

## Generating Norms for a Test

The following syntax files scores the subtests of depression (sdepress), anxious (sanxious), hurtself (shurdetl), and schizophrenia (sschiz).

### Scoring Subtests

```
syntax name = pasmeal.sps

get file = 'proeval\pashrt.sav'.
missing values jumpy to leisure (9).
compute worthr=8-worth.
compute calmr=8-calm.
compute outgor=8-outgoing.
compute sdepress= mean(sad, hurtself, useless, worthr).
compute sanxious= mean(jumpy, fear, tense, shy, worried, calmr).
compute sborderl= mean(hurtself, angry, trouble).
compute sschiz= mean(halluci, confuse, outgor).
compute stotal= mean(sdepress, sanxious, sborderl, sschiz).
execute.
```

It is the statements

```
compute sdepress= mean(sad, hurtself, useless, worthr).
compute sanxious= mean(jumpy, fear, tense, shy, worried, calmr).
compute sborderl= mean(hurtself, angry, trouble).
compute sschiz= mean(halluci, confuse, outgor).
that do the actual scoring.
```

[Click here for more detailed description of scoring Likert items.](#)

### Obtaining Means and Standard Deviations Needed for Norms

The following analysis assumes that the above syntax file has been run and that there is a diagnosis field where the person with the diagnosis field (DIAGN) contains: (1) anxious = 1, (2) depression = 2, (3) borderline = 3 and (4) schizophrenia = 4. Further, it is assumed that the diagnosis field (DIAGN) has been sorted in ascending order.

File Name = pasrep1.sps

---

```

get file = '\proeval\pashrt.sav'.
missing values jumpy to leisure (9).
compute worthr=8-worth.
compute calmr=8-calm.
compute outgor=8-outgoing.
compute sdepress= mean(sad, hurtself, useless, worthr).
compute sanxious= mean(jumpy, fear, tense, shy, worried, calmr).
compute sborderl= mean(hurtself, angry, trouble).
compute sschiz= mean(halluci, confuse).
compute stotal= mean(sdepress, sanxious, sborderl, sschiz).
SORT CASES BY diagn (A) .
Report
  /FORMAT= CHWRAP(ON) PREVIEW(OFF) CHALIGN(BOTTOM) UNDERSCORE(ON)
  ONEBREAKCOLUMN(OFF) CHDSPACE(1) SUMSPACE(0) AUTOMATIC NOLIST
  BRKSPACE(0)
  PAGE(1) MISSING.' ' LENGTH(1, 59) ALIGN(LEFT) TSPACE(1) FTSPACE(1)
  MARGINS(1,58)
  /TITLE=
  RIGHT 'Page )PAGE'
  /VARIABLES
  sdepress (VALUES) (RIGHT) (OFFSET(0)) (8)
  sanxious (VALUES) (RIGHT) (OFFSET(0)) (8)
  sborderl (VALUES) (RIGHT) (OFFSET(0)) (8)
  sschiz (VALUES) (RIGHT) (OFFSET(0)) (8)
  stotal (VALUES) (RIGHT) (OFFSET(0)) (8)
  /BREAK (TOTAL) 'Grand Total' (SKIP(1)) /SUMMARY
  MEAN( sdepress) SKIP(1) MEAN( sanxious ) MEAN( sborderl ) MEAN( sschiz )
  MEAN( stotal ) 'Mean'
  /SUMMARY VALIDN( sdepress) VALIDN( sanxious ) VALIDN( sborderl ) VALIDN(
  sschiz ) VALIDN( stotal ) 'N'
  /SUMMARY STDDEV( sdepress) STDDEV( sanxious ) STDDEV( sborderl ) STDDEV(
  sschiz ) STDDEV( stotal ) 'StdDev'
  /BREAK diagn (LABELS) (LEFT) (OFFSET(0)) (8)
  /SUMMARY MEAN( sdepress) SKIP(0) MEAN( sanxious ) MEAN( sborderl ) MEAN(
  sschiz ) MEAN( stotal ) 'Mean'
  /SUMMARY VALIDN( sdepress) VALIDN( sanxious ) VALIDN( sborderl ) VALIDN(
  sschiz ) VALIDN( stotal ) 'N'
  /SUMMARY STDDEV( sdepress) STDDEV( sanxious ) STDDEV( sborderl ) STDDEV(
  sschiz ) STDDEV( stotal ) 'StdDev' .

