Introduction to Public health; applications to Midwifery

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Announcements/ Logistics

- Thinkwave Readings
- Reminder: PH in Headlines
- Discussion of the Reading (Wk 1)
- Lecture
- Break
- Discussion of Readings

Review

- Epidemiology helps us determine

a. How diseases are transmitted

b. The amount of disease in a particular community

Life Expectancy

Top 10

1. Monaco 89.68
2. Macau 84.43
3. Japan 83.91
4. Singapore 83.75
5. San Marino 83.07
6. Andorra 82.50
7. Guernsey 82.24
8. Hong Kong 82.12
9. Australia 81.90
10. Italy 81.86

Bottom 10

212. Mozambique 52.02
213. Lesotho 51.86
214. Zimbabwe 51.82
215. Somalia 50.80
216. Central African Republic 50.48
217. Afghanistan 49.72
218. Swaziland 49.42
219. South Africa 49.41
220. Guinea-Bissau 49.11
221. Chad 48.69

Infant Mortality rate

Bottom 10

1. Afghanistan 121.63
2. Niger 109.98
3. Mali 109.08
4. Somalia 103.72
5. Central African Republic 97.17
6. Guinea-Bissau 94.40
7. Chad 93.61
8. Angola 83.53
9. Burkina Faso 79.84
10. Malawi 79.02

Top 10

213. Spain 3.37
214. Italy 3.36
215. Iceland 3.18
216. Macau 3.17
217. Hong Kong 2.90
218. Sweden 2.74
219. Singapore 2.65
220. Bermuda 2.47
221. Japan 2.21
222. Monaco 1.80

Biostatistics

Biostatistics

- Statistics = Data or numbers looking at data and describing events

- Biostatistics= is the use of statistical methods to describe and understand health-related conditions as well as determine possible solutions.

Why Use Biostatistics

1. Biostatistics is used to help summarize the differences (also known as variability) in variables of interest.

Why use Biostatistics?

1. Biostatistics (or applying statistical methods to health data) is used to calculate and summarize health data.

Why Use Biostatistics?

- It is also used to reach certain conclusions that may be applied to patient care and public health planning and to explore whether observed differences in health among groups of people call for further investigation… (Epidemiology)

Understanding Biostatistics

- Central Tendency
- Mean
- Median

Central Tendency

Central Tendency= a way of looking at numbers or data sets. The most commonly used measures of central tendency are the mean, mode and median.

These three measures are used to describe and make sense of numbers or data sets.

Mean

- Mean = The mean is the same as the average.

Calculating Mean

$$\frac{\text{Sum of all Data}}{\text{Number of observations(data points)}} = M$$

18 21 25 29 33 33 35 45 49

$$\frac{18+ 21 + 25 + 29 + 33 + 33 + 35 + 45 + 49}{9} = 32$$

Median

- The median is the middle observation. It is basically the midpoint at which half of the observations fall below and half fall above.

Median

1. Order the observations smallest to largest
2. The middle or central # is median or avg
3. If there are an even number of observations than then take the avg of the central numbers

18 21 25 29 33 33 35 45 49

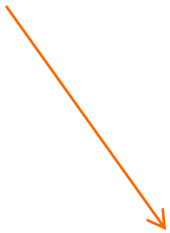
Median

Mode

- The mode is the value (number) that occurs most frequently. It can be used to describe the most "popular" value in a series of observations.

Mode

18 21 25 29 33 33 35 45 49



Mode

Measures of Variability

- Measures of variability are statistical methods used to describe the “spread” of the data (numbers).

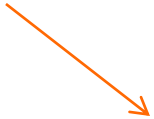
- Some of the statistics most frequently used in public health and medicine to describe how dispersed the data is include the range, percentile and standard deviation.

Range

- The range is the difference between the largest observation and the smallest observation. This is easy to determine once the data has been arranged in increasing order.

18 21 25 29 33 33 35 45 49

49-18= 31



Range

Standard Deviation

- The standard deviation is the most commonly used measure of spread or dispersion.

- Allows you to look at how far away each observation “deviates” from the mean in terms of points above or below.

Maternal health snapshot

As described by Bhutta et al 2010

Maternal, Newborn & Child survival

- Public Health Initiative to improve child mortality and maternal health
- 68 priority countries
- Using 26 key interventions
- Interventions/ Initiatives included: exclusive breastfeeding, early initiation of breastfeeding, malaria treatment, improved sanitation & improved drinking water.

Findings

- Global child mortality fell ~ 28%
- Individual countries experienced relative improvement in MCH*
- Worldwide improvement is insufficient

References & resources

- www.cia.gov
- https://pphtc.sdsu.edu {Pacific Public Health Training Center}
- Natan, B., Ari. B., Bader, T. & Hallak M. (2012) Universal screening for domestic violence in a department of obstetrics and gynaecology: a patient and carer perspective. *International Nursing Review* **59**, 108–114
- Bhutta, Z., Chopra, M., Alxelson, H., Berman, P., Boerma, T. Bryce, J., Bustreo, F., et al (2010) Countdown to 2015 decade report (200-10): Taking Stock of Maternal, Newborn and Child Survival. Lancet, 375, 2032-2044*