Are health issues exacerbated by undiagnosed mental health problems? Cross-sectional study using a household health survey to estimate healthcare costs and quality of life related to multimorbidity.

Appendices. Full SPSS output files and additional figures.

Figure A1. Costs by number of conditions.

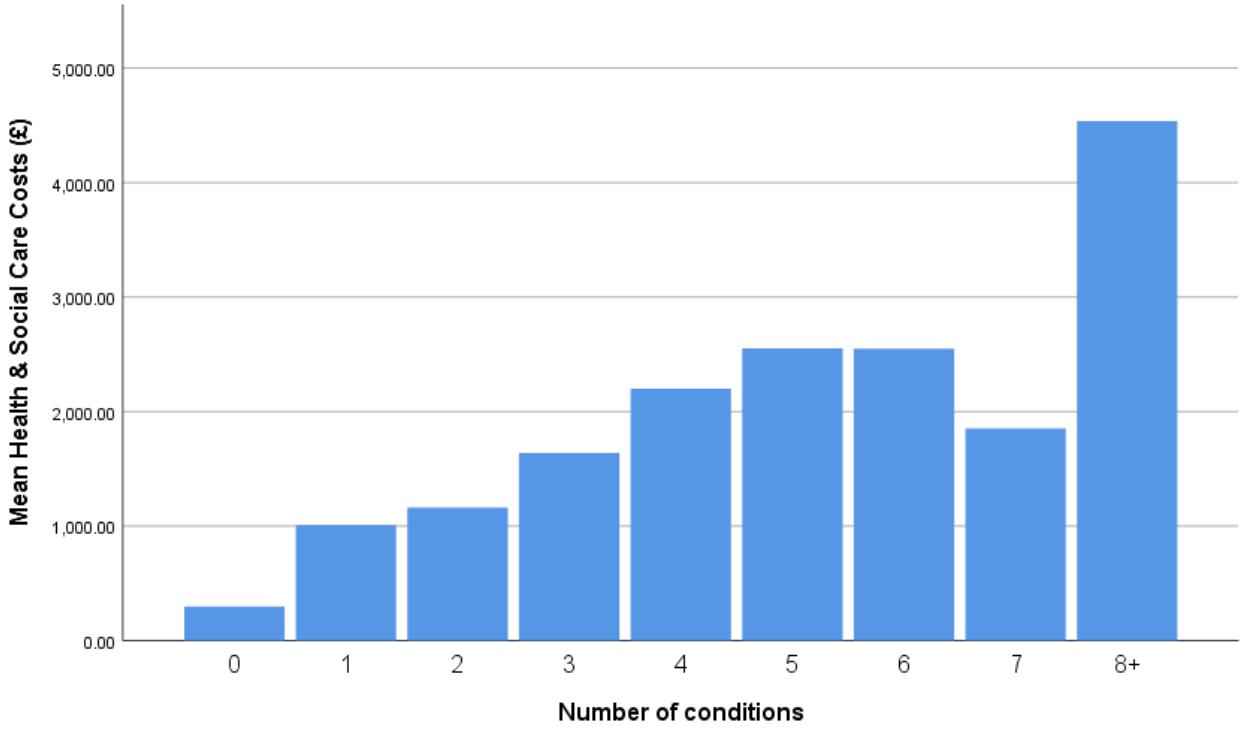


Figure A2. EQ-5D index scores by number of conditions

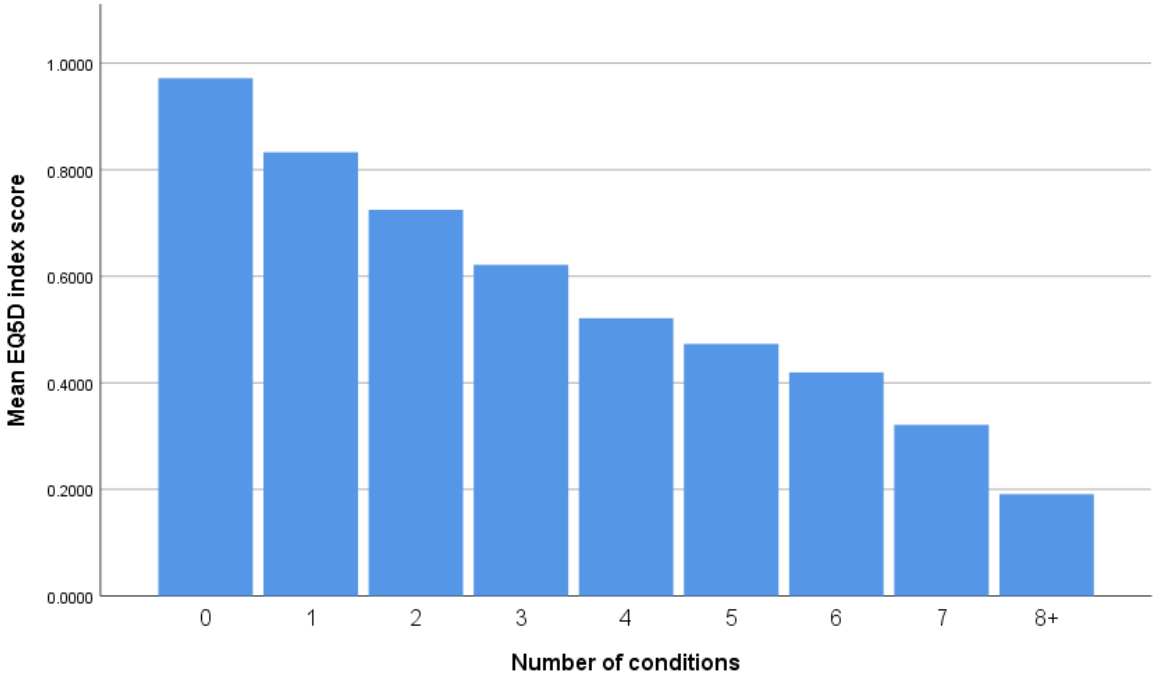
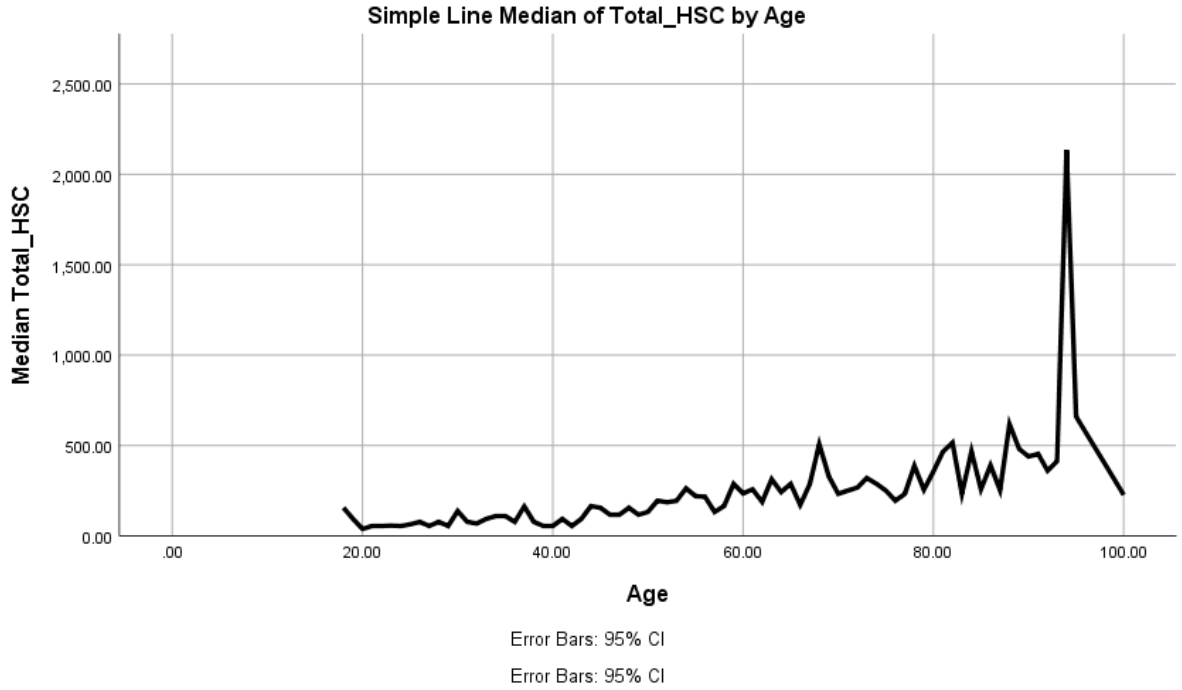
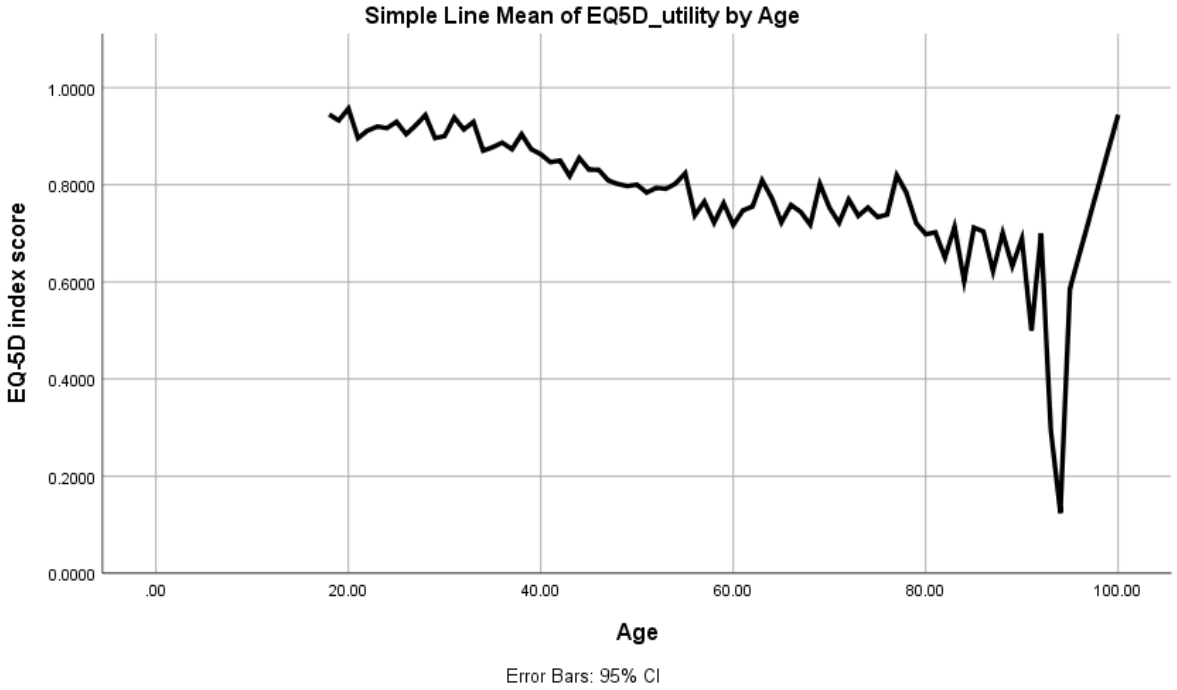


