**SPSS: Single-Sample t-test**

**Application:** To test a hypothesis about the mean of a single quantitative variable.

**Research Hypothesis** (it is often the case that the researcher’s hypothesis is the statistical null, something more common for this statistical model than for most others): The researcher hypothesized that the average number of reptiles for the population of stores represented by these pet stores was 10.

**H0:** The sample represents a population of pet stores that has an average of 10 reptiles.

**Analyze ➔ Compare Means ➔ One Sample TTest**
- highlight the variable (be sure it is quantitative) and press the arrow to put it into the “Test Variable(s)” box
- type the H0: value into the “Test Value” box

**SPSS Syntax**

```
T-TEST
/TESTVAL=10
/VARIABLES=reptnum.
```

**One-Sample Statistics**

<table>
<thead>
<tr>
<th>number of reptiles at store</th>
<th>N</th>
<th>Mean</th>
<th>Std. Deviation</th>
<th>Std. Error Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>82</td>
<td>9.25</td>
<td>4.267</td>
<td>1.232</td>
</tr>
</tbody>
</table>

**One-Sample Test**

<table>
<thead>
<tr>
<th>number of reptiles at store</th>
<th>t</th>
<th>df</th>
<th>Sig. (2-tailed)</th>
<th>Mean Difference</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>-0.609</td>
<td>11</td>
<td>.555</td>
<td>-.750</td>
</tr>
</tbody>
</table>

The p-value of .555 means there is a 55.5% chance this is a Type I error.

Remember, even if the printout shows it, never report p = .000, because that would suggest there is no possibility of a Type 1 error. Instead report “p<.001”

**Reporting the Results:**

The average number of reptiles in the sampled stores (M = 9.25, S =4.27) was not significantly different from the hypothesized value of 10, t(11) = .609, p = .555.

It is important to show the sample mean and standard deviation before presenting the t-test results.

As in the example, be sure to communicate:
- The research hypothesis (if there is one)
- The statistical results
- Whether or not those results support the research hypothesis