Different ways to present quantitative evaluation results

"Quantitative" data is represented by numbers. Numbers can be reported in many different ways, for example:
- Number (such as, "35 teachers attended")
- Percent (such as, "60% of survey respondents were female")
- Average, also called "mean" (such as, "youth reported an average of 9.3 hours of 'screen time' per week")

Most program evaluation reporting involves basic "descriptive statistics"—meaning numbers that simply summarize or describe a data set. There are several different types of descriptive statistics that are commonly used in basic program evaluation:

Characteristic	Type of Descriptive Statistic	Example
Basic summary	Frequency as a Raw Number: the number of times a response is represented in the data set for a specific variable or item	35 out of 60 participants reported that they "strongly agreed"
	Frequency as a Percent: the percent of times a response is represented in the data set (numerator= the response you are interested in; denominator= total number of respondents who completed the item)	58% of participants reported that they "strongly agreed" (35 participants "strongly agreed" out of the 60 participants who filled out an answer for this item)
	Cross-tabulation ("break-outs"): reporting frequencies broken out by categories, such as gender, age groups, schools, or zip codes	67% of females "strongly agreed," compared to 51% of males
Central tendency (identifies the most common result)	Mean: the average value in a data set (the sum of all values divided by the number of values)	Youth reported an average of 9.3 hours of "screen time" per week.
	Median: the mid-point in a data set; half of values in the data set are lower than the median and half are higher than the median	The median annual household income in the community was $32,000.
	Mode: the value that occurs most frequently in a data set	The mode age was 17 years.
Dispersion (shows how spread out the results are and how much variation there is in the responses)	Range: the lowest and highest numbers in a data set	Participants' ages ranged from 13 to 18.
	Standard deviation ("SD"): indicates how the responses "spread out" around the mean; a low standard deviation indicates that most of the data points are clustered close to the mean; a high standard deviation indicates that the data points are spread out (dispersed more widely from the mean)	The average rating on the five-point scale was 4.5, with a standard deviation of 0.5.

Characteristic	Type of Descriptive Statistic	Example
Change from one time period to another*	Percentage-point change for a group	There was an increase of 30 percentage points in the proportion of MOST Club participants who reported they were "somewhat" or "very" confident in their ability to confront a friend who was saying harmful things about women and girls.
	Percent change for a group (change rate)	There was a 20% increase in the proportion of MOST Club participants…
	Individual-level change	85% of Incredible Years Dinosaur School participants demonstrated an improvement of 5 or more points in their Self-Control Score at the post-program assessment compared to the baseline.

*see *Percentage-Point Change and Percent Change* Tip Sheet in Part 1 of this toolkit.

Which kind of descriptive statistics should you present in your evaluation report?

The answer to this question should be guided by the following considerations:

- Refer to your evaluation questions and your ABCDE outcome statements for guidance on how you need to frame your results. For example, if you have an ABCDE outcome statement that refers to a percent change from the pre-test to the post-test for a group of participants, then you will need to present your results in a percent-change format.
- Think about the level of detail that your report's audience will need. If you will be presenting your report to a group of school administrators, for example, it might be important to present cross-tabulations by grade level or school building.
- Consider the limitations of your data analysis tools. In Excel, for example, it is very easy to calculate means and medians, while it is more time-consuming to calculate frequency percents. In SurveyMonkey, some account types include a cross-tabulation feature, while the "Basic" account does not.
- Treat "discrete" and "continuous" variables differently. Continuous variables have data that can flow gradually along a scale. For example, hours of screen time per week could vary from 1.0 hour to 2.5 hours to 9.7 hours, or, a child's score on a developmental assessment could range from 20.0 to 35.5 to 52.0. "Discrete" variables, on the other hand, have data in finite "chunks." For example, true/false or multiple-choice style survey questions about knowledge are discrete variables. Discrete variables are typically more common in IPV/SV prevention program evaluation.
    - Means, medians, and modes should be used for continuous variables, not for discrete variables.
    - Continuous variable data often needs to be organized into categories before it can be displayed in user-friendly frequencies or cross-tabulations. For example, categorizing children's ages (a continuous variable) into age-group categories (such as, 0-5 year-olds, 6-12 year-olds, and 13-17-year olds) will provide data that is easier to read in a concise table format.

Collapsed categories

In order to make quantitative results easier to display and read, it is sometimes helpful to "collapse" several small categories into a few larger categories. This is particularly helpful for continuous data (such as the age group example above) or for survey items with four or more response options. For example, data from a five-point scale (not effective, somewhat effective, moderately effective, very effective, extremely effective) could be collapsed into

three categories: "not effective," "somewhat or moderately effective," and "very or extremely effective." This would provide most stakeholders with sufficient information, and would be easier to read in a table or graph.

Present results for the group, not for individuals
The purpose of an evaluation report is to show the results for the group overall, not to present specific results for each participant. For example, if you had 250 students complete pre and post-test surveys about a teen dating violence prevention program, do not simply list the results for each student. That would be cumbersome for the reader and would not help to answer the overall evaluation questions. Instead, present the *aggregate* results—meaning the results for the group overall, such as the percent of students who demonstrated positive bystander skills at the end of a program. Plus, always remember to protect the confidentiality of participants; never include the names of participants in an evaluation report (unless it is in the acknowledgements section).

Narrative, tables, charts, or graphs?
While it is helpful to have some narrative to describe evaluation methods and to highlight key findings and recommendations, numbers can sometimes be "lost" in a narrative format. Tables, charts, and graphs provide a visually appealing way to present quantitative results that will catch the readers' attention and will be easier to process. A strong evaluation report typically includes a balance of narrative that provides context, tables that present detailed results, and a few charts and/or graphs that highlight key findings or help to illustrate more complex data. The following table presents some considerations for using tables, charts, and graphs.

Type of data display	When to use	Potential pit-falls
Table	When displaying lots of detailed data with many categories or response options; Easy to create in Word or Excel	Tables with multiple columns can be difficult to read; Complex tables do not work well in PowerPoint
Bar chart	Good for group comparisons, such as pre-test vs. post-test, or School A vs. School B. vs. School C; Easy to create in Excel or PowerPoint	May need to collapse categories or could be too confusing, especially if you can only print in black and white
Line graph	Useful for showing trends over time, such as three or more years of data; Easy to create in Excel or PowerPoint	Too many data lines can be confusing, especially if you can only print in black and white
Pie chart	Shows percentage of a whole; Data must equal 100%; Easy to create in Excel or PowerPoint	Won't work for "choose all that apply" items (must equal 100%); Too many "slices" in the pie can be confusing
Box Plots, Dot Plots, Scatter Plots, Trellis/Lattice Graphs	For more information about these alternative forms of graphical display of data, go to: http://assets.en.oreilly.com/1/event/55/Communicating%20Data%20Clearly%20Presentation.pdf	