Supplementary Table 1. Before and after sailing program changes in Mobility, Self-care, Usual Activities, Pain/Discomfort, and Anxiety/Depression dimension stratified by age, sex, year of attendance, education level, and BESSI-20

Nature-based interventions for individuals with rare skeletal disorders: evaluation of a 5-day sailing program on health-related quality of life

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EQ-5D Dimensions	Stratification groups	No variation (- -)	Improved (+ -)	Worsened (- +)	No variation (+ +)	*p*-value
Mobility	Aggregate	8 (32.0%)	3 (12.0%)	3 (12.0%)	11 (44.0%)	1
	Age (<16 years)	3 (30.0%)	0 (0.0%)	3 (30.0%)	4 (40.0%)	0.25
	Age (≥16 years)	5 (33.3%)	3 (20.0%)	0 (0.0%)	7 (46.7%)	0.25
	Male	5 (38.5%)	1 (7.7%)	3 (23.1%)	4 (30.8%)	0.63
	Female	3 (25.0%)	2 (16.7%)	0 (0.0%)	7 (58.3%)	0.50
	2022	6 (50.0%)	2 (16.7%)	2 (16.7%)	2 (16.7%)	1
	2023	2 (15.4%)	1 (7.7%)	1 (7.7%)	9 (69.2%)	1
	Education level (<Secondary)	2 (25.0%)	0 (0.0%)	2 (25.0%)	4 (50.0%)	0.50
	Education level (≥Secondary)	6 (35.3%)	3 (17.6%)	1 (5.9%)	7 (41.2%)	0.63
	SM[a] (<15)	3 (27.3%)	0 (0.0%)	3 (27.3%)	5 (45.5%)	0.25
	SM (≥15)	5 (35.7%)	3 (21.4%)	0 (0.0%)	6 (42.9%)	0.25
	IN[b] (<17)	3 (37.5%)	0 (0.0%)	1 (12.5%)	4 (50.0%)	1
	IN (≥17)	5 (29.4%)	3 (17.6%)	2 (11.8%)	7 (41.2%)	1

CO[c] (<16)	5 (41.7%)	0 (0.0%)	3 (25.0%)	4 (33.3%)	0.25
CO (≥16)	3 (23.1%)	3 (23.1%)	0 (0.0%)	7 (53.8%)	0.25
SE[d] (<14)	3 (27.3%)	0 (0.0%)	3 (27.3%)	5 (45.5%)	0.25
SE (≥14)	5 (35.7%)	3 (21.4%)	0 (0.0%)	6 (42.9%)	0.25
ER[e] (<12)	4 (33.3%)	0 (0.0%)	3 (25.0%)	5 (41.7%)	0.25
ER (≥12)	4 (30.8%)	3 (23.1%)	0 (0.0%)	6 (46.2%)	0.25

Self-Care

Aggregate	17 (68.0%)	0 (0.0%)	7 (28.0%)	1 (4.0%)	0.02**
Age (<16 years)	6 (60.0%)	0 (0.0%)	4 (40.0%)	0 (0.0%)	0.13
Age (≥16 years)	11 (73.3%)	0 (0.0%)	3 (20.0%)	1 (6.7%)	0.25
Male	7 (53.8%)	0 (0.0%)	5 (38.5%)	1 (7.7%)	0.06*
Female	10 (83.3%)	0 (0.0%)	2 (16.7%)	0 (0.0%)	0.50
2022	7 (58.3%)	0 (0.0%)	5 (41.7%)	0 (0.0%)	0.06*
2023	10 (76.9%)	0 (0.0%)	2 (15.4%)	1 (7.7%)	0.50
Education level (<Secondary)	5 (62.5%)	0 (0.0%)	3 (37.5%)	0 (0.0%)	0.25
Education level (≥Secondary)	12 (70.6%)	0 (0.0%)	4 (23.5%)	1 (5.9%)	0.13
SM (<15)	5 (45.5%)	0 (0.0%)	6 (54.5%)	0 (0.0%)	0.03**
SM (≥15)	12 (85.8%)	0 (0.0%)	1 (7.1%)	1 (7.1%)	1
IN (<17)	5 (70.6%)	0 (0.0%)	3 (37.5%)	0 (0.0%)	0.25
IN (≥17)	12 (70.6%)	0 (0.0%)	4 (23.5%)	1 (5.9%)	0.13
CO (<16)	7 (58.3%)	0 (0.0%)	5 (41.7%)	0 (0.0%)	0.06*
CO (≥16)	10 (76.9%)	0 (0.0%)	2 (15.4%)	1 (7.7%)	0.50
SE (<14)	4 (36.4%)	0 (0.0%)	6 (54.5%)	1 (9.1%)	0.03**
SE (≥14)	13 (92.9%)	0 (0.0%)	1 (7.1%)	0 (0.0%)	1
ER (<12)	6 (50.0%)	0 (0.0%)	6 (50.0%)	0 (0.0%)	0.03**
ER (≥12)	11 (84.6%)	0 (0.0%)	1 (7.7%)	1 (7.7%)	1

