

\* Encoding: UTF-8.

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\* ShortForm2017\_outpatient\_FrailtyIndex\_35items.

\* Construction of a Frailty Index 35 items based on TOPICS-MDS Short Form 2017 - outpatient clinic WITH casemix (morbidity and cognitive functioning (dementia yes/no) during outpatient clinic visit).

\* Last updated: December 5, 2019.

\* Protocol of Searle et al. 2008 "A standard procedure for creating a frailty index" BMC Geriatrics.

\* Convert values of included health deficits to indicate worsening condition - Range of 0 to 1.

\* ADVICE: run this syntax in pieces; running it all at once may create errors/problems.

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\*-----DATA TRANSFORMATIONS-----

\*\*\*\*\* Define deficits \*\*\*\*\*.

\*\*\* Psych sub-scale \*\*\*.

IF (SF\_TO\_PW\_BLUE = 6) SF\_TO\_FI\_blue=0.

IF (SF\_TO\_PW\_BLUE = 5) SF\_TO\_FI\_blue=0.2.

IF (SF\_TO\_PW\_BLUE = 4) SF\_TO\_FI\_blue=0.4.

IF (SF\_TO\_PW\_BLUE = 3) SF\_TO\_FI\_blue=0.6.

IF (SF\_TO\_PW\_BLUE = 2) SF\_TO\_FI\_blue=0.8.

IF (SF\_TO\_PW\_BLUE = 1) SF\_TO\_FI\_blue=1.

EXECUTE.

IF (SF\_TO\_PW\_CALM = 6) SF\_TO\_FI\_calm=1.

IF (SF\_TO\_PW\_CALM = 5) SF\_TO\_FI\_calm=0.8.

IF (SF\_TO\_PW\_CALM = 4) SF\_TO\_FI\_calm=0.6.

IF (SF\_TO\_PW\_CALM = 3) SF\_TO\_FI\_calm=0.4.

IF (SF\_TO\_PW\_CALM = 2) SF\_TO\_FI\_calm=0.2.

IF (SF\_TO\_PW\_CALM = 1) SF\_TO\_FI\_calm=0.

EXECUTE.

IF (SF\_TO\_PW\_HAPPY = 6) SF\_TO\_FI\_happy=1.  
IF (SF\_TO\_PW\_HAPPY = 5) SF\_TO\_FI\_happy=0.8.  
IF (SF\_TO\_PW\_HAPPY = 4) SF\_TO\_FI\_happy=0.6.  
IF (SF\_TO\_PW\_HAPPY = 3) SF\_TO\_FI\_happy=0.4.  
IF (SF\_TO\_PW\_HAPPY = 2) SF\_TO\_FI\_happy=0.2.  
IF (SF\_TO\_PW\_HAPPY = 1) SF\_TO\_FI\_happy=0.  
EXECUTE.

\*\*\* EQ-5D-5L\*\*\*.

IF (SF\_TO\_EQ5PAIN= 1) SF\_TO\_FI\_EQ\_pain=0.  
IF (SF\_TO\_EQ5PAIN = 2) SF\_TO\_FI\_EQ\_pain=0.25.  
IF (SF\_TO\_EQ5PAIN = 3) SF\_TO\_FI\_EQ\_pain=0.5.  
IF (SF\_TO\_EQ5PAIN = 4) SF\_TO\_FI\_EQ\_pain=0.75.  
IF (SF\_TO\_EQ5PAIN = 5) SF\_TO\_FI\_EQ\_pain=1.  
EXECUTE.

\*\*\* Social functioning and self-reported health \*\*\*.

IF (SF\_TO\_SOCFUNC = 5) SF\_TO\_FI\_SocFunc=0.  
IF (SF\_TO\_SOCFUNC = 4) SF\_TO\_FI\_SocFunc=0.25.  
IF (SF\_TO\_SOCFUNC = 3) SF\_TO\_FI\_SocFunc=0.50.  
IF (SF\_TO\_SOCFUNC = 2) SF\_TO\_FI\_SocFunc=0.75.  
IF (SF\_TO\_SOCFUNC = 1) SF\_TO\_FI\_SocFunc=1.  
EXECUTE.

