DIET AND LONGEVITY STUDY

11. Displaying and Describing the Data with SPSS

In this part, we will demonstrate how to use SPSS to produce the computer outputs we referred to in Sections 4 and 5. There are hyperlinks between the section and Sections 4 and 5 containing the statistical outputs.

Open the file *case0501* with the data in the experiment. It consists of two columns, named *lifetime* and *treatmt*. The column *lifetime* contains the lifespan of the mice expressed in months, the entry in the column *treatmt* contains the name of the treatment the mouse is subjected to.

In our analysis with SPSS it will be necessary to recode the variable *treatmt* by assigning the consecutive integer numbers to the six treatments. In order to do this, click on *Transform* from the main menu, then on *Recode* from the pull-down menu, and finally on *Into Same Variable*. This opens the *Recode into same variable* dialog box. For each value you want to recode, you must indicate the old value and the new values, and click on *Add*. Old values are the names of the treatments that exist in the original data file. New values are the consecutive integer numbers from 1 to 6. The variable *treatmt* will be recoded.

In order to obtain side-by-side boxplots of the lifetimes of mice fed on the six diet regimens, and then the summary statistics for each group, click on *Statistics* in the main menu, select *Summarize*, and then *Explore* from the pull-down menu.
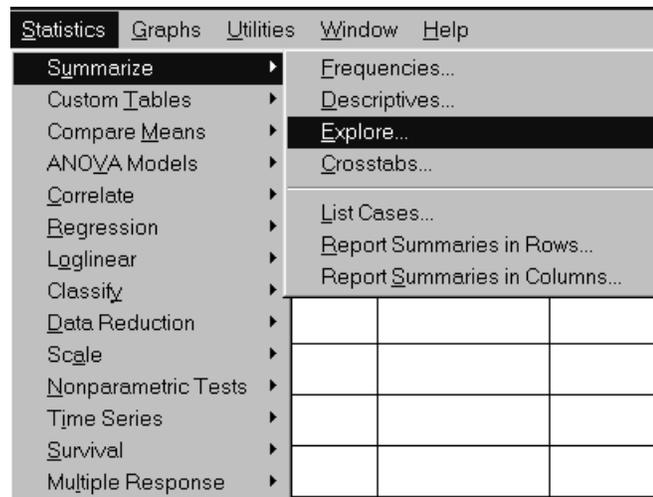
Fill out the *Explore* dialog box as follows:
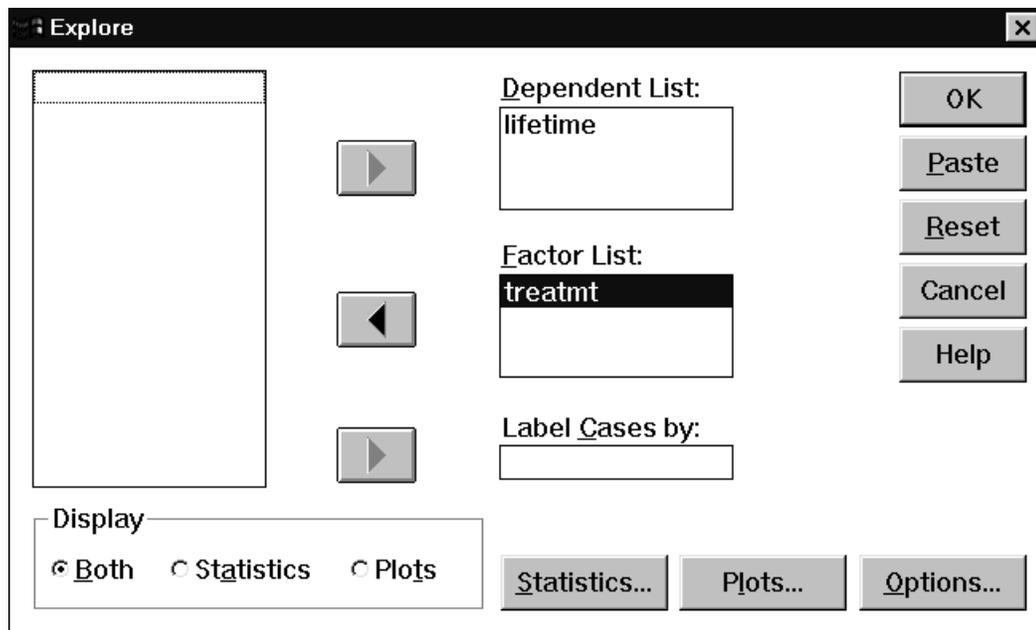
In order to make sure that your output will include side-by-side boxplots, click on Plots and check the radio button *Factor levels together*.
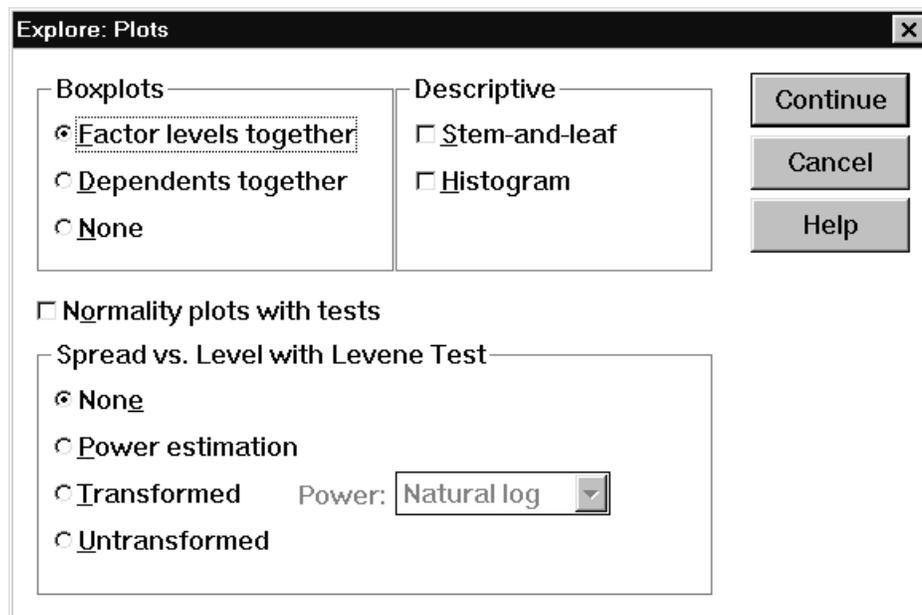
The side-by-side boxplots displayed in Section 4.1 and summary statistics output displayed in Section 5 will be produced by SPSS.