Figure A3. Costs by age.



.

Figure A4. EQ-5D index scores by age.



1. HEALTH&SOCIAL CARE COSTS REGRESSION WITHOUT UNDIAGNOSED MENTAL HEALTH

```
* Generalized Linear Models.
GENLIN USE_Total_health_social_care_costs WITH Age Gender_1st_participant N_conditions quint_imd
  /MODEL Age Gender_1st_participant N_conditions quint_imd INTERCEPT=YES SCALEWEIGHT=WEIGHT5
 DISTRIBUTION=TWEEDIE(1.5) LINK=IDENTITY
  /CRITERIA METHOD=FISHER SCALE=MLE COVB=MODEL MAXITERATIONS=50000 MAXSTEPHALVING=10
    PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD
    LIKELIHOOD=FULL
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
```

Generalized Linear Models

Notes

Output Created	**11-DEC-2019 15:50:50**
Comments	

Input	**Data**	**M:\HHS work\wave12_withgeo_CG.sav**
	Active Dataset	**DataSet1**
	Filter	**New_or_repeat=1 (FILTER)**
	Weight	**<none>**
	Split File	**<none>**
	N of Rows in Working Data File	**6675**
Missing Value Handling	**Definition of Missing**	**User-defined missing values for factor, subject and within-subject variables are treated as missing.**
	Cases Used	**Statistics are based on cases with valid data for all variables in the model.**
Weight Handling		**not applicable**

Syntax		**GENLIN USE_Total_health_social_care_costs WITH Age Gender_1st_participant N_conditions quint_imd** **/MODEL Age Gender_1st_participant N_conditions quint_imd INTERCEPT=YES SCALEWEIGHT=WEIGHT5** **DISTRIBUTION=TWEEDIE(1.5) LINK=IDENTITY** **/CRITERIA METHOD=FISHER SCALE=MLE COVB=MODEL MAXITERATIONS=50000 MAXSTEPHALVING=10** **PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD** **LIKELIHOOD=FULL** **/MISSING CLASSMISSING=EXCLUDE** **/PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.**
Resources	**Processor Time**	**00:00:02.36**

Elapsed Time	**00:00:02.35**

Warnings

The maximum number of step-halvings was reached but the log-likelihood value cannot be further improved. Output for the last iteration is displayed.

The GENLIN procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Model Information

Dependent Variable	**Total_HSC**
Probability Distribution	**Tweedie (1.5)**
Link Function	**Identity**
Scale Weight Variable	**WEIGHT5**

Case Processing Summary

	N	**Percent**
Included	**5998**	**89.9%**
Excluded	**677**	**10.1%**

Total	**6675**	**100.0%**

Continuous Variable Information

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	**Total_HSC**	**5998**	**.00**	**203754.00**	**1003.1209**	**4290.19466**
Covariate	**Age**	**5998**	**18.00**	**100.00**	**49.0027**	**19.29905**
	Gender_1st_participant	**5998**	**1.00**	**2.00**	**1.5522**	**.49731**
	N_conditions	**5998**	**0**	**16**	**1.46**	**1.900**
	quint_imd	**5998**	**1**	**5**	**4.43**	**1.071**
Scale Weight	**WEIGHT5**	**5998**	**0**	**10**	**1.0169**	**.75133**

Goodness of Fit[a]

	Value	df	Value/df
Deviance	**457518.484**	**5993**	**76.342**
Scaled Deviance	**10611.519**	**5993**	
Pearson Chi-Square	**3475498.128**	**5993**	**579.926**
Scaled Pearson Chi-Square	**80609.453**	**5993**	
Log Likelihood[b]	**-43376.305**		

Akaike's Information Criterion (AIC)	**86764.611**		
Finite Sample Corrected AIC (AICC)	**86764.625**		
Bayesian Information Criterion (BIC)	**86804.806**		
Consistent AIC (CAIC)	**86810.806**		