IF (SF\_TO\_HEALTH = 0) SF\_TO\_FI\_Health=1.  
IF (SF\_TO\_HEALTH = 1) SF\_TO\_FI\_Health=0.9.  
IF (SF\_TO\_HEALTH = 2) SF\_TO\_FI\_Health=0.8.  
IF (SF\_TO\_HEALTH = 3) SF\_TO\_FI\_Health=0.7.  
IF (SF\_TO\_HEALTH = 4) SF\_TO\_FI\_Health=0.6.  
IF (SF\_TO\_HEALTH = 5) SF\_TO\_FI\_Health=0.5.

IF (SF\_TO\_HEALTH = 6) SF\_TO\_FI\_Health=0.4.  
IF (SF\_TO\_HEALTH = 7) SF\_TO\_FI\_Health=0.3.  
IF (SF\_TO\_HEALTH = 8) SF\_TO\_FI\_Health=0.2.  
IF (SF\_TO\_HEALTH = 9) SF\_TO\_FI\_Health=0.1.  
IF (SF\_TO\_HEALTH = 10) SF\_TO\_FI\_Health=0.  
EXECUTE.

\*\*\* Tasks and occupations in daily life \*\*\*.

IF (SF\_TO\_GARS\_DRES=1) SF\_TO\_FI\_GARS\_DRES=0.  
IF (SF\_TO\_GARS\_DRES=2) SF\_TO\_FI\_GARS\_DRES=0.33.  
IF (SF\_TO\_GARS\_DRES=3) SF\_TO\_FI\_GARS\_DRES=0.66.  
IF (SF\_TO\_GARS\_DRES=4) SF\_TO\_FI\_GARS\_DRES=1.  
EXECUTE.

IF (SF\_TO\_GARS\_CHAIR=1) SF\_TO\_FI\_GARS\_CHAIR=0.  
IF (SF\_TO\_GARS\_CHAIR=2) SF\_TO\_FI\_GARS\_CHAIR=0.33.  
IF (SF\_TO\_GARS\_CHAIR=3) SF\_TO\_FI\_GARS\_CHAIR=0.66.  
IF (SF\_TO\_GARS\_CHAIR=4) SF\_TO\_FI\_GARS\_CHAIR=1.  
EXECUTE.

IF (SF\_TO\_GARS\_WASH=1) SF\_TO\_FI\_GARS\_WASH=0.  
IF (SF\_TO\_GARS\_WASH=2) SF\_TO\_FI\_GARS\_WASH=0.33.  
IF (SF\_TO\_GARS\_WASH=3) SF\_TO\_FI\_GARS\_WASH=0.66.  
IF (SF\_TO\_GARS\_WASH=4) SF\_TO\_FI\_GARS\_WASH=1.  
EXECUTE.

IF (SF\_TO\_GARS\_STAIRS=1) SF\_TO\_FI\_GARS\_STAIRS=0.  
IF (SF\_TO\_GARS\_STAIRS=2) SF\_TO\_FI\_GARS\_STAIRS=0.33.  
IF (SF\_TO\_GARS\_STAIRS=3) SF\_TO\_FI\_GARS\_STAIRS=0.66.  
IF (SF\_TO\_GARS\_STAIRS=4) SF\_TO\_FI\_GARS\_STAIRS=1.  
EXECUTE.

IF (SF\_TO\_GARS\_WALK=1) SF\_TO\_FI\_GARS\_WALK=0.  
IF (SF\_TO\_GARS\_WALK=2) SF\_TO\_FI\_GARS\_WALK=0.33.  
IF (SF\_TO\_GARS\_WALK=3) SF\_TO\_FI\_GARS\_WALK=0.66.  
IF (SF\_TO\_GARS\_WALK=4) SF\_TO\_FI\_GARS\_WALK=1.  
EXECUTE.

