” (4) “I trust that health care providers are giving me the best treatment available” (5) “I trust that health care providers have my best interest in mind when treating me” (6) “I trust that health care providers will tell me if a mistake is made about my medical treatment.” Respondents answered on a five-point scale (i.e., 1 = “strongly disagree” to 5 = “no

strongly agree”). Then, the answers to these statements were averaged ( $M = 2.96$ ,  $SD = .81$ ).

This study also controlled for self-reported sociodemographic variables (i.e., age, gender, income, education, employment status, marital status).

## IV. Results

A path analysis was conducted. Hu and Bentler (1999) suggested that a good model should have a root mean square error of approximation (RMSEA) of  $\leq .06$ , a comparative fit index of  $\geq .95$ , and a standardized root-mean-square residual  $\leq .08$ . The model showed an acceptable fit: RMSEA = .077; 90% CI = [.052, .106]; CFI = .96; and SRMR = .011. When taking the control variables into account, the model explained 21.6% of the variance in hypochondriasis at Wave 1 and 17.8% of the variance in physician visits at Wave 2.

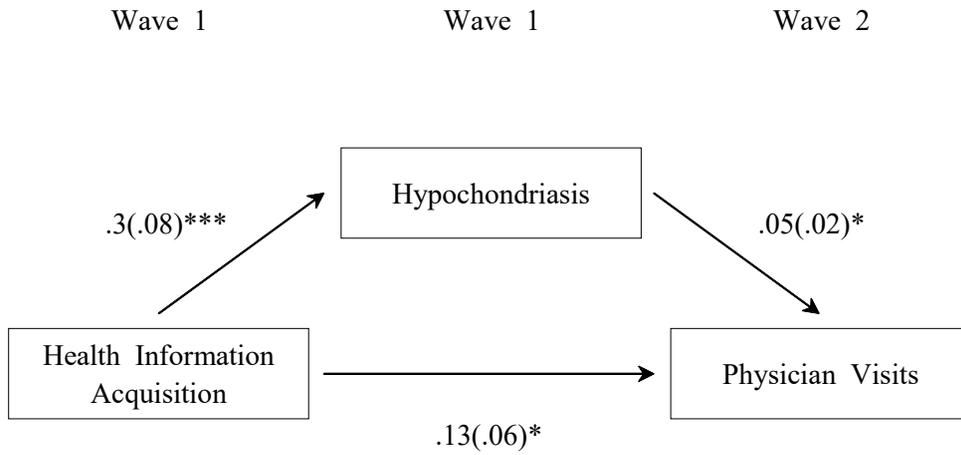
To recap briefly, this study advanced one hypothesis and three research questions. H1 predicted that hypochondriasis would increase the number of physician visits. RQ1 asked whether health information acquisition was correlated with hypochondriasis. RQ2 asked whether health information acquisition influenced physician visits through hypochondriasis. RQ3 asked whether health information acquisition was correlated with physician visits.

The results showed that hypochondriasis at Wave 1 was positively correlated with physician visits at Wave 2, after controlling for sociodemographic, mental health, medical trust, health status, health consciousness, and physician visits at Wave 1 ( $\beta = .07$ ,  $p < .05$ ). Thus, H1 was supported. Also, health information acquisition at

Wave 1 and hypochondriasis at Wave 1 were positively correlated, after controlling for other confounding variables, answering RQ1 ( $\beta = .09, p < .01$ ).

Furthermore, health information acquisition at Wave 1 was positively correlated with physician visits at Wave 2, after controlling for sociodemographic, mental health, medical trust, health status, health consciousness, and physician visits at Wave 1 ( $\beta = .06, p < .05$ ), answering RQ3.

Finally, this study used the Sobel test to check for mediation effects,  $t = 2.00, p = .04$ . It showed that the indirect effects among variables were significant. To answer RQ2, through hypochondriasis, health information acquisition and physician visits were correlated. Thus, the mediation effect was supported. However, health information acquisition at Wave 1 was directly correlated with physician visits at Wave 2 ( $\beta = .06, p < .05$ ). There was a direct effect between the two variables. Thus, this was a partial mediation model, not a full mediation model (see Figure 1).



**Figure 1.** The relationships among health information acquisition, hypochondriasis, and physician visits in the South Korean sample. The displayed values are unstandardized coefficients and standard errors.

