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PERForMance Review: Behavioral Indicators

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PERFORMANCE REVIEW: BEHAVIORAL INDICATORS

LEARNING OBJECTIVES

By the end of this chapter, the reader will be able to:

1. Identify the standard definition of indicators.

2. Understand the denominator and numerator of each indicator.

3. Understand the syntax of case study examples.

4. Be able to produce the indicators according to standard definition and suggested procedure.

5. Report the results to PSI/Washington.

BACKGROUND

Improving health among low-income and vulnerable people has long been PSI's mission. Measuring health impact has been regarded as PSI/Research's priority. Like the Dashboard and SMRS, *the PERForMance Review* is one of the approaches that PSI/Research employs to measure health impact of PSI interventions. The PERForMance Review, previously called Box Score, compiles dashboard data from around the world using standard behavioral definitions to summarize the status of each behavior of interest and the effectiveness of the intervention. The PERForMance Review also allows cross-country comparison of behavioral indicators and program impacts.

The purpose of the *PERForMance Review: Behavioral Indicators* chapter is to introduce standard definitions and approaches for measuring behavioral indicators so that the indicators can be produced in a standard way at country level. Behavioral indicators reported in the review come from four health areas: HIV/AIDS, malaria, family planning, and safe water. Standard definitions of these indicators are drawn from PERFAR, USAID, UNAIDS, and other sources. Indicators, their definitions, and required variables are detailed below first by health area. Then, how-to-steps are summarized for one-round and two-round data. Thirdly, example syntax of creating relevant behavioral variables is presented and explained. Finally, a checklist is attached for quality improvement.

LIST 1: HIV/AIDS INDICATORS FOR GENERAL GROUPS

1. **Abstinence**

   a. *Primary Abstinence* (i.e., never had sex)

      - **Definition:** percent of never-married men and women aged 15–24 who have never had sex of all never-married men and women (aged 15–24) surveyed.

      - **Denominator:** all never-married men and women aged 15-24.

      - **Numerator:** never-married men and women aged 15-24 who had never had sex.

      - **Key variables required**: age (in continuous form); marital status; gender; ever had sex.

   b. *Secondary Abstinence*

      - **Definition:** percent of never-married men and women aged 15–24 who have ever had sex but abstained from sexual intercourse in the last 12 months of all never-married men and women (aged 15–24) who had ever had sex.

      - **Denominator:** all never-married men and women aged 15-24 who had ever had sex.

      - **Numerator:** never-married men and women aged 15-24 who had ever had sex but did not have sex during the last 12 months.

      - **Key variables required**: age (in continuous form); marital status; gender; ever had sex; had sex in the past 12 months.

2. **Not Being Faithful** (i.e., number of partners)

   - **Definition:** percent of men and women aged 15-24 and/or 15-49 who had sex with more than one partner (including spouse/cohabiting partner) in the last 12 months of all people aged 15-24 and/or 15-49.

   - **Denominator:** all men and women aged 15-24 and/or 15-49.

   - **Numerator:** men and women aged 15-24 and/or 15-49 who had sex with more than one partner (including spouse/live-in partner) in the last 12 months.

   - **Key variables required**: age (in continuous form); gender; total number of sexual partners in the past 12 months. In the case where information on number of sexual partners is collected by type of partners, the variables of "number of spouse", "number of regular partner (excluding martial partner)", "number of casual partner",

and/or "number of commercial sex workers" is needed (please refer to Case Study 1 in this chapter).

- **Tips**: make sure to check the variables of "ever had sex" and "has sex in the past 12 months" to correct missing values in the variable of "number of sexual partner".

3. **Condom Use With Non-Marital, Non-Cohabiting Partner at Last Sex**

- **Definition:** percent of men and women aged 15-24 and/or 15–49 who say they used a condom the last time they had sex with a non-marital, non-cohabiting partner of those who have had sex with such a partner in the last 12 months.

- **Denominator:** men and women aged 15-24 and/or 15-49 who had non-marital, non-cohabiting partner(s) during the last 12 months.

- **Numerator:** men and women aged 15-24 and/or 15-49 who had non-marital, non-cohabiting partner(s) and who used a condom with such a partner at last sex.

- **Key variables required**: age (in continuous form); gender; had sex with a non-marital, non-cohabiting partner in the past 12 months; condom use the last time they had sex with a non-marital, non-cohabiting partner in past 12 months. In the case where information on sexual encounter and condom use with a non-marital, non-cohabiting partner is collected by type of partner, use those questions to figure out whether a respondent has a non-marital, non-cohabiting partner (please refer to Case Study 1 in this chapter for further details).

- **Tips**: make sure to check the variables of "ever had sex" and "has sex in the past 12 months" to correct missing values in the variable of "type of partner".

LIST 2: HIV/AIDS INDICATORS FOR TARGET GROUPS

1. **Truckers, Mobile Populations, Youth, and So Forth**
   Same as the indicators for general population

2. **Sex Workers: Condom Use at Last Sex With a Client**

- **Definition:** percent of sex workers sampled who used a condom at their last sex with a client of all those who admit to having sex for money or material goods.

