

Children in Crisis

This module focuses on factors related to death rates for children and teens.

1. Use the 2002 Kids Count Data Book Online and examine how "teen death by accident, homicide, and suicide" varies across the states.

Eyeballing the map, which region or regions of the country have a higher rate of teen deaths?

[MAP: TeenDeaths]

How much variation is there in the rate of teen deaths?

[RANKINGS: TeenDeaths]

Which state has the lowest (best) rate of teen deaths, and what is the percent in that state? Which state has the highest (worst) rate of teen deaths, and what is the percent in that state? Also, what is the range of variation between these percents?

State Ranking	Teen Death by Accident, Homicide, and Suicide
Best _____	_____ %
Worst _____	_____ %
Variation (high-low percent)	_____ %

Examine teen deaths as a trend over time. Choose the United States, Maryland, and one other state for your line graph. Consider choosing one of the worst or best-ranked states as a comparison. Choose "TeenDeaths" as your indicator. Graph the data from 1990-1999.

2. Examine teen idleness as a trend over time. Choose the United States, Maryland, and one other state for your line graph. Consider choosing one of the worst or best-ranked states as a comparison. Choose "percent teens not attending school/working" as your indicator. Graph the data from 1990-1999.

[GRAPH]

Describe the overall national trend. Was there an increase, decrease, or did it stay the same. Put another way, nationally are we experiencing more or less teen idleness?

Describe the trend for Maryland and the other state chosen. Do these state trends differ from the national trend? Describe any similarities and differences.

3. More children died in 1998 from gunfire (ten children and teens die each day from gunfire in America—one child every two and a half hours) than die from cancer, pneumonia, influenza, asthma, and HIV/AIDS combined. We also

know that the unemployment rate for teens is more than four times the adult rate.*

The first step in testing whether there is a relationship between these two facts is to write a hypothesis consistent with your observations.

To test the relationship between teen death rate (rate of teen deaths per 100,000 teenagers ages 15-19), and teen idleness (percent teens not attending school/working) and open the excel file called "tool.xls".

Make a scatter plot by using the pull down menu. Let x be "percent teens not attending school/working 1999" and y be "teen death by accident, homicide, and suicide 1999." Cut and paste the scatter plot into a Word file and record the correlation coefficient. (An explanation of the correlation coefficient can be found below)

Are there any data points that seem to stand out --not part of the cluster of data points? These are called outliers. Click on an outlier to see which state is represented.

Was the hypothesis confirmed? Explain your answer.

4.Repeat these steps, substituting juvenile property crime arrest rate as the new y variable.

To test the relationship between the teen death rate (rate of teen deaths per 100,000 teenagers ages 15-19), and the juvenile property crime arrest rate open the excel file called "tool.xls".

Make a scatter plot by using the pull down menu. Let x be "percent teens not attending school/working 1998" and y be "teen death by accident, homicide, and suicide 1999". Cut and paste the scatter plot into a Word file and record the correlation coefficient. (An explanation of the correlation coefficient can be found below)

Write an interpretation of the correlation coefficient for the scatter plot (x = juvenile property crime arrest rate 1998), y = teen death rate). See below for an explanation of the correlation coefficient.

Write an interpretation of the correlation coefficient for the scatter plot with teen death rate as the y variable.

Are there any data points that seem to stand out --not part of the cluster of data points? These are called outliers. Click on an outlier to see which state is represented.

Was the hypothesis confirmed? Explain your answer.

* Children's Defense Fund, 2001 *The State of America's Children*.

Explanation of Correlation Coefficient

The correlation coefficient or Pearson's r is a measure of the degree of linear association existing between two variables. We want to pay close attention to both the direction and strength of the association. A positive correlation is indicated by the absence of a negative sign and means that variables are changing in the same direction. An increase or decrease in one variable corresponds to the same change in another variable. For example, we would expect that the more time a student studies for an exam (x) the higher the exam score (y). A negative relationship is indicated by a minus sign and means that as one variable increases there is a corresponding decrease in another variable. The strength of a relationship is indicated by the numeric value of the coefficient. Coefficients range from -1.0 to 1.0 . These values are examples of perfect correlations. In reality most values are found in between -1.0 and 1.0 . Correlations of $.30$ or less (either $+$ or $-$) are considered weak, $.31 - .70$ (either $+$ or $-$) are deemed moderate and $.71$ and above (either $+$ or $-$) considered strong. These are not absolute rules but should be used as a guide in interpretation. Note that the higher the correlation coefficient (either positive or negative), the more closely clustered the data points are in the shape of a diagonal line.

What might be a better measure of children in crisis than death rates?

5. Not all teen deaths can be classified as relating to criminal activity. Teen pregnancy is considered a social problem because many of these girls live in poverty and do not have access to adequate health care (although the number of children without health care coverage dropped from a record high of 11.9 million uninsured children in 1998, there are still 10.8 million uninsured children in 1999*). Pregnancy and childbearing for teens in crisis can be life threatening.

Develop a hypothesis between teen birth rate (births per 1,000 females aged 15-17) and (x) teen deaths.

To test the relationship between teen deaths and Teen birthrate, use the "tool.xls" file.

Make a scatter plot using the pull down menu. Let x be "births per 1000 females aged 15-17." and y be teen deaths. Cut and paste the scatter plot into a word file and record the correlation coefficient.

Interpret your findings.

Are there any data points that seem to stand out --not part of the cluster of data points? These are called outliers. Click on an outlier to see which state is represented.

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Was your hypothesis confirmed? Explain your answer.