

Health-Related Quality of Life in Subgroups of a US-based, Stratified Sample of People with Obesity

1. Ronette L Kolotkin

Quality of Life Consulting, Durham, NC, USA

2. Michelle Look

San Diego Sports Medicine and Family Health, San Diego, CA, USA

3. Kenneth J. Tomaszewski

KJT Group, Inc., Honeoye Falls, NY, USA

4. Lise Højbjerg

Novo Nordisk A/S, Søborg, Denmark

5. Pernille Auerbach

Novo Nordisk A/S, Søborg, Denmark

6. Gabriel Smolarz

Novo Nordisk Inc., Plainsboro, NJ, USA

7. Joseph Nadglowski

Obesity Action Coalition, Tampa, FL, US

Background and Objectives

- Obesity has been consistently linked with lower health-related quality of life in the physical, emotional, and psychosocial domains. Severe obesity is associated with the poorest quality of life.^{1,2}
- Existing literature validates the IWQOL-Lite, an obesity-specific measure to assess the impact of obesity on health-related quality of life (HRQoL), and the SF-12, a generic, standardized HRQoL measure.^{3,4}
- The ACTION (Awareness, Care, and Treatment In Obesity maNagement) study assessed HRQoL using these two measures, among a large nationally representative sample of people with obesity (PwO) allowing for examination of HRQoL among subgroups.

Study design

- This study consisted of a cross-sectional, US-based, stratified sampling of 3,008 adult PwO who completed online surveys.
- Inclusion criterion included BMI ≥ 30 kg/m² based on self-reported height and weight.
- The survey assessed attitudes, experiences, and behaviors associated with medical and employer-based obesity management and included the IWQOL-Lite and SF-12v2.
- Respondents were recruited through an online panel.
- The study and the survey were Institutional Review Board approved.

Health-Related Quality of Life Measures

- IWQOL-Lite
 - The IWQOL-Lite is a validated, 31-item, self-report measure of obesity-specific quality of life that provides:
 - A total score and scores for five subscales: physical function, self-esteem, sexual life, public distress, and work.
- Scores range from 0 to 100 (with lower scores indicating greater impairment). There are cut-offs for severity of baseline impairment: none, mild, moderate, severe.⁵

None	Mild	Moderate	Severe
≥ 87.1	79.5-87.0	71.9-79.4	<71.9

SF-12v2

- The SF-12v2 is a 12-item, validated, self-report survey measure that is used in evaluating an individual's health status.
- The general population norm score = 50.⁴
- In addition to 8 subscales, there is a Physical Component Summary Score (PCS) and a Mental Component Summary Score (MCS).

References

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- Burdine JN, Felix MR, Abel AL, Wiltraut CJ, Musselman YI. The SF-12 as a population health measure: an exploratory examination of potential for application. *Health Serv Res*. 2000;35(4):885-904.
- Crosby, R. D., Kolotkin, R. L., & Williams, G. R. (2004). An integrated method to determine meaningful changes in health-related quality of life. *J Clin Epidemiol*, 57(11), 1153-1160. (Normative sample = 534 normal/overweight individuals not enrolled in a weight loss program)

Statistical Analysis

- Respondent-level weights were applied to the PwO sample to demographic targets for age, household income, ethnicity, race and Hispanic descent, gender and US Region based on the 2010 US Census.
- Sample sizes presented are unweighted.
- Statistical significance was set at $p < 0.05$, using 2-tailed tests. Statistical significance is noted by capital letters displayed next to significant values; their placement identifies the greater of the two values, while the letter references the comparison group.

Results

Table 1. PwO Sample Characteristics (Unweighted %)

People with Obesity	Total (n=3,008)
Sex, No. (%)	
Male	1,378 (46)
Female	1,630 (54)

Age

Mean (+/- std. dev.)	54 (14)
65 years and over, No. (%)	946 (31)

Race, No. (%)

White	2,542 (84)
Black or African American	308 (10)
Other	170 (8)

Body mass index, mean (+/- std. dev.), kg/m²

Obesity Class, No. (%)	
Class I (BMI 30-34.9)	1,304 (43)
Class II (BMI 35-39.9)	896 (30)
Class III (BMI 40+)	808 (27)

ClinicalTrials.gov identifier: NCT03223493

HRQoL Scores

Figure 1. IWQOL-Lite Total and Subscale Scores in the Overall PwO Population and Across BMI Subclasses

- Mean IWQOL-Lite score (Total) of $68 \pm 21^*$ indicated severe impairment in PwO, on average.
- Differences between obesity classes were statistically significant ($p < 0.05$), with HRQoL declining as BMI class increased.