- **Denominator:** all female sex workers.

- **Numerator:** female sex workers who reported using a condom at their last sex with a client.

- **Key variables required**: condom use the last time they had sex with a client.

3. **Men Who Have Sex with Men (MSM): Condom Use at Last Anal Sex With a Male Partner**

    - **Definition:** percent of men who used a condom at last anal sex with a male partner of those who had anal sex with a male partner in the last 12 months.

    - **Denominator:** all men who had anal sex with men during the last 12 months.

    - **Numerator:** MSM who reported using a condom at his last anal sex with a male partner.

    - **Key variables required**: had anal sex with a men during the last 12 months; condom use the last time they had sex with a male partner.

LIST 3: MALARIA/ITN INDICATORS

1. **Ownership of Net**

    - **Definition:** proportion of households owning at least one mosquito net.

    - **Denominator:** all households interviewed.

    - **Numerator:** households which have at least one mosquito net.

    - **Key variables required**: whether a household has at least one mosquito net or number of nets in the household.

2. **Ownership of ITN**

    - **Definition:** proportion of households owning at least one insecticide treated mosquito net.

    - **Denominator:** all households interviewed.

    - **Numerator:** households which have at least one insecticide treated mosquito net.

    - **Key variables required**: whether a household has at least one insecticide treated mosquito net or number of ITN in the household.

    - **Tips**: make sure to check the variables of "ownership of a net" to correct missing values in the variable of "ownership of an ITN".

3. **Usage of Net Among Pregnant Women**

   - **Definition:** percent of pregnant women who slept under a net the previous night.

   - **Denominator:** pregnant women from all of the interviewed households.

   - **Numerator:** pregnant women who slept under a net the last night.

   - **Key variables required**: whether a household member is a pregnant woman; whether each household member slept under a net last night.

   - **Tips**: make sure such information is collected even if the household does not have a net.

4. **Usage of ITN among pregnant women**

   - **Definition:** percent of pregnant women who slept under an ITN the previous night.

   - **Denominator:** pregnant women from all of the interviewed households.

   - **Numerator:** pregnant women who slept under an ITN the last night.

   - **Key variables required:** whether a household member is a pregnant woman; whether each household member slept under an ITN last night.

   - **Tips**: make sure such information is collected even if the household doesn't have a net/ITN.

     Make sure to check the variable of "whether a member slept under a net" to correct missing values in the variable of "whether a member slept under an ITN".

5. **Usage of net among children under five**

   - **Definition:** percent of children under five who slept under a net the previous night.

   - **Denominator:** children under five from all of the interviewed households.

   - **Numerator:** children under five who slept under a net the last night.

   - **Key variables required**: age of each household member; whether each household member slept under a net last night.

   - **Tips**: make sure such information is collected even if the household does not have a net.

6. **Usage of ITN among children under five**

- **Definition:** percent of children under five who slept under an ITN the previous night.

- **Denominator:** children under five from all of the interviewed households.

- **Numerator:** children under five who slept under a net the last night.

- **Key variables required:** age of each household member; whether each household member slept under an ITN last night.

- **Tips**: make sure such information is collected even if the household does not have a net/ITN.

  Make sure to check the variable of "whether a member slept under a net" to correct missing values in the variable of "whether a member slept under an ITN".

LIST 4: FAMILY PLANNING INDICATORS

1. **Usage of Modern Contraceptive Method**

- **Definition:** percent of married women of reproductive age (aged 15–49) who are currently using a modern contraceptive method.

- **Denominator:** all married women aged 15-49 surveyed in the study.

- **Numerator:** married women aged 15-49 who report they are currently using any form of the following contraceptive methods: pills, injectables, condoms, IUD, sterilization, diaphragm, foams/tablets, female barrier methods, or hormonal implants.

- **Key variables required**: age; gender; marital status; contraceptive method currently used.

- **Tips**: make sure to check the variable of "ever used contraceptive method", "currently use contraceptive method or not", and/or "currently pregnant or not" (depending on how the questionnaire is designed) to correct missing values in the variable of "contraceptive method currently used".

> **1. Drinking Water Treated with Chemicals**
>
> - **Definition:** percent of households currently treating drinking water with PSI product or other chemicals (e.g., chlorine, iodine, purifying solution, purifying tablets, Alum, and so forth) among all the households with children under five.
>
> - **Denominator**: households with children under five.
>
> - **Numerator:** households with children under five which (currently) treat their drinking water with chemicals.
>
> - **Key variables required**: whether a household has a child under five; methods a household used to treat their drinking water currently.
>
> - **Tips**: make sure to check the variable of "ever treated drinking water" and/or "currently treat drinking water or not" (depending on how the questionnaire is designed) to correct missing values in the variable of "methods used to treat drinking water".

HOW-TO-STEPS

Include performance review questions into the questionnaire in the simplest form possible. Include all the relevant variables (i.e., key variables required) such as age, gender, and marital status, which facilitate analysis as illustrated in the above section. During the questionnaire design stage, researchers should review their instruments and asses whether they have the variables to be able to compute the numerator and denominator. Sample questions per indicator are enclosed in the annex.

