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SELF-ISOLATION AND ITS IMPACT ON CHRONIC PAIN

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Introduction

Early on in the coronavirus disease (COVID-19) pandemic, New York City was the epicenter in the United States. To reduce the spread of this highly contagious virus, a “shelter in place” order was initiated on March 20, 2020, which stopped all in-person visits at pain management clinics (1). This order continued until June 13, 2020. The aim of our study is to investigate the impact of this “shelter in place” order on pain severity and level of disability in patients with pre-existing chronic pain.

Materials and Methods

1. Study design

This is an observational prospective cohort study that received approval from the Institutional Review Board (IRB) at the Mount Sinai Health System (New York, NY). The primary outcome was measured by the Brief Pain Inventory (BPI) questionnaire (2).

Image 1 - Brief Pain Inventory (BPI) questionnaire: sample questions

2. Subjects

65 subjects participated in the study. The inclusion criteria were:

- (1) adults older than 18 y.o.
- (2) presence of chronic pain lasting longer than 3 months
- (3) actively receiving treatment at Mount Sinai Pain Management and Wellness Center during the “shelter in place” order (03/20/2020 - 6/13/2020).

The exclusion criteria were patients who received any surgical or interventional treatment for pain during the study period.

3. Data analysis

This study divided patients into during-quarantine (3/20 - 6/13/2020) and post-quarantine periods. The patient pain ratings were classified into mild (≤ 3), moderate (4-6) and severe pain (≥ 7). The difference in pain ratings in the two periods were rated as “improved” if there was a negative difference (≤ -1), which means the post-quarantine pain rating is lower than the pre-quarantine pain rating; “same” if there was no difference (0); and “worse” if the post-quarantine pain rating was higher than the pre-quarantine pain rating (≥ 1). This same principle is applied to the functional scores as well, which were categorized as “improved” (< 0), “same” (0), and “worse” (> 0).

The Wilcoxon signed-rank test was used for continuous variables, and weighted kappa statistics were used for the

categorical data. Statistical significance was defined as a p-value < 0.05.

Results/Case Report

Table 1 shows the baseline characteristics of the patients. There were no significant changes in medication breakdown in the during-quarantine vs. post-quarantine groups (Table 2). Changes in pain scores in the pain now, 24-hour least pain and average pain were not significantly different as well. The 24-hour worst pain significantly improved in the post-quarantine period (median 0; QR [-1, 0]; $p=0.034$). Functional scores demonstrated improvement over a 24-hour period: General activity ($p<0.001$), mood ($p=0.016$), normal work ($p<0.001$), relations ($p=0.002$), sleep ($p<0.001$), enjoyment of life ($p<0.002$) and overall functional score difference ($p<0.001$). Functional scores did not show improvement in the 24-hour walking ($p=0.1303$).

Table 3 shows the change in functional scores and pain scores and their relationship during the during-quarantine and post-quarantine periods. There is a weak to moderate coherence between change in worst pain ($\kappa =0.28$) and least pain ($\kappa =0.38$) with change in functional score (both had $p<0.001$). However, there is no association between change in average pain ($p=0.185$) and pain now ($p=0.059$) versus change in functional score.

Discussion

We found that self-reported pain severity and analgesic requirements did not significantly differ during and after the "shelter in place" mandate. However, the degree of disability significantly increased during this mandate. Almost all measures of function significantly improved when "shelter in place" was lifted and patients were able to return to semi-normal lives. This finding may be attributed to the impact of fear, anxiety, social isolation, and lack of available resources during the pandemic, especially when this "shelter in place" order was in place. These stressors can worsen a sense of disability in chronic pain patients, who already have a higher prevalence of comorbid psychiatric disorders such as depression and anxiety (3).

These findings reemphasize that chronic pain is a complex condition affected by various elements beyond tissue injury. Just as important as medications and interventional procedures, routine follow-up care and behavioral and social guidance are essential to pain management.

References

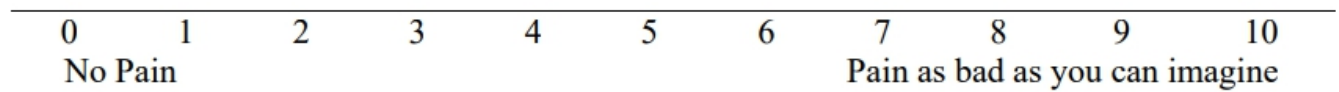
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Disclosures

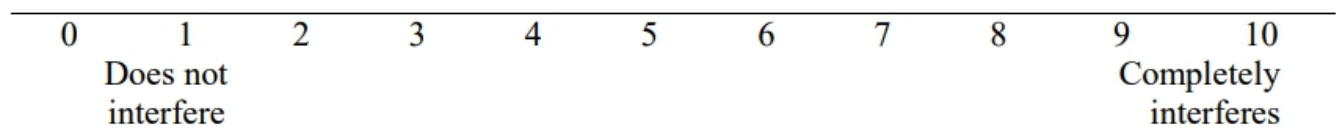
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Tables / Images

1. What number best describes your pain on average in the past week?



2. What number best describes how, during the past week, pain has interfered with your enjoyment of life?



3. What number best describes how, during the past week, pain has interfered with your general activity?

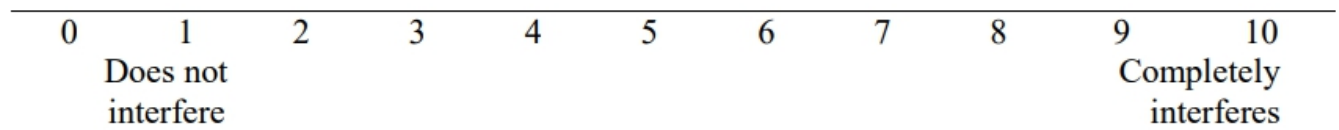


TABLE 1: Baseline characteristics of 65 participants by quarantine period.

