



# Was Level of Fear of Recurrence Associated with Level of Fatigue in Colorectal Cancer Patients?

Shiow-Ching Shun, RN, PhD; Yun-Jen Chou, RN, MSN, Hsuan-Ju Kuo, RN, MSN,  
School of Nursing, College of Medicine, National Taiwan University, Taipei, Taiwan

## Introduction

Fatigue is the common symptom in colorectal cancer patients and psychological distress has been proved as one of the most related factors. Fear of recurrence is the most psychological distress that the majority of cancer patients experience. However, the relationship between fear of recurrence and fatigue has not been studied in colorectal cancer patients.

## Methods

A cross-sectional study was conducted in surgery clinics at 2 medical centers in northern Taiwan. Colorectal cancer patients who were diagnosed within 5 years were recruited.

### Measurement:

**Fatigue Symptom Inventory:** Ranging from 0 to 127 for overall fatigue including fatigue interference (7 items), duration (2 items), and intensity (4 items).

**Fear of Cancer Recurrence Inventory-Short Form (FCR-sf):** Ranging from 0-36, the higher score means the higher level of fear of recurrence. The score of 13 is the cutoff point for high and low level of fear of recurrence.

**Symptom Severity Scale:** Scaling from 0 (no problem) to 10 (very severity) with ranging from 0 to 230; the higher score means the higher level of symptom severity.

**Center for Epidemiological Studies Depression Scale (CES-D):** Ranging from 0-60, the higher score means the higher level of depression.

## Objectives

To explore the relationship between fear of recurrence and fatigue characteristics (interference, intensity, and duration) in colorectal cancer patients after controlling other confounding factors (symptom severity and depression).

## Results

1. Among 97 patients, the mean of age was 62.6 (SD= 11.7) and the majority were male, unemployed, married, and with colon cancer (71.1%) (Table 1).
2. The patients with mild fatigue, **54.6% (n=53) had been identified as clinical levels of fear of recurrence (the score of FCR-sf  $\geq$  13).**
3. No significant differences of levels of FCR and fatigue in patients with different treatment status (active treatment vs. survivors) and cancer stage.
4. **FCR was significant positively associated with average fatigue ( $r = .25, p = .013$ ) and patients with higher level of fear of recurrence ( $\geq 13$ ) had significant higher than level of average fatigue than patients with lower level than 13 ( $p = .040$ ) (Table 3).**
5. After controlling the symptom severity, and depression, **fear of recurrence was the significantly factor related to average fatigue in the past week ( $\beta = .034, p = .044$ )** indicating the patients with higher level of fear of recurrence had higher level of fatigue intensity in the past week.

Table 1 Clinical Disease Characteristics (N=97)

Characteristics	n	%
Functional status <sup>a</sup>		
100	18	18.6
90	73	75.3
80	6	6.2
Diagnosis		
Colon cancer	69	71.1
Rectal cancer	28	28.9
Stage		
I	38	39.2
II	30	30.9
III	29	29.9
Chronic disease		
No	45	46.4
Yes	52	53.6
Diagnose time (Month) (Mean/SD)	27.9	16.8
End of treatment (Month) (Mean/SD)	20.9	17.1

Table 2 Mean Scores of Fatigue Characteristics, Symptom Distress, Depression, and Fear of Recurrence

Scales	M	SD
Overall Fatigue	7.1	14.3
Interference caused by fatigue	2.2	6.6
Intensity	2.8	5.3
Duration	2.1	3.8
Average fatigue	0.8	1.5
Symptom Severity	12.5	14.9
Depression	6.7	7.1
Fear of recurrence	12.7	7.8

Table 3 Correlation among Fear of Recurrence, Fatigue, Symptom Severity, and Depression

	All (N=97) r	Low Group (n=44) M(SD)	High Group (n=53) M (SD)	p <sup>a</sup>
FSI	.190	5.39 (14.43)	8.51 (14.12)	.286
Interference caused by fatigue	.126	1.93 ( 6.59)	2.47 ( 6.58)	.689
Intensity	<b>.239*</b>	1.77 ( 4.55)	3.66 ( 5.79)	.076
Duration	.161	1.68 ( 4.00)	2.38 ( 3.68)	.375
Average fatigue	<b>.250*</b>	0.48 ( 1.25)	1.09 ( 1.67)	<b>.040</b>
Symptom severity	.126	10.70(15.93)	12.40(12.46)	.559
Depression	<b>.339**</b>	4.93(7.01)	8.21(6.83)	<b>.022</b>

Note: \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$ . High group patients was identified as those score of fear of recurrence  $\geq 13$  and the low group patients with the score of fear of recurrence  $< 13$ . <sup>a</sup> p values were the results of student t-test to examine the differences between the two groups.

Table 4 Examining the associated factors with Overall and Average Fatigue in the Generalized Estimating Equations Analysis<sup>a</sup>

Variable	Overall Fatigue				Average Fatigue			
	Coefficient	Std. Err.	Wald chi-square	p	Coefficient	Std. Err.	Wald chi-square	p
Symptom severity	.635	.112	31.980	.061	.056	.010	30.055	<b>.000</b>
Depression	.193	.242	.639	<b>.000</b>	.006	.023	.077	.781
Fear of recurrence	.144	.137	1.104	.424	.034	.017	4.041	<b>.044</b>
Intercept	-3.471	1.853	3.508	.293	-.320	.215	2.218	.136

Note: <sup>a</sup> Generalized estimating equation was based on unstructured working correlation matrix.

## Conclusions

Colorectal cancer patients with higher level of fear of recurrence had the higher level of fatigue in average. Therefore, decreasing the level of fear of recurrence might be an important factor to help colorectal cancer patients in managing fatigue effectively. However, their causal effect needs to identify in the further study with larger sample size.

## Acknowledgement

The authors gratefully acknowledge the assistance of the patients who participated in this study and for the grant support from Ministry of Science and Technology (MOST104-2314-B-002-097-MY3).

## References

- Fardell, J. E., Jones, G., Smith, A. B., Lebel, S., Thewes, B., Costa, D., . . . Butow, P. (2017). Exploring the screening capacity of the Fear of Cancer Recurrence Inventory-Short Form for clinical levels of fear of cancer recurrence. *Psychooncology*. doi: 10.1002/pon.4516
- Simard, S., & Savard, J. (2015). Screening and comorbidity of clinical levels of fear of cancer recurrence. *J Cancer Surviv*, 9(3), 481-491. doi: 10.1007/s11764-015-0424-4