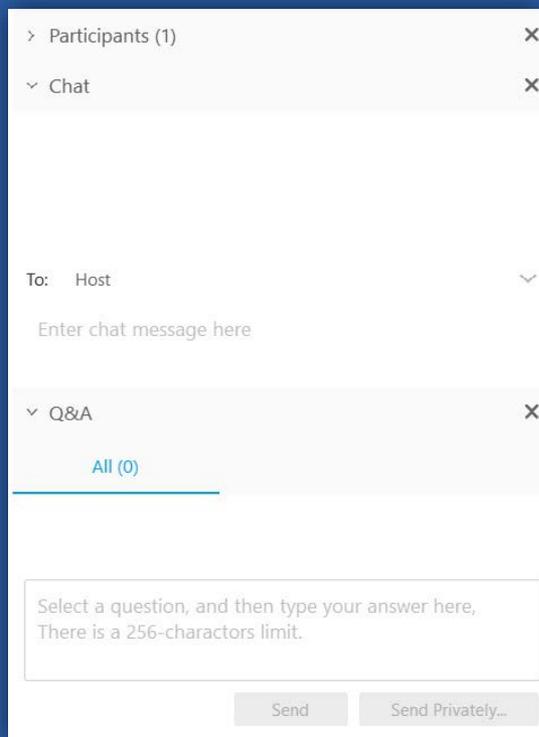


Health Information National Trends Survey (HINTS) 5 Cycle 3 Data: A How-To Guide for Using the New Data in your Research

Behavioral Research Program (BRP)
Division of Cancer Control and Population Sciences

To ask a question



- Submit questions using the Q&A or Chat Panel and select *All Panelists*
- You may need to activate the appropriate box using the floating navigation panel found on the center of your screen



- The webinar recording will be posted in a few weeks at cancercontrol.cancer.gov/brpwebinars

Webinar Overview



Richard Moser, Ph.D.
*Training Director and Research Methods
Coordinator
Behavioral Research Program*



Ashley Murray, Ph.D.
*Cancer Research Training Award
Fellow
Behavioral Research Program*

Health Information National Trends Survey (HINTS) 5 Cycle 3 Tutorial

Richard P. Moser, Ph.D.

Chief Methodologist, HINTS Program
Research Methods Coordinator, Behavioral Research Program
National Cancer Institute

Ashley B. Murray, Ph.D.

Cancer Research Training Award Fellow
Behavioral Research Program
National Cancer Institute

March 26, 2020

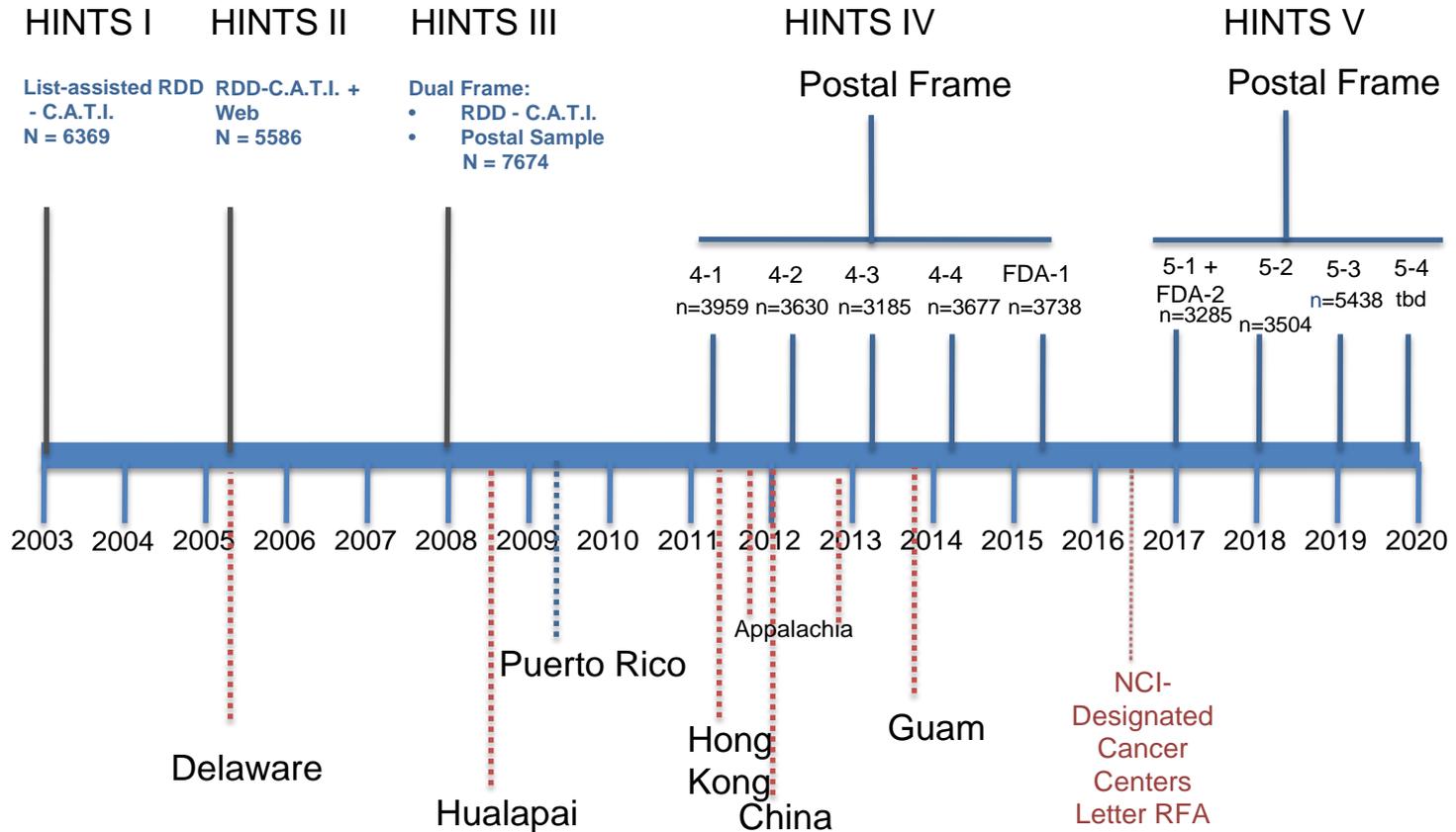
Rapidly Changing Communication Environment



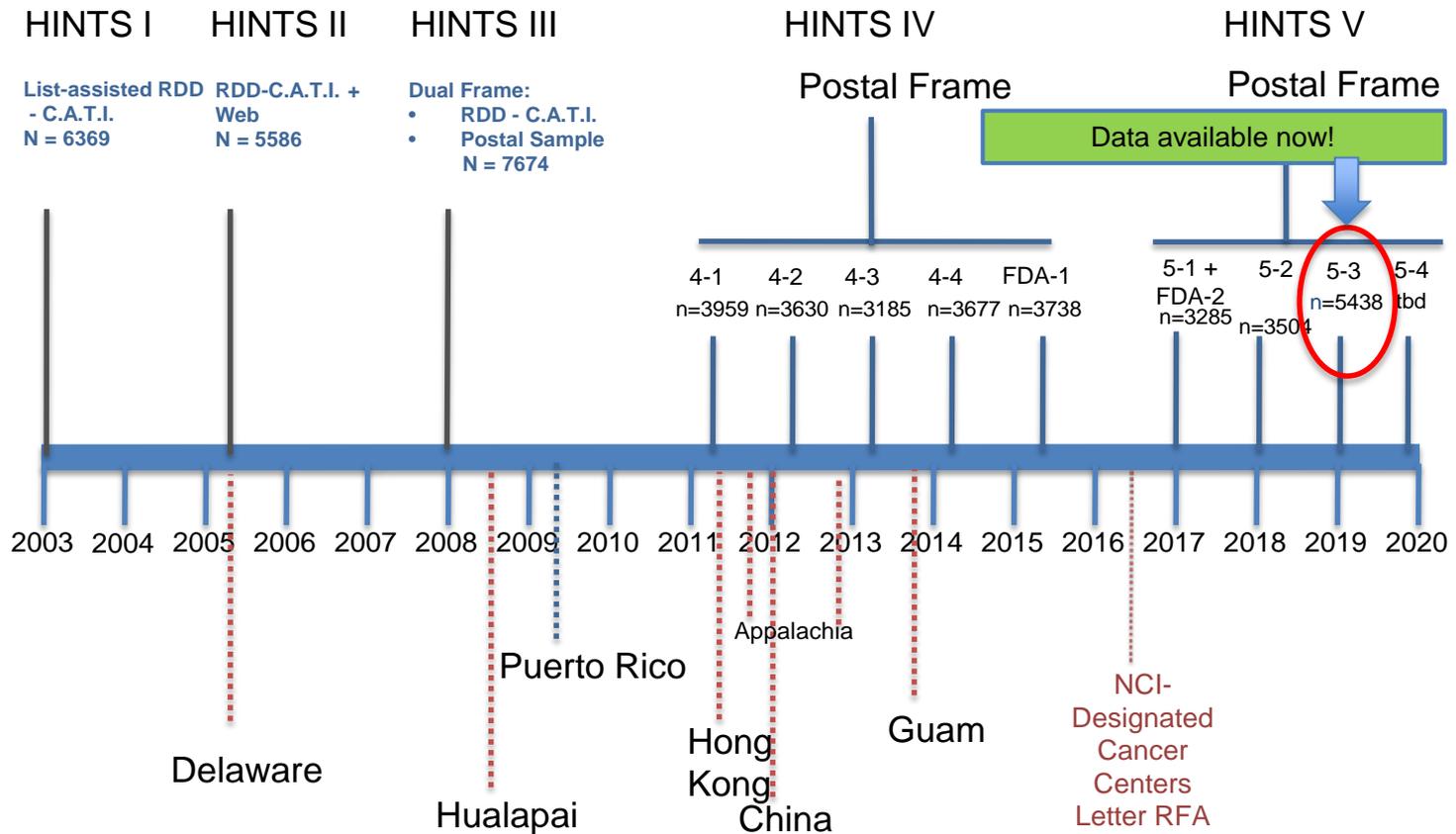
Rapidly Changing Communication Environment



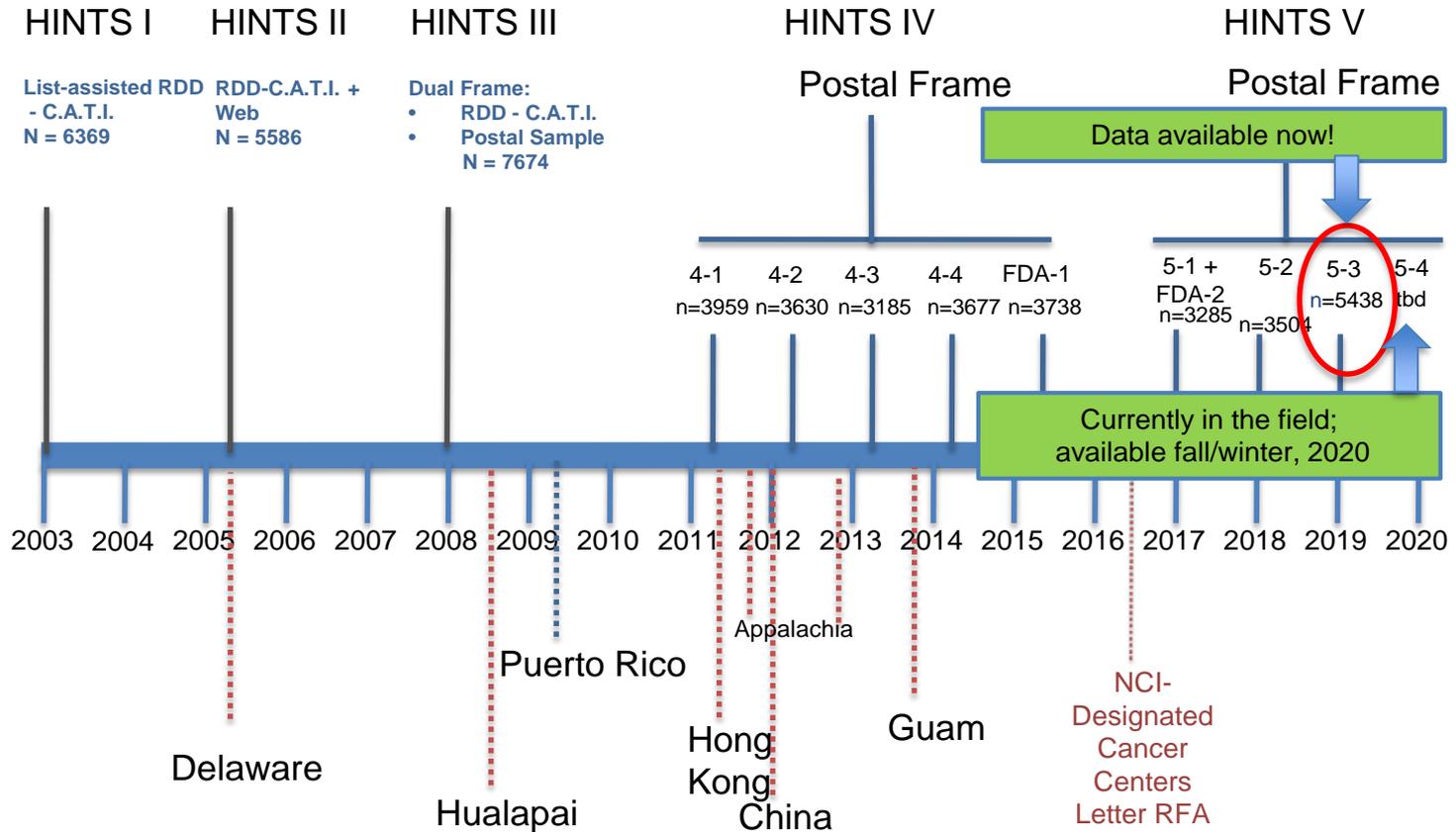
HINTS History & Timeline



HINTS History & Timeline



HINTS History & Timeline



HINTS Brief 34: Calorie Labels on Restaurant Menus: Who Uses Them

Access to:

- HINTS data and supporting documents
- Electronic codebook
- Tutorial
- Reports
- List of publications
- Briefs

What is HINTS?