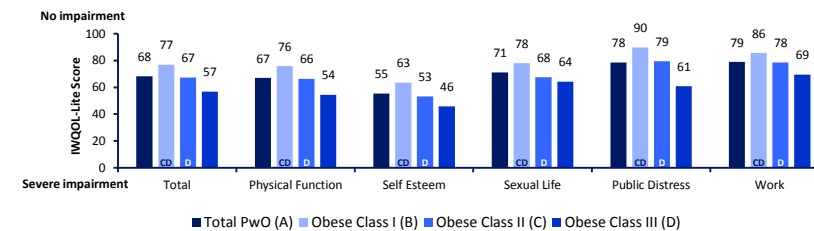


Figure 2A. SF-12 Quality of Life Domain Scores [Norm-Based Scoring (NBS) Algorithms] in the Overall PwO Population and Across BMI Subclasses

- Mean SF-12 PCS and MCS scores were below the general population norm at $47 \pm 10^*$ and $47 \pm 11^*$, respectively. PwO with higher BMI were significantly more likely than PwO with lower BMI to report scores indicating a more impaired HRQoL.

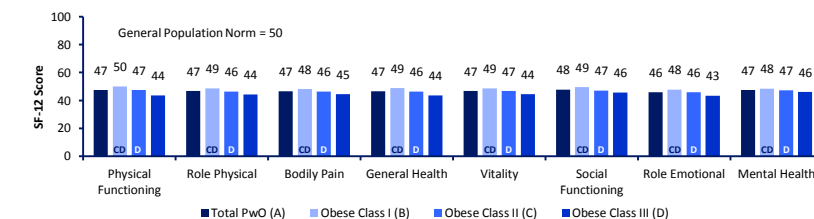
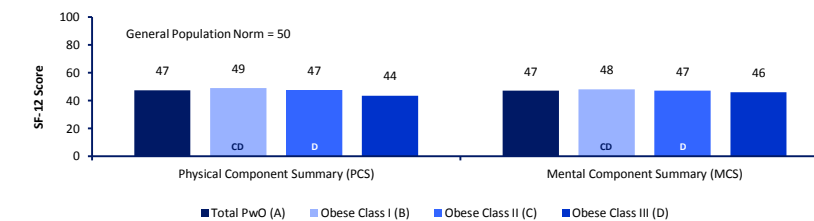


Figure 2B. SF-12 Quality of Life Physical Composite Summary (PCS) and Mental Composite Summary (MCS) Scores in the Overall PwO Population and Across BMI Subclasses



*Mean score +/- standard deviation

Figure 3. IWQOL-Lite Total and SF-12 PCS and MCS Scores – Gender Differences

- Female PwO demonstrated lower Total IWQOL-Lite scores than Male PwO (66 ± 21 vs. $71 \pm 21^*$) and lower SF-12 MCS (46 ± 11 vs $48 \pm 10^*$).

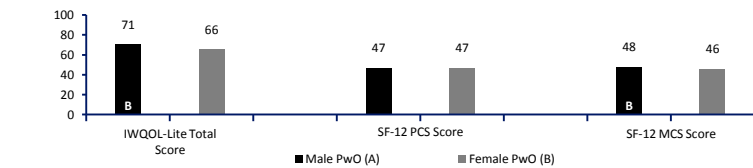


Figure 4. IWQOL-Lite Total and SF-12 PCS and MCS Scores – Age Differences

- PwO ≥ 65 years were more likely than PwO ages 18-64 years to report better Total IWQOL-Lite scores (73 ± 20 vs $67 \pm 22^*$) and better MCS (52 ± 8 vs $46 \pm 11^*$); however, they had lower PCS (44 ± 10 vs $48 \pm 10^*$).

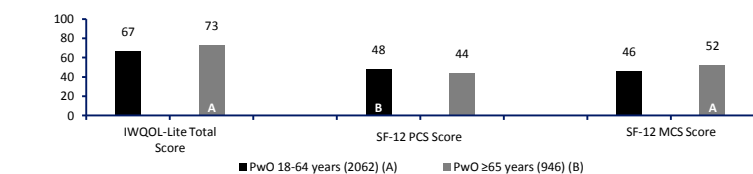
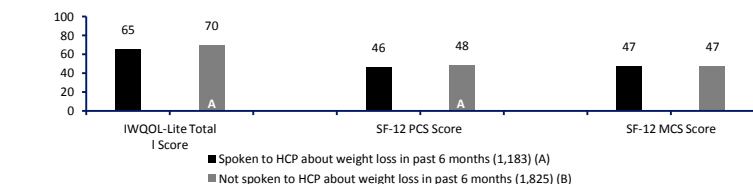


Figure 5. IWQOL-Lite Total and SF-12 PCS and MCS Scores – Care-Seeking Differences

- PwO who had spoken to a health care provider about weight loss in the past 6 months were more likely to report lower Total IWQOL-Lite compared to PwO who had not (65 ± 22 vs. $70 \pm 21^*$) as well as lower PCS (46 ± 10 vs. $48 \pm 10^*$). There were no differences in MCS.



- No meaningful differences among racial/ethnic groups were found for Total IWQOL-Lite scores, SF-12 PCS, or SF-12 MCS.

Conclusions

In a nationally-representative US sample of people with obesity, differences were found on both obesity-specific and general measures of health-related quality of life based on gender, age and care-seeking behaviors. Future studies should explore how these differences might affect obesity care.

This study was sponsored by Novo Nordisk. Medical writing assistance was provided by Rebecca Hahn, KJT Group. Presented at Obesity Week 2017, Washington, DC, USA.