

Table 1. Comparison of PWE without seizure increase and PWE with seizure increase in demographic characteristics and COVID-19 exposure

Variables	PWE without seizure increase (n=1134)	PWE with seizure increase (n=103)	P value
Gender			0.790
Female	557 (49.1%)	52 (50.5%)	
male	577 (50.9%)	51 (49.5%)	
Age	33.18±12.07	34.56±11.65	0.254
Education			0.072
<High school	349 (30.8%)	43 (41.7%)	
High school or equivalent	281/1134(24.8)	22 (21.4%)	
Higher professional or university	504/1134(44.4)	38/103(36.9)	
Living state			0.332
On leave at home	91 (8.0%)	8 (7.8%)	
Work in workplace	244 (21.5%)	15 (14.6%)	
Work at home	163 (14.4%)	15 (14.6%)	
Study at school	24 (2.1%)	2 (1.9%)	
Home quarantine	605 (53.4%)	61 (59.2%)	
Hospital treatment	7 (0.6%)	2 (1.9%)	
COVID-19 exposure <sup>a</sup>			0.726
No	1099 (96.9%)	101(98.1%)	
Yes	35(3.1%)	2 (1.9%)	
COVID-19 related symptoms			
Yes	83 (7.3%)	17 (8.1%)	0.001**
No	1051 (92.7%)	86 (91.9%)	

<sup>a</sup>PWE with the following history were considered to have COVID-19 exposure: (1) Wuhan travel or residence history, (2) confirmed or suspicious patients contact history; \* $P < 0.05$ , \*\*  $P < 0.01$ .

Table 2. Comparison of PWE with/without seizure increase in COVID-19 perception

Variables	PWE without seizure increase (n=1134)	PWE with seizure increase (n=103)	P value
Concern about COVID-19			0.377
None	5 (0.4%)	0 (0.0%)	
A little	66 (65.1%)	5 (4.9%)	
Medium	149 (13.1%)	7 (6.8%)	
Fairly much	406 (35.8%)	41 (39.8%)	
Very much	508 (44.8%)	50 (48.5%)	
Feelings of the COVID-19 information			0.456
Very chaotic	27 (2.4%)	6 (5.8%)	
Fairly chaotic	87 (7.7%)	7 (6.8%)	
Neutral	270 (23.8%)	22 (21.4%)	
Fairly explicit	473 (41.7%)	44 (43.0%)	
Very explicit	277 (24.4%)	24 (23.3%)	
Worries of being infected			0.136
None	184 (16.2%)	13 (12.6%)	
A little	354 (31.2%)	24 (23.3%)	
Medium	128 (11.3%)	17 (16.5%)	
Fairly much	237 (20.9%)	21 (20.4%)	
Very much	231 (20.4%)	28 (27.2%)	
Feel nervous about the epidemic			0.000***
Totally disagree	305 (26.9%)	10 (9.7%)	
Fairly disagree	222 (19.6%)	16 (15.5%)	
Neutral	390 (34.4%)	45 (43.7%)	
Fairly agree	146 (12.9%)	19 (18.4%)	
Totally agree	71 (6.3%)	13 (12.6%)	
Quality of life during COVID-19 outbreak			0.000***
Very good	329 (29.0%)	15 (14.6%)	
Fairly good	539 (47.5%)	29 (28.2%)	
Neutral	248 (21.9%)	41 (39.8%)	
Poor	18 (1.6%)	18 (17.5%)	

\*\*\*  $P < 0.001$ .

Table 3. Comparison of PWE with/without seizure increase in epilepsy-related condition

Variables	PWE without seizure increase (n=1134)	PWE with seizure increase (n=103)	P value
Epilepsy course (month)	101.89±97.77	119.38±101.39	0.095
Seizure control before COVID-19 outbreak			0.000***
No seizure	476 (42.0%)	6 (5.8%)	
Seizure reduction > 90%	289 (25.5%)	20 (19.4%)	
Seizure reduction ≥50%	140 (12.3%)	26 (25.2%)	
Seizure reduction < 50%	104 (9.2%)	15 (14.6%)	
No reduction	125 (11.0%)	36 (35.0%)	
Number of doses missing before COVID-19 outbreak			0.184
0	904 (79.7%)	79 (76.7%)	
1-2 doses/week	200 (17.6%)	18 (17.5%)	
≥3 doses/week	30/1134(2.6%)	6(5.8%)	
Number of doses missing during COVID-19 outbreak			1.000
0	904 (79.7%)	83 (80.6%)	
1-2 doses/week	191 (16.8%)	17 (16.5%)	
≥3 doses/week	39 (3.4%)	3 (2.9%)	
Number of AEDs before COVID-19 outbreak			0.006**
1	584 (51.5%)	38 (36.9%)	
2	372 (32.8%)	37 (34.1%)	
3	95 (8.4%)	15 (9.2%)	
>3	31 (2.7%)	8 (3.2%)	
Never took AEDs	33 (2.9%)	4 (3.1%)	
Stop medication	19 (1.7%)	1 (1.7%)	
Medication alteration during COVID-19 outbreak			0.000***
None	1077 (95.0%)	86 (83.5%)	
Increase	38/ (3.4%)	10 (9.7%)	
Reduction/withdrawal	19 (1.7%)	7 (6.8%)	
Worry about seizure attack during COVID-19 outbreak			0.000***
None	478 (40.9%)	14 (13.6%)	
A little	399 (35.2%)	30 (29.1%)	
Medium	72 (6.3%)	8/ (7.8% %)	
Fairly much	111 (9.8%)	22 (21.4%)	

Very much	88 (7.8%)	29 (28.2%)	
Worry about the epidemic's impact on seizure control			0.000***
None	606 (53.4%)	30 (29.1%)	
A little	321 (28.3%)	32 (31.1%)	
Medium	54 (4.8%)	7 (6.8%)	
Fairly much	87 (7.7%)	12 (8.2%)	
Very much	66 (5.8%)	22 (21.4%)	

\*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .

*Table 4. Comparison of PWE without seizure increase and PWE with seizure increase in mental health*

Variables	PWE without seizure increase (n=1134)	PWE with seizure increase (n=103)	<i>P</i> value
GAD-7			0.000***
0-4 (No anxiety)	819 (72.2%)	42 (40.8%)	
5-9 (Mild anxiety)	237 (20.9%)	32 (31.3%)	
10-14 (Moderate anxiety)	55 (4.9%)	20 (19.4%)	
≥15 (Severe anxiety)	23 (2.0%)	9 (8.7%)	
PHQ-9			0.000***
0-4 (No depression)	738 (65.1%)	36 (35.0%)	
5-9 (Mild depression)	238 (21.0%)	30 (29.1%)	
10-14 (Moderate depression)	94 (8.3%)	16 (15.5%)	
15-19 (Moderately severe depression)	38 (3.4%)	10 (9.7%)	
20-27 (Severe depression)	26 (2.3%)	11 (10.7%)	
PSQI			0.000***
≤5 (good)	514 (45.3%)	22 (21.4%)	
>5 (poor)	620 (54.7%)	81 (78.6%)	

\*\*\*  $P < 0.001$ .

### 5. Risk factors for seizure increase

Variables	$\beta$	OR (95% CI) value	P value
Constant	-2.399		0.000
COVID-19 related symptoms	0.243	1.275 (0.647~2.514)	0.482
Feel nervous about the epidemic			
Totally disagree		1.000 (reference)	
Fairly disagree	0.905	2.471 (1.003~6.085)	0.049*
Neutral	0.824	2.279 (1.019~5.095)	0.045*
Fairly agree	1.150	3.159 (1.240~8.048)	0.016*
Totally agree	0.765	2.148 (0.739~6.243)	0.160
Quality of life during COVID-19 outbreak			
Very good		1.000 (reference)	
Fairly good	-0.436	0.647 (0.319~1.310)	0.226
Neutral	0.070	1.072 (0.512~2.246)	0.853
Fairly poor	1.684	5.387 (1.970~14.735)	0.001**
Worry about seizure attack during COVID-19 outbreak			
None		1.000 (reference)	
A little	0.147	1.159 (0.544~2.469)	0.703
Medium	0.674	1.962 (0.671~5.735)	0.218
Fairly much	0.720	2.054 (0.841~5.013)	0.114
Very much	0.941	2.564 (0.969~6.781)	0.058
Worry about the epidemic's impact on seizure control			
None		1.000 (reference)	
A little	0.121	1.129 (0.602~2.118)	0.706
Medium	-0.497	0.609 (0.194~1.907)	0.394
Fairly much	-0.528	0.590 (0.238~1.462)	0.255
Very much	-0.032	0.968 (0.381~2.458)	0.946
Seizure control before COVID-19 outbreak			
No seizure		1.000 (reference)	
Seizure reduction >90%	1.388	4.006 (1.516~10.584)	0.005**
Seizure reduction $\geq$ 50%	2.259	9.577 (2.628~25.284)	0.000***
Seizure reduction <50%	1.690	5.418 (1.858~15.799)	0.002**
No reduction	2.539	12.670 (4.755~33.760)	0.000***
Number of AEDs before COVID-19 outbreak			
Never took AEDs		1.000 (reference)	
Stop medication	-2.943	0.053 (0.004~0.667)	0.023*
1	-1.920	0.147 (0.037~0.584)	0.006**

2	-1.962	0.141 (0.034~0.577)	0.006**
3	-1.498	0.224 (0.049~1.016)	0.052
>3	-1.519	0.219 (0.042~1.141)	0.071
Medication alteration during COVID-19 outbreak			
None		1.000 (reference)	
Increase	0.646	1.908 (0.806~ 4.513)	0.141
Reduction/withdrawal	1.199	3.317 (1.107~9.936)	0.032*
GAD-7			
0-4 (No anxiety)		1.000 (reference)	
5-9 (Mild anxiety)	0.380	1.462 (0.780~2.740)	0.236
10-14 (Moderate anxiety)	0.889	2.433 (1.015~5.832)	0.046*
≥15 (Severe anxiety)	0.519	1.680 (0.489~5.777)	0.410
PHQ-9			
0-4 (No depression)		1.000 (reference)	
5-9 (Mild depression)	-0.037	0.964 (0.496~1.871)	0.913
10-14 (Moderate depression)	-0.079	0.954 (0.390~2.188)	0.857
15-19 (Moderately severe depression)	-0.046	1.003 (0.322~2.835)	0.935
20-27 (Severe depression)	-0.053	0.948 (0.304~3.138)	0.969
PSQI	0.361	1.435 (0.777~2.648)	0.248

\*  $P < 0.05$ , \*\*  $P < 0.01$ , \*\*\*  $P < 0.001$ .