

Disability is best understood as a continuum. In terms of difficulty functioning, disability can be operationalized through a range of descriptors from no difficulty at all, through some difficulty and a lot of difficulty to completely unable to carry out the action. Each of these descriptors represent a cut-off or threshold in the determination of a disability identifier; i.e. to define those with and without disability. These levels of functioning are also represented in the response categories to the WG Short Set of questions.

Disability prevalence is then not a single statistic, but can be calculated to describe at various thresholds depending on the purpose of both data collection and reporting. For example, if the purpose is to provide for equitable access to public spaces – then the level of inclusion for a disability identifier might be *some difficulty*, since those with even minor levels of difficulty functioning would likely benefit from adaptations made to remove barriers and ease access. For example, the installation of escalators in place of stairs. Alternatively, if the purpose is to provide subsidies or allowances – the level of inclusion for a disability identifier might be *cannot do at all* since only those with more severe functional limitations would meet eligibility criteria.

The SPSS syntax below provides for the calculation of four disability identifiers at four thresholds. The population of those *with disability* is defined as:

- **DISABILITY1:** the level of inclusion is at least one domain/question is coded SOME DIFFICULTY or A LOT OF DIFFICULTY or CANNOT DO AT ALL.
- **DISABILITY2:** the level of inclusion is at least 2 domains/questions are coded SOME DIFFICULTY or any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL
- **DISABILITY3:** the level of inclusion is any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL. **THIS IS THE CUT-OFF RECOMMENDED BY THE WG.**
- **DISABILITY4:** the level of inclusion is any one domain is coded CANNOT DO AT ALL (4).

NOTE: Use your standard weighting and estimation techniques.

The SPSS syntax is based on the *variable labels* indicated in the table below. Ensure that you use the same *variable labels* OR revise the SPSS syntax to reflect the *variable labels* in your data base.

The WG Short Set Questions as they appear in the US National Health Interview Survey (NHIS)

WG Short Set Questions/Domains	Variable label
1. Do you have difficulty seeing even if wearing glasses?	VIS_SS
2. Do you have difficulty hearing even if using a hearing aid?	HEAR_SS
3. Do you have difficulty walking or climbing stairs?	MOB_SS
4. Do you have difficulty remembering or concentrating?	COG_SS
5. Do you have difficulty with (self-care such as) washing all over or dressing?	UB_SS
6. Using your usual language, do you have difficulty communicating (for example understanding or being understood by others)?	COM_SS

Value labels are:

- 1 No difficulty
- 2 Yes, Some difficulty
- 3 Yes, A lot of difficulty
- 4 Cannot do at all

- 7 Refused
- 8 Not ascertained
- 9 Don't know

SPSS WG Short Set Syntax annotated with Output tables:

The syntax below produces frequency distributions on each the 6 domains. Codes 7 (REFUSED), 8 (NOT ASCERTAINED) and 9 (DON'T KNOW) INCLUDED.

FREQUENCIES VIS_SS HEAR_SS MOB_SS COM_SS UB_SS COG_SS.

Frequencies

VIS_SS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13690	79.0	79.0	79.0
	Some difficulty	2708	15.6	15.6	94.6
	A lot of difficulty	333	1.9	1.9	96.6
	Cannot do at all	36	.2	.2	96.8
	Refused	21	.1	.1	96.9
	Not ascertained	532	3.1	3.1	100.0
	Don't know	6	.0	.0	100.0
	Total	17326	100.0	100.0	

HEAR_SS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13680	79.0	79.0	79.0
	Some difficulty	2753	15.9	15.9	94.8
	A lot of difficulty	310	1.8	1.8	96.6
	Cannot do at all	23	.1	.1	96.8
	Refused	24	.1	.1	96.9
	Not ascertained	534	3.1	3.1	100.0
	Don't know	2	.0	.0	100.0
	Total	17326	100.0	100.0	

MOB_SS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13424	77.5	77.5	77.5
	Some difficulty	2165	12.5	12.5	90.0
	A lot of difficulty	792	4.6	4.6	94.5
	Cannot do at all	380	2.2	2.2	96.7
	Refused	25	.1	.1	96.9
	Not ascertained	536	3.1	3.1	100.0
	Don't know	4	.0	.0	100.0
	Total	17326	100.0	100.0	

