



Is Cancer-related Fatigue Related to the Levels of Physical Activity and Body Weights in Head and Neck Cancer Survivors in Taiwan?

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Purpose

In cancer survivors, fatigue frequently attacks and impact patients’ daily life, but is usually underreported. Physical activity can decelerate the disease progress and decreases the impact of fatigue, but in head and neck cancer (HNC) patients there were few literatures and without combining the issue of body weight loss or obesity after treatment. The purposes of this study were to explore the relationship between physical activity, body weight status, and cancer-related fatigue.

Method

This was a cross-sectional study design research and 144 HNC patients were recruited in outpatients center in medical center in Northern Taiwan after complete the treatment. Using Fatigue Symptom Inventory (FSI) and Godin Leisure-Time Exercise Questionnaire (GLTEQ) to be the interments and assessing by the senior nurses after agree to participant in the study.

Table 1. Background information (N=144)

Variable	M (SD) or N (%)	
KPS (0-100)	83.8	(7.8)
Age (years)	55.6	(11.2)
Completed treatment (months)	17.2	(13.8)
BMI (kg/m2)	26.7	(1.6)
<18.5	15	(10.4)
18.5 to 24.9	97	(67.4)
≥25	32	(22.2)
Gender		
Male	121	(84.0)
Female	23	(16.0)
Education		
Illiterate and elementary	45	(31.3)
Junior and senior high	65	(45.1)
Undergraduate and above	34	(23.6)
Physical activity status		
Sedentary	39	(27.1)
Insufficiently activity	75	(52.1)
Activity	30	(20.8)
Cancer type		
Oral cavity	75	(52.1)
Oropharynx	22	(15.3)
Hypopharyngeal	17	(11.8)
Laryngeal	12	(8.3)
Double cancer in head and neck area	18	(12.5)
Cancer stage		
I / II	47	(32.7)
III/IV	94	(65.2)
Missing	3	(2.1)
Treatment		
Surgery alone	24	(16.7)
Radiotherapy alone	7	(4.9)
Concurrent chemoradiotherapy (CCRT)	17	(11.8)
Surgery & CCRT	69	(47.9)
Surgery & Radiotherapy	17	(11.8)
Surgery & Chemotherapy	3	(2.1)
Surgery, CCRT &Target therapy	3	(2.1)
Other	4	(2.8)

Note: KPS: Karnofsky Performance Scale; BMI: Body Mass Index; Physical activity status was measured by GLTEQ and was used to divided into three groups: sedentary (total score 0), insufficiently activity (total score <24); and activity (total score ≥24).

Table 2. Fatigue intensity, inference, and duration (N=144)

	M (SD)	N (%)
Fatigue intensity	1.6 (1.5)	
Felt most fatigued (0-10)	3.4 (2.5)	
Felt least fatigued (0-10)	0.5 (1.2)	
Average fatigue level (0-10)	1.7 (1.8)	
Right now fatigue level (0-10)	1.0 (1.6)	
Fatigue interference	1.2 (1.6)	
General level of activity (0-10)	1.6 (2.1)	
Ability to bath & dress (0-10)	0.2 (1.0)	
Normal work activity (0-10)	1.4 (2.0)	
Ability to concentrate (0-10)	1.2 (1.9)	
Relation to other people (0-10)	1.2 (1.9)	
Enjoyment of life (0-10)	1.2 (2.0)	
Mood (0-10)	1.3 (2.1)	
Fatigue duration	1.6 (1.5)	
Felt fatigued in a week (0-7)	1.4 (1.7)	
Rate of felt fatigued day (0-10)	1.9 (1.5)	
Daily fatigue type		
None	30	(20.4)
In the morning	14	(9.5)
In the afternoon	23	(15.6)
At night	22	(15.0)
No fixed pattern	55	(37.4)

Results

- Most patients had good KPS (83.8±7.76) and were average completed the treatment 17.2 (± 13.8) months, but only 20.8% were in met the public health exercise recommendation.
- Even after the treatment, nearly 80% of patients still suffer from fatigue, and first three fatigue daily interference were “general level of activity” (1.6 ± 2.1), “normal work activity” (1.4 ± 2.0), and “mood” (1.3 ± 2.1).
- The patients met exercise recommendation (in activity group) with normal BMI (18.5 to 24.9) were had significant lower fatigue intensity ($P = .02$) and fatigue interferences ($P = .004$) than sedentary.
- The trend showed that the sedentary patients in normal weight or overweight had worst fatigue intensity, inference, and duration.
- With BMI<18.5, the patients had worst fatigue intensity, inference and duration than other participants.