A. For One-Round Data

1. Perform the distribution of relevant variables such as "age", "gender", "marital status", and all related behavioral questions.

   To become familiar with the data, check the distribution of relevant variables, including finding out-of-range values, identifying missing patterns, recognizing codes which are not matching with those in the questionnaire, and assessing the quality of the data.

2. Create new variables to facilitate the analysis.

   Create or recode behavioral related variables into dichotomies, with "1" indicating having the behavior and "0" not having the behavior. Before doing this, make sure that missing data due to skipping has been correctly recoded. For more information on this, please refer to *Dashboard Analysis Series One: Pre-Analysis Preparation* (O'Connell, Yang, Astatke, & Lipovsek, 2006). After creating new variables, check the distribution of these newly created variables to make sure they are correctly created.

3. Select the right population and produce distributions of behavioral variables of interest.

B. For Two-Round Data

1. Perform the distribution analysis for relevant variables, including socio-demographic variables and all related behavioral variables, for each round separately. Create new variables to facilitate the analysis. Variables representing the same thing should have the same variable name and values. Save each round of data with newly created variables as a new data set file. For the second round, remember to save exposure related items as well.

2. Merge the two newly created data sets and specify the "wave" variable. It is suggested to label the first round as "0" and the second round as "1" for the "wave" variable.

3. Perform UNIANOVA to get adjusted proportions or means for both rounds while controlling for socio-demographic characteristics and study design related variables if necessary. Please refer to *Dashboard Analysis Series Five: Analysis Methodology for Complex Survey Data* for additional details (Yang, O'Connell, & Lipovsek, 2007). When there is a significant trend between the two rounds, create exposure variable, and then run UNIANOVA to estimate the adjusted proportions or means by different exposure levels. To learn more about exposure, please refer to *Methods: Understanding Exposure in Social Marketing* (Patel, Chapman, & Morgan, 2007). Mark down the pattern of pairwise comparisons among exposure levels and judge the impact.

CASE EXAMPLES AND LESSONS LEARNED

CASE EXAMPLES

In this section, several examples covering all the health areas and data rounds are presented. For each example, an original data set and related questions can be obtained in the annex. Syntaxes are explained.