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
2291.749	**4**	**.000**

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd

a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

Source	Type III Wald Chi-Square	df	Sig.
(Intercept)	68.181	1	.000
Age	8.847	1	.003
Gender_1st_participant	50.048	1	.000
N_conditions	1430.535	1	.000
quint_imd	39.522	1	.000

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	420.044	50.8702	320.341	519.748	68.181	1	.000
Age	-1.407	.4731	-2.334	-.480	8.847	1	.003
Gender_1st_participant	121.686	17.2008	87.973	155.399	50.048	1	.000
N_conditions	519.127	13.7254	492.226	546.028	1430.535	1	.000
quint_imd	-52.568	8.3618	-68.956	-36.179	39.522	1	.000

(Scale)	**43.115[a]**	**.5096**	**42.128**	**44.126**			

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd

a. Maximum likelihood estimate.

HEALTH&SOCIAL CARE COSTS REGRESSION MODEL WITH UNDIAGNOSED MENTAL HEALTH

```
* Generalized Linear Models.
GENLIN USE_Total_health_social_care_costs WITH Age Gender_1st_participant N_conditions quint_imd
    undiagnosed_MH_use
  /MODEL Age Gender_1st_participant N_conditions quint_imd undiagnosed_MH_use INTERCEPT=YES
    SCALEWEIGHT=WEIGHT5
 DISTRIBUTION=TWEEDIE(1.5) LINK=IDENTITY
  /CRITERIA METHOD=FISHER SCALE=MLE COVB=MODEL MAXITERATIONS=50000 MAXSTEPHALVING=10
    PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD
    LIKELIHOOD=FULL
  /MISSING CLASSMISSING=EXCLUDE
  /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.
```

Generalized Linear Models

Notes

Output Created		**11-DEC-2019 15:51:46**
Comments		
Input	**Data**	**M:\HHS work\wave12_withgeo_CG.sav**
	Active Dataset	**DataSet1**
	Filter	**New_or_repeat=1 (FILTER)**
	Weight	**<none>**
	Split File	**<none>**
	N of Rows in Working Data File	**6675**
Missing Value Handling	**Definition of Missing**	**User-defined missing values for factor, subject and within-subject variables are treated as missing.**
	Cases Used	**Statistics are based on cases with valid data for all variables in the model.**
Weight Handling		**not applicable**

Syntax	**GENLIN USE_Total_health_social_care_costs WITH Age Gender_1st_participant N_conditions quint_imd** **undiagnosed_MH_use** **/MODEL Age Gender_1st_participant N_conditions quint_imd undiagnosed_MH_use INTERCEPT=YES** **SCALEWEIGHT=WEIGHT5** **DISTRIBUTION=TWEEDIE(1.5) LINK=IDENTITY** **/CRITERIA METHOD=FISHER SCALE=MLE COVB=MODEL MAXITERATIONS=50000 MAXSTEPHALVING=10** **PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD** **LIKELIHOOD=FULL** **/MISSING CLASSMISSING=EXCLUDE** **/PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.**

Resources	**Processor Time**	**00:00:02.30**
	Elapsed Time	**00:00:02.29**

Warnings

The maximum number of step-halvings was reached but the log-likelihood value cannot be further improved. Output for the last iteration is displayed.

The GENLIN procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Model Information

Dependent Variable	**Total_HSC**
Probability Distribution	**Tweedie (1.5)**
Link Function	**Identity**
Scale Weight Variable	**WEIGHT5**

Case Processing Summary

	N	**Percent**
Included	**5998**	**89.9%**

Excluded	**677**	**10.1%**
Total	**6675**	**100.0%**

Continuous Variable Information

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	**Total_HSC**	**5998**	**.00**	**203754.00**	**1003.1209**	**4290.19466**
Covariate	**Age**	**5998**	**18.00**	**100.00**	**49.0027**	**19.29905**
	Gender_1st_participant	**5998**	**1.00**	**2.00**	**1.5522**	**.49731**
	N_conditions	**5998**	**0**	**16**	**1.46**	**1.900**
	quint_imd	**5998**	**1**	**5**	**4.43**	**1.071**
	undiagnosed_MH_use	**5998**	**.00**	**1.00**	**.2656**	**.44168**
Scale Weight	**WEIGHT5**	**5998**	**0**	**10**	**1.0169**	**.75133**

Goodness of Fit[a]

	Value	df	Value/df
Deviance	**451509.842**	**5992**	**75.352**
Scaled Deviance	**10575.248**	**5992**	
Pearson Chi-Square	**3264449.300**	**5992**	**544.801**
Scaled Pearson Chi-Square	**76459.820**	**5992**	

Log Likelihood[b]	**-43306.282**		
Akaike's Information Criterion (AIC)	**86626.565**		
Finite Sample Corrected AIC (AICC)	**86626.584**		
Bayesian Information Criterion (BIC)	**86673.459**		
Consistent AIC (CAIC)	**86680.459**		

