

PHYSICAL ACTIVITY AMONG FEMALE INPATIENTS WITH EATING DISORDERS:

The importance of physical activity as an affect regulator

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ABSTRACT:

There are more clinical opinions than empirical knowledge regarding physical activity of patients seeking treatment for longstanding eating disorders. The aim of this dissertation was therefore to examine different aspects of physical activity among inpatients with longstanding eating disorders a) compared to non-clinical controls, and b) prospective during an inpatient treatment period. Discussion and conclusions: The underreporting of moderate-to-vigorous physical activity indicates a need for objective assessment of the amount of physical activity. The importance of exercise as an affect regulator, and not only a weight regulator, calls for a wider approach and understanding of the mechanism and function of physical activity in the patients with longstanding eating disorders in general, and in excessive exercising patients in particular.

METHODS: Sample and design

The sample consisted of 59 inpatient females with longstanding eating disorders, and 53 age and gendermatched controls. Inclusion criterion for the inpatients was hospitalization at the Department of eating disorders at Modum Bad. Admission criteria at this department is age ≥ 18 yrs, BMI ≥ 14.5 kg/m², meeting the DSM-IV criteria for Anorexia Nervosa, Bulimia Nervosa or EDNOS, and previous treatment failure. The controls were selected from a subset of a base of Norwegian females (aged 19-46 yrs in 2007). The study was conducted as a two phase study, with Phase 1 as a cross sectional case-control design, and Phase 2 as a pre-post design following the patients only.

Table 1: Subject characteristics and amount of physical activity.

	AN (n = 7)	BN (n = 29)	EDNOS (n = 22)	F	Patients (n=59)	Controls (n=53)	t
Age, yrs	27.6 (9.9)	30.7 (7.3)	30.3 (8.8)	0.73	30.1 (8.5)	31.3 (8.3)	0.73
BMI, kg/m ²	15.6 (1.4)	22.3 (3.5)	21.0 (3.2)	12.0 ***	20.9 (3.8)	25.3 (4.8)	4.78 ***
ED duration, yrs	12.2 (11.5)	16.6 (8.2)	11.9 (6.3)	2.13	14.3 (8.0)	-	
Physical activity (n = 4)	(n = 23)	(n = 20)			(n=47)	(n=44)	
ActiGraph, Counts/min	675.9 (270.6)	572.9 (200.0)	658.0 (311.9)	0.85	617.4 (254.8)	515.2 (259.6)	1.98 *
MVPA ¹ , min·w ⁻¹	649.3 (342.0, 1232.6)	465.4 (385.0, 562.7)	517.3 (389.9, 686.3)	0.95	459.3 (390.3, 540.4)	283.6 (230.7, 348.8)	3.72 **
Self report MVPA ¹ , min·w ⁻¹	528.6 (180.8, 1545.2)	456.4 (386.6, 538.9)	448.3 (325.7, 617.2)	0.19	435.8 (368.8, 514.9)	311.2 (231.2, 419.0)	2.11 *

*p<0.05 **p<0.01 ***p<0.001

RESULTS:

The main findings were that despite a higher weekly amount of both moderate and vigorous intensity physical activity among the patients compared to the controls, there were no differences in physical fitness.

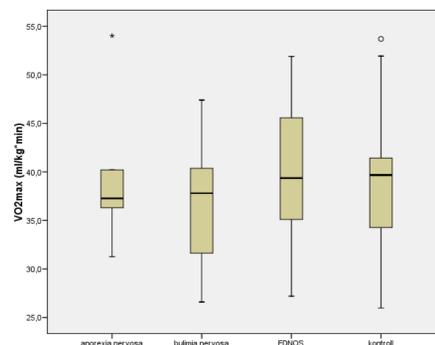


Figure 2: Aerobic fitness among patients and controls.

Furthermore, the patients perceived exercise as an affect regulator as more important than the controls, whereas no differences were found in perceived importance of exercise for weight and shape related reasons.

Table 2: Reasons for exercise among patients and controls.