Now we will we will plot the cumulative percentage of mice survived in each of the six treatment groups over time using line charts. Click on *Graphs* in the main menu and then on *Line...*

```
Graphs   Utilities
   Bar...
   Line...
   Area...
   Pie...
   High-Low...

   Pareto...
   Control...

   Boxplot...
   Error Bar...

   Scatter...
   Histogram...
   Normal P-P...
   Normal Q-Q...
   Sequence...
   Time Series        ▶
```

The following *Line charts* dialog box is displayed.

```
Line Charts                              [×]

   ┌────────┐
   │  /\    │   Simple          ┌──────────┐
   │ /  \/  │                   │  Define  │
   └────────┘                   └──────────┘
   ┌────────┐                   ┌──────────┐
   │ ◇◇◇◇◇  │   Multiple        │  Cancel  │
   └────────┘                   └──────────┘
   ┌────────┐                   ┌──────────┐
   │ ░▢░▢░  │   Drop-line       │   Help   │
   └────────┘

   ┌Data in Chart Are───────────────────────┐
   │                                         │
   │  ⦿ Summaries for groups of cases        │
   │  ○ Summaries of separate variables      │
   │  ○ Values of individual cases           │
   │                                         │
   └─────────────────────────────────────────┘
```
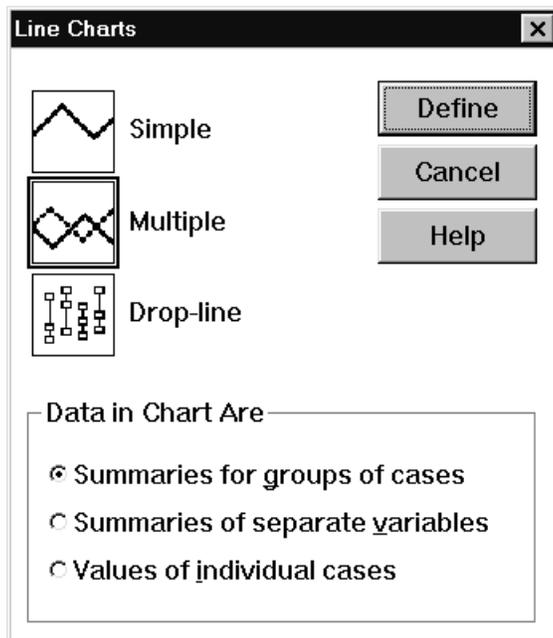
Click on *Multiple* and *Summaries for groups of cases.* The *Define Multiple Line* dialog box displayed below should be filled out as follows:

Define Multiple Line: Summaries for Groups of Cases   ✕

Lines Represent

◯ N of cases   ◯ % of cases

◯ Cum. n of cases   ⦿ Cum. % of cases

◯ Other summary function

▶   Variable:

          [   ]

          Change Summary...