## V. Discussion

The effects of health information acquisition from various information sources on hypochondriasis have been under researched compared to those from the online sources, which exclude people whom acquire health information from non-online information sources. Thus, this study aimed to answer the following question: Does health information acquired through various information sources influence hypochondriasis?

The survey results showed that health information acquisition was positively correlated with hypochondriasis. Health information acquisition at Wave 1 was positively correlated with hypochondriasis at Wave 1 ( $\beta = .09, p < .01$ ), after controlling for sociodemographic, mental health, medical trust, and health status. This finding confirmed that people whom gain health information from numerous information sources are more likely to be concerned about their health. This finding was compatible with the large body of literature demonstrating that acquiring health information from the Internet is positively correlated with hypochondriasis (White & Horvitz, 2009; Starcevic & Berle, 2013; Starcevic & Aboujaoude, 2015). However, previous studies only focused on the effects of a single medium—the Internet—while this study investigated the effects of health information acquisition from several different information sources (i.e., the Internet,

television, print media, and interpersonal communication). This finding suggested that future studies should well consider all information sources when analyzing the effect of health information acquisition on hypochondriasis.

Also, consistent with H1, hypochondriasis was significantly correlated with physician visits, after controlling for sociodemographic, mental health, medical trust, health status, health consciousness, and physician visits at Wave 1 ( $\beta = .07, p < .05$ ). Thus, people with health anxiety, or hypochondriasis, are more likely to seek health information from physicians by visiting them for treatment. This result is consistent with previous studies that found that hypochondriasis increases the frequency of physician visits (Warwick & Salkoviks, 1990; Barsky et al., 1991; Barsky et al., 2005). The present study reaffirmed the correlation between hypochondriasis and physician visits through a two-wave longitudinal survey. This correlation suggests that “extra medical cost might be offset by savings on health service consultations” (Seivewright et al., 2008, p. 332).

The most interesting finding of this study was the role of hypochondriasis in the relationship between health information acquisition and physician visits. By using the Sobel test, health information acquisition and physician visits were positively correlated through hypochondriasis ( $t = 2.00, p = .04$ ). This result suggests that hypochondriasis is a mediator between health information acquisition

and physician visits. However, health information acquisition and physician visits were directly correlated ( $\beta = .06, p < .05$ ). Thus, this was a partial mediation model, not a full mediation model.

In summary, health information acquisition at Wave 1 predicted hypochondriasis at Wave 1, which in turn increased physician visits at Wave 2. This result suggests that people who acquire health information from information sources suffer from hypochondriasis, which results in increased physician visits. Hypochondriasis is a mediating variable in these relationships.

Finally, these findings have practical implications. When it comes to hypochondriasis, scholars should pay attention to more than one information source, as people are exposed to a lot of health information from various sources. In the information age, people acquire health information through many information sources in their daily lives, and health information may impact hypochondriasis. Furthermore, scholars should consider the role of hypochondriasis as a mediator between health information acquisition and physician visits.

## **VI. Limitations and Suggestions for Future Research**

As discussed, this study takes a significant step toward a better understanding of the role of hypochondriasis in the relationship between health information acquisition and physician visits. However, this study has several limitations. First, future research should investigate health information acquisition according to media source, which may influence the effects of health information acquisition on hypochondriasis. This study examined total health information acquisition from various information sources, but it did not verify the separate effects of each information source. Acquiring a variety of health information from television, print media, and interpersonal communication may have medium-specific effects. For example, Chae (2015) examined that the type of media affects people's thoughts and feelings about cancer. Thus, the effects of health information acquisition may vary based on the characteristics of each type of media. Despite the hype about the unprecedented amount and speed of information provided by the Internet, it is important to examine other sources of information for a comprehensive understanding of people's health information acquisition. Therefore, future research should consider all possible sources of health information and examine the effects of each.

Furthermore, in this study, hypochondriasis was assessed through a self-report questionnaire. However, because the concept of hypochondriasis is complex, future studies could add interviews and dialogues regarding hypochondriasis.

Finally, the effect sizes between variables in the present study were small due to the correlations between the variables. Future studies should measure variables with high reliability when conducting studies similar to the current study.

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## APPENDIX – SURVEY QUESTIONS

1. 귀하의 성별은 무엇입니까?

1) 남자 2) 여자

2. 귀하의 연령은 어떻게 되십니까?

만 \_\_\_\_\_ 세

3. 귀하의 직업은 무엇입니까?

