

CYBERCHONDRIA IN THE DIGITAL AGE: AGE-COHORT DIFFERENCES IN ONLINE HEALTH ANXIETY AMONG DIGITALLY ACTIVE WOMEN

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ABSTRACT

This study examines age-cohort differences in cyberchondria among digitally active women and their associations with selected demographic and healthcare-related variables. Conducted as a descriptive cross-sectional study, data were collected from 410 women aged 18–78 years in Türkiye via an online survey. Analyses included descriptive statistics, independent-samples t-tests, and one-way ANOVA, using the Cyberchondria Severity Scale–Short Form (CSS-12). Results indicated moderate overall cyberchondria levels (mean = 2.46). Younger women reported significantly higher scores in the Excessiveness, Distress, and Total dimensions, reflecting more frequent and anxiety-driven online health information seeking.

Education level was associated only with Excessiveness, while the presence of a healthcare professional in one's immediate social environment was linked to lower overall cyberchondria levels. These findings highlight the role of age, digital engagement, and social context in shaping online health anxiety. Strengthening digital health literacy and critical evaluation skills may help reduce excessive health-related searches, particularly among younger women.

Keywords: Cyberchondria, Online Health Anxiety, Digital Health Behavior, Women's Health, Internet Use

INTRODUCTION

Rapid digitalization has fundamentally reshaped access to health information. For many individuals, particularly those who frequently rely on digital platforms, repeated online health searches may lead to increased anxiety, a phenomenon commonly referred to as cyberchondria (Yıldız Akyol et al., 2024; Starcevic and Berle, 2013). Individuals with low tolerance for uncertainty are especially prone to repetitive online searches that amplify health-related worries, while cognitive distortions triggered by digital content may reinforce maladaptive illness beliefs (Fergus, 2013; Kalantari et al., 2025). Although the internet provides a wide range of health-related resources, information overload and the rapid spread of misinformation can complicate the evaluation of online health information and contribute to heightened anxiety (World Health Organization, 2022; Dalmer, 2017). Previous research highlights digital health literacy as an important factor shaping how individuals interpret and respond to online health information, thereby influencing their vulnerability to cyberchondria (Sansakorn et al., 2024). Several studies conducted in Türkiye and other cultural contexts have reported that women tend to engage more actively in online health information seeking and may therefore experience higher levels of online health anxiety compared with men (Özyıldız and Alkan, 2020; Ojha, 2025). These findings suggest that women's intensive engagement with digital health content may increase their susceptibility to anxiety-provoking information, particularly in environments characterized by limited regulation and variable information quality.

Women's prominent role in family health information management further underscores the relevance of understanding cyberchondria within digitally engaged female populations. Exposure to unreliable or misleading health information may influence not only women's personal health behaviors but also health-related decisions affecting family members. Despite the growing literature on cyberchondria, relatively few studies have explored age-related or cohort-based patterns of online health anxiety among women who are actively engaged in digital health information seeking. However, evidence on intergenerational differences in cyberchondria among women remains limited, particularly in middle-income countries such as Türkiye.

Therefore, the present study aims to explore cyberchondria levels among digitally active women aged 18–78 years and to examine age-cohort differences within the study sample. In addition, the study investigates the associations between cyberchondria and selected demographic and healthcare-related factors, including education level, consultation with healthcare professionals following online health searches, and the presence of a healthcare professional in one's immediate social environment.

METHODS

Study Design

This descriptive cross-sectional study was conducted and reported in accordance with the STROBE guidelines for observational studies. The study was designed as an exploratory analysis to examine cyberchondria levels and age-related patterns within a sample of digitally active women, allowing for the simultaneous assessment of selected demographic and healthcare-related variables.

Participants and Sampling

The study included women aged 18 years and older who reported regular internet use and voluntarily participated in the online survey. Rather than aiming for population-level representativeness, the study focused on exploring patterns of online health anxiety within a digitally engaged sample. Therefore, the findings should be interpreted as exploratory rather than as population-level estimates. A total of 410 participants completed the survey, which is considered sufficient for exploratory analyses examining group differences and associations among variables in cross-sectional research.

