Relation Between Marital Status and Life Satisfaction with Different Health Outcomes Among the Elderly

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Abstract

Background: According previous studies and analysis, it has been discovered that less depression is correlated with high marital output. Single adults, however, have better mental health effects than individuals who are unhappily married/ Divorced/Widowed.

Aim: The purpose of this study was to explore the link between elderly people's marital status, feeling of depression and loneliness, any self reported long term illness and self rated health; to examine whether marital status is a health risk factor. Variables like gender and age were used to support this study.

Methods: This study is done using data from the English Longitudinal Study of Ageing (ELSA Wave 7). To test if marital status is statistically correlated with health effects such as depression and loneliness, the Chi-square test was used. To assess the risk factors for the welfare of older people, Binary Logistic Regression model is used.

Results: This study results in finding that, people above the age of 50 are very vulnerable to many different factors in life that affect their mental as well as physical health. Regularly meeting their children or relatives could improve their lives and keep them mentally strong. Not having a partner has an adverse effect on health which may cause depression or loneliness. This can further lead to long-term illnesses and finally a poor health condition.

Conclusion: The goal that the elderly population from the UK should have is to be socially engaged as much as possible and maintain the relation with their partner to lead a better and healthier life. Which means that marital status does play an important role in the health outcomes of the elderly. To further study this topic, more detailed statistical analysis will be required with access to more data from other waves of the ELSA dataset.

1. Introduction

1.1 Context of the Study

Owing to the vulnerability of both physical and mental illnesses and relationships, elderly people can suffer from numerous health disorders. There are various conditions and factors that may influence the quality of life of the elderly population. According to WHO statements, in the sense of the community and values structures in which they live and in relation to their priorities, aspirations, standards and concerns, quality of life is characterized as an individual's view of their place in life. Moreover, quality of life is identified as a well-being resulting from a combination of physical, functional, emotional and social factors. The main reason for this study was to improve the quality of life of elderly adults by determining different risk factors affecting their health and how they corelate with each other.

1.2 Research Aims and Objectives

This study majorly aims to find the relation between Self Reported Health (SRH), feeling of loneliness and depressed, and Marital Status of the elderly population of the United Kingdom. Also, how demographics such as Age and Gender play an important role in this correlation will be part of this study.

The objectives to be covered in this study are as follows:

- How Marital status affects the outcome of the Long-term illness.
- How Life Satisfaction affects the outcome of the SRH.
- How Demographics and SRH changes the feeling of loneliness.
- How Marital status changes the feeling of depression
- How meeting with children affects the Life satisfaction of the elderly.

2. Methodology

The methodological methods used in this analysis as well as the explanations to why they are relevant for this study and data will be presented in this section. It will present a detailed summary of the variables selected for this analysis. In addition, statistical techniques used for data analysis are also presented.

2.1 Study Population

The English Longitudinal Study of Ageing (ELSA) is a nationally representative panel study of people aged 50 years or older living in England. Data are collected every two years using computer-assisted personal interviews and self-completion questionnaires, with home visits from a research nurse every four years for the collection of biomarkers (Steptoe A, et. al, 2013). It was carried out by the Health Survey of England (HSE). For the purpose of this study data collected from 2014-2015 was used which is known as ELSA wave 7. In total there were 9666 participants that took part in the survey.

2.2 Chosen Variables

2.2.1 Physical Health

- **Self Reported General Health (SRH)**
  Even though the SRH is subjective to each of the respondent, many studies have shown that it can be used to predict the several different health related problems. SRH is consistent with objective health status and can serve as a global measure of health status in the general population (Wang et al., 2013).

- **Self Reported Long term illness**
  Participants were asked whether they can confirm any diagnosis of long term illnesses or conditions.

2.2.2 Mental Health

- **Loneliness**
  Individuals taking part in survey were asked if they felt lonely during the past week from the time of the interview.
- **Depression**
  Individuals taking part in survey were asked if they felt depressed over the past week from the time of the interview.
- **Life Satisfaction**
  Respondents were asked if they were satisfied with their life. In which the responses were divided into 7 categories. But for the purpose of this study they were recoded into two outcomes to make it a binary variable.