CASE STUDY 1: ONE-ROUND DATA, "DOMINICAN REPUBLIC HIV BATEYES 2006"

```
***data set: "DR_TRaC Batey.sav" .

* Step 1: checking the distribution of relevant variables * .
FREQ VAR=q101 q1o3 q105 q201 q203 q206 q207 q208 q210 q211 q212 q214 q215
q216 .

*/note: from the output, we note that those who had never had sex skipped all following
questions on sexual behaviors and that those who did not have sex during the past year
skipped following questions. So, those who had never had sex were actually having no
sex and having no any type of sexual partners during the past year. So were those who
did not have sex during the past year. Therefore, we need to recode missing due to
skipping into proper values. /*.
```

```
* Step 2: creating new variables * .
RECODE q101 (0=2) (1=1) INTO gender .
COMPUTE age=q1o3 .
RECODE q105 (1=0) (2 3 4=1) INTO marri .
COMPUTE eversex=q201 .              */ eversex: ever had sex /*.
IF eversex=0 q203=0 .
RECODE q203 (1=1) (0=0) INTO sexly .        */sexly: had sex in the last 12 months
/* .
IF eversex=1 & marri=0 & sexly=0 sex12=0 .
IF eversex=1 & marri=0 & sexly=1 sex12=1 . */sex12: had sex in the last 12 months
among those who are never married but ever had sex/*.


*/note: the following is to create variables indicating if respondents have regular
partner, how many regular partner, and condom use at last sex with a regular partner./* .
IF sexly=0 q206=0 .
RECODE q206 (1=1) (0=0) INTO reg .  */reg: having regular partner/*.
IF reg=0 q207=0 .
RECODE q207 (0=0) (1=1) (2 thru high=2) INTO noreg . */noreg: number of regular
partner/*.
IF reg=1 & q208=1 lastcdm1=1 .
IF reg=1 & q208=0 lastcdm1=0 .   */lastcdm1: condom use at last sex with regular
partner/*.


*/note: the following is to create variables indicating if respondents have casual partner,
how many casual partner, and condom use at last sex with a casual partner./* .
IF sexly=0 q210=0 .
RECODE q210 (1=1) (0=0) INTO casual .   */casual: having casual partner/*.
IF casual=0 q211=0 .
RECODE q211 (0=0) (1=1) (2 thru high=2) INTO nocasu . */nocasu: number of casual
partner/*.
IF casual=1 & q212=1 lastcdm2=1 .
IF casual=1 & q212=0 lastcdm2=0 .   */lastcdm2: condom use at last sex with casual
partner/*.


*/note: the following is to create variables indicating if respondents have commercial
partner, how many, and condom use at last sex with a commercial partner./* .
IF sexly=0 q214=0 .
RECODE q214 (1=1) (0=0) INTO comm .   */comm.: having commercial partner/*.
IF comm=0 q215=0 .
RECODE q215 (0=0) (1=1) (2 thru high=2) INTO nocomm . */nocomm: number of
commercial partner/*.
IF comm=1 & q216=1 lastcdm3=1 .
IF comm=1 & q216=0 lastcdm3=0 .   */lastcdm3: condom use at last sex w. commercial
partner/*.


*/note: creating variable "nonmarip" with "1" indicating having non-marital non-
cohabiting partners and "0" having no such partners. /* .
IF reg=1 | casual=1 | comm=1 nonmarip=1 .
```

```
IF reg=0 & casual=0 & comm=0 nonmarip=0 .

*/note: creating variable "lastcdm" with "1" representing using a condom at last sex
with a non-marital non-cohabiting partner and "0" not using a condom. /* .
IF lastcdm1=1 | lastcdm2=1 | lastcdm3=1 lastcdm=1 .
IF lastcdm1=0 & lastcdm2=0 & lastcdm3=0 lastcdm=0 .
IF lastcdm1=0 & lastcdm2=0 & comm=0 lastcdm=0 .
IF lastcdm1=0 & casual=0  & lastcdm3=0 lastcdm=0 .
IF lastcdm1=0 & casual=0 & comm=0 lastcdm=0 .
IF reg=0 & lastcdm2=0 & lastcdm3=0 lastcdm=0 .
IF reg=0 & lastcdm2=0 & comm=0 lastcdm=0 .
IF reg=0 & casual=0 & lastcdm3=0 lastcdm=0 .

*/note: using all the combinations of different partners to figure out whether the
respondent had sex with more than two partners during the past year. We assume a
married person had only one spouse in Dominican Republic/* .
IF noreg=2 | nocasu=2 | nocomm=2 multisex=1 .
IF (noreg=1 & nocasu=1) | (noreg=1 & nocomm=1) | (noreg=1 & marri=1) | (nocasu=1
& nocomm=1) | (nocasu=1 & marri=1) | (nocomm=1 & marri=1) multisex=1 .
IF noreg=1 & nocasu=0 & nocomm=0 & marri=0 multisex=0 .
IF noreg=0 & nocasu=1 & nocomm=0 & marri=0 multisex=0 .
IF noreg=0 & nocasu=0 & nocomm=1 & marri=0 multisex=0 .
IF noreg=0 & nocasu=0 & nocomm=0 & marri=1 multisex=0 .
IF noreg=0 & nocasu=0 & nocomm=0 & marri=0 multisex=0 .

*/note: checking the distribution of the newly created variables to make sure they are
correctly created./* .
FREQ VAR=age gender marri reg noreg casual nocasu comm nocomm multisex
nonmarip lastcdm1 lastcdm2 lastcdm3 lastcdm .

* Step 3: selecting proper populations and getting the results *.
*/note: male, aged 15-24, indicators A1 & A2/* .
USE ALL.
COMPUTE filter_$=(gender = 1 & age >= 15 & age <= 24 & marri = 0).
VARIABLE LABEL filter_$ 'gender = 1 & age >= 15 & age <= 24 & marri = 0
(FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

FREQ VAR=eversex sex12 .

*/note: male, aged 15-24, indicator B/* .
USE ALL.
COMPUTE filter_$=(gender = 1 & age >= 15 & age <= 24 ).
VARIABLE LABEL filter_$ 'gender = 1 & age >= 15 & age <= 24 (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
```

```
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

FREQ VAR=multisex .

*/note: male, aged 15-24, indicator C/* .
USE ALL.
COMPUTE filter_$=(gender = 1 & age >= 15 & age <= 24 & nonmarip=1).
VARIABLE LABEL filter_$ 'gender = 1 & age >= 15 & age <= 24 & nonmarip=1
(FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

FREQ VAR=lastcdm .

*/note: male, aged 15-49, indicator B/* .
USE ALL.
COMPUTE filter_$=(gender = 1 & age >= 15 & age <= 49 ).
VARIABLE LABEL filter_$ 'gender = 1 & age >= 15 & age <= 49 (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

FREQ VAR=multisex .

*/note: male, aged 15-49, indicator C/* .
USE ALL.
COMPUTE filter_$=(gender = 1 & ageage >= 15 & ageage <= 49 & nonmarip=1).
VARIABLE LABEL filter_$ 'gender = 1 & ageage >= 15 & ageage <= 49 &
nonmarip=1 (FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .
FREQ VAR=lastcdm .


*/note: You continue the analyses for females aged 15-24 and 15-49 /* .
```

CASE STUDY 2: ONE-ROUND DATA, "NAMIBIA MALARIA 2006"

*** data set: "Namibia DatabaseSept2006(Malaria).sav" .

* Step 1: checking the distribution * .

FREQ VAR=q104r1 to q104r17 q105r1 to q105r17 q106r1 to q106r17 q108r1 to
q108r17 q109r1 to q109r17 q110r1 to q110r17 q300 q300ar1 q300ar2 q302.