	N(%) / mean(SD) / median
Age	58.95 (10.67)
Gender	
Females	42 (64.62%)
Males	23 (35.38%)
Psychiatric history	
Depression	12 (66.67%)
Anxiety	5 (27.78%)
Adjustment disorder with depressed mood	1 (5.56%)
Number of quarantine appointments	2 [1-2]
Worst pain location	
Neck	8 (12.31%)
Upper extremity	5 (7.69%)
Breast	1 (1.54%)
Abdomen	1 (1.54%)
Back	43 (66.15%)
Groin	1 (1.54%)
Pelvis	2 (3.08%)
Lower extremity	5 (7.69%)

TABLE 2: Medication use, Pain and functional status, by quarantine period.

	During-Quarantine	Post-Quarantine	
Medications			
Strong opioid	49 (75.34%)	51 (78.46%)	$\kappa = 0.913$
Weak opioid	11 (22.45%)	11 (22.45%)	$\kappa = 1$
Non opioid	19 (29.23%)	18 (27.69%)	$\kappa = 0.89$
NSAIDS	11 (22.45%)	11 (22.45%)	$\kappa = 0.89$
Acetaminophen	9 (13.85%)	11 (22.45%)	$\kappa = 0.88$
Anti-seizure	17 (26.15%)	20 (30.77%)	$\kappa = 0.89$
Antidepressant	11 (18.46%)	12 (18.46%)	$\kappa = 0.95$
Muscle relaxants	11 (22.45%)	11 (22.45%)	$\kappa = 1$
Other	4 (6.15%)	4 (6.15%)	$\kappa = 1$
24-hour Worst Pain			
Post – during difference	0 [-1 , 0]		p=0.034
Grade:			κ not estimable
Mild	0 (0%)	3 (4.62%)	
Moderate	7 (10.77%)	11 (16.92%)	
Severe	58 (89.23%)	51 (78.46%)	
24-hour Least Pain			
Post – during difference	0 [-1, 1]		p=0.681
Grade:			$\kappa=0.47$
Mild	20 (30.77%)	20 (30.77%)	
Moderate	27 (41.54%)	29 (44.62%)	
Severe	18 (27.69%)	16 (24.62%)	
Average Pain			
Post – during difference	0 [-1, 1]		p=0.065
Grade:			$\kappa = 0.399$
Mild	6 (9.23%)	8 (12.31%)	
Moderate	28 (43.08%)	27 (41.54%)	
Severe	31 (47.69%)	30 (46.15%)	
Pain Now			
Post – during difference	0 [-1, 1]		p=0.867
Grade:			$\kappa = 0.39$
Mild	13 (20.00%)	11 (16.92%)	
Moderate	24 (36.92%)	20 (30.77%)	
Severe	28 (43.08%)	34 (52.31%)	
% Relief in 24 hours	50 [30,70]	60 [40,70]	p=0.008¹
24-hour General activity	8 [6, 9]	6 [4, 8]	p<0.001¹
24-hour Mood	7 [5, 9]	6 [3, 8]	p=0.016¹
24-hour Walking	8 [5, 8]	6.50 [5,8]	p=0.130 ¹
24-hour Normal work	8 [6,10]	6 [5, 8]	p<0.001¹
24-hour Relations	6 [3, 8]	3 [0, 7]	p=0.002¹
24-hour Sleep	8 [5, 9]	7 [3, 9]	p<0.001¹
24-hour Enjoy life	8 [5, 9]	6 [4, 8]	p=0.002¹
Functional score	6.77 (1.89)	5.56 (2.41)	
Functional score difference	-1.30 [2.30]		p<0.001¹

Note: all kappa statistics had p<.001.

TABLE 3: Comparing the change in pain score rating for both quarantine periods against change in functional score.

	Change in Functional Score Category			
Change in Pain	Improve	Same	Worse	Agreement
Change in 24-hour Worst Pain				p<.001, κ = 0.28
Improve	22	0	1	
Same	14	2	10	
Worse	9	0	7	
Change in 24-hour Least Pain				p<.001, κ = 0.38
Improve	21	0	2	
Same	16	1	3	
Worse	8	1	13	
Change in Average Pain				p=0.185, κ = 0.16
Improve	23	0	5	
Same	12	0	5	
Worse	10	2	8	
Change in Pain Now				p=0.059, κ = 0.21
Improve	24	0	4	
Same	7	0	5	
Worse	14	2	9	