2.2.3 Marital Status

The respondents were asked to state their marital status and were classified into 11 different categories. But for the purpose of this study these 11 categories have been recoded into 4 categories namely: single, married, separated and widowed to make it more consistent.

2.2.4 Demographics

For the purpose of comparison in this study demographic variables such as age and gender were used.

Table 1: Variables selected for this study

Label	Variable Code	Responses
Self-rated General Health	Hehelf	1= excellent 2= very good 3= good 4= fair 5= or poor
Sex of respondent	indsex	1= Male 2= Female
Age of respondent	ageGrp	Recoded 1= Age 50-65 2= Age 65-80 3= Age 80+

Marital Status	MaritalStatus	Recoded 1= Single 2= Married/Relationship 3= Separated/Divorced 4= Widowed
Felt Depressed	PScedA	1= Yes 2= No
Felt Lonely	PScedE	1= Yes 2=No
Life satisfaction	lifeSatisfacation	Recoded 1= Agree 2= Disagree
Self-reported Long-term illness	Heill	1= Yes 2= No
How often do you meet your children?	meetingChild	Recoded 1= A lot 2= some 3= A little 4= Not at All

2.3 Statistical Analysis

The analysis for this study was carried out using IBM SPSS Statistics 26.

2.3.1 Descriptive Statistics

According to William M.K. Trochim(2020), to explains the basic features of the data in a sample, descriptive statistics are used. They offer quick summaries of the sample and the steps. They form the base of nearly all quantitative data analysis, along with easy graphics analysis. Description of all the variables used in this study will be explained using the descriptive statistics methods.

2.3.2 Chi-squared Test

In this study we use the chi-squared test to find the relation between two categorical variables and to identify the Null hypothesis (H_0). The null hypothesis in the chi-squared test shows that there is no relation between the two variables. If the Asymptotic significance i.e. p-value>0.001 then we accept the null hypothesis and we can conclude that there is no significance between the two selected variables. On the other hand, when p-value<0.001 we reject the H_0, hence there is some significance between the variables.

2.3.3 Binary Logistic Regression

Binary Logistic Regression is carried out when the chosen dependent variable is binary and the independent variables used are categorical. The factors affecting the outcome of feeling lonely or depressed and the reporting of any long term illness will be studied using Logistic Regression technique.

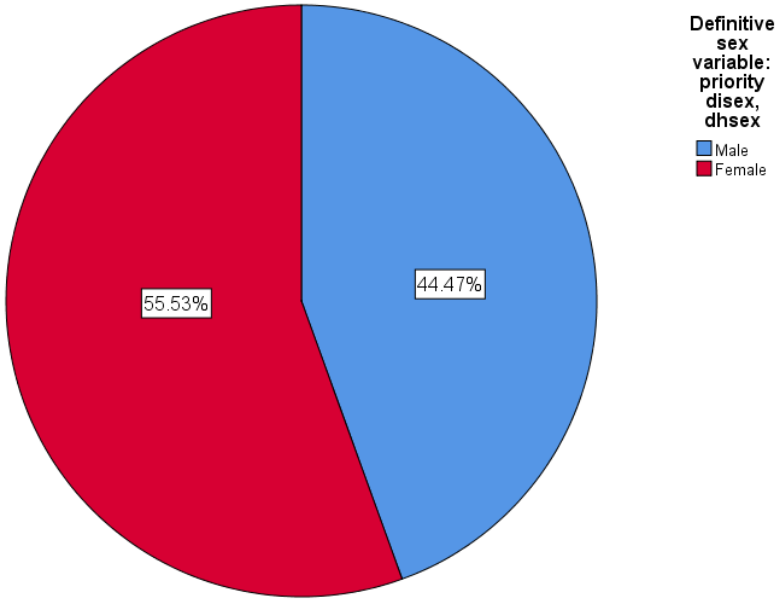
For this study, the aim is to find the relationship between mental health outcomes with marital status, spending time with children and self reported health. Also, demographic variables like age and sex will be used to find additional significance.

3. Results

3.1 Descriptive Statistics

3.1.1 Gender Distribution

The figure below shows the distribution of males and females, who participated in the Health Survey of England. Out of 9666 respondents around 44.5% and 55.5% were males and females respectively that participated in the survey of ELSA wave 7.