```

---

The above Jobstream (syntax file) was created in the following manner:

The first section down to “SORT CASES BY group (A)” was typed in then:

Save the file as LSQREP1.SPS

Click on Statistics

Click on Summerize

Click on Report Summeries in Rows

Select the following variables (hold down CTRL and click on each variable).

Sanxious

Sdepress

Sborderl

Sschiz

Stotal

Click on the “right delta” in Data Columns box

Select Group (your grouping variable might be diagnosis).

Click on “right delta” in Break Columns box

Click on Summary (the variable in the Break Columns must be selected).

Select

Mean of value

Number of cases

Standard deviation

Click Continue

Click on Report

Click on Summary

Select

Mean of value  
 Number of cases  
 Standard deviation

Click Paste  
 Save file as PASREP1.SPS  
 Select contents of the PASREP1.SPS window  
 Click on the "right delta."

DIAGN	SDEPRESS	SANXIOUS	SBORDERL	SSCHIZ	STOTAL
1.00					
Mean	2.52	7.15	1.33	2.63	3.41
N	12	12	12	12	12
StdDev	.88	.73	1.05	1.52	.81
2.00					
Mean	7.13	3.83	4.06	2.21	4.31
N	12	12	12	12	12
StdDev	.66	1.16	1.86	1.30	1.17
3.00					
Mean	4.81	3.87	6.56	3.13	4.59
N	12	12	12	12	12
StdDev	1.13	1.09	1.22	2.29	.57
4.00					
Mean	3.73	3.21	3.03	6.50	4.12
N	12	12	12	12	12
StdDev	1.70	1.51	2.15	2.06	1.23
Grand Total					
Mean	4.55	4.52	3.74	3.61	4.11
N	48	48	48	48	48
StdDev	2.05	1.92	2.48	2.47	1.05

SD	Percent	SDEPRESS	SANXIOUS	SBORDERL	SSCHIZ	STOTAL
2	98	8	8	8	8	6.21
1.5	93	7.625	7.4	7.46	7.315	5.685
1	84	6.6	6.44	6.22	6.08	5.16
0.5	69	5.575	5.48	4.98	4.845	4.635
0	50	4.55	4.52	3.74	3.61	4.11

-0.5	31	3.525	3.56	2.5	2.375	3.585
-1	16	2.5	2.6	1.26	1.14	3.06
-1.5	7	1.475	1.64	0.02	0	2.535
-2	2	0.45	0.68	0	0	2.01

The above chart is created in the following manner. The percentiles are taken from a normal curve function (found in most statistical text books) at the various standard deviations from the mean. For example, at the mean is the 50th percentile. The distance of 1 standard deviation from the mean contains 34.134 percent of the sample. Consequently, one standard deviation above the mean would contain 84 percent of the sample (50 + 34). Further, one standard deviation below the mean would contain 16 percent of the sample (50 - 34).

The numbers are filled in the cells in the following manner. The means are filled in at 0 standard deviations from the mean. A 1 standard deviation above the mean the standard deviation of the sample score for that variable is added to the mean. For example, for the variable SDEPRESS the standard deviation of 2.05 is added to the mean (4.55) resulting in 6.6. When the standard deviation is subtracted from 4.55 (the mean) the result is 2.5. For the same variable 1/2 standard deviation is 1.025 and when that is added to the mean the result is 5.575. The remainder of the table is completed in the same manner.

Creating a profile for an individual case. The data in the table below is for case # 5.

JUMPY	FEAR	SAD	HURTSELF	ANGRY	HALLUCI	TENSE	USELESS	SHY	WORRIED	APPROV	SUSPIC	TROUBLE	WORRIED	CALM	PRODUC	OUTGOIN	DIAGN	WOR	CALM	OUTG	SDEP	SANX	SBOR	SSCH	TOTA
8	5	2	0	0	0	7	3	6	2	5	0	0	6	0	6	6	1	6	8	2	2.75	6.67	0	0	2.35

The subtest scores are generated in the following manner.

$$sdepress = (sad + hurtself + useless + worthr)/4 = (2+0+3+6)/4 = 2.75.$$

$$sanxious = (jumpy + fear + tense + shy + worried + calmr)/6 = (8+5+7+6+6+8)/6 = 6.67.$$

$$sborderl = (hurtself + angry + trouble)/4 = (0+0+0)/3=0.00.$$

$$sschiz = (halluci + confuse)/4 = (0+0)/2 = 0.00.$$

$$total = (sdepress + anxious + sborderl + sschiz)/4 = (2.75 + 6.67 + 0.00 + 0.00) = 2.35$$

The table from above can be used to plot the results.

