HSRC in brief

- The Human Sciences Research Council (HSRC) is the largest research institute in Africa focusing on the **social sciences and humanities**.

- Mandate: to inform effective formulation and monitoring of government policy; evaluate policy implementation; stimulate public debate through the effective dissemination of research-based data and fact-based research results; foster research collaboration; and help build research capacity and infrastructure for the human sciences.

- Knowledge that contributes to policies and programmes to alleviate poverty, reduce inequality, and stimulate employment creation.

GEWE
Gender Equality & Women
Empowerment Programme

HSRC
Human Sciences
Research Council

- **Policy relevant research**
(basic & applied research in the social & human sciences)

Research capacity development
(building capacity & infrastructure for social & human sciences in SA & Africa)

Research engagement
(engaged research focusing on vulnerable groups, communities, policymakers & implementers, research peers)

women, youth &
persons with disabilities
Department:
Women, Youth and Persons with Disabilities
REPUBLIC OF SOUTH AFRICA

social development
Department:
Social Development
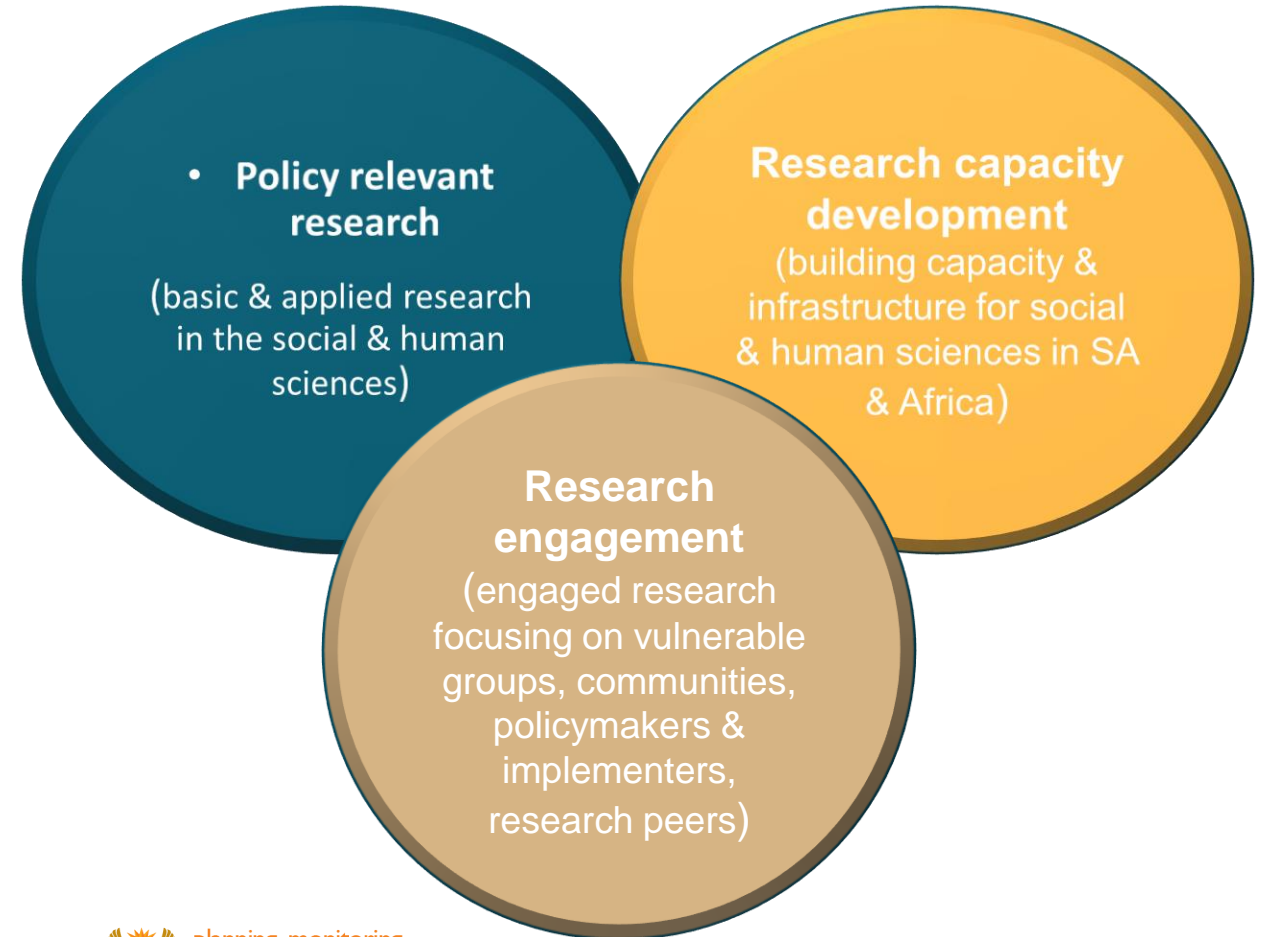REPUBLIC OF SOUTH AFRICA

planning, monitoring
& evaluation
Department:
Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