Reasons for Exercise Inventory Subscales	AN (n = 6)	BN (n = 25)	EDNOS (n = 19)	F	Patients (n = 50)	Controls (n = 52)	t
Fitness/health	24.2 (15.5)	28.5 (13.6)	32.5 (10.1)	1.14	29.5 (12.7)	35.2 (8.2)	-2.71 **
Weight/appearance	30.2 (19.4)	33.5 (17.6)	35.9 (14.9)	0.29	34.0 (16.6)	31.9 (14.9)	0.68
Socializing	4.8 (3.5)	6.9 (4.4)	6.3 (2.7)	0.74	6.4 (3.7)	6.6 (3.4)	-0.30
Negative affect regulation	9.2 (2.9)	7.3 (3.3)	9.3 (3.7)	1.88	8.3 (3.5)	6.4 (3.0)	2.98**
Positive affect regulation	7.4 (3.9)	8.7 (2.6)	8.8 (3.0)	0.49	8.6 (2.9)	8.6 (2.8)	0.05

*p<0.05 **p<0.01 ***p<0.001

The patients who were defined as excessive exercisers had more severe eating disorders, higher frequency of self injurious behavior and longer treatment duration than the non-excessive exercisers. During the inpatient treatment period, a correlation was found between reduced eating disorder, exercise dependence and importance of exercise as an affect regulator in the excessive exercisers, not among the non-excessive exercisers.

Table 3: Correlations between physical * activity, exercise dependence, reasons for exercise and

	PA	EDS	REI neg	REI w/a	EDE	EDI
PA	r	.28	.49	-.71	.50	.49
	n	8	7	7	8	10
EDS	r		.72*	.36	.84*	.34
	n		8	8	7	9
REI neg	r			.32	.87*	.17
	n			8	6	8
REI w/a	r				.35	.05
	n				6	8
EDE	r					.52
	n					10
EDI	r					
	n					

*p<0.05 **p<0.01 ***p<0.001

“Both excessive and defective exercise destroys the strength.”

Aristotle, 384 - 322 B.C

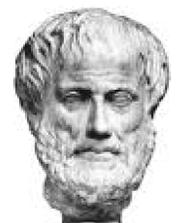
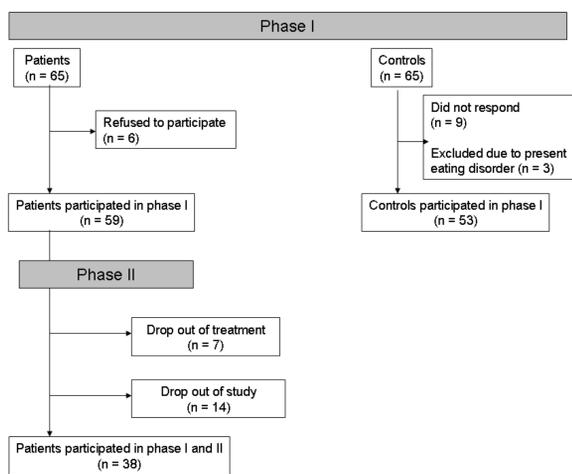


Figure 1: Flow chart of the study.



METHODS: Instruments

Assessments included objectively and self reported physical activity, the objective assessment was done with a MTI ActiGraph accelerometer. For the same seven consecutive days as the participants wore the accelerometer, they tracked frequency, duration, intensity and type of physical activity in a log. We also assessed exercise dependence (Exercise Dependence Scale), exercise motivation (Reasons for Exercise Inventory), physical fitness (aerobic fitness through VO2 max on a tread mill and muscular fitness through 1RM in leg press and seated chest press), bone mineral density and body composition (DXA).



Whats new?

- Underreporting of physical activity among patients
- Importance of exercise as an affect regulator
- Correlation between reduction in eating disorders, exercise dependence and importance of exercise as an affect regulator among the excessive exercisers during treatment

Is it true?

The limitations of the study includes low sample size and large drop outs. The strengths of the study includes adequate assessment methods, and the inclusion of all types of eating disorders. This makes the sample more representative of the total population of adult females with longstanding eating disorders.

What's in it for me?

- Emphasizes the importance of proper screening of physical activity upon admission
- Increases awareness of exercise as an affect regulator, not only a weight regulator
- Individual adjustments to physical activity is necessary. Some patients need to increase level of physical activity, and others need to decrease their activity amount.