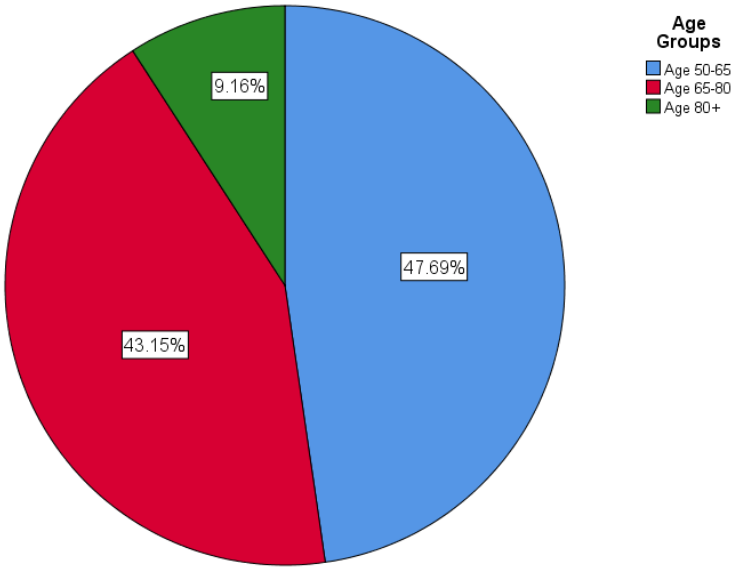


Definitive sex variable: priority disex, dhsex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4298	44.5	44.5	44.5
	Female	5368	55.5	55.5	100.0
	Total	9666	100.0	100.0	

3.1.2 Age Distribution

The figure below shows the distribution of participants based on their age groups. Age groups are divided into the following categories: 50-65, 65-80 and 80+.

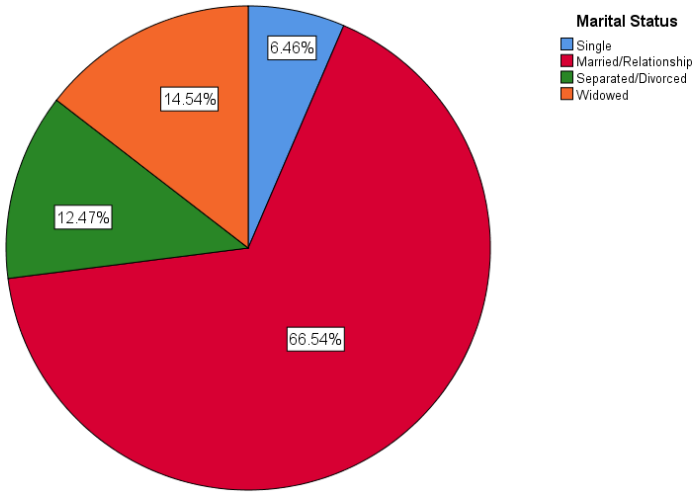


Age Groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Age 50-65	4610	47.7	47.7	47.7
	Age 65-80	4171	43.2	43.2	90.8
	Age 80+	885	9.2	9.2	100.0
	Total	9666	100.0	100.0	

3.3.3 Marital Status Distribution

The figure below shows the distribution of various categories of marital status as a result of the participants responses.



Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	624	6.5	6.5	6.5
	Married/Relationship	6430	66.5	66.5	73.0
	Separated/Divorced	1205	12.5	12.5	85.5
	Widowed	1405	14.5	14.5	100.0
	Total	9664	100.0	100.0	
Missing	System	2	.0		
Total		9666	100.0		

3.3.4 Mental Health

Life Satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	6418	66.4	87.4	87.4
	Disagree	923	9.5	12.6	100.0
	Total	7341	75.9	100.0	
Missing	System	2325	24.1		

Total		9666	100.0		

Whether felt depressed much of the time during past week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1043	10.8	11.6	11.6
	No	7958	82.3	88.4	100.0
	Total	9001	93.1	100.0	
Missing	Refusal	50	.5		
	Don't Know	18	.2		
	Item not applicable	597	6.2		
	Total	665	6.9		
Total		9666	100.0		