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
2431.795	**5**	**.000**

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

Source	Type III Wald Chi-Square	df	Sig.
(Intercept)	58.364	1	.000
Age	1.102	1	.294
Gender_1st_participant	58.557	1	.000
N_conditions	1393.999	1	.000
quint_imd	62.029	1	.000
undiagnosed_MH_use	108.275	1	.000

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	372.591	48.7710	277.002	468.181	58.364	1	.000

Age	**-.455**	**.4337**	**-1.305**	**.395**	**1.102**	**1**	**.294**
Gender_1st_participant	**122.914**	**16.0624**	**91.432**	**154.396**	**58.557**	**1**	**.000**
N_conditions	**505.131**	**13.5292**	**478.615**	**531.648**	**1393.999**	**1**	**.000**
quint_imd	**-64.277**	**8.1613**	**-80.273**	**-48.281**	**62.029**	**1**	**.000**
undiagnosed_MH_use	**249.953**	**24.0212**	**202.872**	**297.033**	**108.275**	**1**	**.000**
(Scale)	**42.695[a]**	**.5053**	**41.716**	**43.697**			

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

a. Maximum likelihood estimate.

2. REGRESSION OF COSTS WITH MODERATE CUTOFF FOR GAD7 AND PHW9

Generalized Linear Models

Notes

Output Created		**10-JAN-2023 15:50:26**
Comments		
Input	**Data**	**C:\Users\brenc\Documents\work\hhs paper\wave12_withgeo_CG from M drive.sav**

	Active Dataset	**DataSet1**
	Filter	**New_or_repeat = 1 (FILTER)**
	Weight	**<none>**
	Split File	**<none>**
	N of Rows in Working Data File	**6675**
Missing Value Handling	**Definition of Missing**	**User-defined missing values for factor, subject and within-subject variables are treated as missing.**
	Cases Used	**Statistics are based on cases with valid data for all variables in the model.**
Weight Handling		**not applicable**

Syntax	**GENLIN USE_Total_health_social_care_costs WITH Age Gender_1st_participant N_conditions quint_imd undiagnosed_based_on_moderat** **/MODEL Age Gender_1st_participant N_conditions quint_imd undiagnosed_based_on_moderat INTERCEPT=YES** **SCALEWEIGHT=WEIGHT5** **DISTRIBUTION=TWEEDIE(1.5) LINK=IDENTITY** **/CRITERIA METHOD=FISHER SCALE=MLE COVB=MODEL MAXITERATIONS=50000 MAXSTEPHALVING=10** **PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD** **LIKELIHOOD=FULL** **/MISSING CLASSMISSING=EXCLUDE** **/PRINT CPS DESCRIPTIVES MODELINFO FIT**

Resources	**Processor Time**	**00:00:02.14**
	Elapsed Time	**00:00:02.14**

Model Information

Dependent Variable	**Total_HSC**
Probability Distribution	**Tweedie (1.5)**
Link Function	**Identity**
Scale Weight Variable	**WEIGHT5**

Case Processing Summary

	N	**Percent**
Included	**5998**	**89.9%**
Excluded	**677**	**10.1%**
Total	**6675**	**100.0%**

Continuous Variable Information

		N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Dependent Variable	**Total_HSC**	**5998**	**.00**	**203754.00**	**1003.1209**	**4290.19466**

Covariate	**Age**	**5998**	**18.00**	**100.00**	**49.0027**	**19.29905**
	Gender_1st_participant	**5998**	**1.00**	**2.00**	**1.5522**	**.49731**
	N_conditions	**5998**	**0**	**16**	**1.46**	**1.900**
	quint_imd	**5998**	**1**	**5**	**4.43**	**1.071**
	undiagnosed_based_on_moderat	**5998**	**.00**	**1.00**	**.1047**	**.30619**
Scale Weight	**WEIGHT5**	**5998**	**0**	**10**	**1.0169**	**.75133**

Goodness of Fit[a]

	Value	**df**	**Value/df**
Deviance	**455197.009**	**5992**	**75.967**
Scaled Deviance	**10597.555**	**5992**	
Pearson Chi-Square	**3673833.680**	**5992**	**613.123**
Scaled Pearson Chi-Square	**85531.439**	**5992**	
Log Likelihood[b]	**-43349.333**		
Akaike's Information Criterion (AIC)	**86712.666**		
Finite Sample Corrected AIC (AICC)	**86712.684**		
Bayesian Information Criterion (BIC)	**86759.560**		

Consistent AIC (CAIC)	**86766.560**		

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_based_on_moderat

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
2345.694	**5**	**.000**

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_based_on_moderat

a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

	Type III		
Source	**Wald Chi-Square**	**df**	**Sig.**

(Intercept)	**55.493**	**1**	**<.001**
Age	**1.898**	**1**	**.168**
Gender_1st_participant	**62.039**	**1**	**<.001**
N_conditions	**1382.705**	**1**	**.000**
quint_imd	**47.491**	**1**	**<.001**
undiagnosed_based_on_moderat	**37.849**	**1**	**<.001**

