



Key concepts to develop statistical literacy on understanding experiments

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Abstract:

Statistical literacy involves the ability to read and interpret data, enabling one to use statistics as evidence in arguments. To do so effectively, it is necessary to think critically about statistics. It has been recognized that statistical literacy is essential to all citizens to function fully in society. The pandemic is teaching us lessons about communication and misinformation, and is changing the way society interacts with data, statistics and science. The COVID-19 pandemic has provided an opportunity to raise the interest of the general population in data-related issues and the scientific method. Here we give emphasis to data from experimental studies. Experiments are essential to support claims about causation. This talk reviews some of the key elements in understanding and interpreting experiments. We intend to tackle major concepts in a way everyone would be able to appropriately reach conclusions about experiments. We show examples on how experimentation can provide useful information to daily-life situations.

Keywords:

Critical thinking; Experimental design; Scientific method; Statistical reasoning; Teaching