**TTU First Year**

**Research variables**

Statistics help us turn quantitative data into useful information to help with decisionmaking.

We can use statistics to summarise our data, describing patterns, relationships

and connections. Statistics can be *descriptive* or *inferential*. Descriptive statistics help us to

summarise our data whereas inferential statistics are used to identify statistically significant

differences between groups of data (such as intervention and control groups in a

randomised control study). During this module our focus will be on descriptive rather

than inferential statistics: this will also help to give a short introduction to the most

common descriptive statistics.

**Data structure**

We generally collect data from a number of individuals or ‘**units**’. These units are most

often the children or adults that we are working with. However, our units could also be

hospitals or schools, for example. The different measurements, questions or pieces of

information that we collect from these individuals are the **variables.**

**Variables**

There are two types of variables, numerical and categorical. It is important to distinguish

between these two types of variables, as the analysis that you do for each type is slightly

different.

**1-Categorical variables** are made up of a group of categories. Sex (male/female) is a

categorical variable, as is quality of training (good; bad; average).

**2-Numerical variables** are numbers. They can be counts (e.g. number of participants at a

training) or measures (e.g. height of a child) or durations (e.g., age, time spent)

5.3 Analysis of categorical variables

Categorical data groups all units into distinct categories which can be summarised by

determining how many times a category occurs. For example, the number of females in a

group of participants. We describe this as the frequency of females in the group.