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_based_on_moderat

Parameter Estimates

			95% Wald Confidence Interval		Hypothesis Test		
Parameter	**B**	**Std. Error**	**Lower**	**Upper**	**Wald Chi-Square**	**df**	**Sig.**
(Intercept)	**372.409**	**49.9920**	**274.426**	**470.391**	**55.493**	**1**	**<.001**
Age	**-.640**	**.4644**	**-1.550**	**.270**	**1.898**	**1**	**.168**
Gender_1st_participant	**132.631**	**16.8390**	**99.628**	**165.635**	**62.039**	**1**	**<.001**
N_conditions	**509.686**	**13.7069**	**482.821**	**536.551**	**1382.705**	**1**	**.000**
quint_imd	**-56.997**	**8.2707**	**-73.207**	**-40.786**	**47.491**	**1**	**<.001**
undiagnosed_based_on_moderat	**250.260**	**40.6785**	**170.532**	**329.989**	**37.849**	**1**	**<.001**

(Scale)	**42.953[a]**	**.5080**	**41.969**	**43.960**			

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_based_on_moderat

a. Maximum likelihood estimate.

3. REGRESSION WITHOUT NUMBER OF CONDITIONS OR UNDIAGNOSED MENTAL HEALTH TO EXPLORE IMPACT OF IMD QUINTILE ON COSTS

Generalized Linear Models

Notes

Output Created		**17-JAN-2023 14:21:29**
Comments		
Input	**Data**	**C:\Users\brenc\Documents\work\hhs paper\wave12_withgeo_CG from M drive.sav**

	Active Dataset	**DataSet1**
	Filter	**<none>**
	Weight	**<none>**
	Split File	**<none>**
	N of Rows in Working Data File	**7731**
Missing Value Handling	**Definition of Missing**	**User-defined missing values for factor, subject and within-subject variables are treated as missing.**
	Cases Used	**Statistics are based on cases with valid data for all variables in the model.**
Weight Handling		**not applicable**

Syntax	**GENLIN USE_Total_health_social_care_costs WITH Age Gender_1st_participant N_conditions quint_imd undiagnosed_MH_use /MODEL Age Gender_1st_participant N_conditions quint_imd undiagnosed_MH_use INTERCEPT=YES SCALEWEIGHT=WEIGHT5 DISTRIBUTION=TWEEDIE(1.5) LINK=IDENTITY /CRITERIA METHOD=FISHER SCALE=MLE COVB=MODEL MAXITERATIONS=50000 MAXSTEPHALVING=10 PCONVERGE=1E-006(ABSOLUTE) SINGULAR=1E-012 ANALYSISTYPE=3(WALD) CILEVEL=95 CITYPE=WALD LIKELIHOOD=FULL /MISSING CLASSMISSING=EXCLUDE /PRINT CPS DESCRIPTIVES MODELINFO FIT SUMMARY SOLUTION.**

Resources	**Processor Time**	**00:00:02.66**
	Elapsed Time	**00:00:02.66**

Warnings

The maximum number of step-halvings was reached but the log-likelihood value cannot be further improved. Output for the last iteration is displayed.
The GENLIN procedure continues despite the above warning(s). Subsequent results shown are based on the last iteration. Validity of the model fit is uncertain.

Model Information

Dependent Variable	**Total_HSC**
Probability Distribution	**Tweedie (1.5)**
Link Function	**Identity**
Scale Weight Variable	**WEIGHT5**

Case Processing Summary

	N	**Percent**
Included	**6985**	**90.4%**

Excluded	**746**	**9.6%**
Total	**7731**	**100.0%**

Continuous Variable Information

		N	Minimum	Maximum	Mean	Std. Deviation
Dependent Variable	**Total_HSC**	**6985**	**.00**	**203754.00**	**1000.4431**	**4068.14276**
Covariate	**Age**	**6985**	**18.00**	**100.00**	**49.2278**	**19.02923**
	Gender_1st_participant	**6985**	**1.00**	**2.00**	**1.5621**	**.49617**
	N_conditions	**6985**	**0**	**16**	**1.47**	**1.919**
	quint_imd	**6985**	**1**	**5**	**4.47**	**1.032**
	undiagnosed_MH_use	**6985**	**.00**	**1.00**	**.2677**	**.44280**
Scale Weight	**WEIGHT5**	**6985**	**0**	**10**	**.9972**	**.73440**

Goodness of Fit[a]

	Value	df	Value/df
Deviance	**505047.681**	**6979**	**72.367**
Scaled Deviance	**12268.813**	**6979**	
Pearson Chi-Square	**3429081.329**	**6979**	**491.343**
Scaled Pearson Chi-Square	**83300.564**	**6979**	

Log Likelihood[b]	**-50525.297**		
Akaike's Information Criterion (AIC)	**101064.594**		
Finite Sample Corrected AIC (AICC)	**101064.610**		
Bayesian Information Criterion (BIC)	**101112.554**		
Consistent AIC (CAIC)	**101119.554**		

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

a. Information criteria are in smaller-is-better form.

b. The full log likelihood function is displayed and used in computing information criteria.