HINTS collects data about the use of cancer-related information by the American public. These data provide opportunities to understand and improve health communication. [Read More >](#)

Get and Use HINTS Data

Download publicly available, nationally representative HINTS data for your next secondary analysis. [Access Data >](#)

Sign Up for HINTS Updates

Sign up to get updates on the latest HINTS data releases, publications, and website features.

Lung cancer is the leading cause of cancer deaths in the United States, but patient-provider communication about lung cancer screening remains infrequent. Read more in HINTS Brief 33: <http://bit.ly/2uiliTQ>
Posted 17 hours ago
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Social Media



New HINTS Publication?

[Submit Here](#)

What's New

Submit an Abstract to the HINTS Data Users Conference

New HINTS data available for download!

Save the Date: The Fifth HINTS Data Users Conference

Check out the HINTS-ASL Project

[Current HINTS Briefs](#)

Brief 34: Calorie Labels on Restaurant Menus: Who Uses Them and Do They Find Them Helpful?

October 2017 (137 k)

Brief 33: Patient-provider Discussion About Lung Cancer Screening Remain Infrequent

Overview of HINTS 5 Cycle 3

- Population: US Non-Institutionalized Adults (18+)
- Conducted January to April 2019
- Total N = 5,438



Content



Web Pilot

- Test multi-mode survey
- Goal: Improve data quality
 - Increase response rates
 - Increase coverage
 - Reduce undesirable respondent behavior
 - Non-completion
 - Speeding
 - Straight lining
- Assess cost effectiveness
- Random assignment into 3 groups
 - Paper only
 - Web option
 - Web bonus
 - All get \$2 incentive in mail
- Web groups could answer on internet or return by mail
- Prompting vs. no prompting (web)
- Considered as independent samples from same population
 - Weights available for each



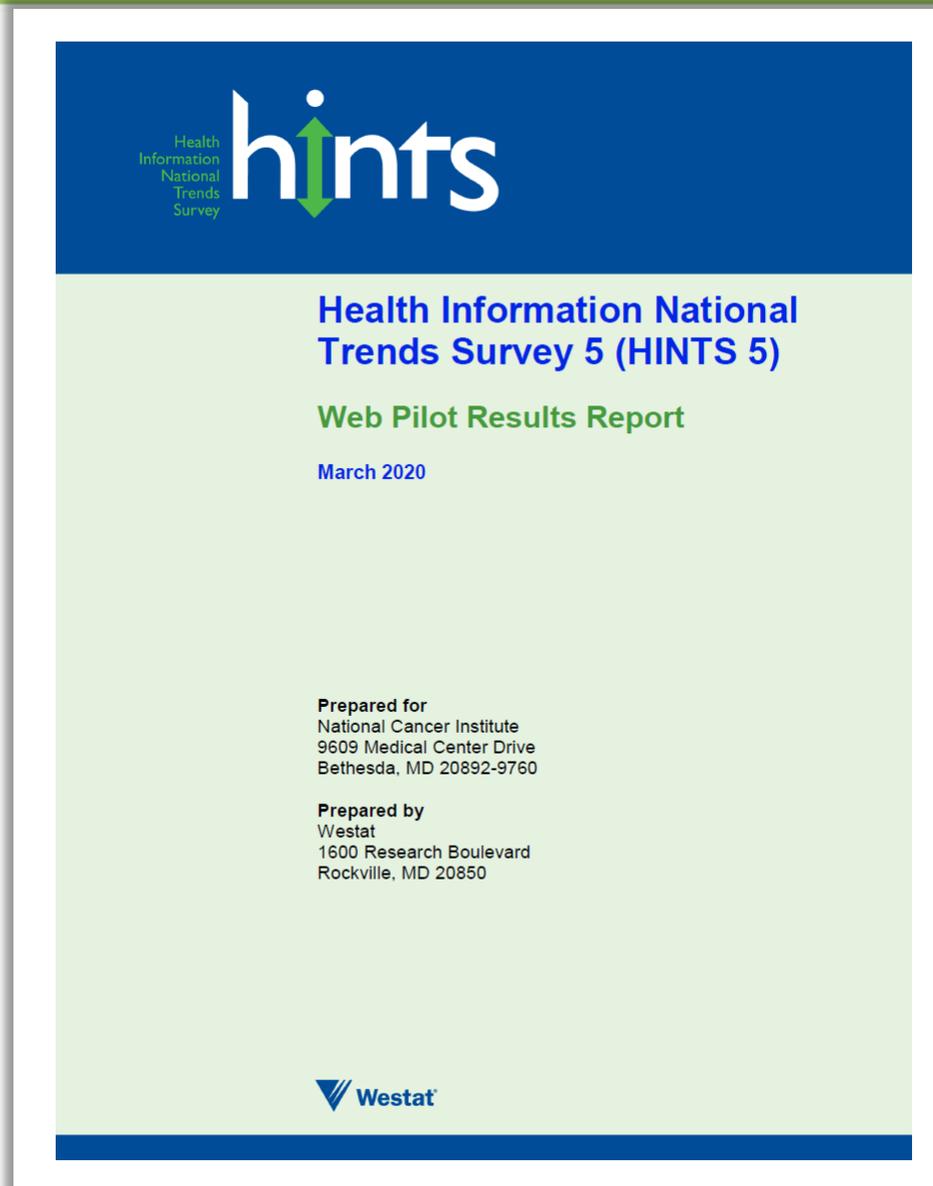
Web Pilot: Results

Group	Sample Size	Response Rate *
Paper Only	3,372	30.2%
Web Option	986	29.6%
Web Bonus	1,080	31.5%
Total Sample	5,438	30.3%

* Not statistically different



See For More Information



Health Information National Trends Survey

hints

Health Information National Trends Survey 5 (HINTS 5)

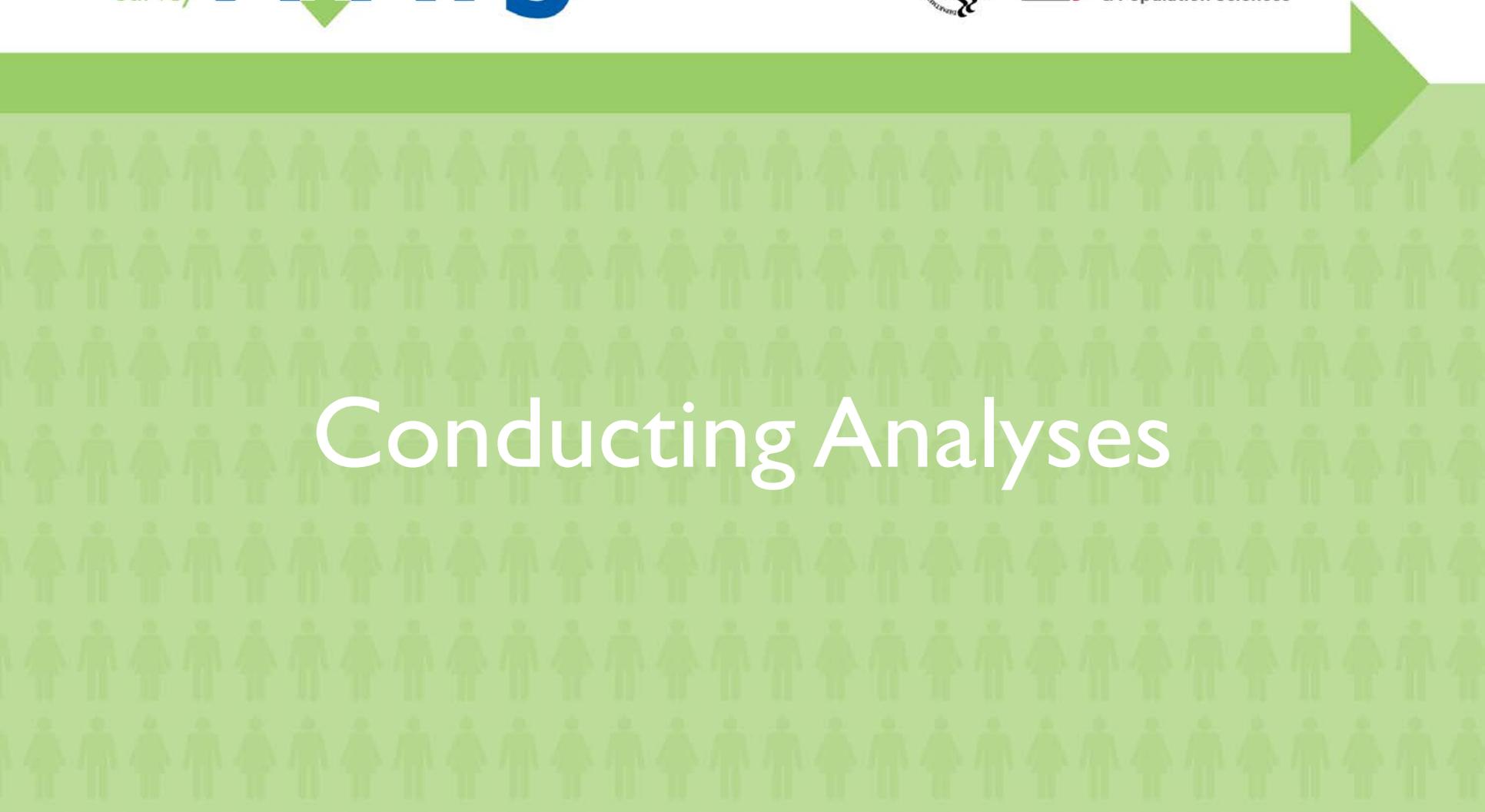
Web Pilot Results Report

March 2020

Prepared for
National Cancer Institute
9609 Medical Center Drive
Bethesda, MD 20892-9760

Prepared by
Westat
1600 Research Boulevard
Rockville, MD 20850

 Westat



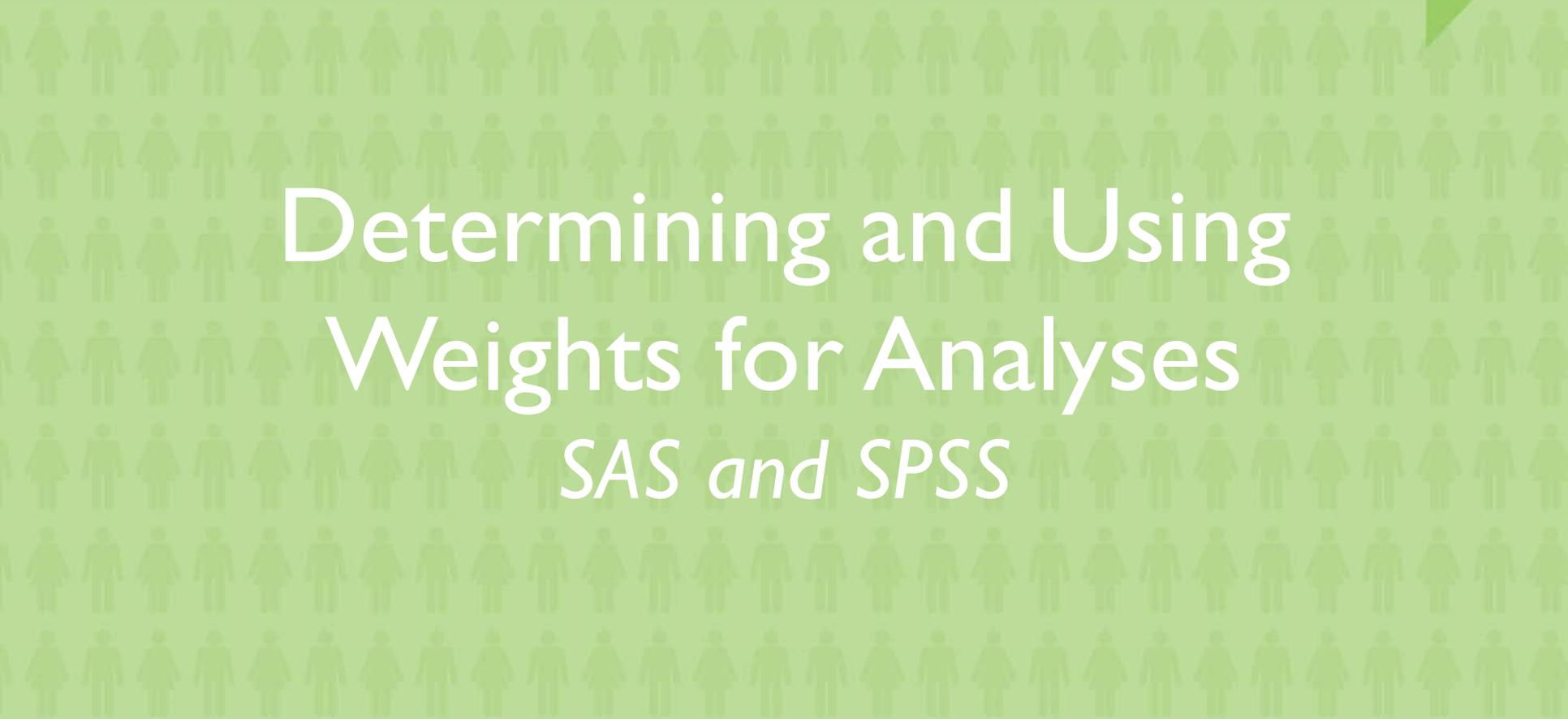
Conducting Analyses

Statistics Overview

- HINTS can be analyzed using a variety of programs
- When you are interested in conducting inferential statistics (i.e. anything that involves calculating a p-value or confidence interval), it is important to consider which program you use
- A program should be able to:
 - Compute the correct variance estimates when analyzing survey data that employ a complex sampling method (e.g. HINTS)
 - Analyze data using jackknife replicate weights OR Taylor Linearization