Age-Cohort Classification

Participants were categorized into age cohorts based on commonly used classifications in the literature: ages 18–28 years, 29–43 years, 44–59 years, and 60 years and older (Altuntuğ, 2012). These groupings were used to explore age-related patterns in cyberchondria within the study sample rather than to draw population-level generational inferences.

Data Collection Instruments

Data were collected using an online questionnaire consisting of two sections. The first section included a demographic information form assessing age, marital status, education level, employment status, internet use, and health-related behaviors. The second section comprised the Cyberchondria Severity Scale–Short Form (CSS-12), originally developed by McElroy et al. and validated for use in Turkish populations by Erciş et al. (McElroy et al., 2019; Erciş et al., 2021). The CSS-12 includes four subdimensions—Excessiveness, Distress, Reassurance Seeking, and Compulsion—each consisting of three items rated on a five-point Likert scale (1 = never to 5 = always). Higher scores indicate greater levels of cyberchondria. In the present study, Cronbach's alpha coefficients ranged from 0.70 to 0.83 for the subdimensions, with an overall scale reliability of 0.86.

Data Collection Procedure

Data were collected between July and September 2024 using Google Forms. The survey link was disseminated via social media platforms and email using a snowball sampling approach. Measures were taken to minimize duplicate responses and enhance data integrity. Prior to participation, respondents were informed about the study objectives and provided electronic informed consent. All responses were collected anonymously and used solely for research purposes. Given the snowball sampling approach, the sample may overrepresent digitally active women.

Data Analysis

Statistical analyses were performed using IBM SPSS Statistics version 26.0. Descriptive statistics were used to summarize demographic characteristics and scale scores. Data distribution was assessed using the Kolmogorov–Smirnov test and by examining skewness and kurtosis values, with values within ± 1.5 considered acceptable. Independent-samples t-tests were used for comparisons between two groups, and one-way analysis of variance (ANOVA) was applied for comparisons involving more than two groups. When significant differences were detected, Tukey's honestly significant difference (HSD) post hoc test was used. Statistical significance was set at $p < 0.05$.

Ethical Considerations

Ethical approval for this study was obtained from the relevant institutional ethics committee prior to data collection. Electronic informed consent was obtained from all participants, and the study was conducted in accordance with the principles of the Declaration of Helsinki. Ethical approval for this study was granted by the Scientific Research and Publication Ethics Committee of Çanakkale Onsekiz Mart University (Decision No: 11/08, dated 25 July 2024; Project No: 2024-YÖNP-0576).

RESULTS

Participant Characteristics

A total of 410 digitally active women aged between 18 and 78 years participated in the study. The majority of participants were university graduates (81%), 55.9% were employed, and nearly all (98.5%) reported regular internet use. Following online health information searches, 48.3% reported consulting a healthcare professional, while 85.9% indicated having a healthcare professional in their immediate social environment. The demographic characteristics of the study sample are presented in Table 1.

Table 1. Demographic characteristics of the participants

Demographic Characteristics	Groups	n	%
Generations	Generation Z	102	24.9
	Generation Y	211	51.5
	Generation X	72	17.6
	Baby Boomers	25	6.1
Marital Status	Married	211	51.5
	Single	188	45.9
	Other	11	2.7
Family Type	Nuclear Family	375	91.5
	Extended Family	35	8.5
	None	178	43.4
Number of Children	1	84	20.5
	2	116	28.3
	3	19	4.6
	4 or more	13	3.2
Income Level	High	52	12.7
	Middle	320	78.0
	Low	38	9.3
Employment Status	Employed	229	55.9
	Unemployed	181	44.1
Education Level	Primary School	7	1.7
	Middle School	4	1.0
	High School	67	16.3
	University	332	81.0
Internet Usage Status	Yes	404	98.5
	No	6	1.5
Daily Internet Usage Duration	0-2 Hours	88	21.5
	3-5 Hours	204	49.8
	6-8 Hours	97	23.7
	9 Hours Or More	21	5.1
Consulting Healthcare Professionals to Verify Health Information Found Online	Yes	198	48.3
	Partially	146	35.6
	No	66	16.1
Presence of a Healthcare Professional in the Immediate Social Environment	Yes	352	85.9
	No	58	14.1
Self-Rated General Health Status	Very Good	20	4.9
	Good	234	57.3
	Moderate	143	34.9
	Poor	12	2.9