Funded by
the European Union

2

Studies conducted at the HSRC

- South African HIV Prevalence, Incidence, Behaviour and Communication Survey (SABSSM) – every +/- 3-5 years since 2002

- South African Social Attitudes Survey (SASAS) – annually since 2003

- South African National Survey on Gender-based Violence (GBV) 2022

- South African National Food and Nutrition Security Survey (NFNSS) 2022

- COVID-19 Socio-behavioural Surveys 2020/21

- South African National Health and Nutrition Examination Survey (SANHANES) 2012

- Trends in International Mathematics and Science Study (TIMSS) –every 4 years

- CeSTII's R&D survey and Business Innovation Surveys - annually

Considerations when analysing and interpreting data/statistics on WYPWD

- How variables (e.g. disability, forms of GBV) are measured during data collection
  - Wording of questions, Construct scales
  - Standardised measurement instruments, comparability to other studies
- Variable Definitions
- Target population in the data, sample frames, sample sizes and methods
- Recruitment methods and eligibility criteria – settings, institutions (people with disabilities), households, respondent driven sampling for hard to reach populations
- Study design
  - Cross-sectional Surveys, Longitudinal cohorts, Randomised controlled trials, Implementation science, administrative records
  - Quantitative, Qualitative, Mixed methods
- Response rates and weighting
- Use of theoretical/conceptual frameworks used in analyses
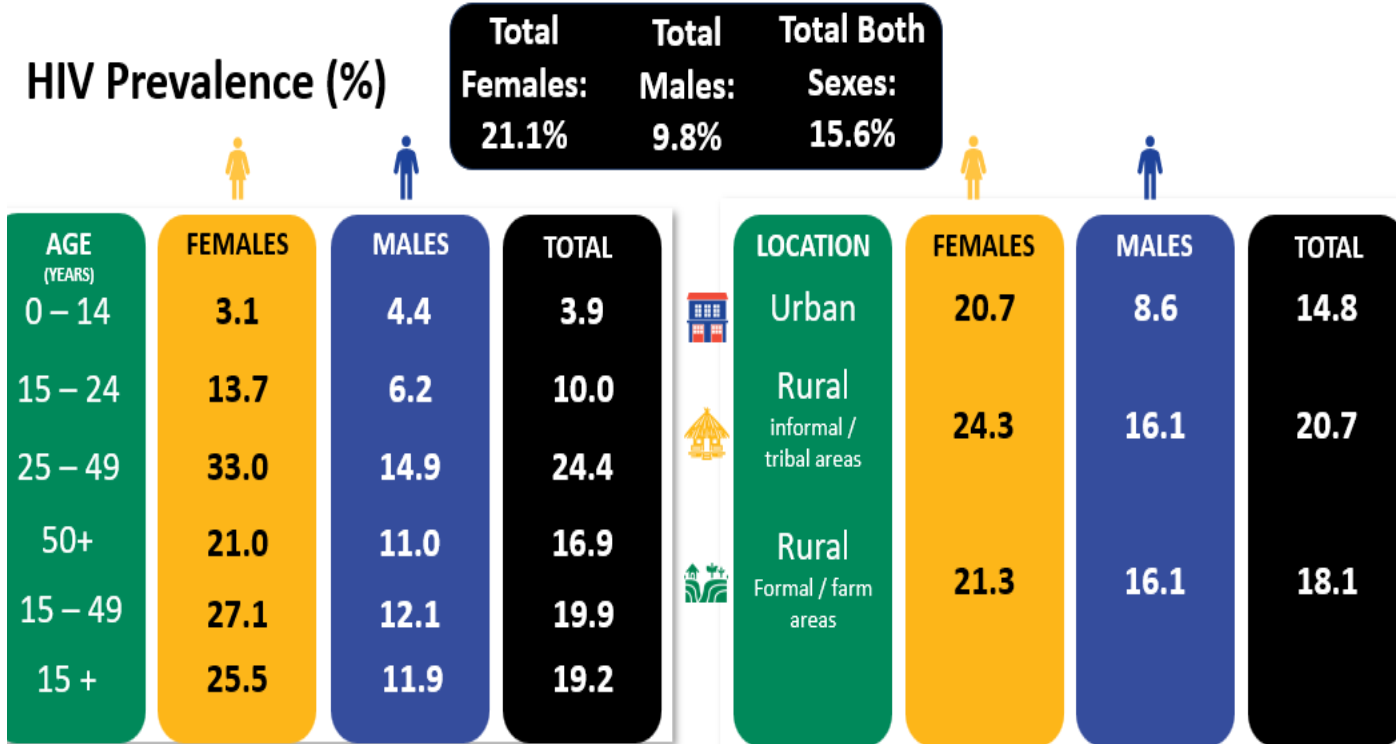
Statistical frameworks and guidance