Statistics Overview

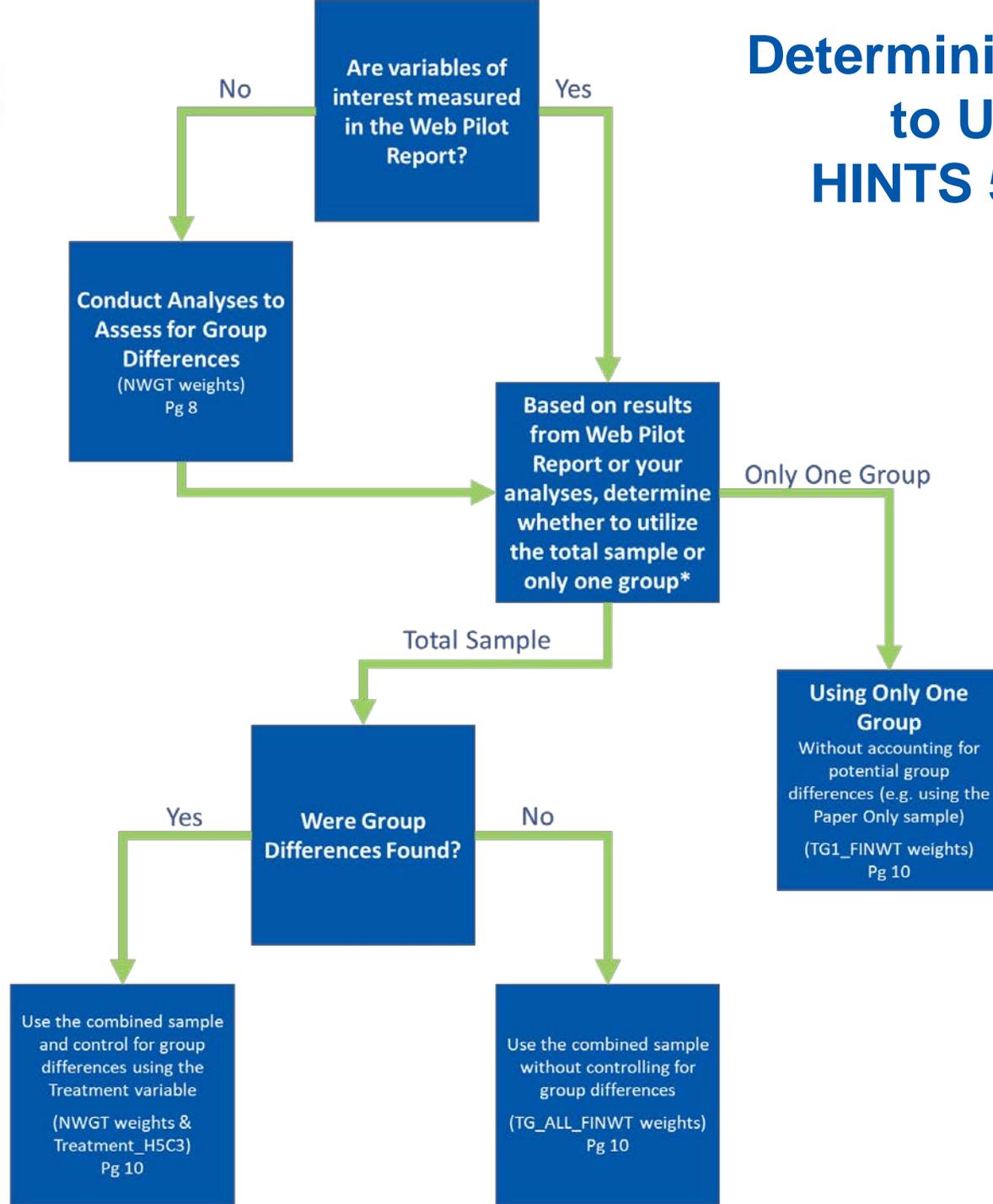
- Code and results for SAS, SPSS, and STATA are provided in the Overview of the HINTS 5 Cycle 3 Survey and Data Analysis Recommendations Document
 - Descriptive analyses, Chi Square, Logistic Regression, & Linear Regression using both Jackknife replicates and Taylor Linearization in SAS and STATA (SPSS can only use Taylor Linearization; code & results provided)
 - SPSS analyses use Complex Samples module (add-on to Base SPSS)
 - We suggest using a program that can integrate Jackknife replicate weights when possible
- Tutorial will highlight both SAS and SPSS

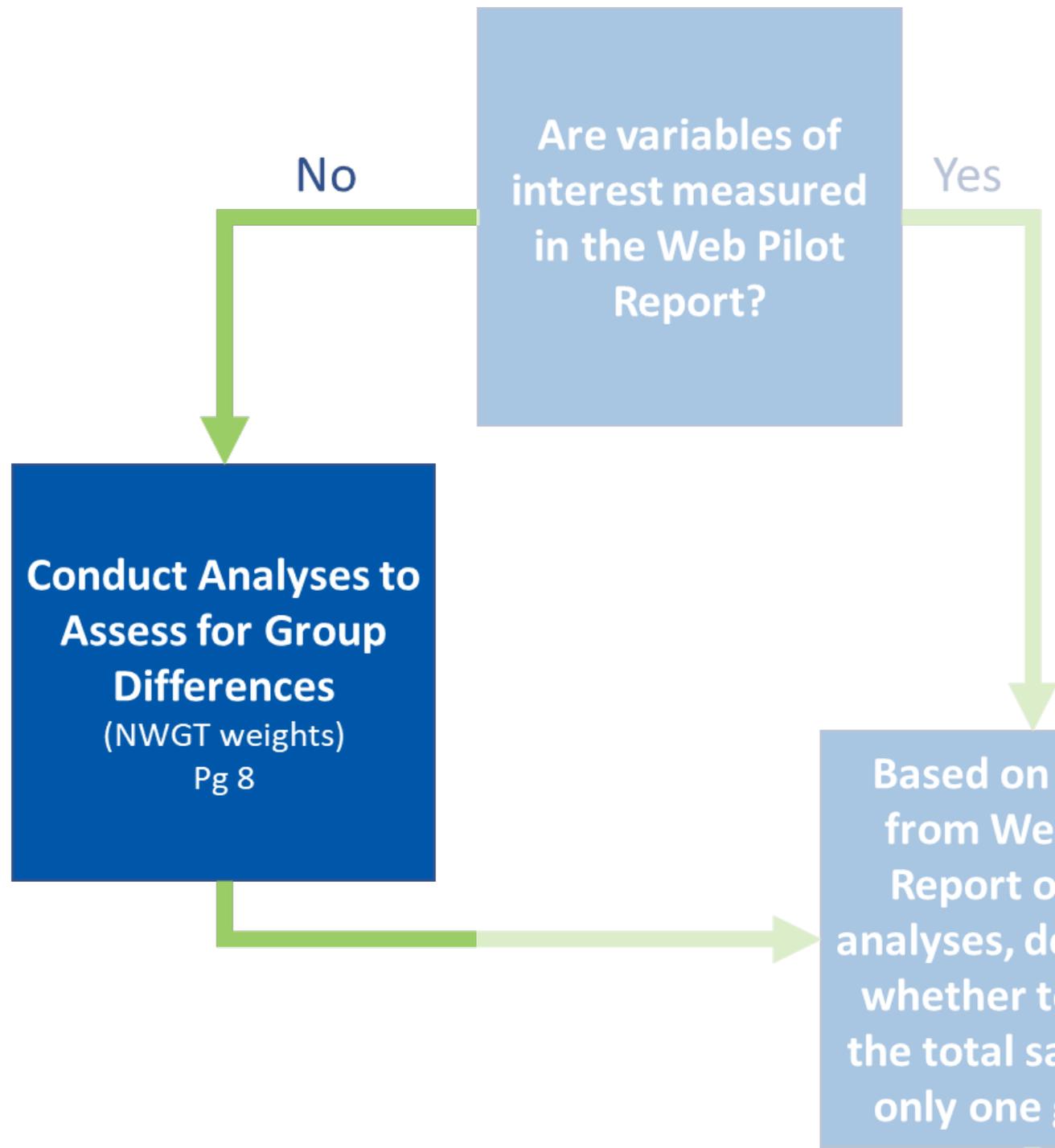
A large, solid green arrow pointing to the right, spanning the width of the slide, positioned above the main text area.A repeating pattern of small, light green human icons (men and women) arranged in a grid, serving as a background for the central text area.

Determining and Using Weights for Analyses

SAS and SPSS

Determining Weights to Use for HINTS 5 Cycle 3





Conducting Analyses to Assess for Group Differences in SAS

- It is strongly recommended that analysts first assess for possible group differences within their target variables.

Assessing for Group Differences with *Binary Outcomes* (with SEEKCANCERINFO as example):

```

data DATAFILENAME;
  set DATAFILENAME;
  *Set negative values to missing;
  if SeekCancerInfo < 0 then SeekCancerInfo=.;
run;
proc surveylogistic data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model SeekCancerInfo = TREATMENT_H5C3;
run;
  
```

Assessing for Group Differences with *Continuous Data* (with GENERALHEALTH as example):

```

data DATAFILE;
  set DATAFILE;
  *Set negative values to missing;
  if GeneralHealth < 0 then GeneralHealth=.;
run;
proc surveyreg data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model GeneralHealth = TREATMENT_H5C3 /solution;
run;
  
```

Conducting Analyses to Assess for Group Differences in SAS

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  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model SeekCancerInfo = TREATMENT_H5C3;

run;
  
```

Set negative values to missing



Assessing for Group Differences with *Continuous Data* (with GENERALHEALTH as example):

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  *Set negative values to missing;
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run;
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  weight nwgt0;
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  class TREATMENT_H5C3;
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  model SeekCancerInfo = TREATMENT_H5C3;
run;

```

Variance
Estimation Method



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  if GeneralHealth < 0 then GeneralHealth=.;
run;
proc surveyreg data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model GeneralHealth = TREATMENT_H5C3 /solution;
run;

```

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  model SeekCancerInfo = TREATMENT_H5C3;
run;

```

Variance
Estimation Method

Final and
Replicate
Sample
Weights

Assessing for Group Differences with *Continuous Data* (with GENERALHEALTH as example):

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  *Set negative values to missing;
  if GeneralHealth < 0 then GeneralHealth=.;
run;
proc surveyreg data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model GeneralHealth = TREATMENT_H5C3 /solution;
run;

```

Conducting Analyses to Assess for Group Differences in SAS

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  *Set negative values to missing;
  if SeekCancerInfo < 0 then SeekCancerInfo=.;

run;
proc surveylogistic data=DATAFILENAME varmethod=jackknife;
  { weight nwgt0;
    repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
    class TREATMENT_H5C3;
    model SeekCancerInfo = TREATMENT_H5C3;
  }
run;
  
```

Variance Estimation Method

Replicate Weight DDF

Final and Replicate Sample Weights

Assessing for Group Differences with *Continuous Data* (with GENERALHEALTH as example):

```

data DATAFILE;
  set DATAFILE;
  *Set negative values to missing;
  if GeneralHealth < 0 then GeneralHealth=.;

run;
proc surveyreg data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
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run;
  
```

Conducting Analyses to Assess for Group Differences in SAS

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run;
proc surveylogistic data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model SeekCancerInfo = TREATMENT_H5C3;
run;

```

Variance Estimation Method

Replicate Weight DDF

Grouping Variable

Final and Replicate Sample Weights

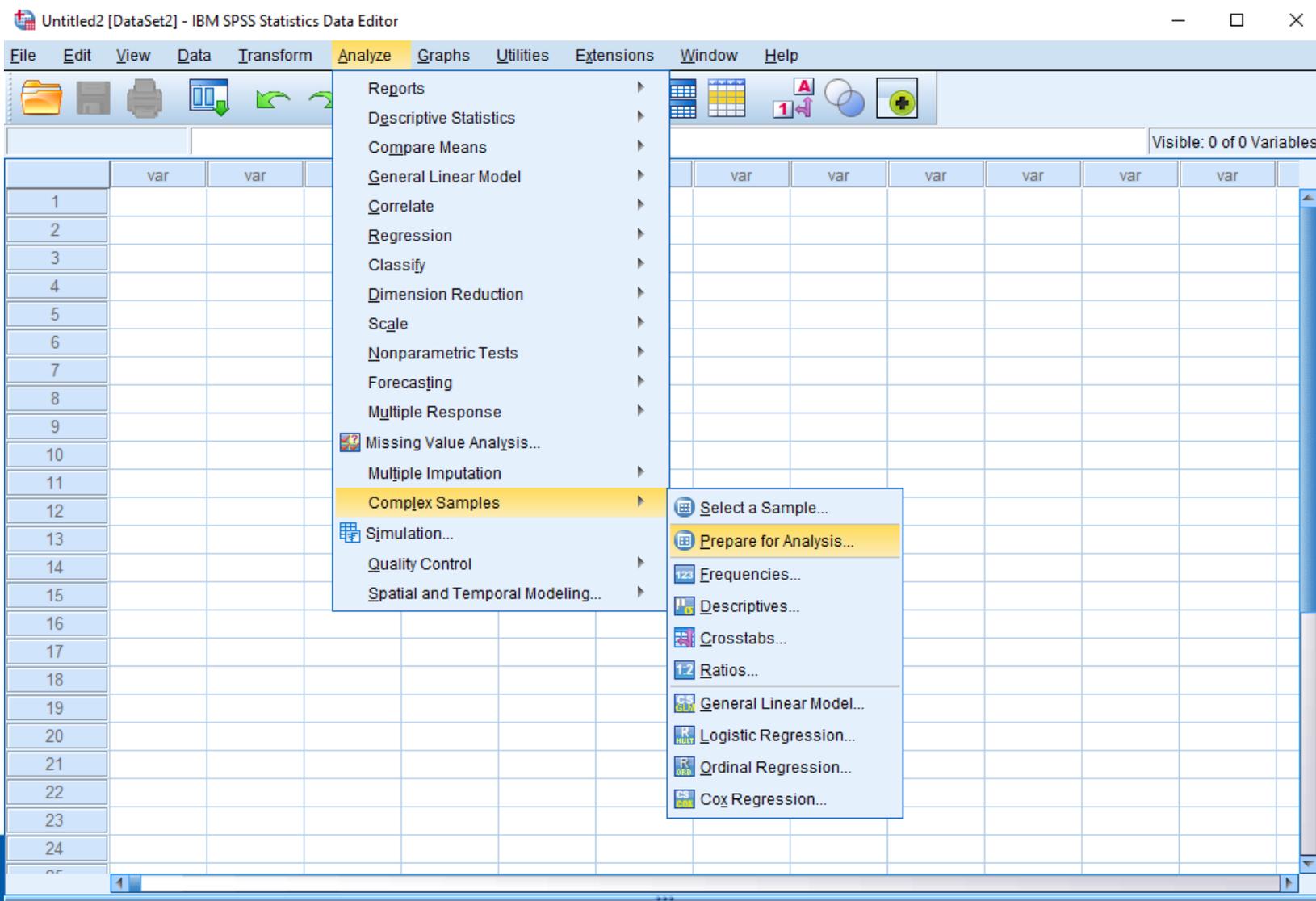
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  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  class TREATMENT_H5C3;
  model GeneralHealth = TREATMENT_H5C3 /solution;
run;

```

SPSS Complex Samples



The screenshot shows the IBM SPSS Statistics Data Editor interface. The menu bar includes File, Edit, View, Data, Transform, Analyze, Graphs, Utilities, Extensions, Window, and Help. The Analyze menu is open, showing options such as Reports, Descriptive Statistics, Compare Means, General Linear Model, Correlate, Regression, Classify, Dimension Reduction, Scale, Nonparametric Tests, Forecasting, Multiple Response, Missing Value Analysis..., Multiple Imputation, Complex Samples, Simulation..., Quality Control, and Spatial and Temporal Modeling... The Complex Samples sub-menu is open, displaying options: Select a Sample..., Prepare for Analysis..., Frequencies..., Descriptives..., Crosstabs..., Ratios..., General Linear Model..., Logistic Regression..., Ordinal Regression..., and Cox Regression... The main data grid is empty, with a status bar indicating 'Visible: 0 of 0 Variables'.

SPSS Complex Samples

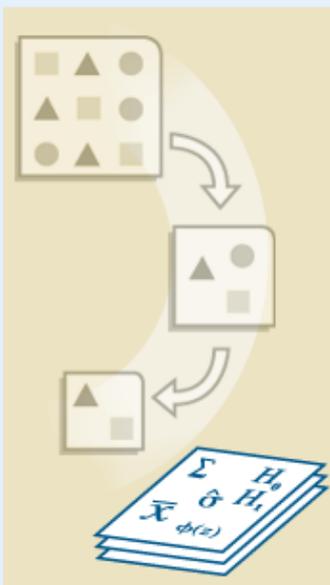
Analysis Preparation Wizard



Welcome to the Analysis Preparation Wizard

The Analysis Preparation Wizard helps you describe your complex sample and choose an estimation method. You will be asked to provide sample weights and other information needed for accurate estimation of standard errors.

Your selections will be saved to a plan file that you can use in any of the analysis procedures in the Complex Samples Option.



What would you like to do?

Create a plan file

Choose this option if you have sample data but have not created a plan file.

File:

Edit a plan file

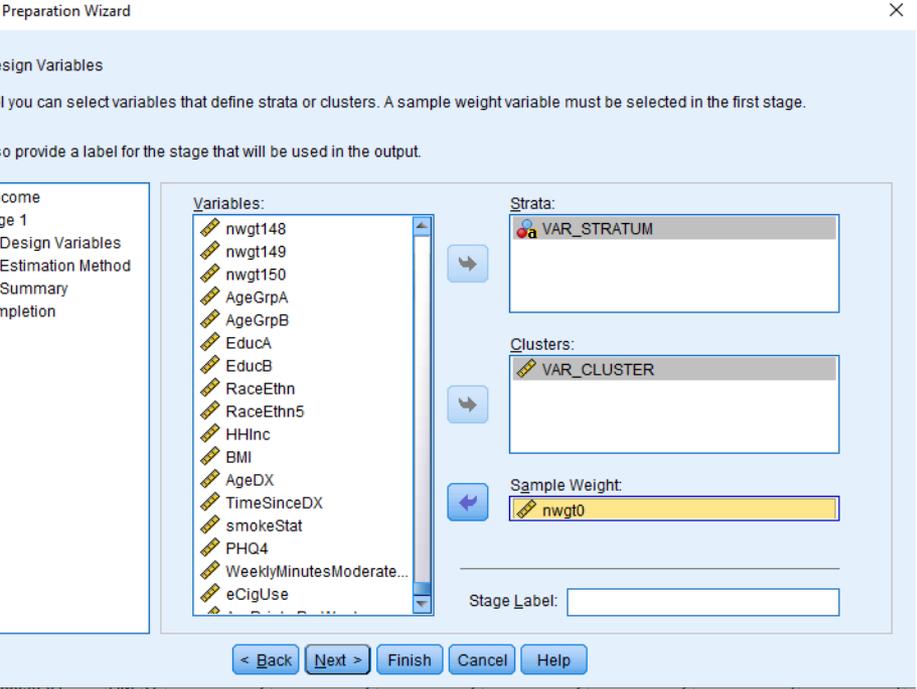
Choose this option if you want to add, remove, or modify stages of an existing plan.

File:

i If you already have a plan file you can skip the Analysis Preparation Wizard and go directly to any of the analysis procedures in the Complex Samples Option to analyze your sample.



SPSS Complex Samples



Preparation Wizard

Design Variables

You can select variables that define strata or clusters. A sample weight variable must be selected in the first stage.

Provide a label for the stage that will be used in the output.

Variables:

- nwgt148
- nwgt149
- nwgt150
- AgeGrpA
- AgeGrpB
- EducA
- EducB
- RaceEthn
- RaceEthn5
- HHInc
- BMI
- AgeDX
- TimeSinceDX
- smokeStat
- PHQ4
- WeeklyMinutesModerate...
- eCigUse

Strata:

- VAR_STRATUM

Clusters:

- VAR_CLUSTER

Sample Weight:

- nwgt0

Stage Label:

< Back Next > Finish Cancel Help

SPSS Complex Samples

Preparation Wizard

Design Variables

Control

Design Variables

Estimation Method

Summary

Completion

Controlling or Assessing for Group Differences

Variables:

- nwgt148
- nwgt149
- nwgt150
- AgeGrpA
- AgeGrpB
- EducA
- EducB
- RaceEthn
- RaceEthn5
- HHInc
- BMI
- AgeDX
- TimeSinceDX
- smokeStat
- PHQ4
- WeeklyMinutesModerate...
- eCigUse

Strata:

- VAR_STRATUM

Clusters:

- VAR_CLUSTER

Sample Weight:

- nwgt0

Stage Label:

< Back Next > Finish Cancel Help



SPSS Complex Samples

Preparation Wizard

Design Variables

In this panel you can select variables that will be used in the analysis.

You can also provide a label for the stage that will be used in the output.

Controlling or Assessing for Group Differences

Stage 1

Design Variables

Estimation Method

Summary

Completion

Variables:

- nwgt148
- nwgt149
- nwgt150
- AgeGrpA
- AgeGrpB
- EducA
- EducB
- RaceEthn
- RaceEthn5
- HHInc
- BMI
- AgeDX
- TimeSinceDX
- smokeStat
- PHQ4
- WeeklyMinutesModerate...
- eCigUse

Strata:

- VAR_STRATUM

Clusters:

- VAR_CLUSTER

Sample Weight:

- nwgt0

Stage Label:

< Back Next > Finish Cancel Help

Analysis Preparation Wizard

Stage 1: Design Variables

In this panel you can select variables that will be used in the analysis.

You can also provide a label for the stage that will be used in the output.

Full Sample (No Group Differences)

Stage 1

Design Variables

Estimation Method

Summary

Completion

Variables:

- TG_all_FINWT40
- TG_all_FINWT41
- TG_all_FINWT42
- TG_all_FINWT43
- TG_all_FINWT44
- TG_all_FINWT45
- TG_all_FINWT46
- TG_all_FINWT47
- TG_all_FINWT48
- TG_all_FINWT49
- TG_all_FINWT50
- TG1_FINWT1
- TG1_FINWT2
- TG1_FINWT3
- TG1_FINWT4
- TG1_FINWT5
- TG1_FINWT6

Strata:

- VAR_STRATUM

Clusters:

- VAR_CLUSTER

Sample Weight:

- TG_all_FINWT0

Stage Label:

< Back Next > Finish Cancel Help

SPSS Complex Samples

Analysis Preparation Wizard

Stage 1: Estimation Method

In this panel you select a method for estimating standard errors.

The estimation method depends on assumptions about how the sample was drawn.

Which of the following sample designs should be assumed for estimation?

WR (sampling with replacement)

If you choose this option you will not be able to add additional stages. Any sample stages after the current stage will be ignored when the data are analyzed.

Use finite population correction (FPC) when estimating variance under simple random sampling assumption

Equal WOR (equal probability sampling without replacement)

The next panel will ask you to specify inclusion probabilities or population sizes.

Unequal WOR (unequal probability sampling without replacement)

Joint probabilities will be required to analyze sample data. This option is available in stage 1 only.

< Back Next > Finish Cancel Help

SPSS Complex Samples

Analysis Preparation Wizard

Stage 1: Estimation Method

In this panel you select a method for estimating standard errors.

The estimation method depends on assumptions about how the sample was drawn.

Which of the following sample designs should be assumed for estimation?

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Unequal WOR (unequal probability sampling without replacement)

Joint probabilities will be required to analyze sample data. This option is available in stage 1 only.

< Back Next > Finish Cancel Help

Conducting Analyses to Assess for Group Differences in SPSS

*hints5_cycle3_public.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Extensions Window Help

Visible: 565 of 565 Variables

	APP_REGION	DRA	HIGHSPANLI	HISPSURNAME	HISP_HH	Treatment_1
1		1	2	2	2	
2		1	2	2	2	
3		1	2	2	2	
4	S	2	2	2	2	
5	S	2	2	2	2	
6		1	2	2	2	
7		1	2	2	2	
8		1	2	2	2	
9		2	2	2	2	
10		2	2	2	2	
11	S	2	2	2	2	
12		2	2	2	2	
13		2	2	2	2	
14		2	2	2	2	
15		2	2	2	2	
16		2	2	2	2	HM
17		2	2	2	2	HM
18		2	2	2	2	HM
19		2	2	2	2	HM
20		2	2	2	2	HM
21		1	2	2	2	HM

Reports
 Descriptive Statistics
 Compare Means
 General Linear Model
 Correlate
 Regression
 Classify
 Dimension Reduction
 Scale
 Nonparametric Tests
 Forecasting
 Multiple Response
 Missing Value Analysis...
 Multiple Imputation
Complex Samples
 Simulation...
 Quality Control
 Spatial and Temporal Modeling...

Select a Sample...
 Prepare for Analysis...
 Frequencies...
 Descriptives...
 Crosstabs...
 Ratios...
 General Linear Model...
Logistic Regression...
 Ordinal Regression...
 Cox Regression...

Data View Variable View

Logistic Regression...

IBM SPSS Statistics Processor is ready | Unicode:ON | Weight On

Conducting Analyses to Assess for Group Differences in SPSS

*hints5_cycle3_public.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Extensions Window Help

Complex Samples Plan for Logistic Regression

Plan

File:

If you do not have a plan file for your complex sample, you can use the Analysis Preparation Wizard to create one. Choose Prepare for Analysis from the Complex Samples menu to access the wizard.

Joint Probabilities

Joint probabilities are required if the plan requests unequal probability WOR estimation. Otherwise, they are ignored.

Use default file (based on name of plan file)

An open dataset

Custom file

File:

HHID	PersonID	HIGHSPANLI	HISPSURNAME	HISP_HH	Treatment
1	91000002 91000002-02	2	2	2	
2	91000006 91000006-02	2	2	2	
3	91000007 91000007-03	2	2	2	
4	91000008 91000008-01	2	2	2	
5	91000012 91000012-01	2	2	2	
6	91000021 91000021-01	2	2	2	
7	91000022 91000022-01	2	2	2	
8	91000024 91000024-01	2	2	2	
9	91000035 91000035-01	2	2	2	
10	91000037 91000037-01	2	2	2	
11	91000050 91000050-01	2	2	2	
12	91000054 91000054-01	2	2	2	
13	91000058 91000058-01	2	2	2	
14	91000071 91000071-02	2	2	2	
15	91000072 91000072-01	2	2	2	
16	91000078 91000078-01	2	2	2	
17	91000085 91000085-01	2	2	2	
18	91000088 91000088-01	2	2	2	
19	91000089 91000089-01	2	2	2	
20	91000091 91000091-01	2	2	2	
21	91000094 91000094-02	2	2	2	

Visible: 565 of 565 Variables

Data View Variable View

IBM SPSS Statistics Processor is ready | Unicode:ON | Weight On

Conducting Analyses to Assess for Group Differences in SPSS

*hints5_cycle3_public.sav [DataSet1] - IBM SPSS Statistics Data Editor

File Edit View Data Transform Analyze Graphs Utilities Extensions Window Help

Visible: 565 of 565 Variables

	HHID	PersonID	HIGHSPANLI	HISPSURNAME	HISP_HH	Treatment
1	91000002	91000002-02	2	2	2	
2	91000006	91000006-02	2	2	2	
3	91000007	91000007-03	2	2	2	
4	91000008	91000008-01	2	2	2	
5	91000012	91000012-01	2	2	2	
6	91000021	91000021-01	2	2	2	
7	91000022	91000022-01	2	2	2	
8	91000024	91000024-01	2	2	2	
9	91000035	91000035-01	2	2	2	
10	91000037	91000037-01	2	2	2	
11	91000050	91000050-01	2	2	2	
12	91000054	91000054-01	2	2	2	
13	91000058	91000058-01	2	2	2	
14	91000071	91000071-02	2	2	2	
15	91000072	91000072-01	2	2	2	
16	91000078	91000078-01	2	2	2	
17	91000085	91000085-01	2	2	2	
18	91000088	91000088-01	2	2	2	
19	91000089	91000089-01	2	2	2	
20	91000091	91000091-01	2	2	2	
21	91000094	91000094-02	2	2	2	

Complex Samples Plan for Logistic Regression

Plan

File: FILE PATH AND NAME HERE

If you do not have a plan file for your complex sample, you can use the Analysis Preparation Wizard to create one. Choose Prepare for Analysis from the Complex Samples menu to access the wizard.

Joint Probabilities

Joint probabilities are required if the plan requests unequal probability WOR estimation. Otherwise, they are ignored.

Use default file (based on name of plan file)

An open dataset

hints5_cycle3_public.sav [DataSet1]

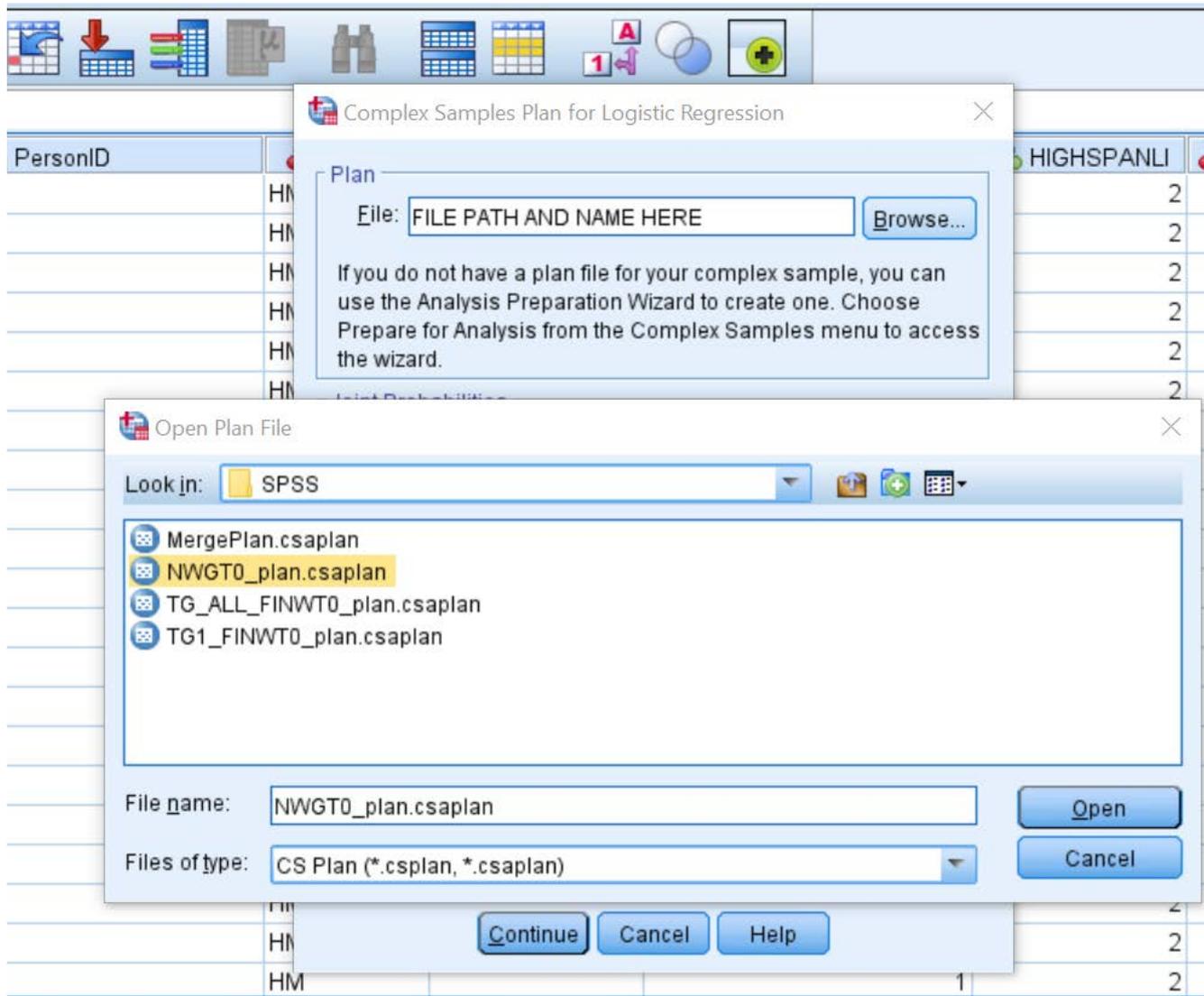
Custom file

File:

Data View Variable View

IBM SPSS Statistics Processor is ready | Unicode:ON | Weight On

Conducting Analyses to Assess for Group Differences in SPSS



The screenshot shows the SPSS interface with two dialog boxes open over a data table. The data table has columns for 'PersonID' and 'HIGHSPANLI'.

Complex Samples Plan for Logistic Regression

Plan

File:

If you do not have a plan file for your complex sample, you can use the Analysis Preparation Wizard to create one. Choose Prepare for Analysis from the Complex Samples menu to access the wizard.

Open Plan File

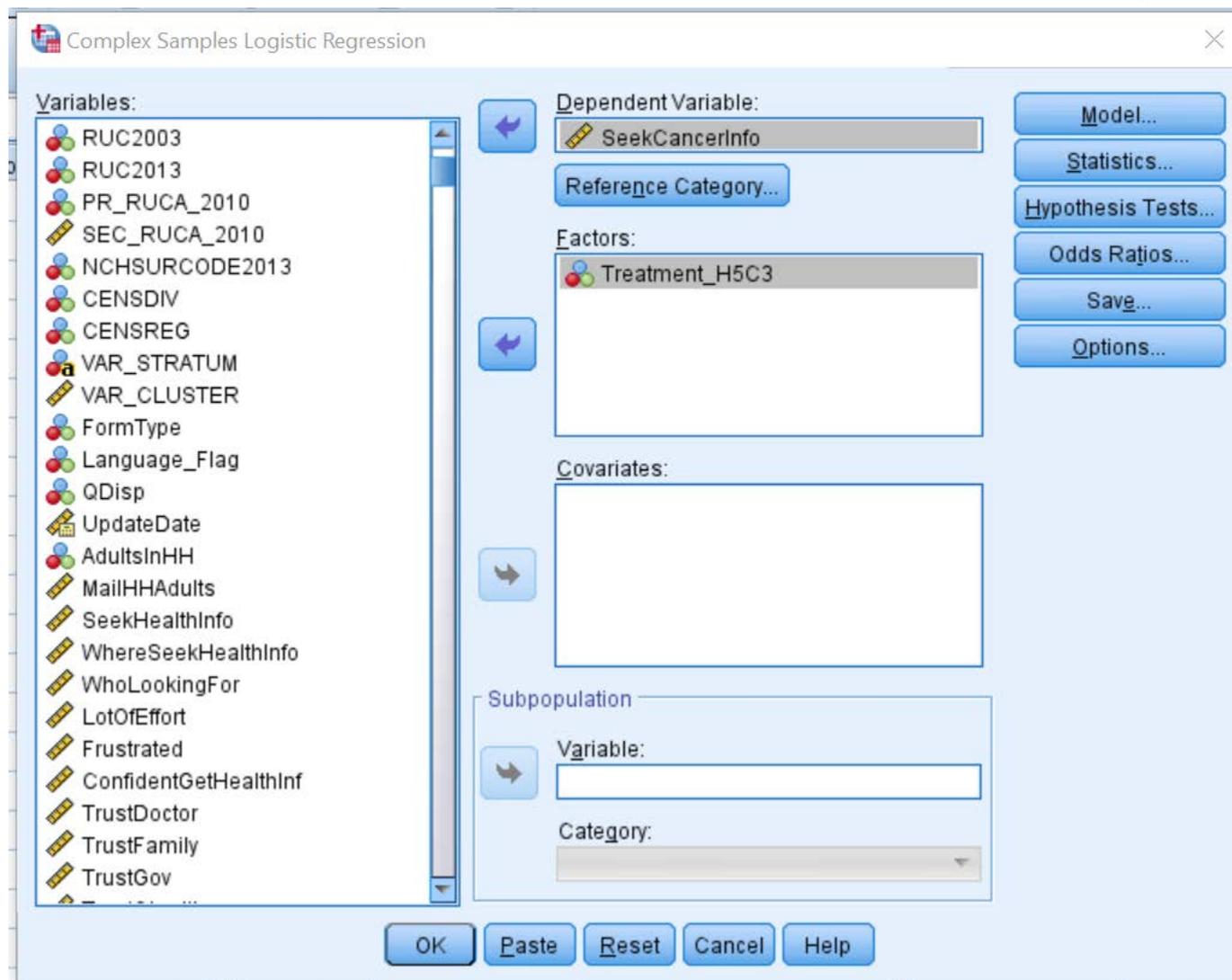
Look in:

- MergePlan.csaplan
- NWGT0_plan.csaplan
- TG_ALL_FINWT0_plan.csaplan
- TG1_FINWT0_plan.csaplan

File name:

Files of type:

Conducting Analyses to Assess for Group Differences in SPSS



Report?

Determining Weights to Use for HINTS 5 Cycle 3

Conduct Analyses to Assess for Group Differences
(NWGT weights)
Pg 8

Based on results from Web Pilot Report or your analyses, determine whether to utilize the total sample or only one group*

Only One Group

Total Sample

Using Only One Group
Without accounting for potential group differences (e.g. using the Paper Only sample)
(TC1, FINWT weights)

Were Group Differences Found?

Yes

No



Determining Weights to Use for HINTS 5 Cycle 3

Based on results
from Web Pilot
Report or your
analyses, determine
whether to utilize
the total sample or
only one group*

Only One Group

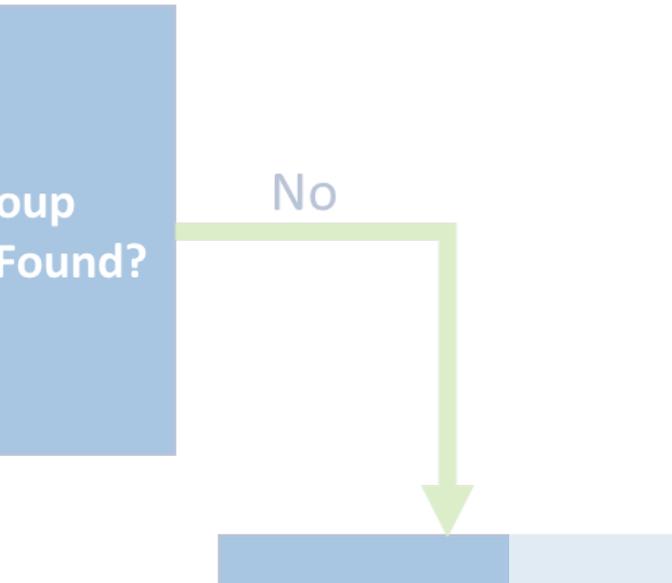
Total Sample

Using Only One Group

Without accounting for
potential group
differences (e.g. using the
Paper Only sample)
(TG1_FINWT weights)
Pg 10

Group
Found?

No



Conducting Analyses Using Only One Group

```

proc surveylogistic data=DATAFILENAME varmethod=jackknife;
  weight tgl_finwt0;
  repweights tgl_finwt1-tgl_finwt50 /df=49 jkcoefs=.98;
  *Predictor# variables in model statement are placeholders
  to substitute with your desired predictors;
  model SeekCancerInfo = predictor1 predictor2
    predictor3 predictor4...;
run;

```

Note: example code above is for the paper-only sample (“TG1”). Weight and repweight statements may be replaced with the “TG2” weights for the web option sample or “TG3” weights for the web bonus sample.

The screenshot displays the SPSS interface with two overlapping dialog boxes. The background shows a data table with columns 'sonID' and 'HIGHSPANLI'. The 'Complex Samples Plan for Logistic Regression' dialog box is open, showing a 'Plan' field with the placeholder text 'FILE PATH AND NAME HERE' and a 'Browse...' button. Below this field, a message reads: 'If you do not have a plan file for your complex sample, you can use the Analysis Preparation Wizard to create one. Choose Prepare for Analysis from the Complex Samples menu to access the wizard.' The 'Open Plan File' dialog box is also open, showing the 'Look in:' field set to 'SPSS'. A list of files is displayed, with 'TG1_FINWT0_plan.csaplan' selected. The 'File name:' field contains 'TG1_FINWT0_plan.csaplan' and the 'Files of type:' dropdown is set to 'CS Plan (*.csplan, *.csaplan)'. Buttons for 'Open', 'Cancel', 'Continue', and 'Help' are visible at the bottom of the dialog boxes.

Complex Samples Plan for Logistic Regression

Plan

File:

If you do not have a plan file for your complex sample, you can use the Analysis Preparation Wizard to create one. Choose Prepare for Analysis from the Complex Samples menu to access the wizard.

Open Plan File

Look in:

- MergePlan.csaplan
- NWGT0_plan.csaplan
- TG_ALL_FINWT0_plan.csaplan
- TG1_FINWT0_plan.csaplan**

File name:

Files of type:

Report?

Determining Weights to Use for HINTS 5 Cycle 3

Conduct Analyses to Assess for Group Differences
(NWGT weights)
Pg 8

Based on results from Web Pilot Report or your analyses, determine whether to utilize the total sample or only one group*

Only One Group

Total Sample

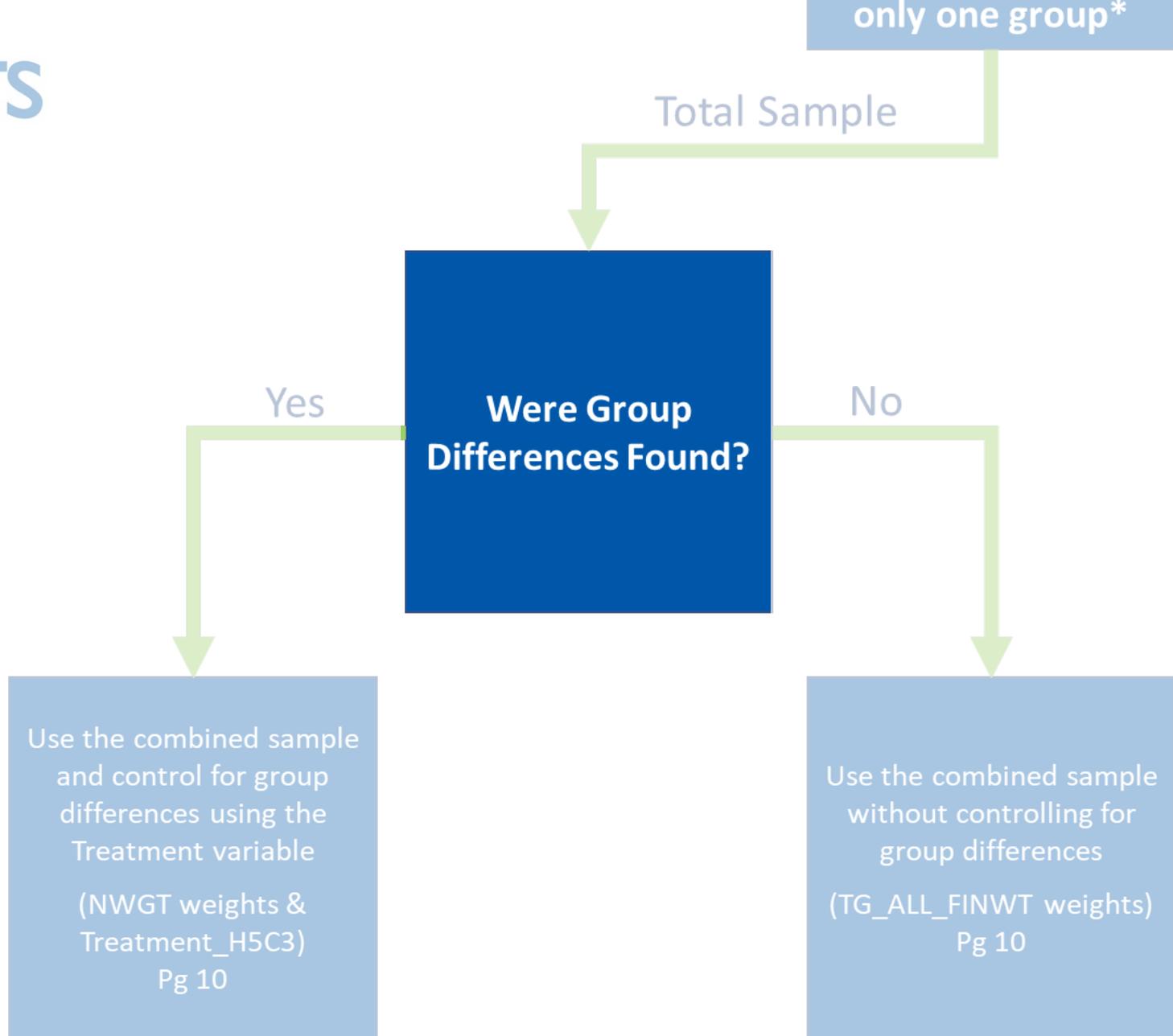
Using Only One Group
Without accounting for potential group differences (e.g. using the Paper Only sample)
(TC1, FINWT weights)

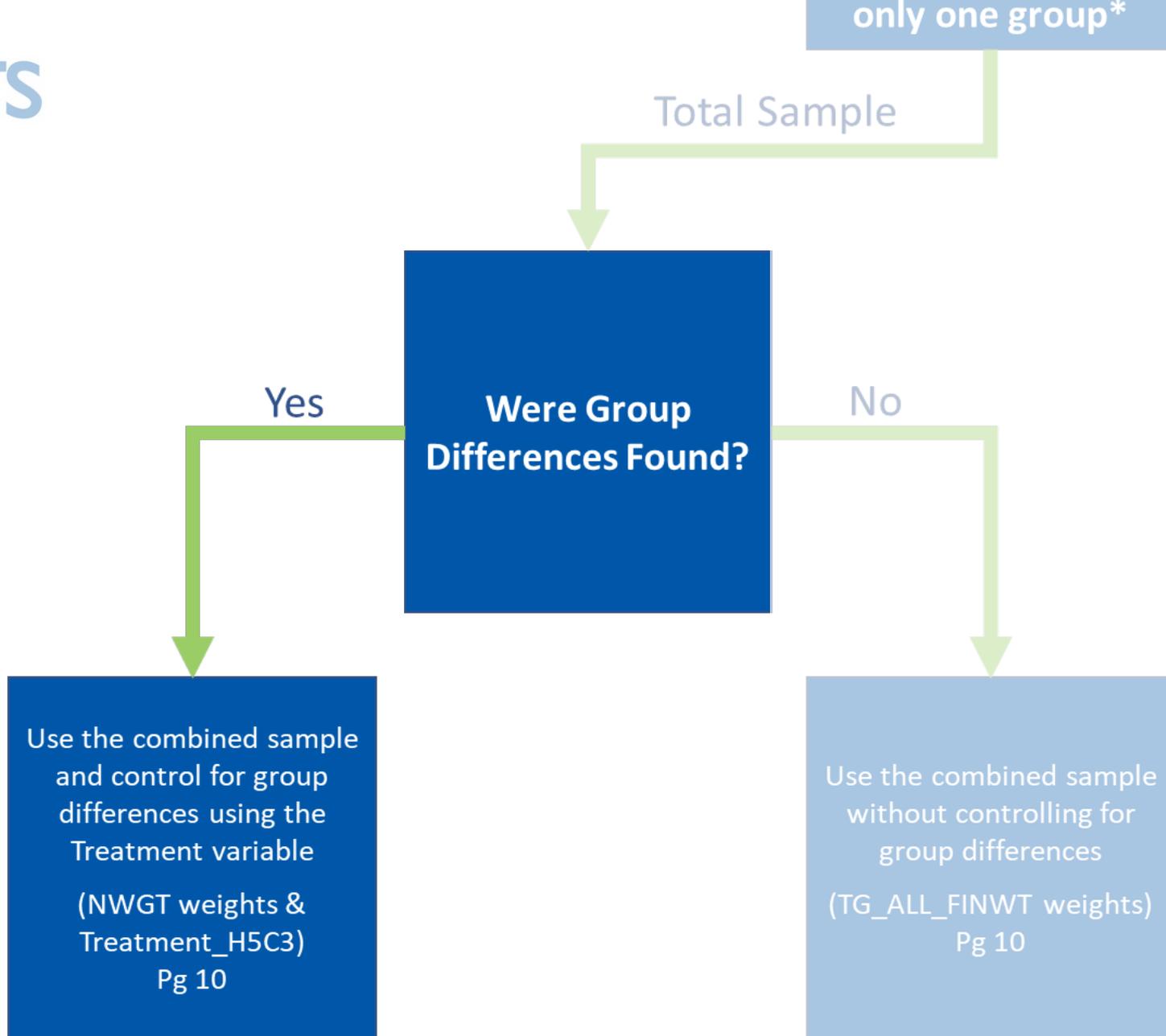
Yes

Were Group Differences Found?

No







Conducting Analyses Combined Sample, Controlling For Group Differences

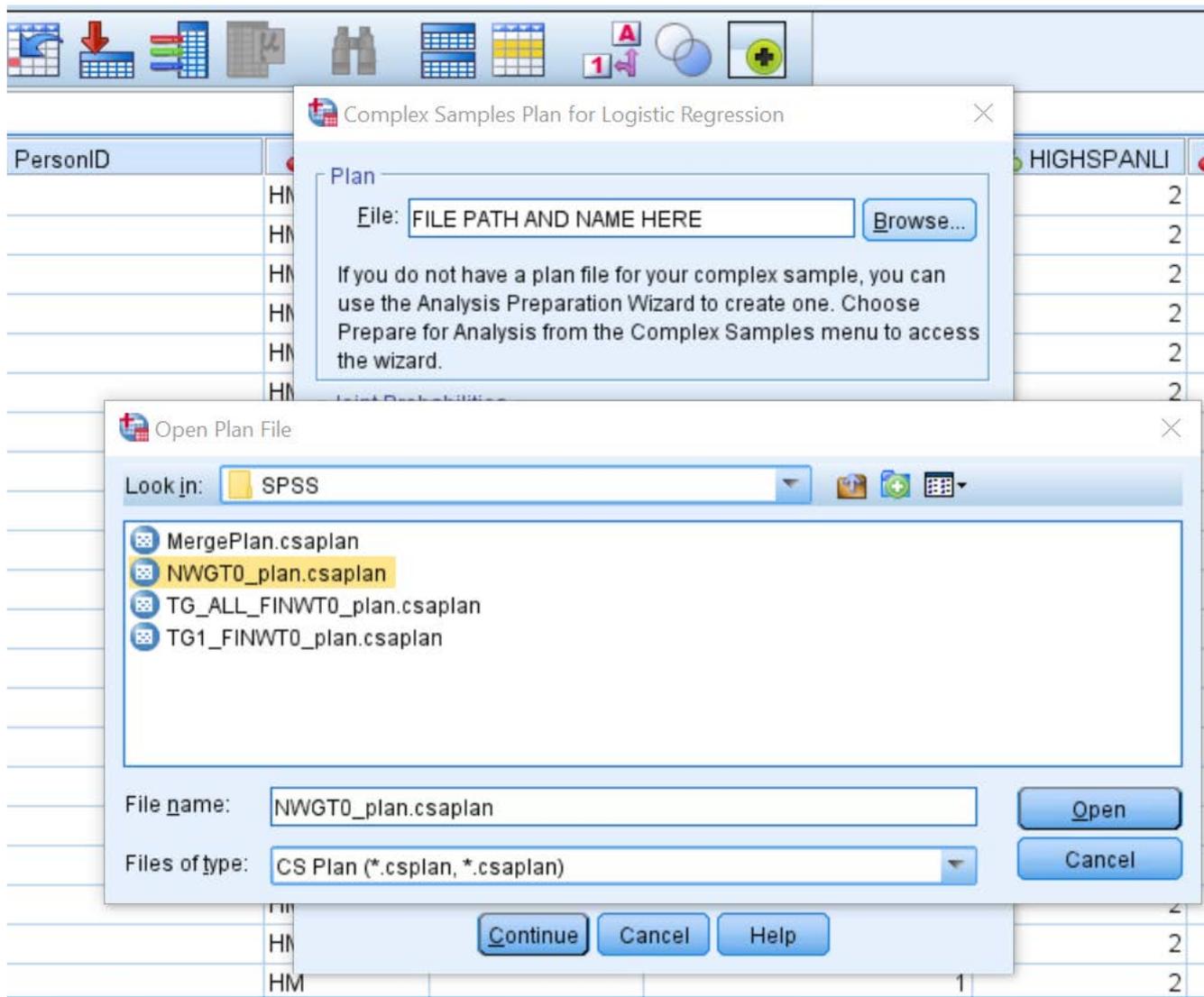
- **Logistic Regression**

```
proc surveylogistic data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  *Predictor# variables in model statement are placeholders to substitute
  with your desired predictors;
  model SeekCancerInfo = TREATMENT_H5C3 predictor1 predictor2 predictor3
  predictor4...;
run;
```

- **Linear Regression**

```
proc surveyreg data=DATAFILENAME varmethod=jackknife;
  weight nwgt0;
  repweights nwgt1-nwgt150 /df=147 jkcoefs=.98;
  *Predictor# variables in model statement are placeholders to substitute
  with your desired predictors;
  model GeneralHealth = TREATMENT_H5C3 predictor1 predictor2 predictor3
  predictor4... /solution;
run;
```

Conducting Analyses Combined Sample, Controlling For Group Differences



The screenshot shows the SPSS interface with two dialog boxes open over a data table. The data table has columns for 'PersonID', 'HIGHSPANLI', and numerical values.

Complex Samples Plan for Logistic Regression dialog box:

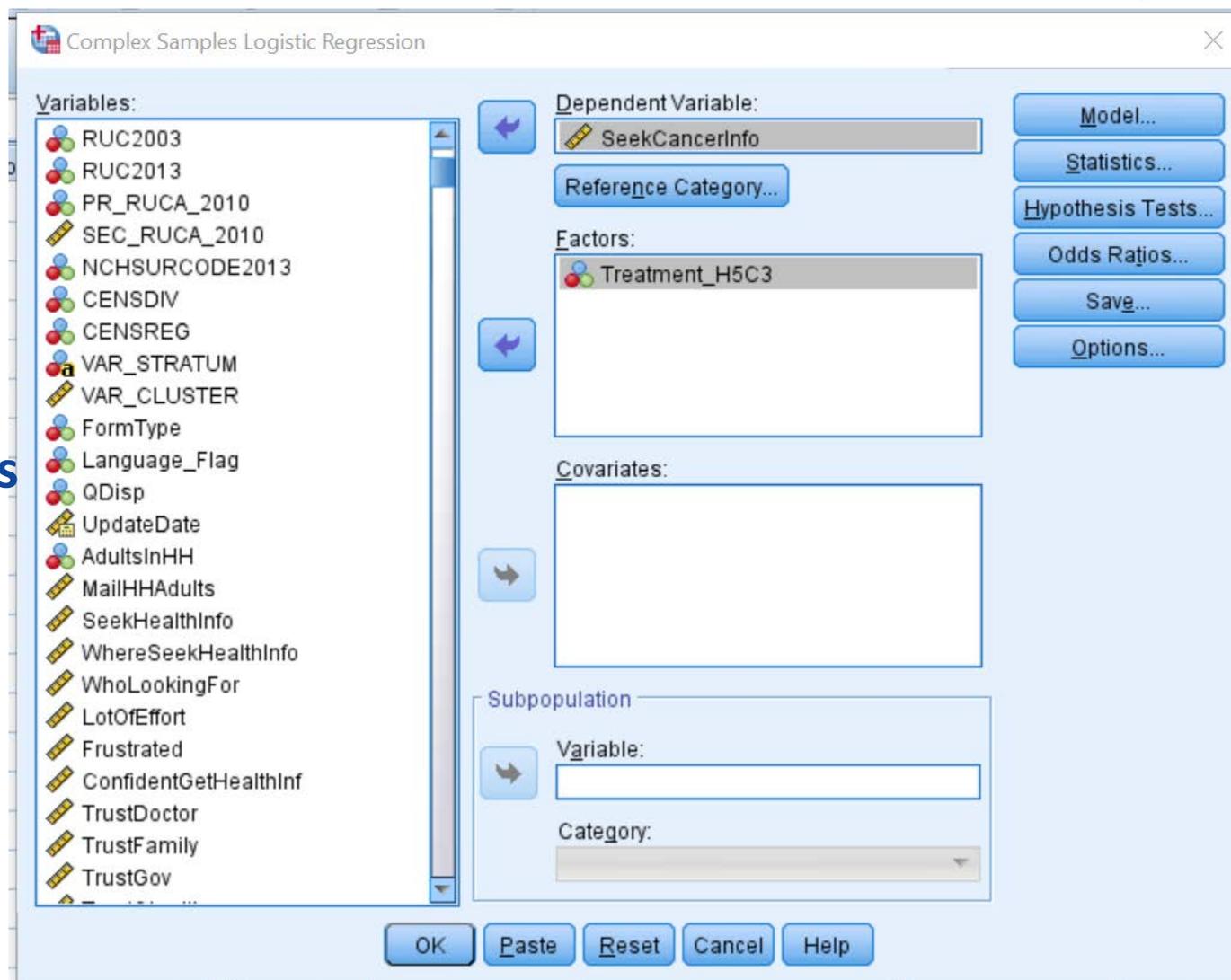
- Title: Complex Samples Plan for Logistic Regression
- Plan: FILE PATH AND NAME HERE
- Buttons: Browse...
- Text: If you do not have a plan file for your complex sample, you can use the Analysis Preparation Wizard to create one. Choose Prepare for Analysis from the Complex Samples menu to access the wizard.

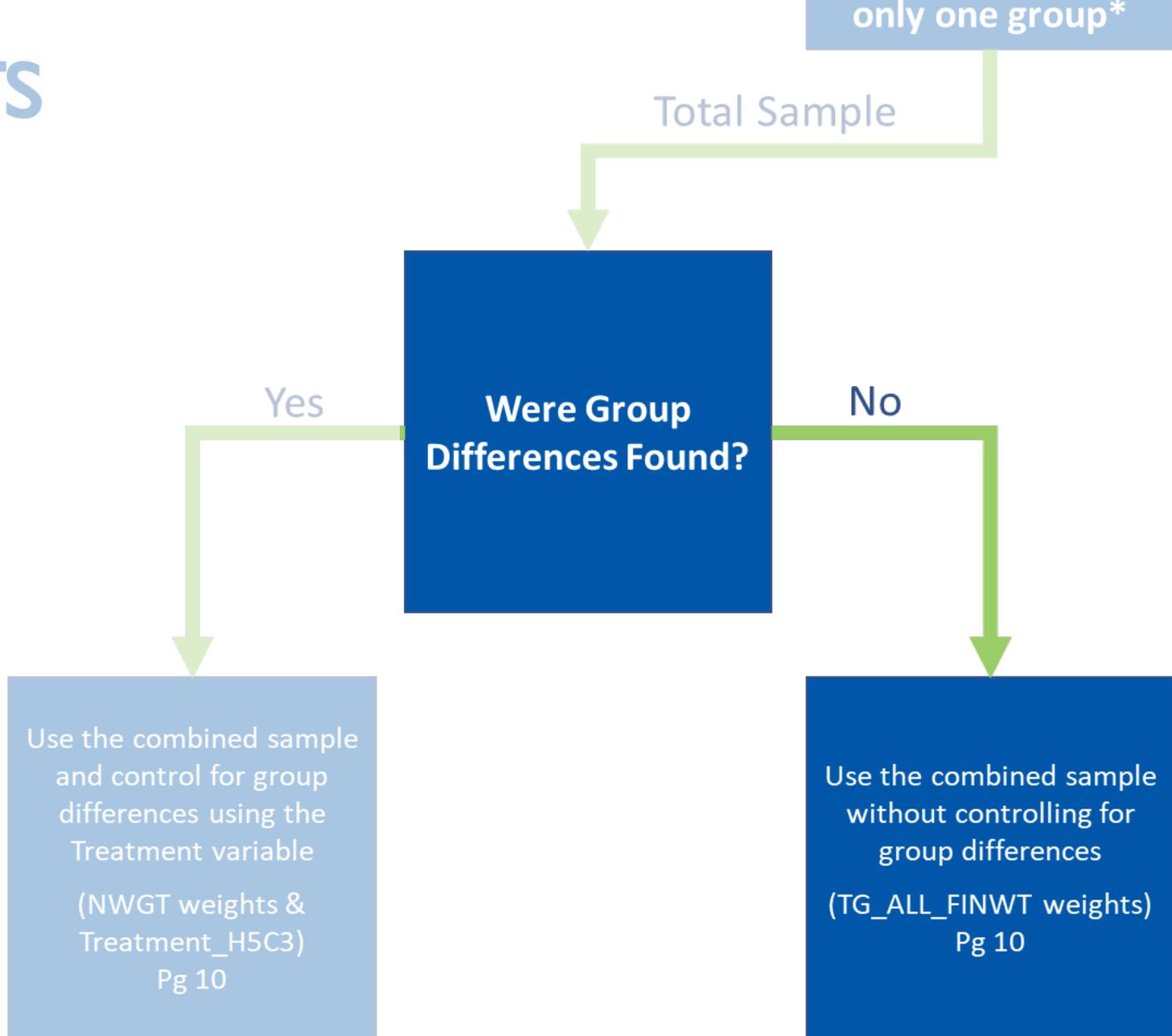
Open Plan File dialog box:

- Look in: SPSS
- Files list: MergePlan.csaplan, NWGT0_plan.csaplan, TG_ALL_FINWT0_plan.csaplan, TG1_FINWT0_plan.csaplan
- File name: NWGT0_plan.csaplan
- Files of type: CS Plan (*.csplan, *.csaplan)
- Buttons: Open, Cancel

At the bottom of the dialog boxes, there are buttons for Continue, Cancel, and Help.

Conducting Analyses Combined Sample, Controlling For Group Differences





Conducting Analyses on the Combined Sample, Without Controlling for Group Differences

If no group differences are found, it is suggested that analysts use the combined sample to increase statistical power

- **Frequency Table and Chi-Square Test**

```
proc surveyfreq data = hints5cycle3 varmethod = jackknife;
  weight TG_all_FINWT0;
  repweights TG_all_FINWT1-TG_all_FINWT50 / df = 49 jkcoefs = 0.98;
  tables edu*gender / row col wchisq;
run;
```

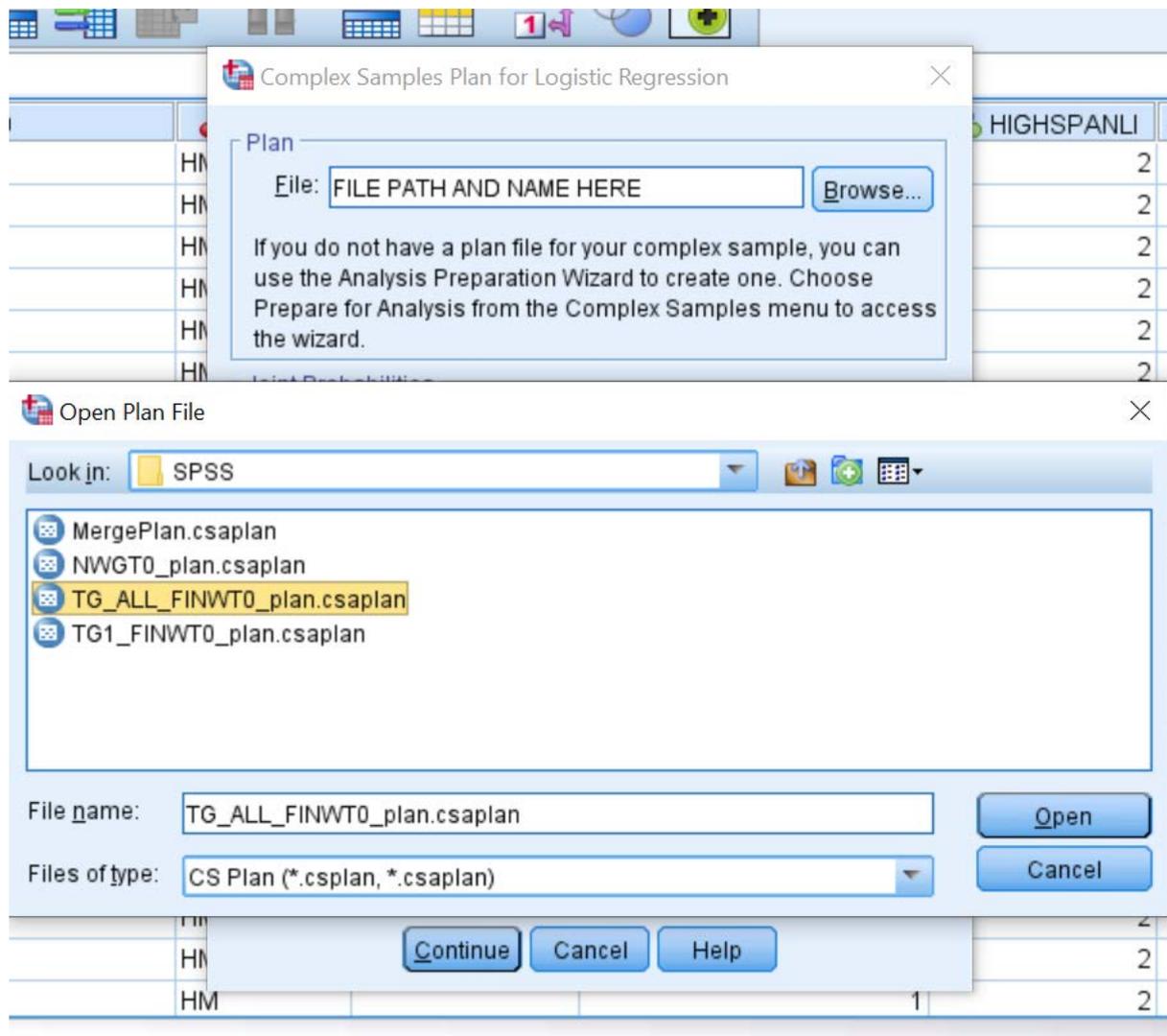
- **Logistic Regression**

```
/*Multivariable logistic regression of gender and education on SeekCancerInfo*/
proc surveylogistic data= hints5cycle3 varmethod=jackknife;
  weight TG_all_FINWT0;
  repweights TG_all_FINWT1-TG_all_FINWT50 / df=49 jkcoefs=0.98;
  class edu (ref="Less than high school")
    gender (ref="Male")/param=REF;
  model seekcancerinfo (descending) = gender edu /tech=newton xconv=1e-8 CLPARM EXPB;
run;
```

- **Linear Regression**

```
/*Multivariable linear regression of gender and education on GeneralHealth*/
proc surveyreg data= hints5cycle3 varmethod=jackknife;
  weight TG_all_FINWT0;
  repweights TG_all_FINWT1-TG_all_FINWT50 / df=49 jkcoefs=0.98;
  class edu (ref="Less than high school") gender (ref="Male");
  model generalhealth = edu gender /solution;
run;
```

Conducting Analyses on the Combined Sample, Without Controlling for Group Differences





Combining Cycles

Merging HINTS Survey Iterations

- Analysts should first assess for group differences in the HINTS 5, Cycle 3 data on variables of interest
- Sample code is created assuming there are no differences between groups in HINTS 5 Cycle 3
- If group differences are found:
 - Create a new variable in both data files that would allow the analyst to differentiate between the 4 groups (H5C2, H5C3 Paper Only, H5C3 Web Option, and H5C3 Web Bonus groups)
 - Use the Rizzo, et al., (2008) method to create 200 replicate weights



Merging HINTS Survey Iterations Using SAS

```

/*FIRST CREATE THE FORMAT FOR THE SURVEY VARIABLE*/
proc format;
  value survey
    1="HINTS 5 CYCLE 2"
    2="HINTS 5 CYCLE 3"
  ;
run;

/*****/

/*CREATE TWO SEPARATE TEMPORARY DATA FILES THAT CONTAIN THE NEW 'SURVEY'
VARIABLE.*/

/*PUT NAME OF LIBRARY WHERE HINTS 5 CYCLE 2 FORMATS ARE STORED*/;
options fmtsearch=(LibH5C2);

data tempHINTS5CYCLE2;
  /*PUT NAME OF LIBRARY AND NAME OF EXISTING HINTS 5 CYCLE 3 DATA FILE*/
  set LibH5C2.DataH5C2;

  survey=1;
  format survey survey.;

run;

/* PUT NAME OF LIBRARY WHERE HINTS 5 CYCLE 3 FORMATS ARE STORED*/
options fmtsearch=(hints5c3);

data tempHINTS5CYCLE3;
  /*PUT NAME OF LIBRARY AND NAME OF EXISTING HINTS 5 CYCLE 3 DATA FILE*/
  set hints5c3.hints5cycle3_formatted;
  survey=2;
  format survey survey.;
run;

```



Merging HINTS Survey Iterations Using SAS

```

/*FIRST CREATE THE FORMAT FOR THE SURVEY VARIABLE*/
proc format;
  value survey
    1="HINTS 5 CYCLE 2" } ← Format for new variable
    2="HINTS 5 CYCLE 3" } ← to differentiate survey
  ;                               cycle
run;

/*****/

/*CREATE TWO SEPARATE TEMPORARY DATA FILES THAT CONTAIN THE NEW 'SURVEY'
VARIABLE.*/

/*PUT NAME OF LIBRARY WHERE HINTS 5 CYCLE 2 FORMATS ARE STORED*/;
options fmtsearch=(LibH5C2);

data tempHINTS5CYCLE2;
  /*PUT NAME OF LIBRARY AND NAME OF EXISTING HINTS 5 CYCLE 3 DATA FILE*/
  set LibH5C2.DataH5C2;

  survey=1;
  format survey survey.;

run;

/* PUT NAME OF LIBRARY WHERE HINTS 5 CYCLE 3 FORMATS ARE STORED*/
options fmtsearch=(hints5c3);

data tempHINTS5CYCLE3;
  /*PUT NAME OF LIBRARY AND NAME OF EXISTING HINTS 5 CYCLE 3 DATA FILE*/
  set hints5c3.hints5cycle3_formatted;
  survey=2;
  format survey survey.;
run;

```



Merging HINTS Survey Iterations Using SAS

```

/*FIRST CREATE THE FORMAT FOR THE SURVEY VARIABLE*/
proc format;
  value survey
    1="HINTS 5 CYCLE 2" } ← Format for new variable
    2="HINTS 5 CYCLE 3" } ← to differentiate survey
  ;                               cycle
run;

/*****/

/*CREATE TWO SEPARATE TEMPORARY DATA FILES THAT CONTAIN THE NEW 'SURVEY'
VARIABLE.*/

/*PUT NAME OF LIBRARY WHERE HINTS 5 CYCLE 2 FORMATS ARE STORED*/;
options fmtsearch=(LibH5C2);

data tempHINTS5CYCLE2;
  /*PUT NAME OF LIBRARY AND NAME OF EXISTING HINTS 5 CYCLE 3 DATA FILE*/
  set LibH5C2.DataH5C2;

  survey=1;
  format survey survey.; ← Create new variable to
                               differentiate survey cycle
run;

/* PUT NAME OF LIBRARY WHERE HINTS 5 CYCLE 3 FORMATS ARE STORED*/
options fmtsearch=(hints5c3);

data tempHINTS5CYCLE3;
  /*PUT NAME OF LIBRARY AND NAME OF EXISTING HINTS 5 CYCLE 3 DATA FILE*/
  set hints5c3.hints5cycle3_formatted;
  survey=2;
  format survey survey.; ← Create new variable to
                               differentiate survey cycle
run;

```

Merging HINTS Survey Iterations Using SAS

SAS Code to Set Up Final and Replicate Weights for the Replicate Variance Estimation Method

```
/*THIS CODE MERGES THE TWO TEMPORARY DATA SETS CREATED ABOVE. IT ALSO CREATES ONE FINAL SAMPLE WEIGHT (Merged_NWGT0) AND 100 REPLICATE WEIGHTS (Merged_NWGT1 THRU Merged_NWGT100)*/
```

```
data mergeHINTS5C2_HINTS5C3;
  set tempHINTS5CYCLE2 tempHINTS5CYCLE3;
  /*Create Replicate Weights for trend tests*/
  **Replicate Weights;
  array hints52wgts [50] person_finwt1-person_finwt50;
  array hints53wgts [50] TG_all_finwt1-TG_all_finwt50;
  array Merged_NWgt [100] Merged_NWGT1-Merged_NWGT100;

  **Adjust Final And Replicate Weights;
  if survey eq 1 then do i=1 to 50; *HINTS 5 CYCLE 2;
    Merged_NWGT0=person_finwt0;
    Merged_NWgt[i]=hints52wgts[i];
    Merged_NWgt[50+i]=person_finwt0;
  end;

  else if survey eq 2 then do i=1 to 50; *HINTS 5 CYCLE 3;
    Merged_NWGT0=TG_all_finwt0;
    Merged_NWgt[i]=TG_all_finwt0;
    Merged_NWgt[50+i]=hints53wgts[i];
  end;
run;
```

Merging HINTS Survey Iterations Using SAS

SAS Code to Set Up Final and Replicate Weights for the Replicate Variance Estimation Method

```
/*THIS CODE MERGES THE TWO TEMPORARY DATA SETS CREATED ABOVE. IT ALSO CREATES ONE FINAL SAMPLE WEIGHT (Merged_NWGT0) AND 100 REPLICATE WEIGHTS (Merged_NWGT1 THRU Merged_NWGT100)*/
```

```
data mergeHINTS5C2_HINTS5C3;
```

```
set tempHINTS5CYCLE2 tempHINTS5CYCLE3;
```

```
/*Create Replicate Weights for trend tests*/
```

```
**Replicate Weights;
```

```
array hints52wgts [50] person_finwt1-person_finwt50;
```

```
array hints53wgts [50] TG_all_finwt1-TG_all_finwt50;
```

```
array Merged_NWgt [100] Merged_NWGT1-Merged_NWGT100;
```

← Create Replicate Weights

```
**Adjust Final And Replicate Weights;
```

```
if survey eq 1 then do i=1 to 50; *HINTS 5 CYCLE 2;
```

```
    Merged_NWGT0=person_finwt0;
```

```
    Merged_NWgt[i]=hints52wgts[i];
```

```
    Merged_NWgt[50+i]=person_finwt0;
```

```
end;
```

```
else if survey eq 2 then do i=1 to 50; *HINTS 5 CYCLE 3;
```

```
    Merged_NWGT0=TG_all_finwt0;
```

```
    Merged_NWgt[i]=TG_all_finwt0;
```

```
    Merged_NWgt[50+i]=hints53wgts[i];
```

```
end;
```

```
run;
```

Merging HINTS Survey Iterations Using SAS

SAS Code to Set Up Final and Replicate Weights for the Replicate Variance Estimation Method

```
/*THIS CODE MERGES THE TWO TEMPORARY DATA SETS CREATED ABOVE. IT ALSO CREATES ONE FINAL SAMPLE WEIGHT (Merged_NWGT0) AND 100 REPLICATE WEIGHTS (Merged_NWGT1 THRU Merged_NWGT100)*/
```

```
data mergeHINTS5C2_HINTS5C3;
```

```
set tempHINTS5CYCLE2 tempHINTS5CYCLE3;
```

```
/*Create Replicate Weights for trend tests*/
```

```
**Replicate Weights;
```

```
array hints52wgts [50] person_finwt1-person_finwt50;
```

```
array hints53wgts [50] TG_all_finwt1-TG_all_finwt50;
```

```
array Merged_NWgt [100] Merged_NWGT1-Merged_NWGT100;
```

← Create Replicate Weights

```
**Adjust Final And Replicate Weights;
```

```
if survey eq 1 then do i=1 to 50; *HINTS 5 CYCLE 2;
```

```
    Merged_NWGT0=person_finwt0;
```

```
    Merged_NWgt[i]=hints52wgts[i];
```

```
    Merged_NWgt[50+i]=person_finwt0;
```

← Adjust Final and Replicate Weights

```
end;
```

```
else if survey eq 2 then do i=1 to 50; *HINTS 5 CYCLE 3;
```

```
    Merged_NWGT0=TG_all_finwt0;
```

```
    Merged_NWgt[i]=TG_all_finwt0;
```

```
    Merged_NWgt[50+i]=hints53wgts[i];
```

← Adjust Final and Replicate Weights

```
end;
```

```
run;
```

Merging HINTS Survey Iterations Using SPSS

```
SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav'  
/COMPRESSED.
```

```
DATASET NAME MERGED_DATA.
```

```
DATASET ACTIVATE MERGED_DATA.
```

```
COMPUTE MERGED_FINWT0=TG_all_FINWT0.
```

```
COMPUTE Survey=2.
```

```
EXECUTE.
```

Merging HINTS Survey Iterations Using SPSS

```
SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav' ← Save as new file  
/COMPRESSED.
```

```
DATASET NAME MERGED_DATA.
```

```
DATASET ACTIVATE MERGED_DATA.
```

```
COMPUTE MERGED_FINWT0=TG_all_FINWT0.
```

```
COMPUTE Survey=2.
```

```
EXECUTE.
```

Merging HINTS Survey Iterations Using SPSS

```
SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav' ← Save as new file  
/COMPRESSED.
```

```
DATASET NAME MERGED_DATA. ← Rename Dataset
```

```
DATASET ACTIVATE MERGED_DATA.  
COMPUTE MERGED_FINWT0=TG_all_FINWT0.  
COMPUTE Survey=2.  
EXECUTE.
```

Merging HINTS Survey Iterations Using SPSS

SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav' ← Save as new file
/COMPRESSED.

DATASET NAME MERGED_DATA. ← Rename Dataset

DATASET ACTIVATE MERGED_DATA.

COMPUTE MERGED_FINWT0=TG_all_FINWT0. ← Rename Final Sample Weight

COMPUTE Survey=2.

EXECUTE.

Merging HINTS Survey Iterations Using SPSS

SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav' ← Save as new file
/COMPRESSED.

DATASET NAME MERGED_DATA. ← Rename Dataset

DATASET ACTIVATE MERGED_DATA.

COMPUTE MERGED_FINWT0=TG_all_FINWT0. ← Rename Final Sample Weight

COMPUTE Survey=2. ← Create a variable that allows
EXECUTE. us to distinguish between
participants from each cycle

Merging HINTS Survey Iterations Using SPSS

```
SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav'  
/COMPRESSED.  
DATASET NAME MERGED_DATA.
```

```
DATASET ACTIVATE MERGED_DATA.  
COMPUTE MERGED_FINWT0=TG_all_FINWT0.  
COMPUTE Survey=2.  
EXECUTE.
```

****below, you should insert the filepath for your HINTS 5 Cycle 2 data**.**

```
GET  
FILE='H:\HINTS\5 Cycle 2\HINTS-5_Cycle2_SPSS\hints5_cycle2_public.sav'.  
ALTER TYPE ALL(A=AMIN).  
DATASET NAME H5C2 WINDOW=FRONT.  
COMPUTE MERGED_FINWT0=Person_FINWT0.  
COMPUTE Survey=1.  
EXECUTE.
```



Merging HINTS Survey Iterations Using SPSS

```
SAVE OUTFILE='H:\HINTS\5 Cycle 3\SPSS\MERGED_H5C3_H5C2.sav'
/COMPRESSED.
DATASET NAME MERGED_DATA.
```

```
DATASET ACTIVATE MERGED_DATA.
COMPUTE MERGED_FINWT0=TG_all_FINWT0.
COMPUTE Survey=2.
EXECUTE.
```

****below, you should insert the filepath for your HINTS 5 Cycle 2 data**.**

```
GET
FILE='H:\HINTS\5 Cycle 2\HINTS-5_Cycle2_SPSS\hints5_cycle2_public.sav'.
ALTER TYPE ALL(A=AMIN).
DATASET NAME H5C2 WINDOW=FRONT.
COMPUTE MERGED_FINWT0=Person_FINWT0.
COMPUTE Survey=1.
EXECUTE.
```

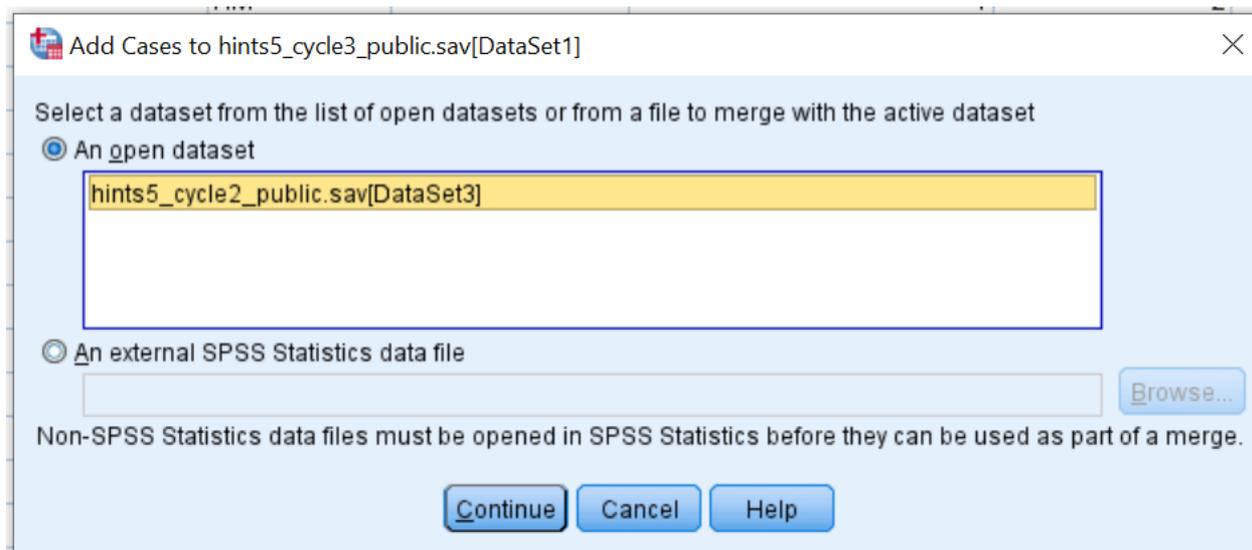
← Open other cycle data

← Rename Dataset

← Rename Final Sample Weight

← Create a variable that allows us to distinguish between participants from each cycle

Merging HINTS Survey Iterations Using SPSS



For More Information



OVERVIEW OF THE HINTS 5 CYCLE 3 SURVEY AND DATA ANALYSIS RECOMMENDATIONS

January 2020



Questions?



Back Pocket Slides

SAS Taylor Linearization

- Frequencies and Chi Square, Combined Sample (No Differences Found)

```

proc surveyfreq data = hints5cycle3
  varmethod = TAYLOR;
  strata VAR_STRATUM;
  cluster VAR_CLUSTER;
  weight TG_all_finwt0;
  tables edu*gender / row col wchisq;
run;

```

Variance Estimation Method

Strata and Cluster

Final Sample Weight

Questions?