Cyberchondria as an emerging trans-diagnostic digital compulsive syndrome: an updated systematic review and clinical case report

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Background

Cyberchondria (CYB), a term coined by the UK Press in the 1990s [1], represents a poorly characterized syndrome involving the **urge-driven tendency to excessively seek health or illness-related information on the Internet.** Intended to provide reassurance, searching is thought to end up **increasing anxiety and distress, uncertainty and reinforcing CYB** [2]. CYB may be differentiated from non-pathological information-seeking by compulsive characteristics [2]. A recent meta-analysis [3] found **CYB to be associated with "health anxiety" broadly defined**. CYB may even represent **a trans-diagnostic digital compulsive syndrome**. However, **the extent to which CYB contributes to the psychopathology of compulsive psychiatric disorders**, such as illness anxiety disorder (hypochondriasis), obsessive-compulsive and related disorders (OCRD) or other online disorders of behavioral addiction, **is not understood.**

Aims

We present

1. **One of the first reported cases** of a treatment-seeking patient with DSM-5 illness anxiety disorder and CYB.
2. **An updated systematic review of the existing literature** describing the association between CYB and psychiatric disorders

Case report

- Jamie, a 30 years old male with no previous history of psychiatric disorder, referred himself to a NHS primary care CBT service seeking assessment and treatment.
- Approximately 9 month before, shortly after ingesting MDMA, he experienced a panic attack (never had one before).
- From that point, he developed intrusive thoughts that MDMA had irrevocably damaged his brain, despite medical reassurance to the contrary.
- Having been told that his cousin "hears voices", he started to obsessively worry he had developed schizophrenia.
- He became hypersensitive to and misinterpreted sounds and movements.
- He also started to worry his heart rhythm was irregular (both parents have heart disease) and started checking his pulse frequently.
- He repeatedly visited the GP, and had two (normal) ECGs.
- He attended a counselor, to help rid himself of the intrusive thoughts, but also looking for reassurance that he does not have schizophrenia.
- He also started to research the Internet for information about MDMA-induced brain damage or physical disorders (cyberchondria).
- He compulsively visited many different websites and patients' forums, spending several hours a day, to the extent his work was interfered with.
- He found researching made him more sensitive and anxious about somatic symptoms, and increased vigilance, further online-searching and bodily checking, panic symptoms and medical consultation behavior.
- He self-medicated with Vitamin D, magnesium, fish oil and multivitamins and reported he was feeling 75% better when he came to our clinic.
- However, he admitted this referral was linked to residual medical reassurance-seeking.
- On mental state examination, signs of schizophrenia and affective disorder were excluded.

Psychometric evaluation.

- Cyberchondria Severity Scale (12 items [4]; **Table 1**): 44/60
- Short Health Anxiety Inventory 18 items [5]: 29/54
- Obsessive-Compulsive Inventory-Revised [6]: 8/72
- Internet Severity and Activities Addiction Questionnaire (developed from Young's Internet Addiction Test [REF]): excessive online gaming (severe), pornography usage (moderate), streaming (severe).

Differential diagnosis.

- DSM-5 Illness Anxiety Disorder - care seeking type and ICD-11 Hypochondriasis **(Table 2).**
- "Problematic internet usage" – not fully meeting ICD-11 Gaming Disorder or Compulsive Sexual Behaviour Disorder criteria.

Treatment Plan.

- Exposure and response-prevention based CBT, aimed at resisting cyberchondria urges (on waiting list June 2019; outcome - not yet known).