Cyberchondria Levels in the Study Sample

The overall mean cyberchondria score was 2.46 (SD = 0.76), indicating a moderate level of online health anxiety within the sample. Among the subdimensions, Excessiveness had the highest mean score (M = 3.19, SD = 1.01), whereas Compulsion had the lowest mean score (M = 1.64, SD = 0.78). Descriptive statistics for the total scale and its subdimensions are shown in Table 2. Assumptions of normality were met based on Kolmogorov–Smirnov test results and skewness–kurtosis values.

Table 2. Cyberchondria scale scores of women (n = 410)

Subdimension	Mean	Standard Deviation
Excessiveness	3.19	1.01
Distress	2.60	1.00
Reassurance Seeking	2.43	1.02
Compulsion	1.64	0.78
Total Score	2.46	0.76

Comparisons Across Age Cohorts and Selected Variables

Comparisons of cyberchondria scores across age cohorts and selected demographic and healthcare-related variables are presented in Table 3.

One-way analysis of variance revealed statistically significant differences in cyberchondria scores across age cohorts within the study sample ($p < .01$). Participants in younger age cohorts reported higher mean scores than those in older cohorts, particularly in the Excessiveness, Distress, Reassurance Seeking, and Total Score dimensions. The lowest mean scores were observed among participants aged 60 years and older. These findings reflect age-related patterns in online health anxiety among digitally engaged women in the sample.

Analyses according to education level demonstrated a statistically significant difference only in the Excessiveness subdimension ($F = 8.04$, $p < .01$). Participants with a university degree reported higher Excessiveness scores compared with those with lower educational attainment. No statistically significant differences were identified for the Distress, Reassurance Seeking, Compulsion, or Total Score dimensions.

Regarding healthcare-seeking behavior, participants who reported consulting a healthcare professional following online health information searches had significantly higher scores in the Excessiveness ($p = .04$) and Reassurance Seeking ($p < .01$) subdimensions, while exhibiting significantly lower scores in the Compulsion subdimension ($p = .032$). No statistically significant difference was observed in the total cyberchondria score.

Participants who reported having a healthcare professional in their immediate social environment demonstrated significantly lower mean scores in the Excessiveness, Distress, and Total Score dimensions ($p < .01$). No significant differences were observed in the Reassurance Seeking or Compulsion subdimensions.

Table 3. Comparison of cyberchondria scale scores according to generation, education, and healthcare-related variables

