

Healthcare Differences and COVID-19 Impact on Parkinson's Disease

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The coronavirus disease 2019 (COVID-19) pandemic has introduced drastic changes worldwide, particularly affecting chronic diseases such as Parkinson's disease (PD).¹ Different countries have implemented variable measures to control the pandemic with a different toll on patients, which also depends on the specific national healthcare. This notion inspired this cross-sectional-questionnaire-based study conducted in person between July and August 2021 and aimed at comparing the impact of forced lockdown in 60 consecutive PD outpatients followed in two movement disorders centers in North and South America. All the subjects fulfilled the following inclusion criteria: clinical diagnosis of PD; at least one evaluation in 2019; and consent to participate. Patients were instructed to answer taking into account the changes to their care caused by the lockdown.

Demographic characteristics were similar in both centers, although drug coverage was different (Table 1). Around 97% of patients in Toronto were fully-vaccinated against COVID-19 vs 57% in Buenos Aires ($P < 0.001$). Most patients were retired prior to the pandemic, and none lost their job during this period. Monthly income was however negatively affected during pandemic in Toronto (18%) and Buenos Aires (37%) ($P = 0.146$). Difficulties in getting essential supplies, laundry and house cleaning were more frequent in Toronto whereas anti-PD drugs supply was more frequently affected in Buenos Aires (26.7% vs 10%, $P = 0.026$, Table 1).

About 67% of Toronto patients and 90% in Buenos Aires had to make changes in their medical appointments ($P = 0.01$). Videocalls (40% vs 0%, $P < 0.001$) or phone calls (33.3% vs 3.3%, $P = 0.006$) were most frequently used in Toronto, whereas the vast majority of patients in Buenos Aires canceled (73.3% vs 16.7%, $P < 0.001$) or cannot schedule an appointment (53.3%, $P < 0.001$).

Around 30% of Canadian patients kept doing physical therapy, while 20% of them canceled or rescheduled. In Argentina 46.7% of patients canceled or rescheduled ($P = 0.01$, Table 1).

Regarding the overall impact of COVID-19 and forced lockdown on the quality of medical care for PD, most patients in Toronto felt that there are no differences (43.3% vs 16.7%), or recognized some difficulties with minimal impact (33.3% vs 23.3%). An extreme negative impact was described by 16.7% in Buenos Aires and only by 3.3% in Toronto ($P = 0.024$).

COVID-19 pandemic imposed drastic changes in PD care and this is clearly seen in our study, which also highlights country-specific differences. Canada has a provincial publicly-funded healthcare system, financed by 10.4% of its gross domestic product (GDP).² In contrast, Argentine has a segmented health system divided in public, social security and private sectors; the health cost takes 8% of the GDP.³ In addition, a dedicated telemedicine program was not available prior to the pandemic for Argentinian patients, who were less likely to adopt telemedicine and had to cancel or postpone appointments more frequently. Fear of getting infected and cancellation of regular services were the main reasons.⁴ Our findings also emphasize the important role of telemedicine during lockdown.⁵

In conclusion, our study indicates that the national health policies should be taken into account when interpreting the literature on COVID-19 and planning strategies to improve the care of our PD patients during these difficult times.

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TABLE 1 Demographic, clinical and survey-related characteristics of the two cohort of PD patients followed in Toronto, Canada and Buenos Aires, Argentina