CROSSTABS
 /TABLES=q300 BY q300ar1 q300ar2
 /FORMAT= AVALUE TABLES
 /CELLS= COUNT
 /COUNT ROUND CELL .
*/note: based on the distribution of q302 (the number of nets a household has), some
households seem to have more than one net. The cross-tab results suggested that those
who responded to q300ar2 may have more than one net and that the treatment status of
the nets is different. So, a household is considered as having an ITN either q300ar1 or
q300ar2 is treated./* .

* Step 2: creating new variables * .

COMPUTE ownnet=q300 .   */ownnet: if a household has a net/*.
IF q300ar1=2 | q300ar1=3 | q300ar2=2 | q300ar2=3 ownitn=1 .
IF q300ar1=1 & q300ar2=1 ownitn=0 .
IF ownnet=0 ownitn=0 .   */ownitn: if a household has an ITN/*.

FREQ VAR= ownnet ownitn .

*/note: restructure the data set from wide to long so that each record in the new data set
represents an individual from the households surveyed. If you need to retain some other
variables in the new data set, insert "/KEEP = var_list" between "/INDEX" and
"/NULL". /*.
VARSTOCASES /ID = a
 /MAKE age FROM q106r1 q106r2 q106r3 q106r4 q106r5 q106r6 q106r7 q106r8
q106r9 q106r10 q106r11 q106r12 q106r13 q106r14 q106r15 q106r16 q106r17
 /MAKE pregw FROM q108r1 q108r2 q108r3 q108r4 q108r5 q108r6 q108r7 q108r8
q108r9 q108r10 q108r11 q108r12 q108r13 q108r14 q108r15 q108r16 q108r17
 /MAKE undernet FROM q109r1 q109r2 q109r3 q109r4 q109r5 q109r6 q109r7 q109r8
q109r9 q109r10 q109r11 q109r12 q109r13 q109r14 q109r15 q109r16 q109r17
 /MAKE underitn FROM q110r1 q110r2 q110r3 q110r4 q110r5 q110r6 q110r7 q110r8
q110r9 q110r10 q110r11 q110r12 q110r13 q110r14 q110r15 q110r16 q110r17
/INDEX = id(17)
 /NULL = DROP.

FREQ VAR=age pregw undernet underitn .
/pregw: whether a household member is a pregnant woman/.
/undernet & underitn: whether a household member slept under a net/ITN last night/.

```
IF age>=0 & age<5 ufchild=1 .   */ufchild: whether a member is a child under five/*.
RECODE undernet underitn (1=1) (2=0) (8=sysmis) INTO undnet unditn .
IF ufchild=1 & undnet=0 unditn=0 .
IF pregw=1 & undnet=0 unditn=0 .

* Step 3: select the proper populations and get the results.

CROSSTABS
  /TABLES=ufchild pregw  BY undnet unditn
  /FORMAT= AVALUE TABLES
  /CELLS= COUNT ROW COLUMN TOTAL
  /COUNT ROUND CELL .
```

CASE STUDY 3: ONE-ROUND DATA, "BENIN FP RMW 2005"

```
***data set: "Benin_2005_HIV Condom Malaria_TRac_Ind_ Data.sav" .

* Step 1: check the distribution * .
FREQ VAR=q101 q102 q106 q704 q705 q706a to q706p .

* Step 2: create new variables * .
COMPUTE gender=q101 .
COMPUTE age=q102 .
RECODE q106 (1=0) (2 3 4=1) INTO marri .
IF q704=1 | q704=7 q705=0 .
IF q704=8 q705=8 .
RECODE q705 (1=1) (0=0) (8=sysmis) INTO curruse .
IF curruse=1 & (q706a=1 | q706b=1 | q706c=1 | q706d=1 | q706e=1 | q706f=1 |
q706g=1 | q706h=1) modern=1 .
IF curruse=1 & q706a=0 & q706b=0 & q706c=0 & q706d=0 & q706e=0 & q706f=0 &
q706g=0 & q706h=0 modern=0 .
IF curruse=0 modern=0 .
FREQ VAR=curruse modern .

* Step 3: select the proper population and get the results *.
USE ALL.
COMPUTE filter_$=(age >= 15 & age <= 49 & gender = 2 & marri=1).
VARIABLE LABEL filter_$ 'age >= 15 & age <= 49 & gender = 2 & marri=1
(FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

FREQ VAR=modern .
```

