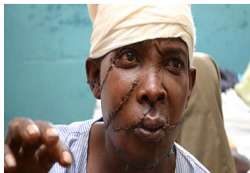# INTRODUCTION

Dr. Tabitha Mwangi

Content

- Definition of statistics and its components
- Populations and samples
- Exposures and outcomes
- Variables
- Statistics

What is statistics?

Statistics is the science of Collecting, Summarising, Presenting and Interpreting data

Examples. . . .a case study

- There is anecdotal evidence of a phenomena. . .

All stitched up: Simon Mwangi at the Nyeri Provincial General Hospital in February 2012.

Question

- Are women from Central Province battering their husbands/partners more than women from other provinces in Kenya?

Exposure & Outcomes

- The exposures and outcomes of interest are specific to study hypotheses
- Should always be clearly defined before the study starts
- Type of outcome determines the analysis that will be used.

Outcomes

- The outcome of a study is a broad term for any defined disease, state of health, health-related event or death.

Outcomes

- An outcome is the result of an experiment or other situation involving uncertainty.
- Its the focus of your attention – seeking to understand its occurrence and variation
- In some studies, there may be multiple outcomes.

In this case our outcomes is. . . .

- Husband/partner batering

Exposure

- The exposure of interest may be associated with either an increased or a decreased occurrence of disease or other specified health outcome,
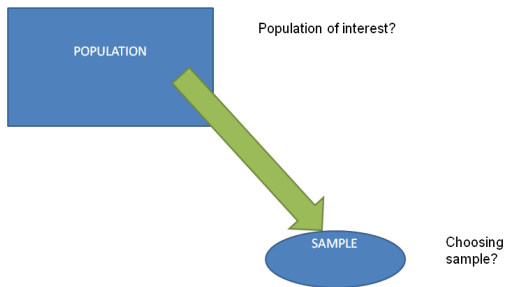- May relate to the environment, or inborn or inherited characteristics

Exposure in this case is?

Exposure

- Residence = Central province ??
- Ethnicity = Kikuyu??

Spousal battering in Central Kenya

Spousal battering in Central Kenya

POPULATION

Population of interest?

SAMPLE

Choosing sample?

Choosing your sample

- Population of interest?
  - Partnered/married women in Kenya
- Choosing sample
  - Partnered/married women from central + other provinces
  - Why would you not choose married/partnered men?

POPULATION

SAMPLE

How to best obtain the required data

Comparison groups

Sample size
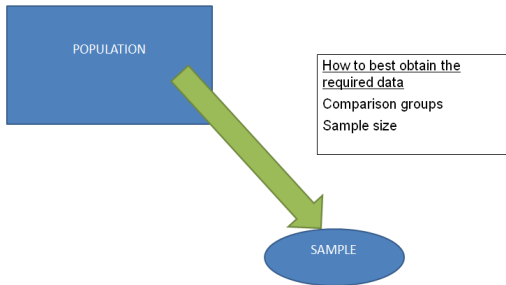
Decide on study design

- Descriptive
- Cross sectional
- Analytical
- Case-control
- Cohort
- Experimental
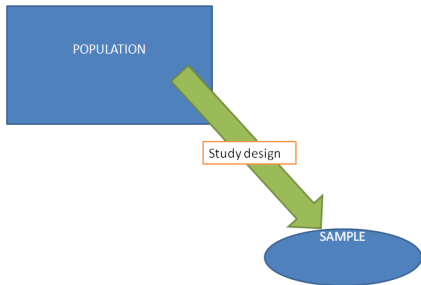
Describe your sample

- Characteristic measured for each subject
- Values of the characteristic vary among subjects in a sample or a Population.
- These can be categorical or quantitative

Categorical variables

- Unordered categorical variables
    - Marital status
        - married, divorced etc
    - Residence
        - rural or urban
    - none is higher than the other
- Ordinal categorical variables
    - Wealth quantiles
        - High, medium, low
    - Employment
        - unemployed, casual laborer, etc

quantitative variable

- Takes numerical values, which differ in magnitude. Each value is greater than or lower than any other possible value
    - Discrete
        - Number of children: 0, 1, 2, 3, 4, . . .
    - Continous
        - Weight

Statistics
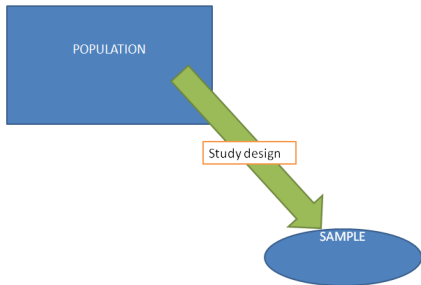
- Allow us to use the sample to make inferences about the population from which it was derived......