Generation	Excessiveness		Distress		Reassurance Seeking		Compulsion		Total Score	
	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD	n	Mean ± SD
Gen Z	102	3.42±1.04	102	2.63±1.05	102	2.58±1.0	102	1.7±0.81	102	2.58±0.77
Gen Y	211	3.23±0.99	211	2.67±0.99	211	2.46±1.07	211	1.62±0.74	211	2.5±0.76
Gen X	72	2.98±0.97	72	2.47±1.0	72	2.24±0.89	72	1.69±0.93	72	2.34±0.77
Baby Boomers	25	2.53±0.94	25	2.25±0.89	25	2.13±1.02	25	1.47±0.59	25	2.1±0.63
	F=6.65; p= <.01		F= 6.38; p= <.01		F=5.44; p= <.01		F=4.72; p= <.01		F=7.09; p= <.01	
Education Level										
Primary School	7	2.71±0.56	7	1.95±0.97	7	1.95±0.56	7	1.19±0.26	7	1.95±0.43
Middle School	4	2.08±1.34	4	1.75±0.88	4	1.83±1.26	4	1.08±0.17	4	1.69±0.9
High School	67	2.75±1.03	67	2.49±0.95	67	2.31±0.95	67	1.75±0.94	67	2.33±0.78
University	332	3.3±0.99	332	2.65±1.01	332	2.47±1.04	332	1.64±0.76	332	2.52±0.76
	F= 8.038; p= <.01		F= 2.439; p= .064		F= 1.495; p= .215		F= 1.889; p= .131		F= 3.717; p= .012	
Consulting a Healthcare Professional										
Yes	198	3.24±1.02	198	2.57±0.96	198	2.51±1.00	198	1.57±0.72	198	2.47±0.74
No	66	2.89±1.23	66	2.46±1.13	66	2.10±1.09	66	1.84±0.92	66	2.32±0.92
	t= 2.082, p= .04		t= 0.74, p= .461		t= 2.709, p= <.01		t= 2.179, p= .032		t= 1.205, p= .231	
Having a Healthcare Professional in One's Immediate Social Circle										
Yes	352	3.14±1.01	352	2.55±0.99	352	2.39±1.01	352	1.62±0.77	352	2.42±0.75
No	58	3.53±1.01	58	2.93±1.04	58	2.68±1.07	58	1.78±0.88	58	2.73±0.79
	t= 2.739, p < .01		t= 2.626, p < .01		t=1.947, p= .055		t= 1.298, p= .198		t= 2.758, p < .01	

DISCUSSION

This study explored patterns of cyberchondria among women within a digitally active sample, focusing on age-related differences and selected demographic and healthcare-related factors. Using the Cyberchondria Severity Scale–Short Form (CSS-12), the findings indicate that cyberchondria-related behaviours vary across age cohorts within the study sample, reflecting differences in engagement with online health information rather than population-level generational effects. By adopting a cohort-sensitive perspective, the study contributes to a more nuanced understanding of how digital health anxiety manifests among women with varying levels of digital exposure. Participants in younger age cohorts reported higher scores in the Excessiveness subdimension, suggesting more frequent and repetitive online health information-seeking behaviours. This finding is consistent with previous research demonstrating that individuals with elevated health anxiety tend to engage in repeated online symptom searches that may exacerbate rather than alleviate anxiety (Muse et al., 2012). Beyond individual anxiety levels, the digital environments predominantly used by younger cohorts may actively shape reassurance-seeking behaviours.

Algorithm-driven health content—characterized by personalization, continuous feedback loops, and repeated exposure to symptom-related information—may amplify reassurance-seeking cycles among younger users, reinforcing cyberchondria rather than reducing uncertainty. These mechanisms highlight the role of digital platforms themselves as active contributors to health-related anxiety.

Relatively higher Distress scores observed among participants in early and middle adulthood may reflect increased exposure to health-related digital content combined with uncertainty in evaluating the credibility of online information. During these life stages, health-related responsibilities and decision-making demands often increase, potentially intensifying emotional responses to ambiguous or alarming online content. Similar associations between intensive online health searches and heightened anxiety have been reported in prior studies underscoring the cumulative psychological impact of prolonged digital engagement with health information (Baumgartner and Hartmann, 2011).

In contrast, participants in older age cohorts exhibited comparatively lower overall cyberchondria scores. Where reassurance-seeking behaviours were present, these appeared to be more strongly oriented toward professional consultation rather than reliance on digital sources alone. Previous research suggests that more cautious engagement with online health information among older adults may foster greater trust in healthcare professionals as authoritative sources (Baumgartner and Hartmann, 2011). However, given the smaller representation of the oldest age group in the present sample, these findings should be interpreted cautiously.

Regarding the Compulsion subdimension, higher scores among younger participants suggest that prolonged engagement with digital environments may be associated with more habitual or compulsive health-related searches. This observation aligns with existing evidence indicating that health anxiety can contribute to problematic patterns of internet use, particularly in health-related contexts where uncertainty and perceived risk are salient (Fergus and Dolan, 2014).