Usual Activities

Aggregate	6 (24.0%)	4 (16.0%)	3 (12.0%)	12 (48.0%)	1
Age (<16 years)	1 (10.0%)	2 (20.0%)	1 (10.0%)	6 (60.0%)	1
Age (≥16 years)	5 (33.3%)	2 (13.3%)	2 (13.3%)	6 (40.0%)	1
Male	3 (23.1%)	2 (15.4%)	3 (23.1%)	5 (38.5%)	1
Female	3 (25.0%)	2 (16.7%)	0 (0.0%)	7 (58.3%)	0.50
2022	3 (25.0%)	3 (25.0%)	2 (16.7%)	4 (33.3%)	1
2023	3 (23.1%)	1 (7.7%)	1 (7.7%)	8 (61.5%)	1
Education level (<Secondary)	0 (0.0%)	2 (25.0%)	1 (12.5%)	5 (62.5%)	1
Education level (≥Secondary)	6 (35.3%)	2 (11.8%)	2 (11.8%)	7 (41.1%)	1

	SM (<15)	0 (0.0%)	2 (18.2%)	2 (18.2%)	7 (63.6%)	1
	SM (≥15)	6 (42.9%)	2 (14.3%)	1 (7.1%)	5 (35.7%)	1
	IN (<17)	0 (0.0%)	1 (12.5%)	2 (25.0%)	5 (62.5%)	1
	IN (≥17)	6 (35.3%)	3 (17.6%)	1 (5.9%)	7 (41.2%)	0.63
	CO (<16)	0 (0.0%)	2 (16.7%)	3 (25.0%)	7 (58.3%)	1
	CO (≥16)	6 (46.2%)	2 (15.4%)	0 (0.0%)	5 (38.5%)	0.50
	SE (<14)	1 (9.1%)	1 (9.1%)	2 (18.2%)	7 (63.6%)	1
	SE (≥14)	5 (35.7%)	3 (21.4%)	1 (7.1%)	5 (35.7%)	0.63
	ER (<12)	0 (0.0%)	1 (8.3%)	3 (25.0%)	8 (66.7%)	0.63
	ER (≥12)	6 (46.2%)	3 (23.1%)	0 (0.0%)	4 (30.8%)	0.25
Pain/Discomfort	Aggregate	0 (0.0%)	1 (4.0%)	4 (16.0%)	20 (80.0%)	0.38
	Age (<16 years)	0 (0.0%)	0 (0.0%)	3 (30.0%)	7 (70.0%)	0.25
	Age (≥16 years)	0 (0.0%)	1 (6.7%)	1 (6.7%)	13 (86.7%)	1
	Male	0 (0.0%)	0 (0.0%)	4 (30.8%)	9 (69.2%)	0.13
	Female	0 (0.0%)	1 (8.3%)	0 (0.0%)	11 (91.7%)	1
	2022	0 (0.0%)	1 (.3%)	4 (33.3%)	7 (58.3%)	0.38
	2023	0 (0.0%)	0 (0.0%)	0 (0.0%)	13 (100.0%)	1
	Education level (<Secondary)	0 (0.0%)	0 (0.0%)	1 (12.5%)	7 (87.5%)	1
	Education level (≥Secondary)	0 (0.0%)	1 (5.9%)	3 (17.6%)	13 (76.5%)	0.63
	SM (<15)	0 (0.0%)	0 (0.0%)	3 (27.3%)	8 (72.7%)	0.25
	SM (≥15)	0 (0.0%)	1 (7.1%)	1 (7.1%)	12 (85.8%)	1
	IN (<17)	0 (0.0%)	0 (0.0%)	3 (37.5%)	5 (62.5%)	0.25
	IN (≥17)	0 (0.0%)	1 (5.9%)	1 (5.9%)	15 (88.2%)	1
	CO (<16)	0 (0.0%)	0 (0.0%)	3 (25.0%)	9 (75.0%)	0.25
	CO (≥16)	0 (0.0%)	1 (7.7%)	1 (7.7%)	11 (84.6%)	1
	SE (<14)	0 (0.0%)	0 (0.0%)	2 (18.2%)	9 (81.8%)	0.50
	SE (≥14)	0 (0.0%)	1 (7.1%)	2 (14.3%)	11 (78.6%)	1
	ER (<12)	0 (0.0%)	0 (0.0%)	3 (25.0%)	9 (75.0%)	0.25
	ER (≥12)	0 (0.0%)	1 (7.7%)	1 (7.7%)	11 (84.6%)	1
Anxiety/Depression	Overall	5 (20.0%)	5 (20.0%)	4 (16.0%)	11 (44.0%)	1
	Age (<16 years)	0 (0.0%)	3 (30.0%)	3 (30.0%)	4 (40.0%)	1
	Age (≥16 years)	5 (33.3%)	2 (13.3%)	1 (6.7%)	7 (46.7%)	1
	Male	2 (15.4%)	4 (30.8%)	4 (30.8%)	3 (23.1%)	1
	Female	3 (25.0%)	1 (8.3%)	0 (0.0%)	8 (66.7%)	1