CASE STUDY 4: ONE-ROUND DATA, "ETHIOPIA MCH – SAFE WATER 2006"

```
*/note: information on age and water treatment were saved in different data sets: one is
the household data set and the other is for individuals. /* .

*** individual dataset: "Ethiopia MCH SWS.sav" .
* Identify Duplicate Cases. Use region (REGION), community (KEBELE) and
household number (HHNO) as identification variables to see if there are records from
the same household. Drop-down manual: DATA→ Identify duplicate cases.
SORT CASES BY REGION(A) KEBELE(A) HHNO(A) .
MATCH FILES /FILE = * /BY REGION KEBELE HHNO
 /FIRST = PrimaryFirst /LAST = PrimaryLast.
DO IF (PrimaryFirst).
COMPUTE MatchSequence = 1 - PrimaryLast.
ELSE.
COMPUTE MatchSequence = MatchSequence + 1.
END IF.
LEAVE MatchSequence.
FORMAT MatchSequence (f7).
COMPUTE InDupGrp = MatchSequence > 0.
SORT CASES InDupGrp(D).
MATCH FILES /FILE = * /DROP = PrimaryFirst InDupGrp MatchSequence.
VARIABLE LABELS PrimaryLast 'Indicator of each last matching case as Primary' .
VALUE LABELS PrimaryLast 0 'Duplicate Case' 1 'Primary Case'.
VARIABLE LEVEL PrimaryLast (ORDINAL).
FREQUENCIES VARIABLES = PrimaryLast .
EXECUTE.

*/note: the output indicates no duplicates; respondents come from different households
/* .

*** household data set: "Ethiopia HH-wide.sav" .
* Identify Duplicate Cases. Use region (REGION), community (KEBELE) and
household number (HHNO) as identification variables to see if there are records from
the same household.
SORT CASES BY REGION(A) KEBELE(A) HHNO(A) .
MATCH FILES /FILE = * /BY REGION KEBELE HHNO
 /FIRST = PrimaryFirst /LAST = PrimaryLast1.
DO IF (PrimaryFirst).
COMPUTE MatchSequence1 = 1 - PrimaryLast1.
ELSE.
COMPUTE MatchSequence1 = MatchSequence1 + 1.
END IF.
LEAVE MatchSequence1.
FORMAT MatchSequence1 (f7).
COMPUTE InDupGrp1 = MatchSequence1 > 0.
SORT CASES InDupGrp1(D).
MATCH FILES /FILE = * /DROP = PrimaryFirst InDupGrp1 MatchSequence1.
```

```
VARIABLE LABELS PrimaryLast1 'Indicator of each last matching case as Primary' .
VALUE LABELS PrimaryLast1 0 'Duplicate Case' 1 'Primary Case'.
VARIABLE LEVEL PrimaryLast1 (ORDINAL).
FREQUENCIES VARIABLES = PrimaryLast1 .
EXECUTE.


*/note: the output indicates no duplicates. Each record represents a different household
/* .



***Merge "Ethiopia HH-wide.sav" with "Ethiopia MCH SWS.sav " . You can use the
Drop-Down manual: DATA→ MERGE FILES→ ADD VARIABLES.  Use region
(REGION), community (KEBELE) and household number (HHNO) as the
identification variables.

MATCH FILES /FILE=*
 /FILE='U:\MIS management\MIS-data received\for 2006\Ethiopia safewater
2006\SWS - Ethiopia 2.sav'
 /RENAME (FVYEAR INTRES LAN1 LAN2 TOWN wereda1 ZONE = d0 d1 d2 d3
d4 d5 d6)
 /BY REGION KEBELE HHNO
 /DROP= d0 d1 d2 d3 d4 d5 d6.
EXECUTE.
* save the merged data set as "Ethiopia MCH SWS-HH merged.sav" .

*** use the merged dataset " Ethiopia MCH SWS-HH merged.sav " .

* Step 1: check the distribution .
Freq VAR=q107.1 to q107.16 q3112 q3113a to q3113k .

* Step 2: create new variables .
IF q107.1<5 | q107.2<5 | q107.3<5 | q107.4<5 | q107.5<5 | q107.6<5 | q107.7<5 |
q107.8<5 | q107.9<5 | q107.10<5  | q107.11<5 | q107.12<5 | q107.13<5 | q107.14<5 |
q107.15<5 | q107.16<5 hhchild=1 .   */hhchild: whether a hh has a child under 5/*.
IF q107.1>4 & q107.2>4 & q107.3>4 & q107.4>4 & q107.5>4 & q107.6>4 &
q107.7>4 & q107.8>4 & q107.9>4 & q107.10>4 & q107.11>4 & q107.12>4 &
q107.13>4 & q107.14>4 & q107.15>4 & q107.16>4 hhchild=0 .

IF q3112=0 treatw=0 .
IF q3113b=1 | q3113c=1 | q3113d=1 | q3113e=1 | q3113f=1 treatw=1 .
IF q3112=1 & (q3113b=0 & q3113c=0 & q3113d=0 & q3113e=0 & q3113f=0)
treatw=0 .    */treatw: whether a household treats water with PSI products or
chemicals/*.
FREQ VAR= hhchild treatw .

* Step 3: select the proper denominator and get the results.

CROSSTABS
```

```
 /TABLES=hhchild  BY treatw
 /FORMAT= AVALUE TABLES
 /CELLS= COUNT ROW COLUMN TOTAL
 /COUNT ROUND CELL .
```