IF (SF\_TO\_GARS\_FEET=1) SF\_TO\_FI\_GARS\_FEET=0.  
IF (SF\_TO\_GARS\_FEET=2) SF\_TO\_FI\_GARS\_FEET=0.33.  
IF (SF\_TO\_GARS\_FEET=3) SF\_TO\_FI\_GARS\_FEET=0.66.  
IF (SF\_TO\_GARS\_FEET=4) SF\_TO\_FI\_GARS\_FEET=1.  
EXECUTE.

IF (SF\_TO\_GARS\_HH=1) SF\_TO\_FI\_GARS\_HH=0.  
IF (SF\_TO\_GARS\_HH=2) SF\_TO\_FI\_GARS\_HH=0.33.  
IF (SF\_TO\_GARS\_HH=3) SF\_TO\_FI\_GARS\_HH=0.66.  
IF (SF\_TO\_GARS\_HH=4) SF\_TO\_FI\_GARS\_HH=1.  
EXECUTE.

IF (SF\_TO\_GARS\_SHOP=1) SF\_TO\_FI\_GARS\_SHOP=0.  
IF (SF\_TO\_GARS\_SHOP=2) SF\_TO\_FI\_GARS\_SHOP=0.33.  
IF (SF\_TO\_GARS\_SHOP=3) SF\_TO\_FI\_GARS\_SHOP=0.66.  
IF (SF\_TO\_GARS\_SHOP=4) SF\_TO\_FI\_GARS\_SHOP=1.  
EXECUTE.

IF (SF\_TO\_LASA\_MED=1) SF\_TO\_FI\_LASA\_MED=0.  
IF (SF\_TO\_LASA\_MED=2) SF\_TO\_FI\_LASA\_MED=0.33.  
IF (SF\_TO\_LASA\_MED=3) SF\_TO\_FI\_LASA\_MED=0.66.  
IF (SF\_TO\_LASA\_MED=4) SF\_TO\_FI\_LASA\_MED=1.  
EXECUTE.

IF (SF\_TO\_LASA\_TRANSP=1) SF\_TO\_FI\_LASA\_TRANSP=0.

IF (SF\_TO\_LASA\_TRANSP=2) SF\_TO\_FI\_LASA\_TRANSP=0.33.

IF (SF\_TO\_LASA\_TRANSP=3) SF\_TO\_FI\_LASA\_TRANSP=0.66.

IF (SF\_TO\_LASA\_TRANSP=4) SF\_TO\_FI\_LASA\_TRANSP=1.

EXECUTE.

\*\*\* Cognitive functioning during outpatient clinic visit (dementia) \*\*\*.

\* Dichotomize SF\_TO\_COGNFUNC\_OUTPAT: Dementia =1, other =0.

COMPUTE SF\_TO\_COGNFUNC\_OUTPAT\_DICH=\$sysmis.

EXECUTE.

FORMATS SF\_TO\_COGNFUNC\_OUTPAT\_DICH (F1.0).

RECODE SF\_TO\_COGNFUNC\_OUTPAT (1=0, 2=0, 3=1, 4=0, 5=0) INTO  
SF\_TO\_COGNFUNC\_OUTPAT\_DICH.

EXECUTE.

VALUE LABELS SF\_TO\_COGNFUNC\_OUTPAT\_DICH 0 'Nee' 1 'Ja'.

\*\*\* SF\_TO\_LASA\_MEMO1 asks for the complaints on memory loss: yes(1) and no(0); No data transformation for this variable is required.

\*\*\* SF\_TO\_MORBa through SF\_TO\_MORBq ask for presence of diseases/conditons: yes(1) and no(0); No data transformation for these variables are required.

\*\*\* SF\_TO\_COGNFUNC\_OUTPAT\_DICH asks for presence of dementia: yes(1) and no(0); No data transformation for this variable is required.

\*-----FRAILITY INDEX CALCULATIONS-----.

\*\*\* Compute SF\_TO\_FI \*\*\*.