Educational attainment was associated with the Excessiveness dimension but not with other aspects of cyberchondria. Participants with higher education levels reported more frequent online health searches, suggesting that greater access to digital resources and general information skills do not necessarily protect against excessive information-seeking. Similar findings have been reported in previous research examining the relationship between education, online health behaviours, and health anxiety (Eastin and Guinsler, 2006; White and Horvitz, 2009). This pattern highlights a critical distinction between formal education and digital health literacy. Higher educational attainment does not automatically translate into the ability to critically appraise online health information, particularly in digital environments characterized by information overload, algorithmic filtering, and conflicting health messages. The absence of associations with other subdimensions further suggests that education alone may be insufficient to address the cognitive and emotional components of cyberchondria without targeted digital health literacy competencies.

Healthcare-related variables further contextualized these findings. Participants who consulted a healthcare professional after searching for health information online demonstrated higher Excessiveness and Reassurance Seeking scores but lower Compulsion scores. This pattern suggests that professional consultation may coexist with ongoing online searching while also helping to regulate compulsive behaviours by providing authoritative reassurance. Moreover, participants who reported having a healthcare professional in their immediate social environment exhibited lower levels of Excessiveness, Distress, and overall cyberchondria, underscoring the protective role of accessible and trusted health information sources.

Within the Turkish context, these findings gain additional relevance. In Türkiye, informal health information exchange through social media platforms and close social networks is widespread, and health-related content is frequently shared without systematic verification. Such practices may intensify exposure to unverified or misleading information, particularly among digitally active women, thereby amplifying vulnerability to cyberchondria.

From a health promotion perspective, the findings emphasize the importance of supporting women's digital health literacy alongside access to reliable healthcare resources. While online platforms offer valuable opportunities for health education, excessive or unregulated engagement may increase susceptibility to health-related anxiety, especially among younger women. Interventions aimed at strengthening critical evaluation skills, increasing awareness of algorithm-driven content dynamics, and reinforcing connections with trusted healthcare professionals may help mitigate the psychological burden associated with online health information-seeking.

CONCLUSION AND RECOMMENDATIONS

This study indicates that women's cyberchondria levels differ according to age-related patterns observed within the study sample and are associated with factors such as education level, consultation with healthcare professionals, and access to healthcare professionals within one's immediate social environment. Higher cyberchondria scores observed among younger participants indicate that more intensive engagement with digital health information may be linked to increased anxiety and repetitive information-seeking behaviours.

These findings highlight the importance of considering age and digital engagement patterns when addressing online health anxiety among women. From a health promotion perspective, interventions aimed at strengthening digital health literacy—particularly among younger and digitally active women—may help mitigate the negative psychological effects of information overload and exposure to unverified health content. These patterns may also be shaped by algorithm-driven digital environments that intensify repeated exposure to health-related content. In addition, psychoeducational approaches focusing on coping with uncertainty and managing online health information-seeking behaviours may contribute to reducing anxiety related to digital health information.

Given women's influential role in family health-related decision-making, improving their capacity to critically evaluate online health information may have benefits that extend beyond individual well-being. Supporting access to reliable health information sources and fostering connections with healthcare professionals may further help reduce vulnerability to cyberchondria. These findings may inform future research and the development of community-based and public health interventions that address online health anxiety in a more targeted and context-sensitive manner.

Limitations

This study has several limitations. First, data were collected using an online survey with a snowball sampling approach, which may have limited participation among women with restricted digital access and overrepresented digitally active individuals. Second, the cross-sectional design precludes causal interpretations of the observed associations between cyberchondria and related variables. Finally, as the study was conducted among women residing in Türkiye, the findings may not be generalizable to other cultural or national contexts. Future research employing representative sampling strategies and longitudinal designs is recommended to further examine these relationships.

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