Omnibus Test[a]

Likelihood Ratio Chi-Square	df	Sig.
2862.209	**5**	**.000**

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

a. Compares the fitted model against the intercept-only model.

Tests of Model Effects

Source	Type III Wald Chi-Square	df	Sig.
(Intercept)	63.050	1	<.001
Age	2.916	1	.088
Gender_1st_participant	75.972	1	.000
N_conditions	1650.578	1	.000
quint_imd	63.203	1	<.001
undiagnosed_MH_use	129.585	1	.000

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

Parameter Estimates

Parameter	B	Std. Error	95% Wald Confidence Interval		Hypothesis Test		
			Lower	Upper	Wald Chi-Square	df	Sig.
(Intercept)	358.206	45.1119	269.789	446.624	63.050	1	<.001

Age	**-.677**	**.3963**	**-1.453**	**.100**	**2.916**	**1**	**.088**
Gender_1st_participant	**128.717**	**14.7676**	**99.773**	**157.661**	**75.972**	**1**	**.000**
N_conditions	**492.692**	**12.1271**	**468.923**	**516.461**	**1650.578**	**1**	**.000**
quint_imd	**-60.573**	**7.6192**	**-75.506**	**-45.639**	**63.203**	**1**	**<.001**
undiagnosed_MH_use	**253.380**	**22.2584**	**209.754**	**297.006**	**129.585**	**1**	**.000**
(Scale)	**41.165[a]**	**.4522**	**40.288**	**42.061**			

Dependent Variable: Total_HSC

Model: (Intercept), Age, Gender_1st_participant, N_conditions, quint_imd, undiagnosed_MH_use

a. Maximum likelihood estimate.

4. REGRESSION OF EQ-5D INDEX SCORE WITHOUT UNDIAGNOSED MENTAL HEALTH

```
REGRESSION
  /MISSING LISTWISE
  /REGWGT=WEIGHT5
  /STATISTICS COEFF OUTS R ANOVA
  /CRITERIA=PIN(.05) POUT(.10)
  /NOORIGIN
```

/DEPENDENT EQ5D_utility

/METHOD=ENTER Age Gender_1st_participant N_conditions quint_imd

/RESIDUALS NORMPROB(ZRESID).

Regression

Notes

Output Created		**11-DEC-2019 15:44:49**
Comments		
Input	**Data**	**M:\HHS work\wave12_withgeo_CG.sav**
	Active Dataset	**DataSet1**
	Filter	**New_or_repeat=1 (FILTER)**
	Weight	**<none>**
	Split File	**<none>**
	N of Rows in Working Data File	**6675**
Missing Value Handling	**Definition of Missing**	**User-defined missing values are treated as missing.**

	Cases Used	**Statistics are based on cases with no missing values for any variable used.**
Syntax		**REGRESSION** **/MISSING LISTWISE** **/REGWGT=WEIGHT5** **/STATISTICS COEFF OUTS R ANOVA** **/CRITERIA=PIN(.05) POUT(.10)** **/NOORIGIN** **/DEPENDENT EQ5D_utility** **/METHOD=ENTER Age Gender_1st_participant N_conditions quint_imd** **/RESIDUALS NORMPROB(ZRESID).**
Resources	**Processor Time**	**00:00:00.09**
	Elapsed Time	**00:00:00.09**
	Memory Required	**47552 bytes**
	Additional Memory Required for Residual Plots	**248 bytes**

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	quint_imd, Gender_1st_participant, N_conditions, Age[c]	.	Enter

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. All requested variables entered.

Model Summary[b,c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.615[a]	.378	.378	.2264322

a. Predictors: (Constant), quint_imd, Gender_1st_participant, N_conditions, Age

b. Dependent Variable: EQ5D_utility

c. Weighted Least Squares Regression - Weighted by WEIGHT5

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	186.525	4	46.631	909.498	.000[c]
	Residual	306.604	5980	.051		
	Total	493.129	5984			

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. Predictors: (Constant), quint_imd, Gender_1st_participant, N_conditions, Age

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.134	.016		69.379	.000
	Age	-.001	.000	-.076	-6.924	.000

	Gender_1st_participant	-.012	.006	-.021	-2.034	.042
	N_conditions	-.095	.002	-.567	-51.498	.000
	quint_imd	-.028	.003	-.113	-10.998	.000

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

Residuals Statistics[a,b]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.630765	1.073533	.798142	.1933642	5985
Residual	-1.3520548	1.1467655	-.0130610	.2524559	5985
Std. Predicted Value[c]	.	.	.	.	0
Std. Residual[c]	.	.	.	.	0

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. Not computed for Weighted Least Squares regression.

5. REGRESSION OF EQ-5D INDEX SCORE WITH UNDIAGNOSED MENTAL HEALTH

REGRESSION

/MISSING LISTWISE

/REGWGT=WEIGHT5

/STATISTICS COEFF OUTS R ANOVA

/CRITERIA=PIN(.05) POUT(.10)

/NOORIGIN

/DEPENDENT EQ5D_utility

/METHOD=ENTER Age Gender_1st_participant N_conditions quint_imd undiagnosed_MH_use

/RESIDUALS NORMPROB(ZRESID).