- Guidance on questionnaire construction, standardised items, variable definitions, measurement, methodology
- Consider context unique to each country/study setting

- United Nations. **Guidelines and Principles for the Development of Disability Statistics**

https://unstats.un.org/unsd/publication/seriesy/seriesy_10e.pdf

- United Nations ODC. **Statistical framework for measuring the gender-related killing of women and girls ("femicide/feminicide")**

https://www.unodc.org/documents/data-and-analysis/statistics/Statistical_framework_femicide_2022.pdf

- United Nations. Department of Economic and Social Affairs. **Guidelines for Producing Statistics on Violence against Women**

https://unstats.un.org/unsd/gender/docs/guidelines_statistics_vaw.pdf

Analysis on WYPWD for evidence-based decision-making

- 1) **Disaggregate** the data/estimates by gender, age and disability (and by other variables: race/ethnicity, age, region, urbanicity, socioeconomic status)

- 2) **Identify inequalities**

  Then apply Gender-sensitive measures:

- 3) Investigate the underlying **causes** of gender/disability/age inequalities (inform strategies to address the root cause of the problems)

- 4) Investigate the **effects** of these inequalities

- 5) Informing decision making - Both 3 and 4 **inform strategies to address the cause/effects** of the problems, so as to fully meet the different needs of women/ men, PWD, youth. Enables development of tailored and targeted interventions.

- 6) Look out for and track unintended consequences

- Go beyond just men/women/disability status/age group stats by investigating how women and men/ PWD/age groups interact/relate with each other, how they are affected by interventions/risk factors, how they access services. Underlying these are beliefs/social norms and attitudes.

Example: HIV prevalence in a region of SA

HIV Prevalence (%)

	Total Females: 21.1%	Total Males: 9.8%	Total Both Sexes: 15.6%

AGE (YEARS)	FEMALES	MALES	TOTAL
0 – 14	3.1	4.4	3.9
15 – 24	13.7	6.2	10.0
25 – 49	33.0	14.9	24.4
50+	21.0	11.0	16.9
15 – 49	27.1	12.1	19.9
15 +	25.5	11.9	19.2

LOCATION	FEMALES	MALES	TOTAL
Urban	20.7	8.6	14.8
Rural informal / tribal areas	24.3	16.1	20.7
Rural Formal / farm areas	21.3	16.1	18.1

- Disaggregation by gender and age/geographic region → Females have significantly higher prevalence than males, particularly in 25-49 year olds

- Why does this exist → risk factors for HIV in these 25-49 year old women vs men
  - Sexual risk, condom use, multiple partners, power relations in negotiating condom use

- What about transmission/incidence in these groups?

- Effects of high HIV prevalence in women aged 25-49: reproductive ages, maternal health, PMTCT

- Related outcomes: ART uptake and viral suppression in these age x gender groups?

women, youth & persons with disabilities
Department: Women, Youth and Persons with Disabilities
REPUBLIC OF SOUTH AFRICA

social development
Department: Social Development
REPUBLIC OF SOUTH AFRICA

planning, monitoring & evaluation
Department: Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

Funded by the European Union

7

Statistical inference

- Various regression models to examine relationships of variables with outcomes of interest.
    - Incorporate stratified analyses or interaction effects E.g. Interaction of gender and education on employment outcomes
    - Mediator/moderator analyses to look at how relationship of one variable on an outcome is influenced by another variable: education → employment opportunity → income