		Toronto Canada (n = 30)	Buenos Aires Argentina (n = 30)	P value
Demographic features	Age	63.2 ± 10.8 (36–83)	66.3 ± 9.8 (49–88)	0.21
	Male sex	17 (56.7%)	18 (60%)	0.79
	Age at PD onset	52.1 ± 14.2 (29–81)	58.4 ± 9.5 (38–78)	0.10
	Hoehn & Yahr stage	2.2 ± 0.5(2–4)	2.3 ± 0.4 (2–3)	0.31
Drug coverage	Medical insurance	23 (76.7%)	16 (53.3%)	0.04
	Paid out of pocket	2 (6.7%)	5 (16.7%)	
	Drug samples or NGOs support	5 (16.6%)	4 (13.3%)	
	Medical insurance and paid out of pocket	0 (0%)	5 (16.7%)	
COVID-19 vaccine	Fully vaccinated	29 (96.7%)	13 (46.4%)	<0.001
	Unable to schedule an appointment	1 (3.3%)	1 (3.3%)	
	Refusal	0 (0%)	2 (6.7%)	
Diagnosis of COVID-19	Yes (hospitalized)	0	2 (6.7%)	0.74
	Yes (home care)	0	2 (6.7%)	
Work status	Retired before the pandemic	21 (75%)	16 (53.3)	0.19
	Unemployed before the pandemic	2 (7.1)	3 (10%)	
	Temporary interruption	1 (3.6%)	2 (6.7%)	
	Working hours reduction	1 (3.6%)	7 (23.3%)	
	Normal work activities	3 (10.7%)	2 (6.7%)	
Activities affected by COVID-19 pandemic	Monthly income	5 (17.9%)	11 (36.7%)	0.14
	Food supplies	7 (23%)	3 (10%)	0.29
	Essentials supplies	9 (30%)	1 (3.3%)	0.01
	Laundry and home cleaning	9 (30%)	1 (3.3%)	0.01
	Care assistance (nurse, caregivers)	3 (10%)	0 (0%)	0.23
	Drug supply	3 (10%)	8 (26.7%)	0.02
Last medical appointment	< 1 month	10 (34.5%)	6 (20%)	0.07
	1–3 months	2 (6.9%)	9 (30%)	
	3–6 months	9 (31%)	6 (20%)	
	>6 months	4 (13.7%)	1 (3.3%)	
	>1 year	2 (6.9%)	6 (20%)	
	>2 years	2 (6.9%)	2 (6.7%)	
Follow-up visits	Need for at least one change	20 (67%)	27 (90%)	0.01
	Canceled	5 (16.7%)	22 (73.3%)	<0.001
	Impossibility to schedule	0 (0%)	16 (53.3%)	<0.001
	Replaced by videocall	12 (40%)	0 (0%)	<0.001
	Replaced by phone call	10 (33.3%)	1 (3.3%)	0.006
	Replaced by other methods (e.g. emails)	2 (6.7%)	7 (23.3%)	0.07
	Need to urgently contact the neurologist	17 (58.6%)	8(26.6%)	0.01

(Continues)

TABLE 1 Continued

		Toronto Canada (n = 30)	Buenos Aires Argentina (n = 30)	P value
Method of contact in case of urgency	In person	3 (10%)	2 (6.7%)	1
	Phone call	10 (33.3%)	1 (3.3%)	0.006
	Text message	1 (3.3%)	1 (3.3%)	1
	Videocall	12 (40%)	0 (0%)	<0.001
	E-mail	4 (13.3%)	3 (10%)	1
	Contact with other health professional	5 (16.7%)	0 (0%)	0.05
Physical therapy	Canceled	4 (13.3%)	9 (30%)	0.01
	Reschedule	2 (6.7%)	5 (16.7%)	
	Performed using alternative methods	4 (13.3%)	0 (0%)	
	Normally performed	5 (16.7%)	0 (0%)	
	Never performed	15 (50%)	16 (53.3%)	
Occupational therapy	Canceled	2 (6.7%)	2 (6.7%)	0.4
	Performed using alternative methods	1 (3.3%)	1 (3.3%)	
	Normally performed	4 (10%)	0 (0%)	
	Never performed	24 (80%)	27 (90%)	
Speech therapy	Canceled	1 (3.3%)	0 (0%)	0.6
	Rescheduled	2 (6.7%)	0 (0%)	
	Normally performed	2 (6.7%)	1 (3%)	
	Never performed	27 (90%)	29 (96.7%)	
Psychotherapy	Canceled	0 (0%)	1 (3.3%)	0.4
	Rescheduled	0 (0%)	1 (3.3%)	
	Performed using alternative methods	4 (13.3%)	2 (6.7%)	
	Normally performed	3 (10%)	1 (3.3%)	
	Never performed	23 (76.7%)	25 (83.3%)	
Overall impact of COVID-19 on PD care	No differences	13 (43.3%)	5 (16.7%)	0.02
	Some difficulties without real impact	10 (33.3%)	7 (23.3%)	
	Mild impact	6 (20%)	13 (43.3%)	
	Extremely negative impact	1 (3.3%)	5 (16.7%)	

Values are mean \pm SD (range) or N (%). Between-group comparisons of continuous variables were performed using the Mann–Whitney U test whereas categorical variables were analyzed with Fisher's exact test. Statistically significant comparisons are bold-typed. Abbreviations: NGOs: non-governmental organizations; PD, Parkinson's disease.

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Author Roles

1) Research project: A. Conception, B. Organization, C. Execution; 2) Statistical Analysis: A. Design, B. Execution, C. Review and Critique; 3) Manuscript: A. Writing of the first draft, B. Review and Critique.

SRQ: 1A, 1B, 1C, 2B, 3A

AF: 1A, 1B, 1C, 2C, 3B

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