- 1) 자영업
- 2) 사무직/기술직
- 3) 경영/관리직
- 4) 전문직
- 5) 기능/생산직
- 6) 판매/서비스직
- 7) 농/임/축/어업
- 8) 주부
- 9) 학생
- 10) 무직
- 11) 기타

4. 혼인 상태는 어떠합니까?

- 1) 미혼
- 2) 배우자 있음
- 3) 동거
- 4) 사별
- 5) 이혼
- 6) 별거

5. 정규교육은 어디까지 받았습니까? 교육부장관이 인정하는 학력을 정규교육으로 봅니다. 검정고시에 합격한 경우는 정규교육을 받은 것으로 인정합니다. 초등학교 취학 이전의 아동은 “받지 않았음 (미취학 포함)” 에 표시합니다.

- 1) 받지 않았음 (미취학 포함)
- 2) 초등학교
- 3) 중학교
- 4) 고등학교
- 5) 대학교 (2, 3 년제)
- 6) 대학교 (4 년제 이상)
- 7) 대학원 석사 과정
- 8) 대학원 박사 과정

6. 귀하 가정의 월 평균 가구소득은 어떻게 되십니까? (가족 모두의 월급, 보너스, 사업소득, 임대소득, 이자 등을 모두 포함해서 말씀해 주시기 바랍니다).

- 1) 100 만원 미만
- 2) 100~200 만원 미만
- 3) 200~300 만원 미만
- 4) 300~400 만원 미만
- 5) 400~500 만원 미만
- 6) 500~600 만원 미만
- 7) 600~700 만원 미만
- 8) 700~800 만원 미만
- 9) 800~900 만원 미만
- 10) 900~100 만원 미만
- 11) 1000 만원 이상

7. 귀하의 건강상태는 어떻습니까?

- 1) 매우 건강하다
- 2) 건강하다
- 3) 보통이다
- 4) 건강하지 않다
- 5) 매우 건강하지 않다

8. 건강에 관한 다음의 문장을 읽고 이에 얼마나 동의하는지 응답해주세요.

전혀 동의하지 않는다.	2	3	4	매우 동의한다.
1	2	3	4	5

1. 나는 나의 건강에 대해 자주 생각한다.
2. 나는 건강을 유지하기 위해 노력한다.
3. 나의 건강은 나에게 중요하다.

9. 다음의 문장을 읽고 이에 얼마나 동의하는지 응답해주세요.

전혀 동의하지 않는다.	2	3	4	매우 동의한다.
1	2	3	4	5

1. 환자들은 때때로 의료인들에게 속는다.
2. 의료인들은 실수를 저질렀을 때에, 그들은 일반적으로 진실을 덮으려고 한다.

3. 의료인들은 때때로 환자들이 모르는 사이에 환자에게 유해한 행위를 한다.
4. 나는 의료인들이 그들이 할 수 있는 최선의 서비스를 내게 제공한다고 믿는다.
5. 나는 의료인들이 나를 진료할 때에 나에게 최선인 방향으로 진료할 것이라고 믿는다.
6. 나는 의료인들이 나를 진료하다가 실수가 생겼을 때에 내게 사실대로 말해줄 것이라 믿는다.

10. 지난 2 주 동안, 얼마나 자주 다음과 같이 느꼈습니까?

거의 매일	자주 느꼈다	가끔 느꼈다	전혀 느끼지 않았다
1	2	3	4

1. 매사에 무관심하거나 흥미를 느끼지 못했다
2. 침체되었거나 우울하거나 혹은 좌절감을 느꼈다
3. 불안하거나 초조하거나 혹은 예민해졌다.
4. 걱정하는 것을 멈추거나 조절할 수 없었다.

11. 다음 서술문에 대해 어떻게 생각하는지 응답해주시시오.

그렇다	아니다	모르겠다
1	2	3

1. 당신은 당신의 몸이 심각하게 잘못되었다고 생각하십니까?
2. 당신은 건강에 대해 많이 걱정하십니까?
3. 당신은 의사가 아무 걱정할 필요가 없다고 진단을 할 경우 그 진단을 믿기 어렵습니까?
4. 당신은 종종 당신이 심각한 질병을 가지고 있을 가능성에 대해 걱정하십니까?
5. 당신은 신체 곳곳의 고통과 통증에 시달리고 있습니까?