- Confounders in order to adjust or account for the effects of for example SES on the relationship between education and empowerment
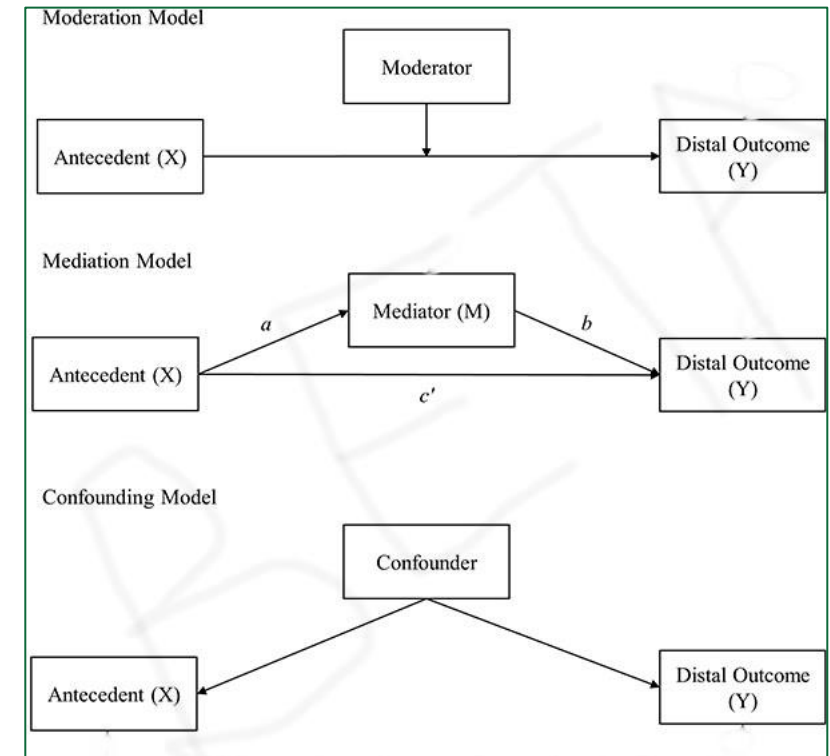
Scales for constructs

- **Scales measuring constructs**
  - compress information from multiple items into a single score.
  - Used widely to measure psychological outcomes e.g. hopelessness, empathy, depression
  - Scales measuring unequal gender/power relations between men and women, or to classify presence and type of disability
  - Assess scale inter-item reliability
  - Aim to use scales that have been previously validated in your study country/context.

Statistical methods – Scales for measuring constructs
Example: _Gender Equitable Men (GEM) Scale_

VIOLENCE DOMAIN ITEMS

To what extent do you agree with the following items: where 1 = agree, 2 = partially agree, and 3 = do not agree.

- There are times when a woman deserves to be beaten.
- A woman should tolerate violence to keep her family together.
- It is alright for a man to beat his wife if she is unfaithful.
- A man can hit his wife if she won't have sex with him.
- If someone insults a man, he should defend his reputation with force if he has to.
- A man using violence against his wife is a private matter that shouldn't be discussed outside the couple.

Analysis: Responses to each item were summed. Higher scores represent **higher support for gender inequitable norms**. Estimate of internal consistency (Cronbach's alpha) = .81.

Further info: Compendium of gender scales. http://gender.careinternationalwikis.org/_media/c-change_gender_scales_compendium.pdf

References: Pulerwitz, J, and G Barker. 2008. Measuring attitudes toward gender norms among young men in Brazil: Development and psychometric evaluation of the GEM Scale. Men and Masculinities 10:322—338

women, youth & persons with disabilities
Department: Women, Youth and Persons with Disabilities
REPUBLIC OF SOUTH AFRICA

social development
Department: Social Development
REPUBLIC OF SOUTH AFRICA

planning, monitoring & evaluation
Department: Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

Funded by the European Union

10

Statistical inference (cont.)

Other analyses that are useful for vulnerable populations:

- **Triangulation methods** –method/data/analysis triangulation

- **Causal inference** - determining whether an observed association truly reflects a cause-and-effect relationship

- **Structural equation models /path analysis** – fits multiple regression equations simultaneously to identify many directions of association
  - e.g. simultaneous 2-way relationship between women's empowerment and mental disorder and do education/wealth play a role in those relationships

- **Joint models** - simultaneously analyzing two or more outcomes from the same individual. E.g. contraceptive use and HIV knowledge in AGYW

Statistical methods (cont.)

- ***Weighting/benchmarking in complex surveys*** to reflect the distribution of the population by age, race, gender
  - Non-response adjustments
  - Surveys often include non-binary gender questions with >=3 options. Benchmarked weights in national surveys require national population estimates (census, mid-year estimates) which still use binary sex questions. Creative ways of constructing survey weights with these non-binary gender questions.