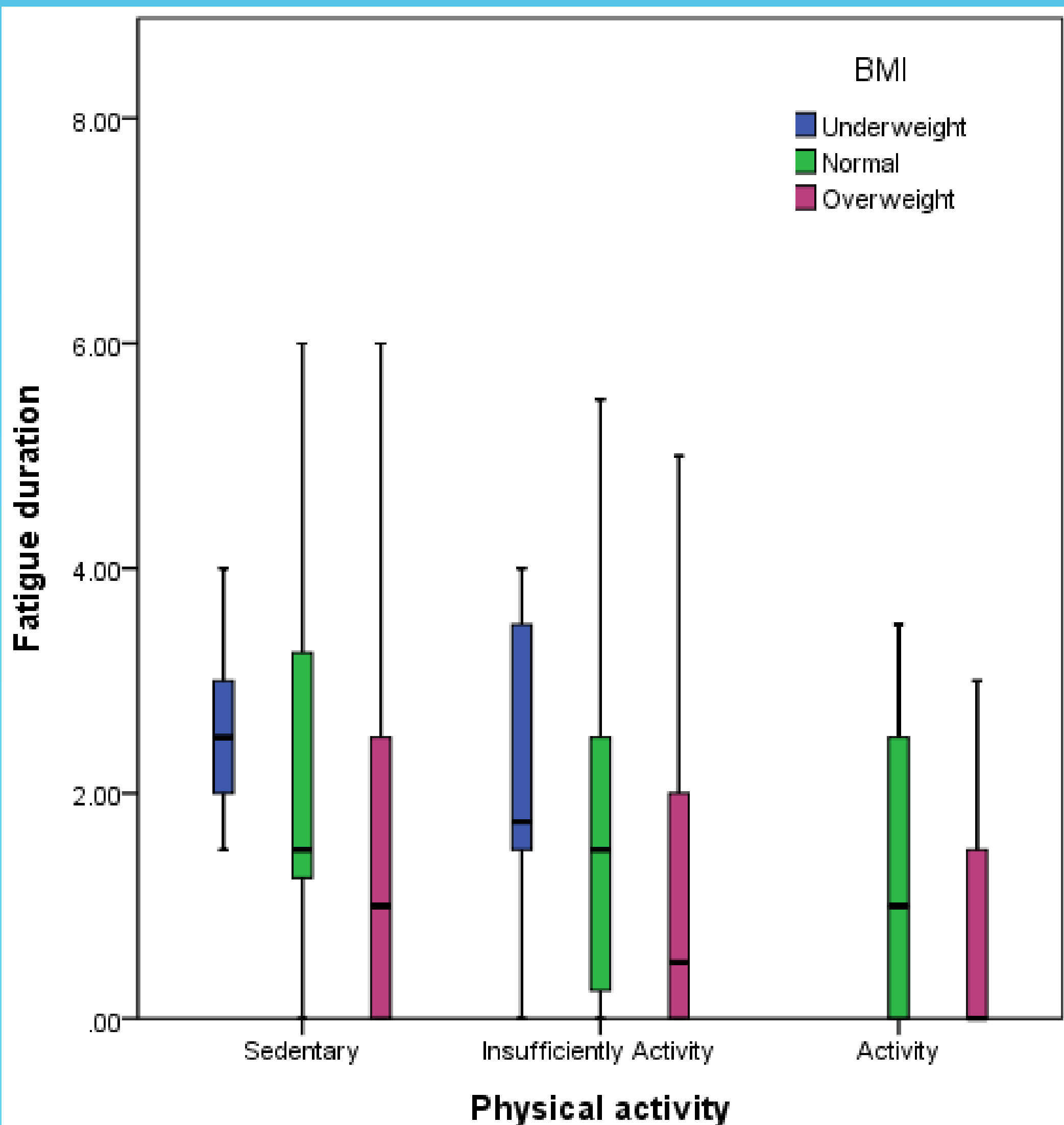
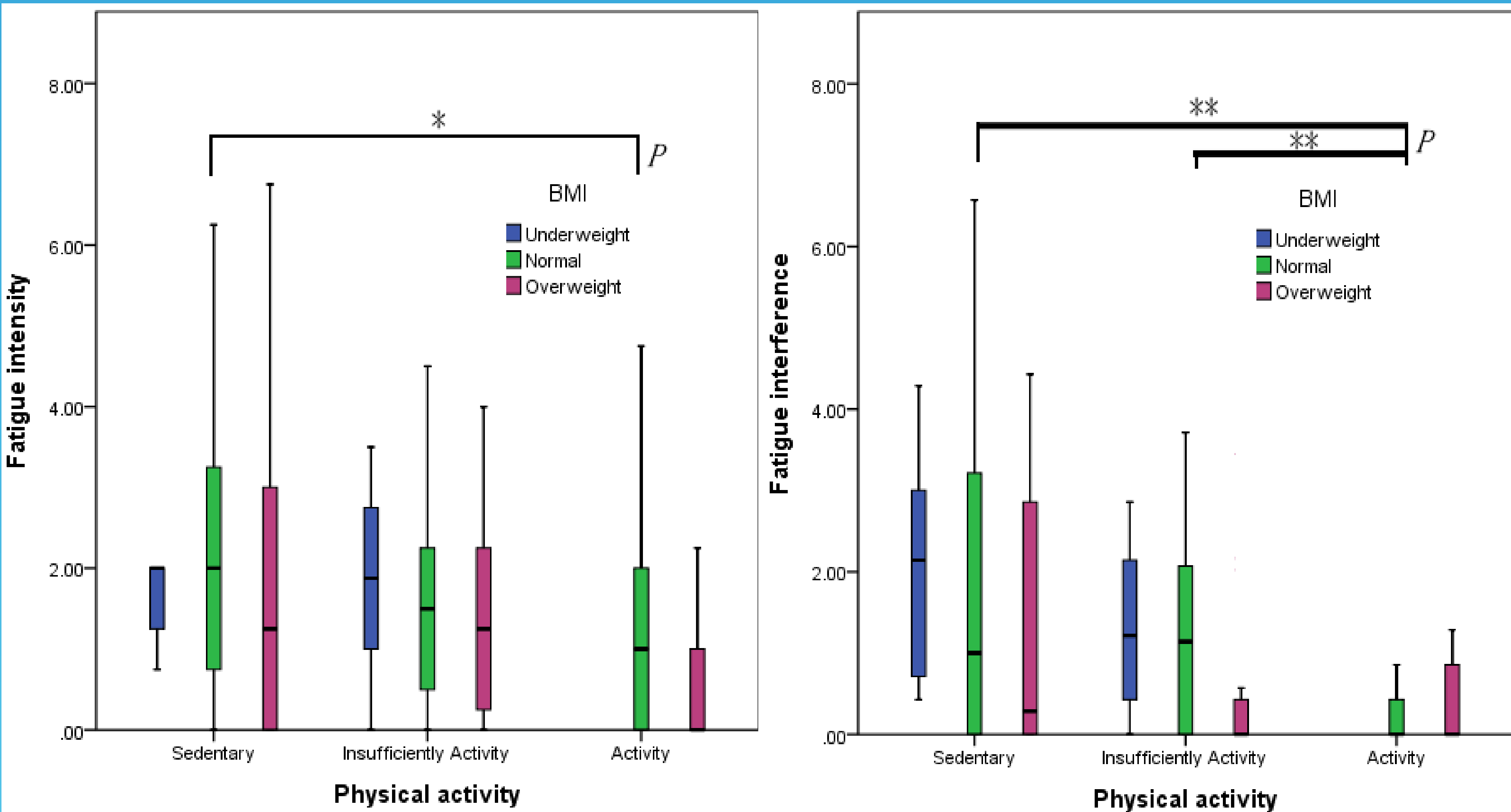
Conclusion

Our study showed that the sedentary patients had worse fatigue than the patients with exercise, and the patients with BMI<18.5 may have worst fatigue than the other participants. We recommend the health care givers encourage the patients have regular exercise behavior after the treatment and long-term follow up their body weight to give specific practical nutritional intervention.

Table 3. Correlations among fatigue, physical activity, BMI, and age

	(1)	(2)	(3)	(4)	(5)	(6)
(1) Fatigue intensity	1					
(2) Fatigue interference	0.74**	1				
(3) Fatigue duration	0.74**	0.79**	1			
(4) Age	-0.19*	-0.18*	-0.14	1		
(5) Physical activity	-0.27**	-0.28**	-0.16	0.15	1	
(6) BMI	-0.15	-0.14	-0.14	-0.04	0.02	1

Note: * p-value < 0.05; ** p-value < 0.01.



誰說運動一定要用專門的運動器材？到特定的場所？



Figure from Health Promotion Administration, Ministry of Health and Welfare.

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