**Measuring Research Variables**

Obesity has reached epidemic proportions worldwide. Decline in physical activity has occurred simultaneously or before the increase in obesity. The aim of this pilot study was to investigate the effect of a physical activity group-based education programme delivered by a Physiotherapist on weight, physical activity, cardiovascular fitness, quality of life and attitudes to exercise in obese females. A sample of 18 obese Irish females (mean age 37.6 years, mean weight 117.9 kg), took part in this study. The participants attended four physical activity education sessions in groups of 6—8, 1 month apart. Outcome measures were Cardiorespiratory fitness (CRF) measured by the Incremental Shuttle Walk test (ISWT), International Physical Activity Questionnaire-Short Form (IPAQ-Short), Impact of Weight on Quality of Life Questionnaire-Short Form (IWQOL-Lite), and a questionnaire adapted from the EU survey on Consumer Attitudes to Physical Activity. There were no significant decreases in participants’ weight (p = 0.444) and there were no significant improvements in IPAQ (p = 0.496) and IWQOL-Lite scores (p = 0.337). There were significant improvements in CRF (p < 0.0002). Attitudes towards exercise improved as shown by decreased barriers to exercise, i.e. decreased shyness (17%) and increased energy (22%) and increased enjoyment (22%). A group education programme focusing on physical activity alone demonstrated a significant increase in CRF (ISWT) and had a positive influence on attitudes to exercise. Longer duration interventions may allow participants to make the necessary lifestyle changes to achieve weight loss. [Abstract from Quinn et al. (2008)]

Break into small groups and develop written responses to the following:

1. Logical validity (face validity) is claimed when the measure obviously involves the performance being measured. This is sometimes considered as a special case of content validity. Develop two possible questions that could be used in the IWQOL-Lite which have high content validity. The first should represent a Likert-Type Scale, while the second a Semantic Differential. Develop one question that has poor content validity using either type of question scale.
2. Explain how a study could be conducted to determine the concurrent validity of the ISWT in comparison to the 3-minute Step Test. Be sure to include the type of statistical test employed.
3. Explain how a study could be conducted to determine the ability of the Consumer Attitudes to Physical Activity Questionnaire to predict an individual’s adherence to a future exercise program. What type of validity is this? Be sure to include the type of statistical test employed.
4. Explain how a study could be conducted, using the known group difference method, to estimate the construct validity of the ISWT. Be sure to include the type of statistical test employed.
5. Using one of the questionnaires from the Abstract, provide clear examples of how stability, alternate forms, and internal consistency types of reliability can be distinguished.