Regression

Notes

Output Created		**11-DEC-2019 15:45:43**
Comments		
Input	**Data**	**M:\HHS work\wave12_withgeo_CG.sav**

	Active Dataset	**DataSet1**
	Filter	**New_or_repeat=1 (FILTER)**
	Weight	**<none>**
	Split File	**<none>**
	N of Rows in Working Data File	**6675**
Missing Value Handling	**Definition of Missing**	**User-defined missing values are treated as missing.**
	Cases Used	**Statistics are based on cases with no missing values for any variable used.**
Syntax		**REGRESSION** **/MISSING LISTWISE** **/REGWGT=WEIGHT5** **/STATISTICS COEFF OUTS R ANOVA** **/CRITERIA=PIN(.05) POUT(.10)** **/NOORIGIN** **/DEPENDENT EQ5D_utility** **/METHOD=ENTER Age Gender_1st_participant N_conditions quint_imd undiagnosed_MH_use** **/RESIDUALS NORMPROB(ZRESID).**

Resources	**Processor Time**	**00:00:00.11**
	Elapsed Time	**00:00:00.09**
	Memory Required	**48208 bytes**
	Additional Memory Required for Residual Plots	**232 bytes**

Warnings

No plots are produced for Weighted Least Squares regression. You can SAVE the appropriate variables and use other procedures (e.g., EXAMINE and PLOT) to produce the requested plots. To plot weighted versions of the residuals and predicted values, use COMPUTE before plotting: COMPUTE RESID = SQRT(REGWGTvar) * RESID COMPUTE PRED = SQRT(REGWGTvar) * PRED.

Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	**undiagnosed_MH_use, Age, Gender_1st_participant, quint_imd, N_conditions[c]**	**.**	**Enter**

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. All requested variables entered.

Model Summary[b,c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.618[a]	.382	.382	.2257455

a. Predictors: (Constant), undiagnosed_MH_use, Age, Gender_1st_participant, quint_imd, N_conditions

b. Dependent Variable: EQ5D_utility

c. Weighted Least Squares Regression - Weighted by WEIGHT5

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	188.433	5	37.687	739.519	.000[c]
	Residual	304.696	5979	.051		
	Total	493.129	5984			

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. Predictors: (Constant), undiagnosed_MH_use, Age, Gender_1st_participant, quint_imd, N_conditions

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.140	.016		69.837	.000
	Age	-.001	.000	-.076	-6.949	.000
	Gender_1st_participant	-.011	.006	-.020	-1.954	.051
	N_conditions	-.095	.002	-.565	-51.465	.000
	quint_imd	-.027	.003	-.110	-10.700	.000
	undiagnosed_MH_use	-.040	.007	-.062	-6.119	.000

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

Residuals Statistics[a,b]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	-.654617	1.081059	.798473	.1942564	5985
Residual	-1.3230425	1.1706175	-.0133921	.2517701	5985
Std. Predicted Value[c]	.	.	.	.	0
Std. Residual[c]	.	.	.	.	0

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. Not computed for Weighted Least Squares regression.

6. REGRESSION WITH UNDIAGNOSED MENTAL HEALTH BASED ON MODERATE CUTOFF FOR PHQ9 AND GAD7

Variables Entered/Removed[a,b]

Model	Variables Entered	Variables Removed	Method
1	undiagnosed_based_on_moderat, Gender_1st_participant, Age, quint_imd, N_conditions[c]	.	Enter

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. All requested variables entered.

Model Summary[b,c]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.620[a]	.385	.384	.2252517

a. Predictors: (Constant), undiagnosed_based_on_moderat, Gender_1st_participant, Age, quint_imd, N_conditions

b. Dependent Variable: EQ5D_utility

c. Weighted Least Squares Regression - Weighted by WEIGHT5

ANOVA[a,b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	189.765	5	37.953	748.014	.000[c]
	Residual	303.364	5979	.051		
	Total	493.129	5984			

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. Predictors: (Constant), undiagnosed_based_on_moderat, Gender_1st_participant, Age, quint_imd, N_conditions

Coefficients[a,b]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.140	.016		70.047	.000
	Age	-.001	.000	-.081	-7.383	<.001
	Gender_1st_participant	-.012	.006	-.021	-2.021	.043
	N_conditions	-.094	.002	-.560	-50.943	.000
	quint_imd	-.027	.003	-.110	-10.738	<.001

	undiagnosed_based_on_moderat	**-.076**	**.010**	**-.081**	**-7.990**	**<.001**

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

Residuals Statistics[a,b]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	**-.682313**	**1.079419**	**.798317**	**.1946455**	**5985**
Residual	**-1.3622371**	**1.1983134**	**-.0132355**	**.2512853**	**5985**
Std. Predicted Value[c]	**.**	**.**	**.**	**.**	**0**
Std. Residual[c]	**.**	**.**	**.**	**.**	**0**

a. Dependent Variable: EQ5D_utility

b. Weighted Least Squares Regression - Weighted by WEIGHT5

c. Not computed for Weighted Least Squares regression.

7.