CASE STUDY 5: TWO-ROUND DATA, "MADAGASCAR FP WOMEN 2004 & 2006"

```
*Madagascar FP 2004 & 2006 among women *.

*** data set for 2004: "mg-TRAC-FP DIARRHEA-WOMEN 15 49-2004-D.sav" .
FREQ VAR=milieu q002 q003 nq103 nq104 nq106 nq109a to nq109i  nq110 nq112
nq114 q301 q319 q319x .

COMPUTE urban=milieu .
COMPUTE ageage=q002 .
COMPUTE gender=q003 .
COMPUTE marri=nq106 .
RECODE nq103 (1 2=1) (3 4 5 6=0) INTO religion .
RECODE nq104 (0 thru 5=0) (6 thru 19=1) INTO educ .

IF q319=1 | q319=2 | q319=3 | q319=4 modcon=1 .
IF q319=6 | q319=7 modcon=0 .   */modcon: usage of modern contraceptive method/*.
IF q319=5 modcon=3 .
RECODE modcon (1=1) (0=0) (3=sysmis) INTO modcon .

FREQ VAR=urban ageage gender religion educ marri modcon .

***ses .
RECODE nq110 (1 2 3=1) (4 5=0) INTO toilet .
RECODE nq112 (1 2 3 16=1) (4 thru 15=0) INTO water .
FACTOR
  /VARIABLES toilet water nq109d nq109e nq109h /MISSING
  PAIRWISE /ANALYSIS toilet water nq109d nq109e nq109h
  /PRINT UNIVARIATE INITIAL CORRELATION EXTRACTION ROTATION
  /FORMAT SORT
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION .
*/note: there is no "/SAVE REG(ALL)" between "/ROTATION" and "/METHOD".
When you play around with the data to see which items are to be used for the creation
of SES, you don't need the "/SAVE REG(ALL)" to save the "fac1_1". /* .

*/note: cut the variables with a rotated component matrix score of less than ".3" and
generate factor scores using "/SAVE REG(ALL)" to save the "fac1_1". /* .
```

```
FACTOR
  /VARIABLES toilet water nq109d nq109e nq109h
  /MISSING PAIRWISE
  /ANALYSIS toilet water nq109d nq109e nq109h
  /FORMAT SORT
  /PLOT EIGEN
  /CRITERIA FACTORS(1)


  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /SAVE REG(ALL)
  /METHOD=CORRELATION .
*FREQ VAR=fac1_1 .
****save the newly created variables in "mg-FP -women 2004 for merge.sav" .

***************************************.
***************************************.
*** data set for 2006: "mg-TRAC-FP DIARRHEA-WOMEN 15 49-2006-D.sav" .
FREQ VAR=milieu q002 q003 nq103 nq104 nq106 nq109a to nq109i  nq110 nq112
nq114 q301 q319 q319x .

COMPUTE urban=milieu .
COMPUTE ageage=q002 .
COMPUTE gender=q003 .
COMPUTE marri=nq106 .
RECODE nq103 (1 2=1) (3 4 5 6=0) INTO religion .
RECODE nq104 (0 thru 5=0) (6 thru 19=1) INTO educ .

IF q319=1 | q319=2 | q319=3 | q319=4 modcon=1 .
IF q319=6 | q319=7 modcon=0 .
IF q319=5 modcon=3 .
RECODE modcon (1=1) (0=0) (3=sysmis) INTO modcon .

FREQ VAR=ageage gender marri modcon .

***ses .
RECODE nq110 (1 2 3=1) (4 5=0) INTO toilet .
RECODE nq112 (1 2 3 16=1) (4 thru 15=0) INTO water .
FACTOR
  /VARIABLES toilet water nq109a nq109d nq109e nq109h /MISSING
  PAIRWISE /ANALYSIS toilet water nq109a nq109d nq109e nq109h
  /PRINT UNIVARIATE INITIAL CORRELATION EXTRACTION ROTATION
  /FORMAT SORT
  /PLOT EIGEN
  /CRITERIA MINEIGEN(1) ITERATE(25)
  /EXTRACTION PC
```

```
 /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /METHOD=CORRELATION .

*/note: cut the variables with a rotated component matrix score of less than ".3" and
generate factor scores using "/SAVE REG(ALL)" to save the "fac1_1". /* .


FACTOR
  /VARIABLES toilet water nq109d nq109e nq109h
  /MISSING PAIRWISE
  /ANALYSIS toilet water nq109d nq109e nq109h
  /FORMAT SORT
  /PLOT EIGEN
  /CRITERIA FACTORS(1)
  /EXTRACTION PC
  /CRITERIA ITERATE(25)
  /ROTATION VARIMAX
  /SAVE REG(ALL)
  /METHOD=CORRELATION .
*FREQ VAR=fac1_1 .
****save the newly created variables in "mg-FP -women 2006 for merge.sav" .
****merged the above data sets and save the merged data set as "mg-FP -women 2004-
06 merged.sav" .

FREQ VAR=source01 .
COMPUTE wave=source01 .
FREQ VAR=pf2000 to pf2008 expopf1 to expopf3 .
RECODE pf2000 to pf2008 (1=0) (2 3 4=1) (9=sysmis) INTO exp1 to exp9 .
COMPUTE exp=exp1+exp2+exp3+exp4+exp5+exp6+exp7+exp8+exp9 .
FREQ VAR=exp .
IF wave=0 expos=0 .
IF wave=1 & exp=0 expos=1 .
IF wave=1 & (exp=1 | exp=2) expos=2 .
IF wave=1 & (exp=3 | exp=4) expos=3 .
IF wave=1 & (exp>4) expos=4 .
FREQ VAR=expos .

USE ALL.
COMPUTE filter_$=(gender = 1 & ageage>=15 & ageage<=49 & marri=1).
VARIABLE LABEL filter_$ 'gender = 1  & ageage>=15 & ageage<=49 & marri=1
(FILTER)'.
VALUE LABELS filter_$  0 'Not Selected' 1 'Selected'.
FORMAT filter_$ (f1.0).
FILTER BY filter_$.
EXECUTE .

UNIANOVA
```

```
  modcon  BY wave  WITH urban ageage educ religion fac1_1
  /METHOD = SSTYPE(3)
  /INTERCEPT = INCLUDE
  /EMMEANS = TABLES(wave) WITH(urban=mean ageage=MEAN educ=MEAN
religion=mean fac1_1=mean) COMPARE ADJ(LSD)
  /CRITERIA = ALPHA(.05)
  /DESIGN = urban ageage educ religion fac1_1 wave .


 UNIANOVA
  modcon  BY expos  WITH urban ageage educ religion fac1_1
  /METHOD = SSTYPE(3)
  /INTERCEPT = INCLUDE
  /EMMEANS = TABLES(expos) WITH(urban=mean ageage=MEAN educ=MEAN
religion=mean fac1_1=mean) COMPARE ADJ(LSD)
  /CRITERIA = ALPHA(.05)
  /DESIGN = urban ageage educ religion fac1_1 expos .
```