COM_SS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	15874	91.6	91.6	91.6
	Some difficulty	745	4.3	4.3	95.9
	A lot of difficulty	94	.5	.5	96.5
	Cannot do at all	43	.2	.2	96.7
	Refused	25	.1	.1	96.9
	Not ascertained	543	3.1	3.1	100.0
	Don't know	2	.0	.0	100.0
	Total	17326	100.0	100.0	

UB_SS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	16029	92.5	92.5	92.5
	Some difficulty	544	3.1	3.1	95.7
	A lot of difficulty	114	.7	.7	96.3
	Cannot do at all	68	.4	.4	96.7
	Refused	25	.1	.1	96.8
	Not ascertained	544	3.1	3.1	100.0
	Don't know	2	.0	.0	100.0
	Total	17326	100.0	100.0	

COG_SS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	No difficulty	13719	79.2	79.2	79.2
	Some difficulty	2632	15.2	15.2	94.4
	A lot of difficulty	382	2.2	2.2	96.6
	Cannot do at all	20	.1	.1	96.7
	Refused	25	.1	.1	96.8
	Not ascertained	543	3.1	3.1	100.0
	Don't know	5	.0	.0	100.0
	Total	17326	100.0	100.0	

The syntax below will yield domain-specific frequencies and thereby, prevalence of disability by domain of functioning. Codes 7, 8 and 9 are TEMPORARILY coded as MISSING.

Combine A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) for domain-specific prevalence at the WG recommended cut-off. (Highlighted in the tables.)

TEMPORARY .

RECODE VIS_SS HEAR_SS MOB_SS COM_SS UB_SS COG_SS (7 thru 9=SYSMIS).

FREQUENCIES VIS_SS HEAR_SS MOB_SS COM_SS UB_SS COG_SS.

Frequencies

VIS_SS

		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 System	559	3.2			
Total	17326	100.0			

HEAR_SS

		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 System	560	3.2			
Total	17326	100.0			

MOB_SS

		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 System	565	3.3			
Total	17326	100.0			

COM_SS

		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 System	570	3.3			
Total	17326	100.0			

UB_SS

		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 System	571	3.3			
Total	17326	100.0			

COG_SS

		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 System	573	3.3			
Total	17326	100.0			

The syntax below counts the number of domains/questions a person has that are coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

Possible range 0: no difficulties in any domain, to 6: all six domains coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

COUNT SUM_234 = VIS_SS HEAR_SS MOB_SS COM_SS COG_SS UB_SS (2 thru 4).
FREQUENCIES SUM_234.

Frequencies

		SUM_234			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	.00	9815	56.6	56.6	56.6
	1.00	3839	22.2	22.2	78.8
	2.00	1892	10.9	10.9	89.7
	3.00	989	5.7	5.7	95.4
	4.00	481	2.8	2.8	98.2
	5.00	232	1.3	1.3	99.5
	6.00	78	.5	.5	100.0
	Total	17326	100.0	100.0	

The syntax below counts the number of domains/questions a person has that are coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4)

Possible range 0: no difficulties coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) in any domain, to 6: all six domains coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

COUNT SUM_34 = VIS_SS HEAR_SS MOB_SS COM_SS COG_SS UB_SS (3 thru 4).
FREQUENCIES SUM_34.

Frequencies

		SUM_34			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	.00	15454	89.2	89.2	89.2
	1.00	1367	7.9	7.9	97.1
	2.00	345	2.0	2.0	99.1
	3.00	117	.7	.7	99.8
	4.00	31	.2	.2	99.9
	5.00	9	.1	.1	100.0
	6.00	3	.0	.0	100.0
	Total	17326	100.0	100.0	

DISABILITY1: the level of inclusion is at least one domain/question is coded SOME DIFFICULTY or A LOT OF DIFFICULTY or CANNOT DO AT ALL. MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

COMPUTE DISABILITY1R = 0.

IF (VIS_SS >= 7 and HEAR_SS >= 7 and MOB_SS >= 7 and COM_SS >= 7 and UB_SS >= 7 and COG_SS >= 7) DISABILITY1 = 9.

IF (SUM_234 >= 1) DISABILITY1 = 1.

NOTE: SUM_234 >= 1 means that at least one of the six domains is coded at least SOME DIFFICULTY (2).

VALUE LABELS DISABILITY1 0 'without disability' 1 'with disability'.

RECODE DISABILITY1 (9=SYSMIS).

FREQUENCIES DISABILITY1.

