FACTORS OF PHYSICAL ACTIVITY LEVEL AMONG PATIENTS WITH COLORECTAL CANCER DURING CHEMOTHERAPY

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Summary

- Cross-sectional, self-report survey was conducted with 113 Colorectal cancer patients who underwent chemotherapy. The Japanese version of International Physical Activity Questionnaire was used to assess physical activity(PA). HPA was defined as exceeding 18 MET hours per week .
- Logistic regression model was applied to assess the relationships between HPA and other factors.
- PA level was associated with younger age, PA level in pre-diagnosis, depression symptoms and an item of communication regarding self-care during chemotherapy: "necessity of spending a daily life actively via housekeeping or hobby even during treatment".

Introduction and aim

- Colorectal cancer (CRC) is one of the most common cancers in the world. The number of CRC patients is increasing in Japan.
- Among CRC patients receiving chemotherapy, 46% report moderate to vigorous fatigue.
- Physical activity(PA) is a modifiable behavior and has been proposed as an important non-pharmacologic mean to improve fatigue symptoms among CRC patients .
- However, few study has investigated factors related to PA during chemotherapy. It is important to clarify them when examining support measures to improve PA level.

The aim of this study was to explore related factors to high physical activity (HPA) in Japanese patients with CRC during chemotherapy.

Methods

Study design: A cross-sectional survey

Setting: Outpatient clinic of a University Hospital and the National Cancer Center in Japan

Participants: CRC patients who met the following criteria from August 2016 to July 2017 :

- Are over 20 years old
- Have been received chemotherapy

Date collection procedure:

- Patients completed a questionnaire by themselves
- Medical data were collected from medical records

Measurements:

- PA: The Japanese version of International Physical Activity Questionnaire(IPAQ) .
HPA was defined as exceeding 18 MET hours per week (MET).
- Potential related factors to HPA: individual factors, disease related factors and communication regarding self-care during chemotherapy . Communication with health care providers regarding self-care during chemotherapy was measured using the QUOTE^{chemo} questionnaire.

Statistical analysis:

- Logistic regression model was applied to assess the relationships between HPA and potential related factors.
- Variables with $p < .05$ in the bivariate analysis were entered into the multiple logistic regression via a forced entry procedure.

Ethical consideration:

The ethics committee of each facilities approved this study and all participants provided their written informed consent.

Results

Table1 Characteristics of participants

N = 113

		N (%) or Mean $\pm$ SD [†]	
Physical activity(PA)	HPA ^a	44	(38.9)
Age		64.3 $\pm$ 11.2	
Sex	Male	71	(62.8)
BMI		22.3 $\pm$ 3.7	
Being in employment	Yes	47	(41.6)
Smoking	Yes	13	(11.5)
Education states	$\geq$ 13 years	58	(51.3)
Cohabitation	Yes	78	(69.0)
Pre-diagnosis total PA	PA < 18 MET [‡]	36	(31.9)
Hospital Anxiety and Depression Scale	Without anxiety	86	(76.1)
	Without depression	88	(77.9)
Cancer stage(TNM classification)	Stage I	9	(8.0)
	Stage II or III	104	(92.0)
Presence metastatics	Yes	79	(69.9)
Side effects	Yes	76	(67.3)
Purpose of chemotherapy	Pre or post-operative adjuvant chemotherapy	80	(70.8)
	Total body chemotherapy	33	(29.2)
Receiving chemotherapy for the first time	Yes	77	(68.1)
The period from diagnosis (months)		27.0 $\pm$ 31.9	
The period from starting chemotherapy (months)		14.5 $\pm$ 20.3	
Medical history	Yes	56	(49.6)
Stoma	Yes	26	(23.0)
ECOG Performance states	PS 0	40	(35.4)

[†] SD: Standard deviation

[‡] MET: MET hours per week

^a: HPA was defined as exceeding 18 MET hours per week

- A response rate was 95.0%. Of 113 CRC patients, 38.9% were HPA.

The mean PA was 23.1MET.

Table2

Multiple logistic regression analysis predicting factors associated with HPA^a N = 113

		Adjusted Odds Ratio ^b	(95%CI [†])	P value
Age		0.96	(0.92 - 0.99)	0.04*
Pre-diagnosis PA [†]	HPA	5.06	(1.71 - 14.96)	0.003**
Hospital Anxiety and Depression scale	Without depression symptoms(score< 8)	5.14	(1.33 - 19.85)	0.02*
	Without anxiety symptoms(score< 8)	2.69	(0.85 - 8.48)	0.09
"Necessity of spending a daily life actively via housekeeping or hobby even during treatment"				
	Yes	2.92	(1.15 - 7.40)	0.02*

* $p < 0.05$, ** $p < 0.01$

[†] PA: Physical activity

[‡] CI: Confidence interval

^a: HPA was defined as exceeding 18 MET hours per week

^b: Multiple logistic regression analysis was adjusted for the variables in this table

- Younger age, HPA in pre-diagnosis, without depression symptoms and communicating "Necessity of spending a daily life actively via housekeeping or hobby even during treatment" significantly related to HPA.

Conclusions

- PA level was associated with younger age, HPA in pre-diagnosis, without depression symptoms and an item of communication regarding self-care during chemotherapy: "necessity of spending a daily life actively via housekeeping or hobby even during treatment"
- Nurses should also attempt to communicate with the patients regarding reasonable measures to have PA in their daily life.
- Our findings may help in developing programs for promoting PA.