The Role of Biostatistics in Public Health

Biostatistics play a vital role in public health. Without statistics, public health would have no premise. Biostatistics are used in public health to “identify special risk groups, to detect new health threats, to plan public health programs and evaluate their success, and to prepare government budgets” (Schneider, 2014).

I chose the topic of amalgam and whether or not it has negative neurologic effects. Amalgam is a restorative component for dental cavities; in other words, when a patient goes in to a dentist to get a filling they are often given the choice of amalgam, composite, or gold fillings. Composite has more aesthetic appeal but does not last as long, gold is more expensive, and the amalgam is durable but less aesthetically pleasing. This topic is of interest to me because my dad is a retired dentist, and my partner is a dentist. Both of them have had patients express concern about whether or not amalgam fillings are safe because of controversy over mercury levels. Both my partner and my dad at times have struggled to convince their patients that amalgam is safe and durable and a good option for restorative work.

The reason some patients fear that amalgam may not be safe is because of a small group of dentists and doctors led by Hal Huggins, D.D.S., have advocated that amalgam fillings are a health hazard and need to be replaced. Their reasoning behind labeling it as a health hazard is because there is a small level of mercury in amalgam fillings, which Huggins has claimed can contribute to changes in an immune system, emotional problems, neurological disorders, cardiovascular problems, and digestive problems to name a few (Barrett, 2006). This spread of information contributed to entire dental practices becoming amalgam free.

In a study conducted by DeRouen in 2006 he found that “children who received dental restorative treatment with amalgam did not, on average, have statistically significant differences in neurobehavioral assessments or in nerve conduction velocity when compared with children who received resin composite materials without amalgam. (TA, et al., 2006)”

The population of interest for either side of the debate is patients who need restorative dental work done. This is also probably based on dichotomous data.

I thought this website had a lot of great information if anyone is interested in reading a more comprehensive overview of the controversy. I believe the whole amalgam issue to be a scare tactic that a select few dentists unfortunately use to make more money.
