

Problematic Internet Use in Parkinson's Disease

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Background and aims:

Problematic Internet Use (PIU) is thought to be associated with Impulse Control Disorders (ICDs). It shares characteristics of behavioural addiction with impulsive and compulsive features. PIU has not been previously studied systematically in Parkinson's disease (PD). In this study, we aim to investigate Internet use in PD patients with and without ICDs and matched healthy volunteers.

Methods:

Twenty-nine PD patients with ICDs, 20 PD patients without ICDs and 19 healthy volunteers underwent a semi-structured interview and completed a battery of questionnaires, including the Yale-Brown Obsessive compulsive scale, adapted for Internet (Y-BOCS-Internet). All participants endorsed using Internet for non-essential purposes. (Table 1).

Results:

Distribution of ICDs and types of websites visited:

Of the 29 patients with ICDs, 19 had compulsive sexual behaviour, 10 reported binge eating, 13 patients reported pathological gambling and nine patients with compulsive buying. Fourteen of the 29 PD patients reported comorbid ICDs.

All patients with compulsive sexual behaviour and /or gambling use the internet for sexual-related activities and online gambling respectively. Only 4 out of nine patients with compulsive buying admitted to carrying out shopping-related activities online, and two of these patient reported the use of online auction websites.

Table 1. Demographic and clinical details of participants.

	PD ICD	PD controls	Healthy volunteers	P value
Frequency	29 (4F: 25M)	19 (6F: 13M)	20 (3F: 17M)	-
Age (yrs)	63.3 (9.1)	62.3 (9.1)	60.1 (10.3)	0.580 ^a
Disease duration (yrs)	12.4 (8.0)	10.4 (6.3)	-	0.364 ^b
UPDRS(III) 'off' meds	38.4 (11.3)	34.4 (11.3)	-	0.283 ^b
Total LEDD(mg/day)	673.2 (309.8)	768.8 (321.7)	-	0.558 ^b
L-dopa (mg/day)	324.3 (202.9)	231.7 (84.7)	-	0.180 ^b
LEU DA (mg/day)	348.9 (307.7)	537.1 (329.3)	-	0.370 ^b
% on DA	82%	90%	-	-
BDI (II)	15.5 (8.8)**	14.3 (9.8)**	6.4 (8.9)	<0.0001 [§]
BSS	7.0 (3.1)**	7.2 (3.4)**	10.4 (4.0)	0.0033 ^a

Values represent mean (standard deviation); § Kruskal-Wallis statistic; ** significant on PD ICD vs HV and PD control vs HV; ^aone way analysis of variance with Bonferroni correction; ^bunpaired t test with Welch's correction

Y-BOCS-Internet

All participants completed this widely-used ten-item questionnaire measuring obsession and compulsion [1]. It has an equal number of questions on obsessions and compulsions, without giving bias to either component. Only non-essential Internet usage (non-business or non-academic use) was evaluated, based on recommendations for assessing PIU [2]. Figure 1.

PD ICD patients scored significantly higher in the total score of the Y-BOCS-Internet questionnaire compared to their PD control counterparts ($p < 0.0001$) and to healthy volunteers ($p < 0.00001$) [PD ICD 13.7 (± 8.5); PD controls 5.42 (± 3.6); HV 4.7 (± 1.1). This was the case for both the obsessive and compulsive sub-scores (see Figure 2).

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Figure 1. Total score for the Y-BOCS-Internet for the PD ICD, PD control and healthy volunteers.

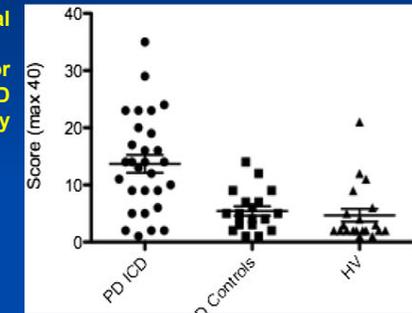
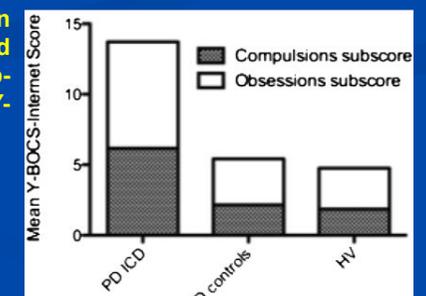


Figure 2. Mean obsessive and compulsive sub-scores for the Y-BOCS-Internet.



Discussion:

This is the first study to systematically study Internet use in Parkinson's disease. Our results suggest that PD patients with ICDs have a relative increased tendency towards excessive Internet use compared to those without ICDs and healthy controls. This is similar to the non-PD general population, and suggest that PIU is closely linked with other impulsive-compulsive disorders[3, 4, 5]. Clinicians should actively screen for excessive Internet use in patients with ICDs.

References:

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