	(- -)	(+ −)	(− +)	(+ +)	p
2022	2 (16.7%)	3 (25.0%)	1 (8.3%)	6 (50.0%)	0.63
2023	3 (23.1%)	2 (15.4%)	3 (23.1%)	5 (38.5%)	1
Education level (<Secondary)	0 (0.0%)	2 (25.0%)	2 (25.0%)	4 (50.0%)	1
Education level (≥Secondary)	5 (29.4%)	3 (17.6%)	2 (11.8%)	7 (41.2%)	1
SM (<15)	1 (9.1%)	2 (18.2%)	3 (27.3%)	5 (45.5%)	1
SM (≥15)	4 (28.6%)	3 (21.4%)	1 (7.1%)	6 (42.9%)	0.63
IN (<17)	1 (12.5%)	1 (12.5%)	2 (25.0%)	4 (50.0%)	1
IN (≥17)	4 (23.5%)	4 (23.5%)	2 (11.8%)	7 (41.2%)	0.69
CO (<16)	2 (16.7%)	2 (16.7%)	3 (25.0%)	5 (41.6%)	1
CO (≥16)	3 (23.1%)	3 (23.1%)	1 (7.6%)	6 (46.2%)	0.63
SE (<14)	2 (18.2%)	1 %)9.1%)	3 (27.3%)	5 (45.4%)	0.63
SE (≥14)	3 (21.4%)	4 (28.6%)	1 (7.1%)	6 (42.9%)	0.38
ER (<12)	1 (8.3%)	1 (8.3%)	4 (33.2%)	6 (50.0%)	0.38
ER (≥12)	4 (30.8%)	4 (30.8%)	0 (0.0%)	5 (38.4%)	0.13

[**] $p< 0.05$; [*] $p< 0.10$

(- -): no problems to no problems (no variation); (+ −) any problems to no problems (improved); (− +) no problems to any problems (worsened); (+ +) any problems to any problems (no variation)

All values were expressed as *n (%)*

[a]SM: Self-Management Skills Domain; [b]IN: Innovation Skills Domain; [c]CO: Cooperation Skills Domain; [d]SE: Social Engagement Skills Domain; [e]ER: Emotional Resilience Skills Domain