\*\*\* First determine the number of missing values \*\*\*.

```
COMPUTE SF_TO_Missing_number_FI=NMISS(SF_TO_PW_BLUE, SF_TO_PW_CALM,
SF_TO_PW_HAPPY, SF_TO_EQ5PAIN, SF_TO_SOCFUNC, SF_TO_HEALTH,
SF_TO_GARS_DRES,SF_TO_GARS_CHAIR, SF_TO_GARS_WASH, SF_TO_GARS_STAIRS,

SF_TO_GARS_WALK, SF_TO_GARS_FEET, SF_TO_GARS_HH, SF_TO_GARS_SHOP, SF_TO_LASA_MED,
SF_TO_LASA_TRANSP, SF_TO_LASA_MEMO1, SF_TO_MORBa, SF_TO_MORBb, SF_TO_MORBc,
SF_TO_MORBd, SF_TO_MORBe, SF_TO_MORBf,

SF_TO_MORBg, SF_TO_MORBh, SF_TO_MORBi, SF_TO_MORBj, SF_TO_MORBk, SF_TO_MORBl,
SF_TO_MORBm, SF_TO_MORBn, SF_TO_MORBo, SF_TO_MORBp, SF_TO_MORBq,
SF_TO_COGNFUNC_OUTPAT_DICH).
```

EXECUTE.

\*\*\* Calculate the frailty index by the total number of deficits accrued \*\*\*.

```
COMPUTE SF_TO_Frailty_total = sum (SF_TO_FI_blue, SF_TO_FI_calm, SF_TO_FI_happy,
SF_TO_FI_EQ_pain, SF_TO_FI_SocFunc, SF_TO_FI_Health, SF_TO_FI_GARS_DRES,
SF_TO_FI_GARS_CHAIR, SF_TO_FI_GARS_WASH, SF_TO_FI_GARS_STAIRS, SF_TO_FI_GARS_WALK,

SF_TO_FI_GARS_FEET, SF_TO_FI_GARS_HH, SF_TO_FI_GARS_SHOP, SF_TO_FI_LASA_MED,
SF_TO_FI_LASA_TRANSP, SF_TO_LASA_MEMO1, SF_TO_MORBa, SF_TO_MORBb, SF_TO_MORBc,
SF_TO_MORBd, SF_TO_MORBe, SF_TO_MORBf,

SF_TO_MORBg, SF_TO_MORBh, SF_TO_MORBi, SF_TO_MORBj, SF_TO_MORBk, SF_TO_MORBl,
SF_TO_MORBm, SF_TO_MORBn, SF_tO_MORBo, SF_TO_MORBp, SF_TO_MORBq,
SF_TO_COGNFUNC_OUTPAT_DICH).
```

EXECUTE.

\*\*\* Examine different methods to address missing \*\*\*.

\*\*\* Complete case analysis - all deficits must be present (no missing values) \*\*\*.

\*\*\* WARNING --> Results in high levels of missing values \*\*\*.

DO IF

SF\_TO\_Missing\_number\_FI = 0.

COMPUTE SF\_TO\_FI\_complete\_case=SF\_TO\_Frailty\_total/35.

END IF.

EXECUTE.

\*\*\* Establish a minimum number of permissible missing deficits \*\*\*.

\*\*\* Adjustment of base for missing data \*\*\*.

IF (SF\_T0\_Missing\_number\_FI <= 10) SF\_T0\_FI\_corrected=SF\_T0\_Frailty\_total/(35-SF\_T0\_Missing\_number\_FI).

EXECUTE.

\*\*\* Dichotomize the frailty index \*\*\*.

\*\*\* No established threshold, cut-offs generally made at either 0.25 or 0.20 (see Searle et al. 2008 above) \*\*\*.

IF (SF\_T0\_FI\_corrected ge 0.25) SF\_T0\_FI\_binary\_25cut=1.

IF (SF\_T0\_FI\_corrected lt 0.25) SF\_T0\_FI\_binary\_25cut=0.

EXECUTE.

IF (SF\_T0\_FI\_corrected ge 0.2) SF\_T0\_FI\_binary\_20cut=1.

IF (SF\_T0\_FI\_corrected lt 0.2) SF\_T0\_FI\_binary\_20cut=0.

EXECUTE.