

## Appendix 2 – not peer reviewed

### **Patient-reported quality of life with obesity – development of a new measurement scale**

**Table 1.** Spearman correlation between Patient Reported Outcomes in Obesity (PROS), Impact of Weight on Quality of Life Questionnaire Short-form (IWQOL-Lite) and body mass index (BMI) in the non-surgical group.

**Table 2.** Spearman correlation between Patient Reported Outcomes in Obesity (PROS), Impact of Weight on Quality of Life Questionnaire Short-form (IWQOL-Lite) and body mass index (BMI) in the surgical group.

**Table 3.** Reliability analysis and exploratory factor analysis of total scores on the Patient Reported Outcomes in Obesity (PROS) questionnaire in the non-surgical group.

**Table 4.** Reliability analysis and exploratory factor analysis of total scores on the Patient Reported Outcomes in Obesity (PROS) questionnaire in the surgical group.

**Table 5.** Exploratory factor analysis with oblique rotation of the Patient Reported Outcomes in Obesity (PROS) questionnaire in the non-surgical group.

**Table 6.** Exploratory factor analysis with oblique rotation of the Patient Reported Outcomes in Obesity (PROS) questionnaire in the surgical group.

**Table 1.** Spearman correlation between Patient Reported Outcomes in Obesity (PROS), Impact of Weight on Quality of Life Questionnaire Short-form (IWQOL-Lite) and body mass index (BMI) in the non-surgical group

	IWQOL-Lite <sup>1</sup> and BMI						
	Sum score	Physical functioning	Self-esteem	Sexual life	Public distress	Work	BMI
<b>PROS, non-surgical group<sup>2</sup></b>							
Sum score	-0.79*	-0.68*	-0.65*	-0.56*	-0.56*	-0.69*	-0.01
Physical activity	-0.38*	-0.57*	-0.16	-0.31*	-0.19	-0.33*	-0.08
Pain	-0.40*	-0.48*	-0.18*	-0.18*	-0.28*	-0.38*	-0.22*
Discrimination	-0.58*	-0.42*	-0.49*	-0.15	-0.62*	-0.45*	0.10
Sleep	-0.24*	-0.30*	-0.22*	-0.12	-0.14	-0.21*	-0.10
Sexual life	-0.57*	-0.46*	-0.34*	-0.68*	-0.32*	-0.48*	0.13
Social interaction	-0.59*	-0.41*	-0.60*	-0.51*	-0.42*	-0.52*	0.08
Work, school	-0.58*	-0.45*	-0.48*	-0.31*	-0.34*	-0.57*	-0.10
Self-esteem	-0.59*	-0.34*	-0.78*	-0.45*	-0.50*	-0.46*	0.08

<sup>1</sup> Total IWQOL-Lite score (n = 79) with variations for individual questions (n=94-109). \*P-values <0.05

**Table 2.** Spearman correlation between Patient Reported Outcomes in Obesity (PROS), Impact of Weight on Quality of Life Questionnaire Short-form (IWQOL-Lite) and body mass index (BMI) in the surgical group

	IWQOL-Lite <sup>1</sup> and BMI						
	Sum score	Physical functioning	Self-esteem	Sexual life	Public distress	Work	BMI
Sum score	-0.73*	-0.69*	-0.60*	-0.63*	-0.49*	-0.72*	0.22*
Physical activity	-0.56*	-0.55*	-0.41*	-0.53*	-0.42*	-0.64*	0.19
Pain	-0.65*	-0.76*	-0.40*	-0.44*	-0.37*	-0.61*	0.24*
Discrimination	-0.43*	-0.43*	-0.44*	-0.30*	-0.49*	-0.52*	0.28*
Sleep	-0.48*	-0.63*	-0.39*	-0.44*	-0.34*	-0.55*	0.18
Sexual life	-0.48*	-0.38*	-0.47*	-0.60*	-0.36*	-0.42*	0.08
Social interaction	-0.46*	-0.39*	-0.44*	-0.39*	-0.55*	-0.54*	0.25*
Work, school	-0.45*	-0.38*	-0.33*	-0.31*	-0.34*	-0.51*	0.15
Self-esteem	-0.67*	-0.38*	-0.74*	-0.56*	-0.46*	-0.60*	0.05

<sup>1</sup> Total IWQOL-Lite score (n = 79) with variations for individual questions (n=88-95). P-values <0.05