Table 1. The Cyberchondria Severity Scale (12 items version; [4])

	Never	Rarely	Some-times	Often	Always
1. If I notice an unexplained bodily sensation I will search for it on the internet	1	2	3	4	5
2. Researching symptoms or perceived medical conditions online distracts me from reading news/sports/entertainment articles online	1	2	3	4	5
3. I read different web pages about the same perceived condition	1	2	3	4	5
4. I start to panic when I read online that a symptom I have is found in a rare/serious condition	1	2	3	4	5
5. Researching symptoms or perceived medical conditions online leads me to consult with my GP	1	2	3	4	5
6. I enter the same symptoms into a web search on more than one occasion	1	2	3	4	5
7. Researching symptoms or perceived medical conditions online interrupts my work (e.g. writing emails, working on word documents or spreadsheets)	1	2	3	4	5
8. I think I am fine until I read about a serious condition online	1	2	3	4	5
9. I feel more anxious or distressed after researching symptoms or perceived medical conditions online	1	2	3	4	5
10. Researching symptoms or perceived medical conditions online interrupts my offline social activities (e.g. reduces time spent with friends/family)	1	2	3	4	5
11. I suggest to my GP/medical professional that I may need a diagnostic procedure that I read about online (e.g. a biopsy/a specific blood test)	1	2	3	4	5
12. Researching symptoms or perceived medical conditions online leads me to consult with other medical specialists (e.g. consultants)	1	2	3	4	5

Method

- Systematic search of PubMed, PsycINFO, Cochrane Library
- "cyberchondria" and "cyberchondriasis" used as search terms.

Results

- 49 hits: 30 original articles, 5 reviews, 1 case report, 11 other (editorials, chapters, dissertations), and 2 descriptions of RCTs (1 including CBT) both still underway.
- Five new studies have been published (>1500 participants) since the most recent review [3]
- Studies were exclusively descriptive and cross-sectional with samples recruited from the general population or university students, mainly via online surveys.
- No characterization of CYB in clinical samples was found.
- There was no consensus definition of CYB, or agreement on epidemiology, sociodemographic and clinical characteristics or associated comorbid diagnoses.
- A 33-item scale [7] to quantify CYB severity, shortened to 12-items [4], based on 5 domains (Compulsion, Distress, Excessiveness, Reassurance and Mistrust), has been developed.
- **CYB was found to correlate with the presence of health anxiety broadly defined, obsessive-compulsive symptoms, problematic use of the internet and other psychological constructs (intolerance of uncertainty, anxiety sensitivity, pain catastrophizing, metacognitive beliefs).**
- Psychoeducation and CBT were suggested as possible therapeutic approaches.

Table 2. Comparison of DSM-5 Illness Anxiety Disorder and ICD-11 Hypochondriasis

	DSM-5	ICD-11 (proposal)
Category	Somatic symptom and related disorders	Primary: OCRD - Secondary: anxiety Disorders
Name	Illness Anxiety Disorder	Hypochondriasis (illness anxiety disorder)
Diagnostic criteria	A) Preoccupation with having or acquiring a serious illness B) Somatic symptoms not present or, if present, only mild in intensity. If another medical condition is present or there is a high risk for developing a medical condition, the preoccupation is clearly excessive or disproportionate. C) High level of anxiety about health, and the individual is easily alarmed about personal health status D) Excessive health-related behaviors or maladaptive avoidance E) Symptom duration >= 6 months	A) Persistent preoccupation with or fear about the possibility of having one or more serious progressive or life-threatening diseases B) The preoccupation is associated with hypervigilance and catastrophic misinterpretation of bodily signs or symptoms, including normal or commonplace sensations C) The preoccupation/fear is not simply a reasonable concern and persists or recurs despite appropriate medical evaluation and reassurance D) One or more of the following behaviors occur in relation to the preoccupation: avoidance, checking, information seeking, and/or requests for reassurance E) The preoccupation/fear causes clinically significant distress or functional impairment F) Includes those with no insight or delusional beliefs
Specifiers	Care-seeking type Care-avoidant type	No insight

Conclusion

CYB appears a clinically relevant form of compulsive behaviour but research remains in its infancy. Further studies are needed to understand CYB in terms of definition, clinical features, measurement,, relationship with hypochondriasis and other compulsive disorders and therapeutic interventions.

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