6. 어떠한 질병에 대해 알게 되었을 경우 (TV, 라디오, 신문 혹은 지인을 통해), 당신은 그 질병에 걸릴 가능성에 대해 걱정합니까?
7. 당신은 다양한 증상에 시달리고 있습니까?
12. 지난 3 개월 간, 얼마나 자주 건강 문제로 의사를 났습니까?

전혀	1 번	2 번	1 달에 1 번 정도	1 달에 1 번 이상
1	2	3	4	5

13. 지난 한달 동안 아래의 정보원을 통해 건강과 의료에 관한 보도나 정보를 얼마나 자주 접했습니까?

전혀 접하지 못했다.	거의 접하지 못했다	조금 접했다	자주 접했다
1	2	3	4

1. 온라인 뉴스  
(예 : [www.chosun.com](http://www.chosun.com), [www.naver.com](http://www.naver.com))
2. 소셜미디어  
(예: Facebook, YouTube, Twitter, 혹은 블로그)
3. 건강 또는 의료 전문 웹사이트  
(예: 보건복지부 웹사이트)
4. 텔레비전
5. 신문 또는 잡지
6. 가족, 친구, 또는 직장 동료
7. 의사 또는 다른 의료 전문가
8. 기타.

## 국문초록

“건강에 대한 지나친 걱정만큼 건강에 치명적인 것은 없다.”

-벤자민 프랭클린-

건강염려증이란 실제로 그들의 건강에는 문제가 없는데도 불구하고 스스로 건강에 문제가 있다고 오해석하고 건강에 대해 과도하게 걱정하는 일종의 불안장애이다. 특히 한국에서 건강염려증을 호소하는 사람들이 늘어나는 추세인데, 서구 사회와 비교하여 한국 사회에서 건강염려증과 관련한 연구가 부족한 실정이다. 이 논문은 건강염려증을 유발하는 여러 가지 원인들 중 하나인 건강정보이용에 주목하였다. 오늘날 사람들은 인터넷뿐만 아니라 다양한 커뮤니케이션 채널을 통해서 건강정보를 얻고 있다. 건강정보가 범람하는 시대에서 만약 건강정보를 많이 얻은 사람일수록 건강염려증이 높아진다면, 그 관계에 대한 규명이 필요한 시점이다. 따라서 이 연구는 건강정보이용이 건강염려증에 미치는 영향을 밝히고자 하였다. 이와 관련한 선행 연구들이 인터넷을 통해 얻는 건강정보가 건강염려증에 미치는 효과를 분석하는 데에서 그친 것에 반해 이 연구는 더 나아가 인터넷뿐만 아니라 다른 커뮤니케이션 채널을 통해 얻는 건강정보의 총합이 건강염려증에 미치는 영향을 살펴보고자 하였다.

뿐만 아니라 건강정보이용과 건강염려증은 의료비용과도 연관이 있다는 점을 주목할 필요가 있다. 비의료인을 통해 얻는 건강정보는 다소 부정확하기 때문에 이는 병원방문을 증가시킬 가능성을 제기한다. 게다가 전세계적으로 건강염려증이 의료 비용을 높이는 하나의 주요 원인으로 꼽히고 있다. 따라서 이 연구는 건강정보이용과 건강염려증, 병원

방문간의 관계를 고찰하고자 하였다.

본 연구는 만 19세 이상 59세 미만 한국인을 대상으로 두 번 설문조사를 실시했다. 설문조사는 6개월을 간격으로 2016년 9월과 2017년 3월에 각각 실행되었다 ( $N = 2,000$  at Wave 1, and  $N = 1,300$  at Wave 2). 본 연구는 패널분석을 통해 종단연구를 분석하였다. 그 결과 Wave 1의 건강정보이용이 Wave1의 건강염려증에 영향을 미쳤고, 이는 Wave2의 병원방문에도 영향을 미쳤다. 이 결과는 여러 커뮤니케이션 채널을 통해 건강정보를 많이 얻는 사람일수록 건강염려증이 높아질 가능성이 있으며, 이는 병원방문을 증가시킬 수 있음을 시사하였다. 뿐만 아니라 건강정보이용과 병원방문 두 변수사이에서 건강염려증은 일종의 매개변수로 작용하였다.

주요어 : 건강염려증, 사이버콘드리아, 건강 불안, 온라인 건강정보, 건강 정보, 건강정보이용, 병원방문

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