

Use of the Stunkard Figural Stimuli Scale to Predict Risk of Diabetes and Early Breast Development.

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Background: The Stunkard Figural Stimuli were originally developed as a psychological tool for body image assessment. In 2001, CM Bulik established BMI norms for each silhouette in a large population-based study (n=16, 728 females). Use of the Stunkard figures could provide a robust tool to better characterize family history of obesity or overweight condition, resulting in more precise risk appraisal of associated diseases, such as Type II diabetes and breast cancer.

Hypotheses:

Hypothesis 1 – The Stunkard figure self-selected by a subject correlates well with the BMI calculated from self-reported height and weight and the observer selected Stunkard figure.

Hypothesis 2 – Family history of Stunkard figure ≥ 6 in female relatives is associated with family history of diabetes and breast cancer.

Hypothesis 3 – Higher pubertal BMI in girls and/or early achievement of Tanner B2 is associated with a family history of obesity in female relatives, characterized by selected Stunkard figures ≥ 6 .

Methods: Data (height, weight, and Stunkard figure for self and mother) were collected via questionnaire from Growing Up Female (GUF) mothers and additional campus women. For the H1 validation study (N=32), the respondent also had a Stunkard figure selected for them discreetly by observer. For the H2 – H3 analyses, only data of GUF mothers (N=68) was used in analyses with their family medical history and daughter's Tanner breast stage at the second year exam.

Preliminary Results: H1: For persons with BMI < 30 (normal, under- and over-weight), excellent agreement was obtained ($p = < 0.001$) when self-selected and observer-selected Stunkard figures were compared with calculated BMI from self-reported height and weight data. For persons with BMI ≥ 30 (obese) both self-selected and observer-selected Stunkard figures were about one level lower than that represented by the person's calculated BMI (-4.4 kg/m² for self-selected, -3.54 kg/m² for observer selected).

H2: Family history of obesity was associated with family history of Type II Diabetes Mellitus, in either mother [M], maternal grandmother [MGM] or both. The strength of the relationship (odds ratio) was similar for mother's obesity status characterized either by calculated BMI (OR=1.10) or by self-selected Stunkard figure.(OR=1.15). Combining Stunkard figure data from M and MGM yielded a stronger association (OR=1.34).

H3: Both calculated BMI of mother ($p=0.001$) and Stunkard figure ($p=0.005$) were related to young daughter's BMI. MGM Stunkard figure was not related ($p=0.73$). Findings of the relationship with Tanner B2 will be presented on the poster.