



Association between stressors after Hurricane María and psychological distress in patients with active treatment of breast and colon cancers

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Background

After Hurricane María, considered the strongest hurricane since 1928 in the region, the population of Puerto Rico experienced multiple disruptions in essential services, including health care. These interruptions were undoubtedly stressors that affected both the physical and mental health of the population, especially among vulnerable individuals. Cancer patients are one of the most vulnerable populations after a disaster, not to mention that these people already present a high degree of psychological distress caused by the disease diagnosis.

Objective

- To evaluate the association between stressors experienced during and after Hurricane María and psychological distress in patients with active breast and colon cancers.

Methodology

- A telephone-based survey was administered to 242 cancer patients (140 breast cancer and 102 colon cancers).
- Inclusion criteria: ≥ 40 years, cancer diagnosis six months before September 2017, and receiving cancer treatment at the time of the event.
- Hurricane-related stressors, perceived social support, and psychological distress (scale K6 score: 0-6 not elevated, 7-24 elevated) experienced during the event and the week that followed were collected.
- Descriptive statistics were computed for all measures.

Results

Table 1. Sociodemographic characteristics of cancer patients (n=242)

Characteristic	Frequency (n=242)	Percent (%)
Cancer type		
Colon	102	57.85
Breast	140	42.15
Age (years)		
Mean (\pm SD)	60.7 (10.35)	-
< 50	37	15.48
50-59	74	30.96
60-69	75	31.38
≥ 70	53	22.18
Educational attainment		
< 12 grade	38	15.70
≥ 12 grade	204	84.30

Table 2. Stressors experienced during and after Hurricane María

Stressor	Frequency	Percent
Live in danger		
Yes	53	21.90
No	189	78.10
Death		
Yes	10	4.13
No	232	95.87
Crime victim		
Yes	3	1.24
No	239	98.76
Family victim		
Yes	240	99.17
No	2	0.83
Lived outside		
Yes	209	86.36
No	33	13.64
House evacuation		
Yes	16	6.61
No	226	93.39
Lack of food		
None	136	56.20
Little/Something	85	35.12
A lot	21	8.68
Lack of water		
None	47	19.42
Little/Something	82	33.88
A lot	113	46.69
Lack of medications^a		
None	196	81.33
Little/Something	28	11.62
A lot	17	7.05
Lack of personal hygiene products		
None	159	65.70
Little/Something	60	24.79
A lot	23	9.50
Sleep disturbance		
None	43	17.77
Little/Something	71	29.34
A lot	128	52.89
Flooding		
Yes	67	27.69
No	175	72.31
House damage		
None	105	43.39
Little/Something	102	42.15
A lot	35	14.46
Losing home		
Yes	10	4.13
No	232	95.87
Vehicle damage		
Yes	8	3.39
No	228	96.61
Lack of gas		
None	44	18.18
Little/Something	83	34.30
A lot	115	47.52
Lack of money		
None	51	21.07
Little/Something	81	33.47
A lot	110	45.45

Missing values: ^a 1

Figure 1. Psychological distress and Social Support in patients (n=242)

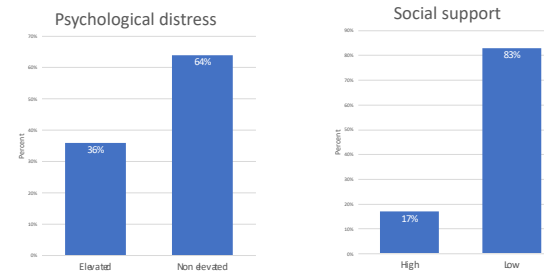


Table 3. Specific stressors related to psychological distress

	Psychological distress		p-value
	Elevated distress	Non-elevated distress	
Live in danger			
Yes	39 (73.58)	14 (26.42)	<0.001
No	49 (25.93)	140 (74.07)	
House damage			
None	26 (24.76)	79 (75.24)	0.002
Little/Something	43(42.16)	59(57.84)	
A lot	19 (54.29)	16 (45.71)	
Lived outside			
Yes	18 (54.55)	15 (45.45)	0.019
No	70 (33.49)	139 (66.51)	
Flooding			
Yes	33 (49.25)	34 (50.75)	0.010
No	55 (31.43)	120 (68.57)	
Death			
Yes	7 (70.0)	3 (30.0)	0.024
No	81 (34.91)	151 (65.09)	
Lack of food			
None	31 (22.79)	105 (77.21)	<0.001
Little/Something	43 (50.59)	42 (49.41)	
A lot	14 (66.67)	7 (33.33)	
Lack of personal hygiene			
None	39 (24.53)	120 (75.47)	<0.001
Little/Something	33 (55.0)	27 (45.0)	
A lot	16 (69.57)	7 (30.43)	
Lack of medicine			
None	61 (31.12)	135 (68.88)	0.001
Little/Something	14 (50.0)	14 (50.0)	
A lot	12 (70.59)	5 (29.41)	
Sleep disturbs			
None	7 (16.28)	36 (83.72)	<0.001
Little/Something	18 (25.35)	53 (74.65)	
A lot	63 (49.22)	65 (50.78)	

Conclusions

- Hurricane María exposed cancer patients to many stressors, resulting in a high level of psychological distress.
- Stressors related to loss of life and physical adversity, such as death, perceived threat to their lives, and sleep problems, were most associated with psychological distress.
- These findings can inform the development of disaster plans and educational materials for cancer patients after future natural disasters.

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