Hypothesis Testing and Childhood Obesity

The use of hypothesis testing in Health and Human Performance is a vital part of research. Hypothesis testing is the practice of testing a hypothesis by comparing it to a null hypothesis. The null hypothesis is rejected if the probability falls a predetermined significance level. This method is used consistently in research of and beyond Health and Human Performance.

The use of hypothesis testing to measure childhood obesity in physical education classes would consist of creating a system to predict the level of obesity as different class levels come through. This begins with measuring obesity levels, determining the significance level, and testing each class according to the previous.

When measuring the obesity levels within a physical education class, it’s suggested to use a body fat scale and body mass index chart. It is important when deeming a child obese, you consider all factors: diet, exercise level, height, and weight. This will be the bases of the data used to determine the test statistic using population means, sample size and standard deviation. This same process and data collection should happen exactly consistent year after year.

Using the example of height compared to weight, it would be possible to determine a null hypothesis and alternative hypothesis.

*Example: Null hypothesis = The difference in the average weight of students 5’5” and under from the sample mean is zero. Alternative hypothesis = The difference in average weight of students 5’5” and over from the sample mean is not zero.*

Using the test statistic, (sample mean difference divided by standard error), the p-value can be determined.

The p-value is defined as the probability value for a given statistic, that when the null hypothesis is correct, the summary will be greater than or equal to the actual observed data. In a physical education class, it will get easier each year to develop null and alternative hypothesizes of levels of obesity compared to height or a different factor that could be chosen to test.

*Example: The p-value of .02 is less than or equal to .05 therefore, if there is no difference in obesity levels and height then we would see an extreme obesity case of a child 5’5” and over only 2% of the time.*