LESSONS LEARNED

1. For indicator "condom use at last sex with non-marital non-cohabiting partner" in HIV studies, almost all the questionnaires collected the information of condom use at last sex by type of partners (i.e., regular, casual, and/or commercial partners). However information on which was the last sex was not available. So, it is assumed that if the respondent used a condom with either type of non-marital non-cohabiting partner, then the respondent used a condom at last sex with non-marital, non-cohabiting partner.

2. For HIV studies, some questionnaires did not collect information on "ever had sex". Even though they asked "whether they had sex during last year", there is still not enough information to figure out the indicator "primary abstinence" and "secondary abstinence" according to the definition.

3. For studies which collect both household and individual information such as in malaria or MCH studies, it is suggested to input all the data in one data set in wide format. Inputting one study into several different pieces of data set makes a lot of trouble later in the analyses (e.g., un-identical identification number in different data sets which makes immerging impossible or duplicate cases in the long format data which makes restructure impossible).

4. For family planning, currently pregnant women were assumed not using modern contraceptives currently. "Married" was measured as "ever-married."

QUALITY IMPROVEMENT CHECKLIST

☐ Identify if the study is a one-round or two-round study.

☐ Identify all related variables, including behavioral variables and socio-demographic variables.

☐ Check the distribution of all related variables and pay attention to out-of-range values and missing values.

☐ Create new variables for the analyses. For two-round data, make sure the newly created variables have the same variable name and value range.

☐ Re-check the distribution of new variables to make sure they are created correctly.

☐ For each indicator, make sure the right population has been selected.

☐ Document anything that is not consistent with the standard definition of the indicators. For example, "in the study, respondents are youth aged 18-24 instead of 15-24", or "in the study, indicator 'condom use at last sex with non-marital partner non-cohabiting partner' refers to condom use at last sex with casual partner".

☐ Report the results:

　° For one-round HIV data, report the percentage of indicators that are available from the study by gender and age group. For example, the above "Dominican Republic HIV Bateyes 2006" study can be reported as below:

Indicator	Male			Female	
	15-24	15-49		15-24	15-49
Primary Abstinence (A1)	5.2			34.2	
Secondary Abstinence (A2)	14.1			16.0	
Not being faithful (B)	65.1	54.7		20.8	14.6
Condom use at last sex with non-marital non-cohabiting partner (C)	76.4	78.1		72.3	55.0

　　Note: The category of "female aged 15-49" is actually representing female aged 15-35 in this study. [This is a hypothesized note just to show how to document things that are not consistent with the standard definition of the indicators].

　° For two-round data, report the adjusted proportions of both rounds and the significant testing of time trend. If there is a desired time trend, also report the adjusted proportions across exposure levels and the significance pattern. For example, the above "Madagascar FP women 2004 & 2006" study can be reported as below:

Indicator	Time Trend			Evaluation					
	2004	2006	Sig.	Ref.	None	Low-	Mid-	High-	Impact
Modern contracept	15.9	21.2	***	15.8a	17.5a	22.7b	22.1ab	27.8b	Yes