Whether felt lonely much of the time during past week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	959	9.9	10.7	10.7
	No	8036	83.1	89.3	100.0
	Total	8995	93.1	100.0	
Missing	Refusal	51	.5		
	Don't Know	23	.2		
	Item not applicable	597	6.2		
	Total	671	6.9		
Total		9666	100.0		

3.2 Inferential Statistics

3.2.1 Chi-Squared Test Results

3.2.1.1 Relationship between SRH, Gender and Age

According to the table below, the p-value for both Male and Female is less than 0.001. Also, same is the case with different age groups. Hence, we can conclude that we reject the null hypothesis (H_0) and state that there is statistical significance between gender of the respondent and SRH.

Test Statistics

Definitive sex variable: priority disex, dhsex		Self-reported general health
Male	Chi-Square	959.369[a]
	df	4
	Asymp. Sig.	.000
Female	Chi-Square	1199.541[b]
	df	4
	Asymp. Sig.	.000

Test Statistics

Age Groups		Self-reported general health
Age 50-65	Chi-Square	1034.958[a]
	df	4
	Asymp. Sig.	.000
Age 65-80	Chi-Square	1090.584[b]
	df	4
	Asymp. Sig.	.000
Age 80+	Chi-Square	232.211[c]
	df	4
	Asymp. Sig.	.000

3.2.1.2 Relationship between Life Satisfaction, Gender and Age Groups

The tables below shows that both Gender and Age group play an important role in the variability of the life satisfaction of the elderly population as the p-value<0.001.

Test Statistics

Age Groups		Life Satisfaction
Age 50-65	Chi-Square	1776.653[a]
	df	1
	Asymp. Sig.	.000
Age 65-80	Chi-Square	2022.682[b]
	df	1
	Asymp. Sig.	.000
Age 80+	Chi-Square	320.826[c]
	df	1
	Asymp. Sig.	.000

Test Statistics

Definitive sex variable: priority disex, dhsex		Life Satisfaction
Male	Chi-Square	1950.329[a]
	df	1
	Asymp. Sig.	.000
Female	Chi-Square	2166.233[b]
	df	1
	Asymp. Sig.	.000

3.2.1.3 Relationship between Marital Status and Life Satisfaction

From the table below, it can be concluded that there is statistically significant relation between Marital status and the life expectancy of old adults as the p-value<0.001 for each category of the marital status variable

Test Statistics

Marital Status		Self-reported general health
Single	Chi-Square	127.802[a]
	df	4
	Asymp. Sig.	.000
Married/Relationship	Chi-Square	1661.736[b]
	df	4
	Asymp. Sig.	.000
Separated/Divorced	Chi-Square	219.438[c]
	df	4
	Asymp. Sig.	.000
Widowed	Chi-Square	337.287[d]
	df	4
	Asymp. Sig.	.000

3.2.1.4 Relationship between Marital Status and Long-term illness

From the table below, it can be concluded that there is statistical significance between being widowed and reporting to have a long-term illness among the older population as the p-value<0.001 for the same. And for the other categories of the marital status, we can accept the null hypothesis and reject the possibility of any correlation.

Test Statistics

Marital Status		Whether has self-reported long-standing illness
Single	Chi-Square	1.853[a]
	df	1
	Asymp. Sig.	.173
Married/Relationship	Chi-Square	2.588[b]

	df	1
	Asymp. Sig.	.108
Separated/Divorced	Chi-Square	42.012[c]
	df	1
	Asymp. Sig.	.000
Widowed	Chi-Square	171.588[d]
	df	1
	Asymp. Sig.	.000

3.3 Logistic Regression Results

3.3.1 Binary Logistic Regression

3.3.1.1 Long-term illness and Marital Status based on Gender

From the first table, it can be concluded that each marital status is being compared with the "widowed" category to find the risk of long-term illness among the older adults. Similarly, for age groups, the reference category is (Age 80+) and for Gender (Female) category is the reference. From the second table, we conclude that for Single (1), Married (2) and Divorced (3) the likelihood of not reporting any long-term illness is 1.6, 1.4 and 1.1 times less than that of Widowed. Similarly, in the case of age groups, Age 50-65 (1), and Age 65-80 (2) are 2.2 and 1.3 times less likely to report any long-term illness compared to people aged 80+. And for males (1), they are 0.9 times more likely to report a long-term illness than a female.