- ***Sufficient sample sizes and statistical power*** to detect findings in subgroups like WYPWD
  - Affects precision of estimates
  - Disaggregation by all genders, small age groups, disabilities in large studies – requires sufficient sample size (power) to present estimates and effects for these subgroup analyses
  - e.g. A survey with 20-30 transgender participants is small to determine outcome estimates for that subgroup. But they need to be presented – non-parametric/small-sample statistics.

women, youth &
persons with disabilities
Department:
Women, Youth and Persons with Disabilities
REPUBLIC OF SOUTH AFRICA

social development
Department:
Social Development
REPUBLIC OF SOUTH AFRICA

planning, monitoring
& evaluation
Department:
Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

Funded by
the European Union

12

Statistical methods (cont.)

- ***Analysis of big data:*** Machine learning methods for classification or prediction
  - Using data with large numbers of risk variables/features to identify ones most strongly related to the outcome. e.g. GBV survey – many scales
  - Clustering analysis
  - Analysis of social media and text data

- ***Participatory approach*** to research and data analysis
  - Mixed methods approaches where qualitative probes further into understanding the findings in quantitative data.
  - Focus groups can be held with persons from WYPWD groups to share findings with them: delve further into understanding findings, interpret and discuss findings to provide context to the associations found.

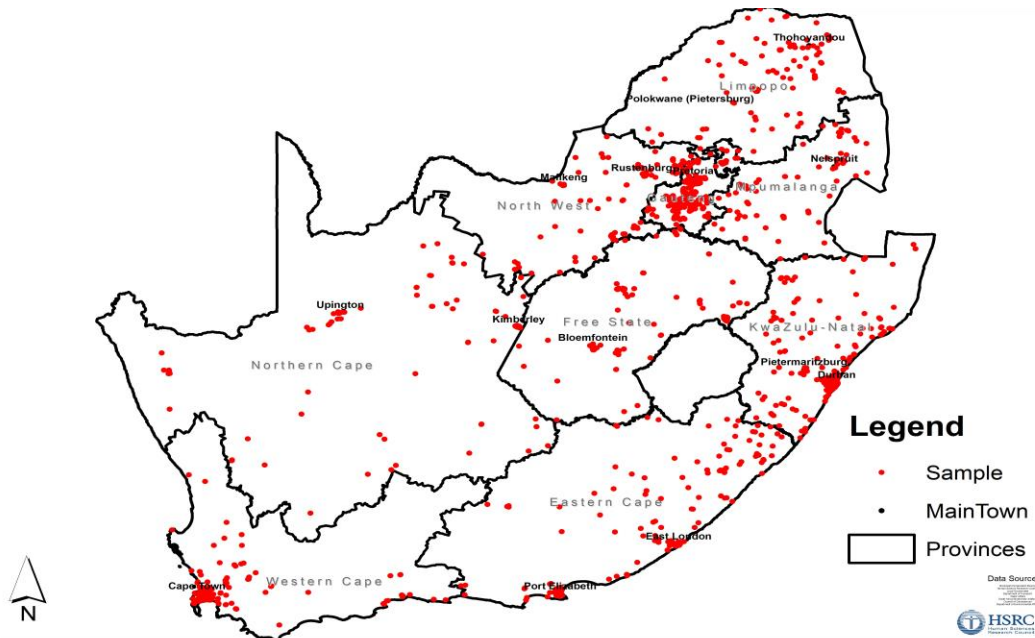# Example. Study design and sampling for a national GBV survey

Primary aim: To estimate the prevalence of various forms of GBV experienced and perpetrated by women and men in South Africa

Estimated prevalence of physical violence among women = 21%[1]

[1] NDoH, Stats SA, SAMRC, & ICF. South Africa demographic and health survey 2016. Pretoria, South Africa, and Rockville, Maryland, USA: National Department of Health, Statistics South Africa, South African

- Multi-stage stratified random sampling design

- Small area layers (SALs) were stratified by province, race and locality type

- A sample of 1 096 (SALs) was sampled from a national sampling frame of 84 907 SALs

Half of the SALs (n=548) were for the women SALs and half for men SALs

Legend
- Sample
- MainTown
- Provinces

women, youth & persons with disabilities
Department:
Women, Youth and Persons with Disabilities
REPUBLIC OF SOUTH AFRICA

social development
Department:
Social Development
REPUBLIC OF SOUTH AFRICA

planning, monitoring & evaluation
Department:
Planning, Monitoring and Evaluation
REPUBLIC OF SOUTH AFRICA

Funded by
the European Union

14

Software

Statistical software:

- Stata, SUDAAN, SPSS, SAS
  - handle complex survey designs and adjust for weighting
- R, Python – Data science, effective data visualisations to communicate results

Qualitative analysis

- E.g. ATLAS TI

Thank you