Frequencies

		DISABILITY1			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	without disability	9266	53.5	55.2	55.2
	with disability	7511	43.4	44.8	100.0
	Total	16777	96.8	100.0	
Missing	System	549	3.2		
Total		17326	100.0		

Of those 'with disability' above, how many people have difficulties in multiple domains of functioning?

The syntax below COUNTS, for those 'with disability', the number of domains coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) and defines that COUNT as a variable called DOMAIN_1.

NOTE: Everyone has at least 1 domain coded SOME DIFFICULTY (2).

DOMAIN_1 ranges from 1: a single domain of functioning coded SOME DIFFICULTY (2), A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) to 6: all six domains of functioning coded (2), (3) or (4).

Values 2 through 6 identify those with difficulties in multiple domains of functioning.

DO IF DISABILITY1 = 1.

COUNT DOMAIN_1 = VIS_SS HEAR_SS MOB_SS COM_SS COG_SS UB_SS (2 thru 4).

END IF.

FREQUENCIES DOMAIN_1.

Frequencies

		DOMAIN_1			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	1.00	3839	22.2	51.1	51.1
	2.00	1892	10.9	25.2	76.3
	3.00	989	5.7	13.2	89.5
	4.00	481	2.8	6.4	95.9
	5.00	232	1.3	3.1	99.0
	6.00	78	.5	1.0	100.0
	Total	7511	43.4	100.0	
Missing	System	9815	56.6		
Total		17326	100.0		

DISABILITY2: the level of inclusion is: at least 2 domains/questions are coded SOME DIFFICULTY or any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL.

MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

COMPUTE DISABILITY2 = 0.

IF (VIS_SS >= 7 and HEAR_SS >= 7 and MOB_SS >= 7 and COM_SS >= 7 and UB_SS >= 7 and COG_SS >= 7) DISABILITY2 = 9.

IF (SUM_234 >= 2 OR SUM_34 = 1) DISABILITY2 = 1.

NOTE: The above syntax identifies those with at least two of the six domains coded as at least SOME DIFFICULTY (2): SUM_234 >= 2, OR those who have one domain that is coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4): SUM_34 = 1.

VALUE LABELS DISABILITY2 0 'without disability' 1 'with disability'.

RECODE DISABILITY2 (9=SYSMIS).

FREQUENCIES DISABILITY2.

Frequencies

		DISABILITY2			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	without disability	12707	73.3	75.7	75.7
	with disability	4070	23.5	24.3	100.0
	Total	16777	96.8	100.0	
Missing	System	549	3.2		
Total		17326	100.0		

Of those 'with disability' above, how many people have difficulties in multiple domains of functioning?

The syntax below COUNTS, for those 'with disability', the number of domains coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) and defines that COUNT as a variable called DOMAIN_2.

NOTE: Everyone has at least 2 domains coded SOME DIFFICULTY (2) or 1 domain coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

DOMAIN_2 ranges from 1: a single functional domain only coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) to 6: all six domains of functioning coded (2), (3) or (4).

Values 2 through 6 identify those with difficulties in multiple domains of functioning.

```
DO IF DISABILITY2 = 1.
COUNT DOMAIN_2 = VIS_SS HEAR_SS MOB_SS COM_SS COG_SS UB_SS (2 thru 4).
END IF.
```

```
FREQUENCIES DOMAIN_2.
```

Frequencies

		DOMAIN_2			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	1.00	398	2.3	9.8	9.8
	2.00	1892	10.9	46.5	56.3
	3.00	989	5.7	24.3	80.6
	4.00	481	2.8	11.8	92.4
	5.00	232	1.3	5.7	98.1
	6.00	78	.5	1.9	100.0
	Total	4070	23.5	100.0	
Missing	System	13256	76.5		
Total		17326	100.0		

DISABILITY3: the level of inclusion is: any 1 domain/question is coded A LOT OF DIFFICULTY or CANNOT DO AT ALL.

MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

THIS IS THE CUT-OFF RECOMMENDED BY THE WG.

```
COMPUTE DISABILITY3 = 0.
```

```
IF (VIS_SS >= 7 and HEAR_SS >= 7 and MOB_SS >= 7 and COM_SS >= 7 and UB_SS >= 7 and COG_SS >= 7) DISABILITY3 = 9.
```

```
IF ((VIS_SS = 3 or VIS_SS = 4) or (HEAR_SS = 3 or HEAR_SS = 4) or (MOB_SS = 3 or MOB_SS = 4) or (COM_SS = 3 or COM_SS = 4) or (UB_SS = 3 or UB_SS = 4) or (COG_SS = 3 or COG_SS = 4)) DISABILITY3 = 1.
```

```
VALUE LABELS DISABILITY3 0 'without disability' 1 'with disability'.
```

```
RECODE DISABILITY3 (9=SYSMIS).
FREQUENCIES DISABILITY3.
```

Frequencies

		DISABILITY3			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	without disability	14905	86.0	88.8	88.8
	with disability	1872	10.8	11.2	100.0
	Total	16777	96.8	100.0	
Missing	System	549	3.2		
Total		17326	100.0		

Of those 'with disability' above, how many people have difficulties in multiple domains of functioning?

The syntax below COUNTS, for those 'with disability', the number of domains coded SOME DIFFICULTY (2), A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) and defines that COUNT as a variable called DOMAIN_3.

NOTE: Everyone has at least 1 domain coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4).

DOMAIN_3 ranges from 1: a single domain of functioning coded A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) to 6: all six domains of functioning coded (2), (3) or (4).

Values 2 through 6 identify those with difficulties in multiple domains of functioning.

```
DO IF DISABILITY3 = 1.
COUNT DOMAIN_3 = VIS_SS HEAR_SS MOB_SS COM_SS COG_SS UB_SS (2 thru 4).
END IF.
```

```
FREQUENCIES DOMAIN_3.
```

Frequencies

		DOMAIN_3			Cumulative
		Frequency	Percent	Valid Percent	Percent
Valid	1.00	398	2.3	21.3	21.3
	2.00	521	3.0	27.8	49.1
	3.00	410	2.4	21.9	71.0
	4.00	300	1.7	16.0	87.0
	5.00	176	1.0	9.4	96.4
	6.00	67	.4	3.6	100.0
	Total	1872	10.8	100.0	
Missing	System	15454	89.2		
Total		17326	100.0		

DISABILITY4: the level of inclusion is any one domain is coded CANNOT DO AT ALL (4).

MISSING (9) are those who have coded 7, 8 or 9 on all six domains.

COMPUTE DISABILITY4 = 0.

IF (VIS_SS >= 7 and HEAR_SS >= 7 and MOB_SS >= 7 and COM_SS >= 7 and UB_SS >= 7 and COG_SS >= 7) DISABILITY4 = 9.

IF ((VIS_SS = 4) or (HEAR_SS = 4) or (MOB_SS = 4) or (COM_SS = 4) or (UB_SS = 4) or (COG_SS = 4)) DISABILITY4 = 1.

VALUE LABELS DISABILITY4 0 'without disability' 1 'with disability'.

RECODE DISABILITY4 (9=SYSMIS).

FREQUENCIES DISABILITY4.

Frequencies

		DISABILITY4			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	without disability	16312	94.1	97.2	97.2
	with disability	465	2.7	2.8	100.0
	Total	16777	96.8	100.0	
Missing	System	549	3.2		
Total		17326	100.0		

Of those 'with disability' above, how many people have difficulties in multiple domains of functioning?

The syntax below COUNTS, for those 'with disability' the number of domains coded SOME DIFFICULTY (2) or A LOT OF DIFFICULTY (3) or CANNOT DO AT ALL (4) and defines that COUNT as a variable called DOMAIN_4.

NOTE: Everyone has at least 1 domain coded CANNOT DO AT ALL (4).

DOMAIN_4 ranges from 1: a single domain of functioning coded CANNOT DO AT ALL (4) to 6: all six domains of functioning coded (2), (3) or (4).

Values 2 through 6 are those with difficulties in multiple domains of functioning.

DO IF DISABILITY4 = 1.

COUNT DOMAIN_4 = VIS_SS HEAR_SS MOB_SS COM_SS COG_SS UB_SS (2 thru 4).

END IF.

FREQUENCIES DOMAIN_4.

Frequencies

		DOMAIN_4			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	71	.4	15.3	15.3
	2.00	108	.6	23.2	38.5
	3.00	114	.7	24.5	63.0
	4.00	78	.5	16.8	79.8
	5.00	69	.4	14.8	94.6
	6.00	25	.1	5.4	100.0
	Total		465	2.7	100.0
Missing	System	16861	97.3		
Total		17326	100.0		