**Table 3** Reliability analysis and exploratory factor analysis of total scores on the Patient Reported Outcomes in Obesity (PROS) questionnaire in the non-surgical group

<b>PROS questions</b>	<b>Item-total correlation<sup>1</sup></b>	<b><math>\alpha</math> if one question is excluded</b>	<b>Factor loads</b>	<b>Communality</b>
Common physical activities	0.44	0.76	0.57	0.73
Bodily pain	0.47	0.76	0.60	0.54
Discrimination or discourteous behaviour	0.42	0.76	0.57	0.42
Sleep	0.37	0.77	0.49	0.45
Sexual life	0.49	0.75	0.64	0.41
Normal social interaction	0.57	0.74	0.73	0.72
Work, school, daily activities	0.56	0.74	0.71	0.51
Self-esteem	0.54	0.74	0.70	0.69

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<sup>1</sup> PROS' total correlation with a separate PROS scale corrected for overlap.

Cronbach's  $\alpha$  for the total PROS score was 0.78. Principal component analysis showed a main factor (eigenvalue = 3.2) that explained 39.8% of the variance in the questionnaire, and a smaller factor (eigenvalue = 1.3) that explained 16% of the variance. The results above are for Factor 1. Kaiser-Meyer-Olkin value = 0.75 and Bartlett's sphere test < 0.001.

**Table 4** Reliability analysis and exploratory factor analysis of total scores on the Patient Reported Outcomes in Obesity (PROS) questionnaire in the surgical group

<b>PROS questions</b>	<b>Item-total correlation<sup>1</sup></b>	<b><math>\alpha</math> if one question is excluded</b>	<b>Factor loads</b>	<b>Communality</b>
Common physical activities	0.63	0.82	0.74	0.55
Bodily pain	0.57	0.83	0.64	0.81
Discrimination or discourteous behaviour	0.60	0.83	0.74	0.66
Sleep	0.57	0.83	0.66	0.69
Sexual life	0.60	0.82	0.70	0.52
Normal social interaction	0.61	0.83	0.75	0.80
Work, school, daily activities	0.60	0.83	0.71	0.53
Self-esteem	0.65	0.82	0.77	0.64

<sup>1</sup> PROS' total correlation with a separate PROS scale corrected for overlap.

Cronbach's  $\alpha$  for the total PROS score was 0.85. Principal component analysis showed a main factor (eigenvalue = 4.1) that explained 60.0% of the variance in the questionnaire, and a smaller factor (eigenvalue = 1.3) that explained 14.2% of the variance. The results above are for Factor 1. Kaiser-Meyer-Olkin value = 0.81 and Bartlett's sphere test < 0.001.

**Table 5** Exploratory factor analysis with oblique rotation of the Patient Reported Outcomes in Obesity (PROS) questionnaire in the non-surgical group

<b>PROS questions</b>	<b>Factor 1</b>	<b>Factor 2</b>
Common physical activities	-0.10	0.89
Bodily pain	0.10	0.69
Discrimination or discourteous behaviour	0.66	-0.02
Sleep	-0.01	0.68
Sexual life	0.44	0.34
Normal social interaction	0.87	-0.07
Work, school, daily activities	0.57	0.26
Self-esteem	0.86	-0.10

Principal component analysis showed a main factor (eigenvalue = 3.2) that explained 39.8% of the variance in the questionnaire, and a smaller factor (eigenvalue = 1.3) that explained 16% of the variance. The factor loads are from the pattern matrix. Correlation between Factors 1 and 2 = 0.37.

**Table 6.** Exploratory factor analysis with oblique rotation of the Patient Reported Outcomes in Obesity (PROS) questionnaire in the surgical group

<b>PROS questions</b>	<b>Factor 1</b>	<b>Factor 2</b>
Common physical activities	0.47	0.39
Bodily pain	-0.10	0.94
Discrimination or discourteous behaviour	0.83	-0.03
Sleep	0.03	0.82
Sexual life	0.66	0.13
Normal social interaction	0.97	-0.18
Work, school, daily activities	0.34	0.50
Self-esteem	0.75	0.10

Principal component analysis showed a main factor (eigenvalue = 4.1) that explained 60.0% of the variance in the questionnaire, and a smaller factor (eigenvalue = 1.3) that explained 14.2% of the variance. The factor loads are from the pattern matrix. Correlation between Factors 1 and 2 = 0.45.