



# The OWLQOL and WRSM in European Community Studies

(Obesity and Weight-Loss Quality of Life and Weight-Related Symptom Measures)

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## OBJECTIVES

- To compare patient-reported outcome characteristics of obese and non-obese populations in Europe.
- To compare and confirm basic psychometric properties of the Obesity and Weight-Loss Quality of Life (OWLQOL) measure and the Weight-Related Symptom Measure (WRSM) in these four European countries to the original U.S. validation.
- To confirm the subscale structure based on a sample of obese persons in the United States: self-image, social stigma, trying to lose weight, physical health.

## METHODS

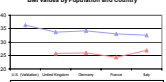
- Data were collected in four countries. In Germany, France and the United Kingdom data were collected via mail questionnaires. In Italy, questionnaires were delivered and picked up by the interviewers.
- The questionnaire consisted of the OWLQOL (condition-specific QOL), WRSM (weight-related symptoms), SF-36 (general health status), Current Health-Status Desirability Rating (CHDR) scale (health-state "thermometer"), and demographic characteristics.
- Item reduction statistics were used to evaluate missing data, ceiling effects, item-to-item and item-to-total correlations.
- A confirmatory principal components analysis (varimax rotation) was conducted using previously identified subscales from the original U.S. validation study.
- Pearson's correlation coefficients were used to assess association with the SF-36 subscales. We hypothesized stronger associations with the vitality, social functioning, and bodily pain subscales.

## SAMPLE

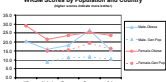
The sample in each country was divided evenly between an obese population (body mass index of 30 or more) and a mutually exclusive nationally representative population (which may include obese persons).

As expected, BMI values were higher and self-reported health-state lower for the obese samples and (except in France) the female samples. Note: there was not a general population comparator from the original U.S. validation study.

BMI Values by Population and Country



CHDR Values by Population and Country



WRSM Scores by Population and Country



## RESULTS

Table 1. Population Characteristics

	U.K.		GERMANY		FRANCE		ITALY	
	General Obese (n=997)	General Population (n=1079)	General Obese (n=1017)	General Population (n=1000)	General Obese (n=493)	General Population (n=500)	General Obese (n=500)	General Population (n=510)
Age (mean ± st. dev.)	49.5 ± 14.2	47.2 ± 15.4	44.9 ± 12.8	44.2 ± 12.7	46.1 ± 12.9	44.9 ± 14.9	52.3 ± 13.3	43.4 ± 16.6
Gender (% female)	53.6	54.4	56.7	65.0	94.1	74.6	50.0	50.8
Marital Status (% married)	N/A	N/A	74.9	66.5	64.5	70.4	68.2	57.3
Education (% college degree)	39.6	45.9	16.3	24.4	6.9	10.4	6.0	7.5
Employment (% unemployed)†	24.0	13.9	18.7	18.2	13.8	14.6	13.2	10.0
Income (%)	>= E 35,000	>= DM 42,000	>= FF 1,800,000	>= Lira 30,000,000				
	51.3	61.1	55.5	54.7	29.8	38.2	58.0	57.5

† The % unemployed refers to the populations studied and not the unemployment rate for the countries.

## Population Comparisons

Figures 1 through 4 show comparisons between the obese population and a representative sample of the general population in each country. Figure 1 shows obesity-specific quality of life (OWLQOL) scores in populations with a BMI of 30 or more. Their scores are considerably lower than those from each general population (Figure 2). SF-36 scores (a more generic health/functionality status measure) show similar results, although the differences are smaller (Figures 3 and 4).

Figure 1

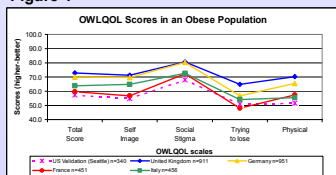


Figure 2

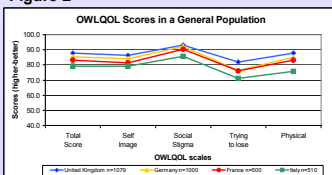


Figure 3

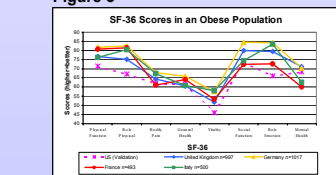
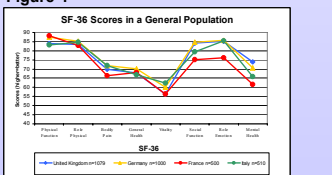


Figure 4



## Item Reduction

No items, other than the item "I avoid having sex because of my weight" (6.2%) had greater than 5% missing. The UK had the greatest number of missing items.

Five items exhibited a ceiling effect in 3 or more countries: "I avoid having sex because of my weight", "I feel left out by others because of my weight", "I feel others are ashamed of me because of my weight", "I worry others think I am lazy because of my weight", and "I feel that others cannot see the real me because of my weight".

All item-to-total correlations were > 0.60. Item-to-item correlations exceeding 0.75 (indicating possible redundancy) existed with several items, however they are items that are similar in construct (i.e., I feel that others cannot see the real me with I feel left out by others; or I feel depressed with I feel ugly). Similar relationships were seen in the original validation data.

## Confirmatory Factor Structure

A confirmatory factor analysis was conducted within each country. Table 2 shows a comparison of each OWLQOL item and factor (subscale) it entered into. While the subscale structure of Trying to Lose Weight and Physical Health subscales were confirmed, there was some variation in the Self-Image and Social Stigma domains. Two items in the Self-Image subscale (from the original validation data) loaded on the Social Stigma subscale in all samples [I avoid having sex..., and I feel embarrassed eating certain foods in front of others...].

Table 2. Confirmatory Factor Analysis

Subscales derived from original U.S. validation	UK				GER				FRA				ITA			
	UK	GER	FRA	ITA	UK	GER	FRA	ITA	UK	GER	FRA	ITA	UK	GER	FRA	ITA
<b>Self-Image</b>																
OWLQ1: I avoid having sex because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ2: I feel embarrassed eating certain foods in front of others	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ3: I feel others are ashamed of me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ4: I worry others think I am lazy because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ5: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ6: I feel left out by others because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ7: I feel others are ashamed of me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ8: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ9: I feel left out by others because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ10: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ11: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ12: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ13: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ14: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ15: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ16: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ17: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ18: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ19: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ20: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ21: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ22: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ23: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ24: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ25: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ26: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ27: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ28: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ29: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ30: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ31: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ32: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ33: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ34: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ35: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ36: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ37: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ38: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ39: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ40: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ41: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ42: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ43: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ44: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ45: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ46: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ47: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ48: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ49: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ50: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ51: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ52: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ53: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ54: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ55: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ56: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
OWLQ57: I feel that others cannot see the real me because of my weight	✓	✓	✓	✓	✓											