Lucky for us someone has attempted to answer this question

Kenya

Demographic and Health Survey   2008-09

remember our issue

- Are women from Central Province battering their husbands/partner more than women from other provinces in Kenya
- The purpose of a statistical analysis is to quantify the magnitude of the association between one of more exposure variables and the outcome variable

How?

- Nov 2008 to Feb 2009
- All 8 provinces
- 8,444 women 15-49 years old
- One-off questionnaire

Questionnaire

- Have you ever hit, slapped, kicked or done anything else to physically hurt your (last)husband/partner at times when he was not already beating or physically hurting you?
- 6,318 Kenyan women 15-49 years old participated

Table 16.13 Violence by women against their spouse

Percentage of ever-married women age 15–49 who have committed physical violence against their husband/partner when he was not already beating or physically hurting them ever and in the past 12 months, according to women's own experience of spousal violence and their own and husband's/partner's characteristics, Kenya 2008-09

Women's experience of spousal violence, women's and their husband's/partner's characteristic	Percentage who have committed physical violence against their current or most recent husband/partner			
	Ever	Number of women	In the past 12 months	Number of women[1]
Woman's experience of spousal physical violence				
Ever	6.9	1,603	4.6	1,489
In the last 12 months	7.5	1,267	5.8	1,196
Not last 12 months/widow/ missing	4.8	336	0.0	293
Never	0.7	2,733	0.4	2,558
Current age				
15–19	2.8	170	2.7	170
20–24	2.2	811	2.1	798
25–29	3.1	917	1.6	893
30–39	3.0	1,450	2.3	1,356
40–49	3.5	988	1.4	830
Employed last 12 months				
Employed for cash	3.4	2,194	2.4	2,016
Employed not for cash	2.3	767	2.0	709
Not employed	2.7	1,373	1.1	1,319
Number of living children				
0	2.0	252	1.5	248
1–2	3.0	1,594	2.1	1,520
3–4	2.3	1,373	1.1	1,267
5+	4.0	1,117	2.8	1,012
Residence				
Urban	3.4	1,022	1.7	975
Rural	2.8	3,314	2.0	3,072
Province				
Nairobi	4.1	320	1.7	311
Central	1.3	495	0.6	467
Coast	1.9	365	1.5	348
Eastern	3.3	702	1.4	675
Nyanza	2.3	774	2.0	663
Rift Valley	2.9	1,112	2.3	1,052
Western	5.2	458	3.7	423
North Eastern	5.2	110	2.1	108
Wealth quintile				
Lowest	4.6	784	3.3	723
Second	1.6	793	0.3	720
Middle	3.3	845	2.6	779
Fourth	1.4	849	1.3	803
Highest	3.8	1,064	2.1	1,022

Continued…

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I'll make it clear in a mo..

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Conclusion

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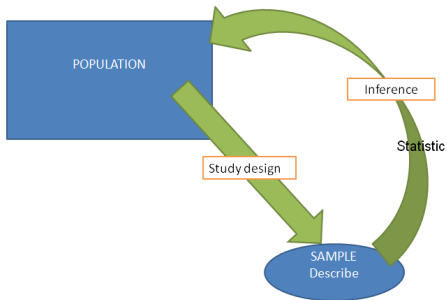- What is missing?

My take. . . . . . .

My take

- Have you ever hit, slapped, kicked or done anything else to physically hurt your (last)husband/partner at times when he was not already beating or physically hurting you?

My take

- Test to compare proportions
  - which ones?
- If you have collected the wrong data – the best analysis will not help you. . . .

In conclusion

- MARRY A WOMAN FROM CENTRAL PROVINCE BUT DO NOT PROVOKE HER
- THANK YOU