Category Axis:

▶   [lifetime   ]

Define Lines by:

▶   [treatmt   ]

Template

☐ Use chart specifications from:

     File...

OK

Paste

Reset

Cancel

Help

Titles...

Options...
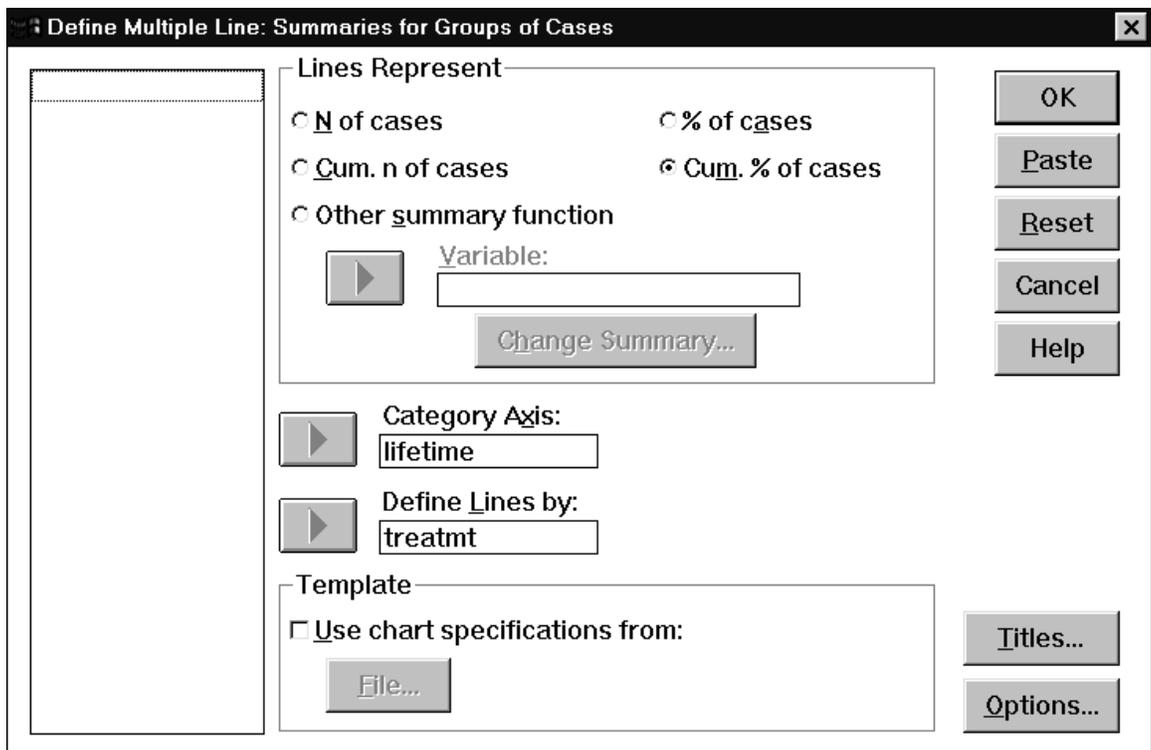
Click on OK to obtain the graph and edit it. The chart is displayed in Section 4.2

In order to obtain the descriptive statistics for the data, click on *Statistics* tab in the *Explore* dialog box.

Explore: Statistics

☑ Descriptives

   Confidence Interval for Mean: 95 %

☐ M-estimators

☑ Outliers

☐ Percentiles

☐ Grouped frequency tables

[Continue]   [Cancel]   [Help]
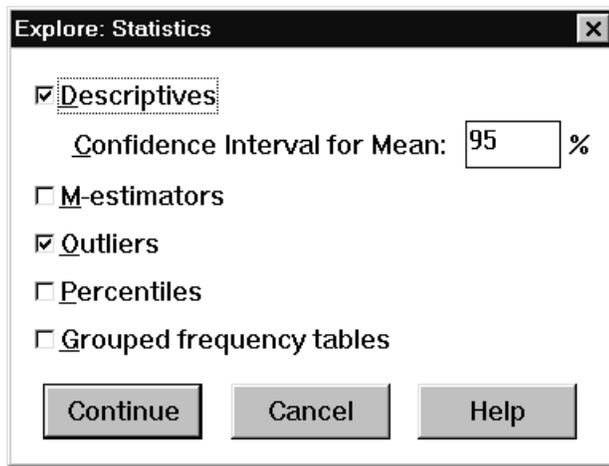
SPSS produces the following output: