# 分析指南：
# 使用华盛顿小组简易功能问题集-增强版（**WG-SS增强版**）
# SAS语法创建残疾标识符

## 导言

华盛顿小组简易功能问题集-增强版（WG-SS增强版）SAS语法是从为华盛顿小组详细功能问题集（WG-ES）开发的语法中提取的。

WG-SS增强版的残疾识别基于纳入程度，即至少一个领域/问题编码为"非常困难"或"完全无法做到"，或者在焦虑或抑郁领域，为四分量表上最大程度的困难。

WG-SS增强版包括WG-SS加上"上半身机能"、"焦虑"和"抑郁"这三个领域：共计9个功能领域12个问题。

注：在进行数据分析时，使用标准的权重和估算技术。

SAS语法基于下表所示的*变量标签*。完整的WG-SS增强版模块包含的问题多于此表中显示的问题。残疾状况是通过在没有使用辅助技术或其他协助的情况下，从事基本的、普遍的活动时出现的困难程度来确定的。关于使用药物治疗焦虑或抑郁症状的问题不包括在用于语法的分析变量中。

只有以下这些问题/变量用于确定残疾标识符。
**确保您使用的是相同的*变量标签*，或者修改SAS语法以反映在数据库中使用的*变量标签*。**

WG-SS作为美国国民健康访谈调查(NHIS)的一部分实施。用于编制这些指南的数据来自2013年的NHIS。

> **《华盛顿小组实施文件》**涵盖了华盛顿残疾统计小组(WG)开发的、用来在人口普查和调查中收集国际可比的残疾数据的多款工具。实施文件介绍了实施简易问题集、详细问题集、简易问题集-增强版、华盛顿小组/儿基会儿童功能模块（2-4岁和5-17岁）、华盛顿小组/国际劳工组织（ILO）劳动力调查残疾模块，以及其他华盛顿小组工具的最佳实践。主题包括翻译、问题规范、分析指南、用于分析的编程代码、分类工具的使用等等。
>
> 如需查找其他《华盛顿小组实施文件》和更多信息，请访问华盛顿小组网站：
> http://www.washingtongroup-disability.com/。

| 华盛顿小组详细问题集中的问题/领域 | 变量标签 | 回答模式 |
|---|---|---|
| 视力 | | |
| **1.即使戴着眼镜，您是否也难以看清楚？** | VIS_SS | 1 |
| 沟通 | | |
| **2.您是否难以使用日常语言和他人沟通，如理解他人或被他人理解？** | COM_SS | 1 |
| 听力 | | |
| **3.即使使用助听器，您是否也难以听清楚？** | HEAR_SS | 1 |
| 认知 | | |
| **4.您是否难以记住东西或集中注意力？** | COG_SS | 1 |
| 自理/上半身 | | |
| **5.您是否难以自理生活，例如清洗全身或穿衣？** | SC_SS | 1 |
| **6.难以将一瓶2升的水从腰部举到齐眼高度？** | UB_1 | 1 |
| **7.使用手和手指的困难程度** | UB_2 | 1 |
| 活动度 | | |
| **8.您是否难以正常行走或上下阶梯？** | MOB_SS | 1 |
| 情感（焦虑） | | |
| **9.多久会出现感觉到担忧、紧张或焦虑的情况？** | ANX_1 | 2 |
| **10.上一次感到担忧、紧张或焦虑时的感受程度？** | ANX_3 | 3 |
| 情感（抑郁） | | |
| **11.您多久会出现感觉到抑郁的情况？** | DEP_1 | 2 |
| **12.上一次您感到抑郁时，您感觉到有多抑郁？** | DEP_3 | 3 |

注： 红色代表华盛顿小组简易问题集(**WG-SS**)。
绿色代表华盛顿小组详细问题集(**WG-ES**)。
红色加绿色的问题包括在华盛顿小组简易问题集-增强版（**WG-SS增强版**）中。

如需详细了解华盛顿残疾统计小组的信息，请访问：
http://www.washingtongroup-disability.com/。

回答模式：

|   | 模式1 | 模式2 | 模式3<sup>*</sup> |
|---|---|---|---|
| 1 | 没有困难 | 每天都有 | 有点 |
| 2 | 是，有点困难 | 每周都有 | 显著 |
| 3 | 是，非常困难 | 每月都有 | 介于有点和显著之间 |
| 4 | 完全无法做到 | 一年几次 | |
| 5 | | 从未有过 | |
| 6 | | | |
| 7 | 拒绝回答 | 拒绝回答 | |
| 8 | 不确定 | 不确定 | |
| 9 | 不知道 | 不知道 | |

**\*在下面的语法中，请注意回答模式为6（ANX_3和DEP_3）的题目被重新编码，以便将"介于"的数值放置在"有点"和"显著"之间。**

下面介绍的SAS语法包括一些WG-SS增强版内容特有的元素。

首先，为包括多个问题（上半身机能、焦虑和抑郁）的功能领域确定特定领域单一标识符是很重要的。举个例子，上半身机能包括两个问题，每个问题都引出了具体而独特的动作：将一瓶水从腰部举到齐眼高度（手臂/肩膀）的困难程度，以及使用手和手指的困难程度。对这两个问题进行分析和组合后，产生一个上半身指标，困难程度分为4级，从"1 - 困难程度低"到"4 - 困难程度高"——这与对单个WG-SS问题的分类回答没有什么不同：没有困难、有点困难、非常困难、完全无法做到。与上半身领域一样，其他WG-SS增强版领域"焦虑和抑郁"有不同的回答模式，不易"转化"为通常的华盛顿小组回答模式。对于这些功能领域，编制了一个相似的4分量表回答模式，并标注为1级到4级，1级表示困难程度最低，而4级表示困难程度最高。

其次，对各个领域指标进行评估，以确定纳入总体残疾标识符的适当分界点——以便根据残疾状况估计发生率和对结果指标进行分类。

## 注：
对于所有变量，代码(7)*"拒绝回答"*，(8)*"不确定"*，以及(9)*"不知道"*，被重新编码为***"缺失"***。

## **SAS WG-SS Enhanced Syntax Annotated with Output Tables**

Actual SAS syntax is indented and are in **Bold** text.

NOTE: For data analysis, use your standard weighting and estimation techniques.

The syntax below produces **frequency distributions** on individual domain questions – **cross-tabulations** on multiple domain questions, and calculates INDICATOR variables for domains with multiple questions – for use in the determination of disability identifiers.

*Step 1: Generate frequency distributions on each of the six domain variables*.

VIS_SS is the WG-SS **Vision** question.

> **If** VIS_SS in (**1**, **2**, **3**, **4**) **then** Vision=VIS_SS;
> **Else If** VIS_SS in (**7**, **8**, **9**) **then** Vision=**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** Vision;
> **Run**;

NOTE: `EH.SS_Enhanced13` is the name of the SAS file used for these analyses. When preparing your SAS code, replace this SAS file with the name of your SAS file.

### <span style="color:red">Vision</span>: Degree of difficulty seeing

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 13690 | 79.0 | 81.6 | 81.6 |
| | Some difficulty | 2708 | 15.6 | 16.2 | 97.8 |
| | **A lot of difficulty** | **333** | **1.9** | **2.0** | **99.8** |
| | **Cannot do at all** | **36** | **.2** | **.2** | **100.0** |
| | Total | 16767 | 96.8 | 100.0 | |
| Missing | | 559 | 3.2 | | |
| Total | | 17326 | 100.0 | | |

HEAR_SS is the WG-SS **Hearing** question.

> **If** HEAR_SS in (**1**, **2**, **3**, **4**) **then** Hearing =HEAR_SS;
> **Else If** HEAR_SS in (**7**, **8**, **9**    ) **then** Hearing =**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** Hearing;
> **Run**;

**Hearing: Degree of difficulty hearing**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 13680 | 79.0 | 81.6 | 81.6 |
| | Some difficulty | 2753 | 15.9 | 16.4 | 98.0 |
| | **A lot of difficulty** | **310** | **1.8** | **1.8** | **99.9** |
| | **Cannot do at all** | **23** | **.1** | **.1** | **100.0** |
| | Total | 16766 | 96.8 | 100.0 | |
| Missing | | 560 | 3.2 | | |
| Total | | 17326 | 100.0 | | |

MOB_SS is the WG-SS **Mobility** question.

> **If** MOB_SS in (**1**, **2**, **3**, **4**) **then** Mobility=MOB_SS;
> **Else If** MOB_SS in (**7**, **8**, **9**   ) **then** Mobility=**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** Mobility;
> **Run**;

**Mobility: Degree of difficulty walking or climbing steps**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 13424 | 77.5 | 80.1 | 80.1 |
| | Some difficulty | 2165 | 12.5 | 12.9 | 93.0 |
| | **A lot of difficulty** | **792** | **4.6** | **4.7** | **97.7** |
| | **Cannot do at all** | **380** | **2.2** | **2.3** | **100.0** |
| | Total | 16761 | 96.7 | 100.0 | |
| Missing | | 565 | 3.3 | | |
| Total | | 17326 | 100.0 | | |

COM_SS is the WG-SS **Communication** question.

> **If** COM_SS in (**1**, **2**, **3**,**4**) **then** Communication =COM_SS;
> **Else If** COM_SS in (**7**, **8**, **9** ) **then** Communication =**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** Communication;
> **Run**;

**Communication: Degree of difficulty communicating using usual language**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 15874 | 91.6 | 94.7 | 94.7 |
| | Some difficulty | 745 | 4.3 | 4.4 | 99.2 |
| | **A lot of difficulty** | **94** | **.5** | **.6** | **99.7** |
| | **Cannot do at all** | **43** | **.2** | **.3** | **100.0** |
| | Total | 16756 | 96.7 | 100.0 | |
| Missing | | 570 | 3.3 | | |
| Total | | 17326 | 100.0 | | |

SC_SS is the WG-SS **Self-care** question.

> **If** SC_SS in (**1**, **2**, **3**, **4**) **then** Self_Care=SC_SS;
> **Else If** SC_SS in (**7**, **8**, **9** ) **then** Self_Care=**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** Self_Care;
> **Run**;

**Self_Care: Degree of difficulty with self-care**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 16029 | 92.5 | 95.7 | 95.7 |
| | Some difficulty | 544 | 3.1 | 3.2 | 98.9 |
| | **A lot of difficulty** | **114** | **.7** | **.7** | **99.6** |
| | **Cannot do at all** | **68** | **.4** | **.4** | **100.0** |
| | Total | 16755 | 96.7 | 100.0 | |
| Missing | | 571 | 3.3 | | |
| Total | | 17326 | 100.0 | | |

COG_SS is the WG-SS **Cognition** question.

> **If** COG_SS in (**1**, **2**, **3**, **4**) **then** Cognition=COG_SS;
> **Else If** COG_SS in (**7**, **8**, **9** ) **then** Cognition=**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** Cognition;
> **Run**;

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http://www.washingtongroup-disability.com/。

### **Cognition**: Degree of difficulty remembering or concentrating

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 13719 | 79.2 | 81.9 | 81.9 |
| | Some difficulty | 2632 | 15.2 | 15.7 | 97.6 |
| | **A lot of difficulty** | **382** | **2.2** | **2.3** | **99.9** |
| | **Cannot do at all** | **20** | **.1** | **.1** | **100.0** |
| | Total | 16753 | 96.7 | 100.0 | |
| Missing | | 573 | 3.3 | | |
| Total | | 17326 | 100.0 | | |

## UPPER BODY

*Step 2. Generate frequency distributions and cross-tabulations for Upper body domain questions and determine the Upper Body Indicator.*

UB_1 is *Difficulty raising 2 liter bottle of water from waist to eye level.*
UB_2 is *Difficulty using hands and fingers*

> **If** UB_1 in (**1**, **2**, **3**, **4**) **then** UB_1_R=UB_1;
> **Else If** UB_1 in (**7**, **8**, **9**) **then** UB_1_R=**.**;
>
> **If** UB_2 in (**1**, **2**, **3**, **4**) **then** UB_2_R=UB_2;
> **Else If** UB_2 in (**7**, **8**, **9**) **then** UB_2_R=**.**;

First, calculate frequency distributions on the two extended set questions.

> **Proc Freq Data**= EH.SS_Enhanced13;
> **Tables** UB_1_R UB_2_R;
> **Run**;

### **UB_1_R: Diff raising 2 liter bottle of water from waist to eye level**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 15677 | 90.5 | 93.6 | 93.6 |
| | Some difficulty | 743 | 4.3 | 4.4 | 98.0 |
| | A lot of difficulty | 167 | 1.0 | 1.0 | 99.0 |
| | Cannot do at all | 166 | 1.0 | 1.0 | 100.0 |
| | Total | 16753 | 96.7 | 100.0 | |
| Missing | | 573 | 3.3 | | |
| Total | | 17326 | 100.0 | | |

**UB_2_R: Degree of difficulty using hands and fingers**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | No difficulty | 15199 | 87.7 | 90.7 | 90.7 |
|  | Some difficulty | 1229 | 7.1 | 7.3 | 98.1 |
|  | A lot of difficulty | 255 | 1.5 | 1.5 | 99.6 |
|  | Cannot do at all | 70 | .4 | .4 | 100.0 |
|  | Total | 16753 | 96.7 | 100.0 |  |
| Missing |  | 573 | 3.3 |  |  |
| Total |  | 17326 | 100.0 |  |  |

*Step 3. Generate a cross-tabulation of the two Upper body Extended Set questions: UB_2_R and UB_1_R.*

The syntax below produces a cross-tabulation of the two Extended Set questions: UB_1_R: *Difficulty raising a 2 liter bottle of water from waste to eye level* UB_2_R: *Difficulty using hands and fingers* to determine a single UPPER BODY INDICATOR (UB_INDICATOR).

> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** UB_2_R*UB_1_R /**NOROW NOCOL NOPERCENT**;
> **Run**;

| UB_2_R: Difficulty using hands and fingers | | UB_1_R: Diff raising 2 liter bottle of water from waist to eye level | | | | |
|---|---|---|---|---|---|---|
|  |  | No difficulty | Some difficulty | A lot of difficulty | Cannot do at all | Total |
| Degree of difficulty using hands and fingers | No difficulty | 14786 | 309 | 58 | 44 | 15197 |
|  | Some difficulty | 782 | 355 | 51 | 40 | 1228 |
|  | A lot of difficulty | 98 | 73 | 51 | 33 | 255 |
|  | Cannot do at all | 9 | 5 | 7 | 49 | 70 |
| Total |  | 15675 | 742 | 167 | 166 | 16750 |

*Step 4. Create an UPPER BODY INDICATOR (UB_INDICATOR) based on the two additional upper body questions UB_2_R and UB_3_R.*

Syntax below creates UB_INDICATOR based on the distribution in the cross-tabulation above.
> **If** (UB_1_R = **4** OR UB_2_R = **4**) **then** UB_INDICATOR = **4**;
> **Else If** UB_INDICATOR NE **4** AND (UB_1_R = **3** OR UB_2_R = **3**)
>     **then** UB_INDICATOR = **3**;
> **Else If** UB_INDICATOR NE **4** AND UB_INDICATOR NE **3** AND (UB_1_R = **2** OR UB_2_R = **2**)     **then** UB_INDICATOR = **2**;
> **Else If** UB_INDICATOR NE **4** AND UB_INDICATOR NE **3** AND UB_INDICATOR NE **2** AND (UB_1_R = **1** OR UB_2_R = **1**) then UB_INDICATOR = **1.**;

```
Proc Freq Data=EH.SS_Enhanced13;
Tables UB_INDICATOR；
Run;
```

**UB_INDICATOR**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | **1.00** | 14790 | 85.4 | 88.3 | 88.3 |
| | **2.00** | 1448 | 8.4 | 8.6 | 96.9 |
| | **3.00** | 331 | 1.9 | 2.0 | 98.9 |
| | **4.00** | 187 | 1.1 | 1.1 | 100.0 |
| | Total | 16756 | 96.7 | 100.0 | |
| Missing | | 570 | 3.3 | | |
| Total | | 17326 | 100.0 | | |

## ANXIETY

*Step 5.Generate frequency distribution on ANX_1.*

First, calculate frequency distributions on ANX_1: *How often do you feel worried, nervous or anxious*?
```
If ANX_1 in (1, 2, 3, 4, 5) then ANX_1_R=ANX_1;
Else If ANX_1 in (7, 8, 9) then ANX_1_R=.;

Proc Freq Data=EH.SS_Enhanced13;
Tables ANX_1_R；
Run;
```

**ANX_1_R: How often feel worried, nervous, or anxious?**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Daily | 1632 | 9.4 | 9.8 | 9.8 |
| | Weekly | 1872 | 10.8 | 11.2 | 21.0 |
| | Monthly | 1558 | 9.0 | 9.3 | 30.4 |
| | A few times a year | 4898 | 28.3 | 29.4 | 59.7 |
| | Never | 6714 | 38.8 | 40.3 | 100.0 |
| | Total | 16674 | 96.2 | 100.0 | |
| Missing | | 652 | 3.8 | | |
| Total | | 17326 | 100.0 | | |

*Step 6. The syntax below recodes ANX_3 into ANX_3Y*
*1) to create a NOT ASKED category based on those who responded NEVER to ANX_1_R and*
*2) to place "SOMEWHERE BETWEEN" numerically in-between "A LITTLE" and "A LOT".*

```
If ANX_3 =1 then ANX_3Y=1;
Else If ANX_3 =2 then ANX_3Y=3;
Else If ANX_3 =3 then ANX_3Y=2;
Else If ANX_3 in (7, 8, 9) then ANX_3Y=.;
```

*Recode ANX_3Y to 0 (not asked) If ANX_1 is 5 (Never).*

```
If ANX_1 =5 then ANX_3Y=0;

Proc Freq Data=EH.SS_Enhanced13;
Tables ANX_3Y;
Run;
```

**ANX_3Y: Level of feelings last time felt worried/nervous/anxious**

|  |  | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Not asked | 6714 | 38.8 | 40.3 | 40.3 |
|  | A little | 5700 | 32.9 | 34.2 | 74.5 |
|  | In between a little and a lot | 3076 | 17.8 | 18.5 | 92.9 |
|  | A lot | 1176 | 6.8 | 7.1 | 100.0 |
|  | Total | 16666 | 96.2 | 100.0 |  |
| Missing |  | 660 | 3.8 |  |  |
| Total |  | 17326 | 100.0 |  |  |

*Step 7. Generate a cross-tabulation of the anxiety Extended Set questions: ANX_1_R and ANX_3Y.*

The syntax below produces a cross-tabulation of ANX_1_R: *How often you felt worried, nervous or anxious* (a measure of frequency) and ANX_3Y: *The level of those feeling the last time you felt worried, nervous or anxious* (a measure of intensity) – used to determine a single ANXIETY INDICATOR (ANX_INDICATOR).

```
Proc Freq Data=EH.SS_Enhanced13;
Tables ANX_3Y*ANX_1_R/NOROW NOCOL NOPERCENT;
Run;
```

| ANX_3Y: Level of feelings last time felt worried, nervous or anxious | ANX_1_R: How often feel worried, nervous or anxious? | | | | | |
|---|---|---|---|---|---|---|
|  | Daily | Weekly | Monthly | A Few Times A Year | Never | Total |
| Not asked | 0 | 0 | 0 | 0 | 6714 | 6714 |
| A little | 489 | 887 | 897 | 3417 | 0 | 5690 |
| In between a little and a lot | 589 | 725 | 535 | 1221 | 0 | 3070 |
| A lot | 548 | 256 | 123 | 248 | 0 | 1175 |
| Total | 1626 | 1868 | 1555 | 4886 | 6714 | 16649 |

*Step 8. Create an ANXIETY INDICATOR (ANX_INDICATOR) based on the two anxiety questions ANX_1_R and ANX_3Y.*

Syntax below creates ANX_INDICATOR based on the distribution in the cross-tabulation above.

> **If** (missing(ANX_1_R) OR missing(ANX_3Y)) **then** ANX_INDICATOR=**.**;
> **Else If** ( ANX_3Y le **4** AND (ANX_1_R = **4** OR ANX_1_R = **5**)) **then** ANX_INDICATOR=**1**;
> **Else If** ((ANX_1_R = **3**) OR (ANX_1_R LT **3** AND ANX_3Y=**1**) OR
> (ANX_1_R = **2** AND ANX_3Y = **2**)) **then** ANX_INDICATOR = **2**;
> **Else If** ((ANX_1_R = **1** AND ANX_3Y = **2**) OR (ANX_1_R = **2** AND ANX_3Y = **3**))
> **then** ANX_INDICATOR = **3**;
> **Else If** ( ANX_1_R = **1** AND ANX_3Y = **3**) **then** ANX_INDICATOR = **4**;
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** ANX_INDICATOR；
> **Run**;

### ANX_INDICATOR

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | **1.00** | 11600 | 67.0 | 69.7 | 69.7 |
| | **2.00** | 3656 | 21.1 | 22.0 | 91.6 |
| | **3.00** | 845 | 4.9 | 5.1 | 96.7 |
| | **4.00** | 548 | 3.2 | 3.3 | 100.0 |
| | Total | 16649 | 96.1 | 100.0 | |
| Missing | | 677 | 3.9 | | |
| Total | | 17326 | 100.0 | | |

## DEPRESSION

*Step 9. Generate frequency distribution on DEP_1.*
First, calculate frequency distributions on DEP_1: *How often do you feel depressed*?

> **If** DEP_1 in (**1**, **2**, **3**, **4**, **5**) **then** DEP_1_R=DEP_1;
> **Else If** DEP_1 in (**7**, **8**, **9**) **then** DEP_1_R=**.**;
> **Else** DEP_1_R=**.**;
>
> **Proc Freq Data**=EH.SS_Enhanced13;
> **Tables** DEP_1_R；
> **Run**;

**DEP_1_R: How often do you feel depressed?**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Daily | 756 | 4.4 | 4.5 | 4.5 |
| | Weekly | 926 | 5.3 | 5.6 | 10.1 |
| | Monthly | 1038 | 6.0 | 6.2 | 16.3 |
| | A few times a year | 4012 | 23.2 | 24.1 | 40.4 |
| | Never | 9929 | 57.3 | 59.6 | 100.0 |
| | Total | 16661 | 96.2 | 100.0 | |
| Missing | | 665 | 3.8 | | |
| Total | | 17326 | 100.0 | | |

*Step 10. The syntax below recodes DEP_3 into DEP_3Y to place "SOMEWHERE BETWEEN" numerically in-between "A LITTLE" and "A LOT". It also creates the category NOT ASKED, if DEP_1 is NEVER (1)*

**If** DEP_3 =**1 then** DEP_3Y=**1**;
**Else If** DEP_3=**2 then** DEP_3Y=**3**;
**Else If** DEP_3=**3 then** DEP_3Y=**2**;
**Else If** DEP_3 in (**7**,**8**,**9**) **then** DEP_3Y=**.**;

**If** DEP_1 =**5 then** DEP_3Y=**0**;

**Proc Freq Data**=EH.SS_Enhanced13;
**Tables** DEP_3Y；
**Run**;

**DEP_3Y: Level of feelings last time felt depressed**

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | Not asked | 9929 | 57.3 | 59.6 | 59.6 |
| | A little | 3775 | 21.8 | 22.7 | 82.3 |
| | In between a little and a lot | 2016 | 11.6 | 12.1 | 94.4 |
| | A lot | 935 | 5.4 | 5.6 | 100.0 |
| | Total | 16655 | 96.1 | 100.0 | |
| Missing | | 671 | 3.9 | | |
| Total | | 17326 | 100.0 | | |

*Step 11. Generate a cross-tabulation of the depression Extended Set questions: DEP_1_R and DEP_3Y.*

The syntax below produces a cross-tabulation of DEP_1_R: *How often do you feel depressed* (a measure of frequency) and DEP_3Y: *The level of those feeling the last time you felt depressed* (a measure of intensity) – used to determine a single DEPRESSION INDICATOR (DEP_INDICATOR).

**Proc Freq Data**=EH.SS_Enhanced13;

**Tables** DEP_3Y*DEP_1_R/**NOROW NOCOL NOPERCENT;**
**Run**;

| DEP_3Y: Level of feelings last time felt depressed | DEP_1_R: How often do you feel depressed? | | | | | |
|---|---|---|---|---|---|---|
| | Daily | Weekly | Monthly | A Few Times A Year | Never | Total |
| Not asked | 0 | 0 | 0 | 0 | 9929 | 9929 |
| A little | 161 | 346 | 548 | 2708 | 0 | 3763 |
| In between a little and a lot | 209 | 384 | 378 | 1042 | 0 | 2013 |
| A lot | 381 | 191 | 112 | 248 | 0 | 932 |
| Total | 751 | 921 | 1038 | 3998 | 9929 | 16637 |

*Step 12. Create a DEPRESSION INDICATOR (DEP_INDICATOR) based on the two depression questions DEP_1_R and DEP_3Y.*

Syntax below creates DEP_INDICATOR based on the distribution in the cross-tabulation above.

**If** (missing(DEP_1_R) OR missing(DEP_3Y)) **then** DEP_INDICATOR = **.**;
**Else If** (DEP_3Y Le **4** AND (DEP_1_R = **4** OR DEP_1_R = **5**)) **then** DEP_INDICATOR=**1**;
**Else If** ((DEP_1_R = **3**) OR (DEP_1_R LT **3** AND DEP_3Y=**1**) OR
(DEP_1 = **2** AND DEP_3Y = **2**)) **then** DEP_INDICATOR = **2**;
**Else If** ((DEP_1_R = **1** AND DEP_3Y = **2**) OR (DEP_1_R = **2** AND DEP_3Y = **3**))
**then** DEP_INDICATOR = **3**;
**Else If** (DEP_1_R = **1** AND DEP_3Y = **3**) **then** DEP_INDICATOR = **4**;

**Proc Freq Data**=EH.SS_Enhanced13;
**Tables** DEP_INDICATOR；
**Run**;

### DEP_INDICATOR

| | | Frequency | Percent | Valid Percent | Cumulative Percent |
|---|---|---|---|---|---|
| Valid | 1.00 | 13927 | 80.4 | 83.7 | 83.7 |
| | 2.00 | 1929 | 11.1 | 11.6 | 95.3 |
| | 3.00 | 400 | 2.3 | 2.4 | 97.7 |
| | 4.00 | 381 | 2.2 | 2.3 | 100.0 |
| | Total | 16637 | 96.0 | 100.0 | |
| Missing | | 689 | 4.0 | | |
| Total | | 17326 | 100.0 | | |

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http://www.washingtongroup-disability.com/。

# Creating Disability Status Indicator for the WG-SS Enhanced

**WG-SS Enhanced**: WG-SS + Upper Body-indicator + Anxiety (level 4) + Depression (level 4)

The syntax below calculates the WG Short Set ENHANCED Disability Indicator (**SS_E**) based on the 12 questions at the recommended cut-off. The level of inclusion is: at least 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL for the six short set question; severity levels 3 or 4 for the Upper body-Indicators; and severity level 4 for Anxiety- and Depression-Indicators.

**If** (missing(vision) AND missing(hearing) AND missing(mobility) AND missing(communication) AND missing(Self_Care) AND missing(Cognition) AND missing(UB_INDICATOR) AND missing(ANX_INDICATOR) AND missing(DEP_INDICATOR) ) **then** SS_E = **.**;
**Else If** ((vision = **3** OR vision = **4**) OR (hearing= **3** OR hearing = **4**) OR (mobility= **3** OR mobility = **4**) OR (communication= **3** OR communication = **4**) OR (Self_Care = **3** OR Self_Care = **4**) OR (Cognition = **3** OR Cognition = **4**) OR (UB_INDICATOR=3 OR UB_INDICATOR=4) OR ANX_INDICATOR = **4** OR DEP_INDICATOR = **4**)
**then** SS_E = **1**;
**Else** SS_E = **2**;

**Proc Freq Data**=EH.SS_Enhanced13;
**Tables** SS_E;
**Run**;

**SS_E: WG-SS Enhanced Disability Indicator based on 9 domains and 12 questions**

|         |                    | Frequency | Percent | Valid Percent | Weighted Estimate |
|---------|--------------------|-----------|---------|---------------|-------------------|
| Valid   | WITHOUT DISABILITY | 14393     | 83.1    | 85.8          | 87.7              |
|         | WITH DISABILITY    | 2384      | 13.8    | 14.2          | 12.3              |
|         | Total              | 16777     | 96.9    | 100.0         |                   |
| Missing |                    | 549       | 3.2     |               |                   |
| Total   |                    | 17326     | 100.1   |               |                   |

## APPENDIX 1: SAS Code used in the NHIS data file

```
Data EH.SS_Enhanced13;
      Set NHIS.Funcdisb13 ;
      *Step 1: Generate frequency distributions on each of the six domain
variables.;
      *The syntax below produces frequency distributions on each the six domains.
Codes 7 (REFUSED), 8 (NOT ASCERTAINED) and 9 (DON'T KNOW) are INCLUDED as MISSING.;
      *Vision;
      ****************************************************************************
**************************************************;
      *Generate frequency distribution for each domain question. Convert 7,8,9 to
missing;
      If VIS_SS2 in (1,2,3,4) then Vision=VIS_SS2;
      Else If VIS_SS2 in (7,8,9) then Vision=.;
      ****************************************************************************
**************************************************;

      *Communication ;
      ****************************************************************************
**********************************************;
      *Generate frequency distribution for each domain question. Convert 7,8,9 to
missing;
      If COM_SS in (1,2,3,4) then Communication =COM_SS;
      Else If COM_SS in (7,8,9) then Communication =.;
      ****************************************************************************
**********************************************;

      *Hearing;
      ****************************************************************************
******************************************************;
      *Generate frequency distribution for each domain question. Recode 7,8,9 to .;
          If HEAR_SS2 in (1,2,3,4) then Hearing=HEAR_SS2;
      Else If HEAR_SS2 in (7,8,9  ) then Hearing=.;


      ****************************************************************************
******************************************************;

      *Cognition:Degree of difficulty remembering or concentrating;
      ****************************************************************************
*****************************************************;
      *Generate frequency distribution for each domain question. Recode 7,8,9 to .;
          If COG_SS in (1,2,3,4) then Cognition=COG_SS;
      Else If COG_SS in (7,8,9) then Cognition=.;
      ****************************************************************************
************************************************;

      *Self care;
      ****************************************************************************
**************************************************;
          If UB_SS in (1,2,3,4) then Self_Care=UB_SS;
      Else If UB_SS in (7,8,9) then Self_Care=.;


      ****************************************************************************
***********************************************;

      *Mobility;
      If MOB_SS2 in (1,2,3,4) then Mobility=MOB_SS2;
```

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http://www.washingtongroup-disability.com/。

```
         Else If MOB_SS2 in (7,8,9) then Mobility=.;
         ***********************************************************************
******************************************************************************;
       *Step 1: Generate frequency distributions on each of the six domain
variables.;

       *Step 2. Generate frequency distributions and cross-tabulations for Upper
body domain questions and determine the Upper Body Indicator;

       *UB_1 is Difficulty raising 2 liter bottle of water from waist to eye level;
       *UB_2 is Difficulty using hands and fingers;

           If UB_1 in (1, 2, 3, 4) then UB_1_R=UB_1;
       Else If UB_1 in (7, 8, 9) then UB_1_R=.;

           If UB_2 in (1, 2, 3, 4) then UB_2_R=UB_2;
       Else If UB_2 in (7, 8, 9) then UB_2_R=.;

       *Step 3. Generate a cross-tabulation of the two Upper body Extended Set
questions: UB_2_R and UB_1_R.;

       *Step 4. Create an UPPER BODY INDICATOR (UB_INDICATOR) based on the two
additional upper body questions UB_2_R and UB_3_R.;
               If (UB_1_R = 4 OR UB_2_R = 4)  then UB_INDICATOR = 4;
       Else If UB_INDICATOR NE 4 AND (UB_1_R = 3 OR UB_2_R = 3)
       then UB_INDICATOR = 3;
       Else If UB_INDICATOR NE 4 AND UB_INDICATOR NE 3 AND (UB_1_R = 2 OR UB_2_R =
2)    then UB_INDICATOR = 2;
       Else If UB_INDICATOR NE 4 AND UB_INDICATOR NE 3 AND UB_INDICATOR NE 2 AND
(UB_1_R = 1 OR UB_2_R = 1) then UB_INDICATOR = 1.;

       *Step 5.Generate frequency distribution on ANX_1.
        First, calculate frequency distributions on ANX_1: How often do you feel
worried, nervous or anxious?;
           If ANX_1 in (1, 2, 3, 4, 5) then ANX_1_R=ANX_1;
       Else If ANX_1 in (7, 8, 9) then ANX_1_R=.;

       *Step 6. The syntax below recodes ANX_3 into ANX_3Y
       1) to create a NOT ASKED category based on those who responded NEVER to
ANX_1_R and
       2) to place "SOMEWHERE BETWEEN" numerically in-between "A LITTLE" and "A
LOT";
           If ANX_3R =1 then ANX_3Y=1;
       Else If ANX_3R =2 then ANX_3Y=3;
       Else If ANX_3R =3 then ANX_3Y=2;
       Else If ANX_3R in (7,8,9) then ANX_3Y=.;

       *Recode ANX_3Y to 0 (not asked) if ANX_1 is 5 (Never).;
       If ANX_1 =5 then ANX_3Y=0;

       *Step 7. Generate a cross-tabulation of the anxiety Extended Set questions:
ANX_1_R and ANX_3Y.;
*Step 8. Create an ANXIETY INDICATOR (ANX_INDICATOR) based on the two anxiety
questions ANX_1_R and ANX_3Y.

Syntax below creates ANX_INDICATOR based on the distribution in the cross-
tabulation above;
```

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http://www.washingtongroup-disability.com/。

```
        If (missing(ANX_1_R) OR missing(ANX_3Y)) then ANX_INDICATOR=.;
    Else If ( ANX_3Y le 4 AND (ANX_1_R = 4 OR ANX_1_R = 5)) then ANX_INDICATOR=1;
    Else If ((ANX_1_R = 3) OR (ANX_1_R LT 3 AND ANX_3Y=1) OR (ANX_1_R = 2 AND
ANX_3Y = 2))  then ANX_INDICATOR = 2;
    Else If ((ANX_1_R = 1 AND ANX_3Y = 2) OR (ANX_1_R = 2 AND ANX_3Y = 3)) then
ANX_INDICATOR = 3;
    Else If ( ANX_1_R = 1 AND ANX_3Y = 3) then ANX_INDICATOR = 4;


    *Step 9.Generate frequency distribution on DEP_1.
    First, calculate frequency distributions on DEP_1: How often do you feel
depressed?;


        If DEP_1 in (1, 2, 3, 4, 5) then DEP_1_R=DEP_1;
    Else If DEP_1 in (7, 8, 9) then DEP_1_R=.;
    Else DEP_1_R=.;


    *Step 10. The syntax below recodes DEP_3 into DEP_3Y to place "SOMEWHERE
BETWEEN" numerically in-between "A LITTLE" and "A LOT".
    It also creates the category NOT ASKED, if DEP_1 is NEVER (1);
        If DEP_3R =1 then DEP_3Y=1;
    Else If DEP_3R =2 then DEP_3Y=3;
    Else If DEP_3R =3 then DEP_3Y=2;
    Else If DEP_3R in (7,8,9) then DEP_3Y=.;


    *Recode DEP_3Y to 0 (not asked) if DEP_1 is 5 (Never).;
    If DEP_1 =5 then DEP_3Y=0;


    *Step 11. Generate a cross-tabulation of the depression Extended Set
questions: DEP_1_R and DEP_3Y.;


    *Step 12. Create a DEPRESSION INDICATOR (DEP_INDICATOR) based on the two
depression questions DEP_1_R and DEP_3Y.
     Syntax below creates DEP_INDICATOR based on the distribution in the cross-
tabulation above.;


        If (missing(DEP_1_R) OR missing(DEP_3Y)) then DEP_INDICATOR = .;
    Else If (DEP_3Y Le 4 AND (DEP_1_R = 4 OR DEP_1_R = 5)) then DEP_INDICATOR=1;
    Else If ((DEP_1_R = 3) OR (DEP_1_R LT 3 AND DEP_3Y=1) OR
(DEP_1 = 2 AND DEP_3Y = 2)) then DEP_INDICATOR = 2;
    Else If ((DEP_1_R = 1 AND DEP_3Y = 2) OR (DEP_1_R = 2 AND DEP_3Y = 3))
then DEP_INDICATOR = 3;
    Else If (DEP_1_R = 1 AND DEP_3Y = 3) then DEP_INDICATOR = 4;

    *WG-SS Enhanced: WG-SS + Upper Body-indicator + Anxiety (level 4) +
Depression (level 4)
     The syntax below calculates the WG Short Set ENHANCED Disability Indicator
(SS_E) based on the 12 questions at the recommended
     cut-off. The level of inclusion is: at least 1 domain/question is coded A
LOT OF DIFFICULTY or CANNOT DO AT ALL for the six short
     set question, severity levels 3 or 4 for the Upper body-Indicators, and
severity level 4 for Anxiety- and Depression-Indicators.;


    If (missing(vision) AND  missing(hearing)  AND missing(mobility) AND
missing(communication) AND missing(Self_Care) AND missing(Cognition) AND
     missing(UB_INDICATOR) AND missing(ANX_INDICATOR) AND missing(DEP_INDICATOR)
) then SS_E = .;
    Else If ((vision = 3 OR vision = 4) OR (hearing= 3 OR hearing = 4) OR
(mobility= 3 OR mobility = 4) OR (communication= 3 OR communication = 4)
```

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http://www.washingtongroup-disability.com/。

```
            OR (Self_Care = 3 OR Self_Care = 4) OR (Cognition = 3 OR Cognition = 4)
OR (UB_INDICATOR=3 OR  UB_INDICATOR=4)
            OR ANX_INDICATOR = 4 OR DEP_INDICATOR = 4) then SS_E = 1;
       Else SS_E = 2;

       Label
             Vision="Degree of difficulty seeing"
             Communication ="Degree of difficulty communicating using usual
language"
             Hearing="Degree of difficulty hearing"
             Cognition="Degree of difficulty remembering or concentrating"
             Self_Care="Degree of difficulty with self-care"
             Mobility="Degree of difficulty walking or climbing steps"
             UB_1_R="Diff raising 2 liter bottle of water from waist to eye level"
             UB_2_R="Degree of difficulty using hands and fingers"
             UB_INDICATOR="UB INDICATOR"
             ANX_1_R="How often feel worried, nervous, or anxious?"
             ANX_3Y="Level of feelings last time felt worried/nervous/anxious"
             ANX_INDICATOR="ANX INDICATOR"
             DEP_1_R="How often do you feel depressed?"
             DEP_3Y="Level of feelings last time felt depressed"
```

```
                DEP_INDICATOR="DEP INDICATOR"
                    SS_E="WG-SS Enhanced"
            ;
        Format Vision Communication  Hearing HEAR_3_R HEAR_4_R Cognition Self_Care
UB_1_R UB_2_R Mobility MOB_4_R MOB_5_R Diff.
                    ANX_1_R DEP_1_R AnxDep. ANX_3Y DEP_3Y AnxDep3F. SS_E DisabF.;
Run;
Proc format library=EH.EH;
        Value Diff
                1="No Difficulty"
                2="Some Difficulty"
                3="A lot of Difficulty"
                4="Cannot do at all"
                .="Missing"
        ;
        Value AnxDep
                1="Daily"
                2="Weekly"
                3="Monthly"
                4="Afew times a year"
                5="Never"
        ;
        Value AnxDep3F
                0="Not asked"
                1="A little"
                2="In bewteen"
                3="A lot"
        ;
        Value DisabF
                1="With Disability"
                2="Without Disability"
        ;
Run;
```

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http://www.washingtongroup-disability.com/。