

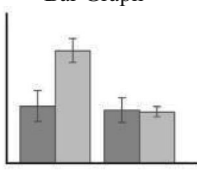
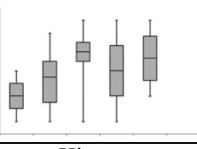
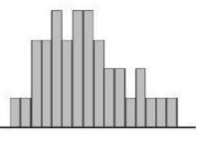

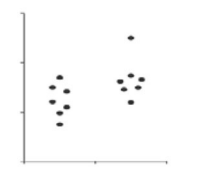


Data Display Type	Usage	Advantages	Disadvantages
<p><b>Bar Graph</b></p> 	To compare categorical data, percentages, or summary statistics from multiple groups. <sup>42</sup> Each bar represents a category; shape can be changed by moving the categories around. <sup>25</sup>	Useful for understanding distributions from large datasets. <sup>42</sup> Stacked bars or shading of bars can be used to distinguish the different levels within the data. <sup>42</sup>	Obscures the distribution of data <sup>42, 49</sup> , number of data points, and their values. <sup>17, 18</sup>
<p><b>Box and Whisker Plot</b></p> 	To show distribution of data from one or multiple groups <sup>18, 42</sup> .	Shows and compares distributions of large datasets. <sup>18, 42</sup>	Should not be used for small datasets. <sup>42</sup> Does not show individual data(except for outliers). <sup>42</sup>
<p><b>Histogram</b></p> 	To show a distribution of data with the independent variable as continuous. <sup>25</sup> Uses numerical data instead of categorical data <sup>25</sup> .	Shows the shape of the distribution of data with a continuous variable. <sup>25</sup>	Must choose the bin size wisely to avoid influencing the shape being too compressed or too dispersed. <sup>25</sup>
<p><b>Line Graph</b></p> 	To show how a single variable or multiple variables changes over time or to show how a variable deviates from a set baseline <sup>20</sup> X axis portrays categories while the Y axis portrays quantitative values. <sup>20</sup>	Shows direct relationships and may be used to predict relationships between continuous variables. <sup>34</sup>	Not appropriate for representing ranked, part-to-whole, or correlational data. <sup>20</sup>
<p><b>Dot Plot</b></p> 	To show distribution of small data sets from multiple groups. <sup>17, 49</sup> The independent variable is categorical and the dependent variable is continuous.	Shows all data from multiple categories and the distribution within each category. <sup>17, 49</sup>	Not appropriate for representing a large data set because the plot will become cluttered and it will be difficult to see the individual points. <sup>17</sup>
<p><b>Scatterplot</b></p> 	To show individual data points from bivariate data. <sup>42</sup>	Shows the relationship between variables. <sup>18, 42</sup> Shows trends in the data and any noticeable outliers.	It may be difficult to extract individual data points if they fall on the same or nearby coordinates. <sup>18, 42</sup>
<p><b>Tables</b></p> 	To display simple relationships between numerical values and categorical groups, so that individual values can be easily extracted from the rows and columns <sup>20</sup> . Often used for small data sets. <sup>19, 47</sup>	Since values in a table are encoded as text, it is easy to extract individual values. <sup>19, 20</sup> Numbers in a table can be displayed with decimal precision. <sup>20, 47</sup> A table can also communicate multiple sets of data with different units. <sup>20</sup>	Tables may make it difficult to interpret the take home message if not organized properly. <sup>19</sup>

Fig. 2. Summary of common graphs, their usage, advantages, and disadvantages. (Citations for figures used: the double bar graph was created by the authors, the box and whisker plot was taken and modified from <http://www.icyte.com/system/snapshots/fs1/3/5/7/c/357c20ba5d012405a4401d7b5b91deaf0ac77ef1/index.html>, the histogram was created by the authors, the line graph was taken from Richard Cox's External Representation Corpus; the dot plot was taken directly from Weissgerber (49); the scatterplot was modified from <http://forrest.psych.unc.edu/research/vistaframes/help/lecturenotes/lecture11/pearson.html>, and the table was taken directly from <http://quickwebresources.com/zebra-stripping-table-with-php-and-css>.)