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Marital Status	Single	624	1.000	.000	.000
	Married/Relationship	6429	.000	1.000	.000
	Separated/Divorced	1205	.000	.000	1.000
	Widowed	1405	.000	.000	.000
Age Groups	Age 50-65	4608	1.000	.000	
	Age 65-80	4170	.000	1.000	
	Age 80+	885	.000	.000	
Definitive sex variable: priority disex, dhsex	Male	4295	1.000		
	Female	5368	.000		

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	Age Groups			180.755	2	.000			
	Age Groups(1)	.788	.082	91.831	1	.000	**2.200**	1.872	2.584
	Age Groups(2)	.267	.081	10.801	1	.001	**1.307**	1.114	1.532
	Marital Status			81.579	3	.000			
	Marital Status(1)	.340	.103	10.920	1	.001	**1.405**	1.148	1.718
	Marital Status(2)	.499	.066	56.655	1	.000	**1.647**	1.447	1.876
	Marital Status(3)	.110	.085	1.668	1	.196	**1.117**	.945	1.320
	Definitive sex variable: priority disex, dhsex(1)	-.054	.043	1.628	1	.202	**.947**	.871	1.030
	Constant	-1.026	.083	152.644	1	.000	.359		

3.3.1.2 Marital Status, Age and Feeling of Depression

In terms of marital status, Single (1) people are 1.3 times less likely to feel depressed compared to widowed people. Similarly, Married (2) people are 2.5 times less and Divorced (3) people are 1.2 times less likely to feel depressed compared to people in widowed category.

Based on the age groups, there is an odds ratio of about 1.4 and 1.5 times less for people in age groups 50-65 and 65-80 respectively to feel depressed compared to people above age of 80.

Table 2 Creating Dummy Variables

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Marital Status	Single	598	1.000	.000	.000
	Married/Relationship	5922	.000	1.000	.000
	Separated/Divorced	1154	.000	.000	1.000
	Widowed	1325	.000	.000	.000
Age Groups	Age 50-65	4259	1.000	.000	
	Age 65-80	3933	.000	1.000	
	Age 80+	807	.000	.000	

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	Age Groups			13.587	2	.001			
	Age Groups(1)	.331	.113	8.562	1	.003	**1.392**	1.115	1.737
	Age Groups(2)	.402	.109	13.582	1	.000	**1.495**	1.207	1.851
	Marital Status			136.739	3	.000			
	Marital Status(1)	.258	.139	3.451	1	.063	**1.294**	.986	1.700

	Marital Status(2)	.903	.089	103.937	1	.000	**2.467**	2.074	2.935
	Marital Status(3)	.217	.112	3.729	1	.053	**1.242**	.997	1.549
	Constant	1.125	.099	130.230	1	.000	3.081		

a. Variable(s) entered on step 1: Age Groups, Marital Status.

3.3.1.3 Self-rated Health and Feeling of Loneliness

The self-reported general health, people with excellent health (1) have the odds ratio of 8.6 times less likelihood of reporting loneliness than those with poor health. Similarly, for people very good health (2)- (6.6 times) less, people with good health (3)- (3.8 times) less and for people with fair health (4)-(2 times) less likely to report loneliness.

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Self-reported general health			360.362	4	.000			
	Self-reported general health(1)	2.156	.171	159.872	1	.000	**8.640**	6.185	12.070
	Self-reported general health(2)	1.890	.120	249.782	1	.000	**6.621**	5.238	8.370
	Self-reported general health(3)	1.336	.106	160.003	1	.000	**3.805**	3.093	4.680
	Self-reported general health(4)	.684	.107	40.494	1	.000	**1.981**	1.605	2.446
	Constant	.905	.085	112.495	1	.000	2.472		

a. Variable(s) entered on step 1: Self-reported general health.

3.3.1.4 Meeting children and Life Satisfaction

From the table below, it can be concluded that people meeting their children sometimes i.e. (1) is not significant but people meeting their children very rarely or never i.e. (2) has a likelihood of decreased life satisfaction by 250% as compared to people meeting their children regularly.

Categorical Variables Codings

			Parameter coding	
		Frequency	(1)	(2)
Meeting Children	A lot	1219	1.000	.000
	Some	4475	.000	1.000
	A little	148	.000	.000

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Meeting Children			22.488	2	.000			
	Meeting Children(1)	.013	.103	.016	1	.900	**1.013**	.829	1.238
	Meeting Children(2)	.940	.212	19.637	1	.000	**2.560**	1.689	3.879
	Constant	-2.075	.091	520.153	1	.000	**.126**		

a. Variable(s) entered on step 1: Meeting Children.

4. Conclusion

Marital status plays an important role in the outcome of the health conditions reported by the elderly population of the UK. Additionally, mental health problems like loneliness and depression are the side effects of the bad marital status and hence has high significance in altering the quality of life and diagnosis of any long-term illness for that matter. Apart from the variables considered in this study there are many health outcome factors attributable to the multidimensional health concept. Any variables are correlated with these dependent variables, which may conflict with the final findings of this analysis. For example, that the prevalence of chronic physical diseases raises the risk of depression (Moussavi et al.,2007).

There were limitations to this study as only Wave 7 of the ELSA dataset was used for the statistical analysis. Also the missing data for some variables was in large quantity.

5. References

- Moussavi, S., Chatterji, S., Verdes, E., Tandon, A., Patel, V., & Ustun, B. (2007). Depression, chronic
- diseases, and decrements in health: results from the World Health Surveys. The Lancet, 370(9590), 851-858.
- Steptoe, A., Breeze, E., Banks, J., & Nazroo, J. (2013). Cohort profile: the English longitudinal study of ageing. International journal of epidemiology, 42(6), 1640-1648.
- Wang, R., Wu, S., Zhao, Y., Ma, X., Wu, M., Yan, X., & He, J. (2013). The relationship between self-rated health and objective health status: a population-based study. BMC public health, 13(1), 1-9.
- William M.K. Trochim(March,2020), Descriptive Statistics, retrieved on 05 February, 2021, from, https://conjointly.com/kb/descriptive-statistics/

6. Appendix

```
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SPLIT FILE LAYERED BY indsex.
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  /EXPECTED=EQUAL
  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS.
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	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
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a. Based on availability of workspace memory.

Descriptive Statistics

Definitive sex variable: priority disex, dhsex		N	Mean	Std. Deviation	Minimum	
Male	Self-reported general health	3975	2.81	1.101	1	
Female	Self-reported general health	5091	2.81	1.102	1	

Chi-Square Test
Frequencies

Self-reported general health

Definitive sex variable: priority disex, dhsex		Observed N	Expected N	Residual
Male	...excellent,	467	795.0	-328.0
	very good,	1169	795.0	374.0
	good,	1312	795.0	517.0
	fair,	725	795.0	-70.0
	or, poor?	302	795.0	-493.0
	Total	3975		
Female	...excellent,	609	1018.2	-409.2
	very good,	1471	1018.2	452.8
	good,	1677	1018.2	658.8
	fair,	957	1018.2	-61.2
	or, poor?	377	1018.2	-641.2
	Total	5091		

Test Statistics

Definitive sex variable: priority disex, dhsex		Self-reported general health
Male	Chi-Square	959.369[a]
	df	4
	Asymp. Sig.	.000
Female	Chi-Square	1199.541[b]
	df	4
	Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 795.0.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1018.2.

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SORT CASES  BY MaritalStatus.
SPLIT FILE LAYERED BY MaritalStatus.
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  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS.
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NPar Tests

Notes

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Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /CHISQUARE=Hehelf /EXPECTED=EQUAL /STATISTICS DESCRIPTIVES /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.53
	Elapsed Time	00:00:00.54
	Number of Cases Allowed[a]	786432

a. Based on availability of workspace memory.

Descriptive Statistics

Marital Status		N	Mean	Std. Deviation	Minimum	
.	Self-reported general health	2	3.00	.000	3	
Single	Self-reported general health	605	2.85	1.138	1	
Married/Relationship	Self-reported general health	5967	2.70	1.079	1	
Separated/Divorced	Self-reported general health	1163	2.98	1.134	1	
Widowed	Self-reported general health	1329	3.12	1.077	1	

Chi-Square Test
Frequencies

Self-reported general health

Marital Status		Observed N	Expected N	Residual
.	good,	2	2.0	.0
	Total	2[a]		
Single	good,	208	121.0	87.0
	Total	605		
	...excellent,	75	121.0	-46.0
	very good,	160	121.0	39.0
	fair,	104	121.0	-17.0
	or, poor?	58	121.0	-63.0
Married/Relationship	good,	1963	1193.4	769.6
	Total	5967		
	...excellent,	795	1193.4	-398.4
	very good,	1893	1193.4	699.6
	fair,	949	1193.4	-244.4
	or, poor?	367	1193.4	-826.4
Separated/Divorced	good,	379	232.6	146.4
	Total	1163		
	...excellent,	120	232.6	-112.6

	very good,	284	232.6	51.4
	fair,	263	232.6	30.4
	or, poor?	117	232.6	-115.6
Widowed	good,	437	265.8	171.2
	Total	1329		
	...excellent,	86	265.8	-179.8
	very good,	303	265.8	37.2
	fair,	366	265.8	100.2
	or, poor?	137	265.8	-128.8

a. This variable is constant. Chi-Square Test cannot be performed.

Test Statistics

Marital Status		Self-reported general health
Single	Chi-Square	127.802[a]
	df	4
	Asymp. Sig.	.000
Married/Relationship	Chi-Square	1661.736[b]
	df	4
	Asymp. Sig.	.000
Separated/Divorced	Chi-Square	219.438[c]
	df	4
	Asymp. Sig.	.000
Widowed	Chi-Square	337.287[d]
	df	4
	Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 121.0.
b. 0 cells (0.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 1193.4.
c. 0 cells (0.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 232.6.
d. 0 cells (0.0%) have expected frequencies less than 5.
The minimum expected cell frequency is 265.8.

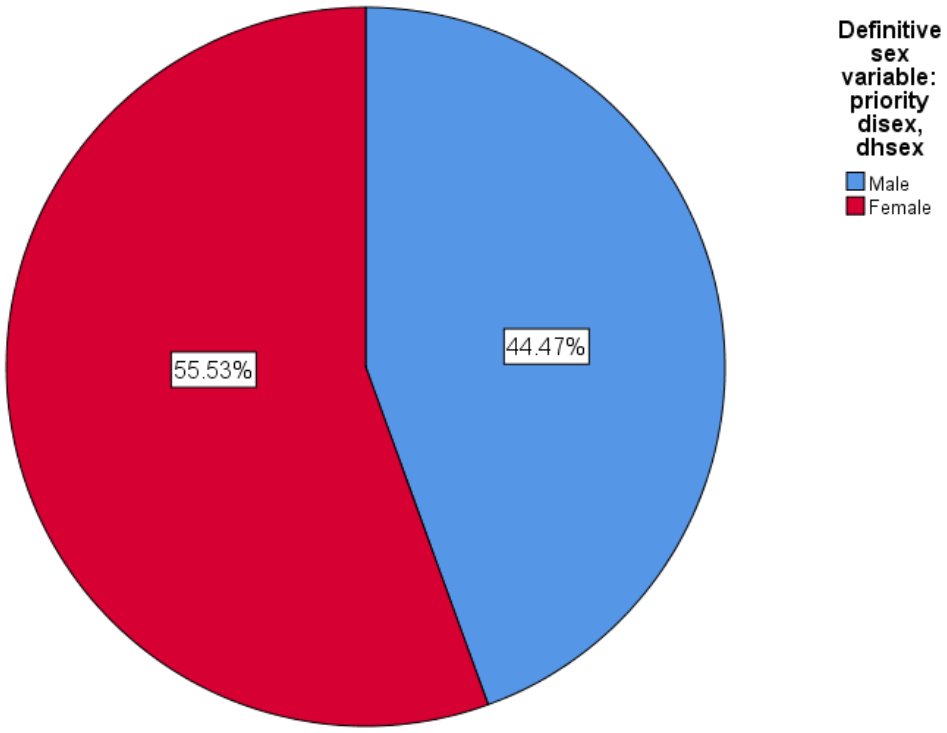
```
GRAPH
```

```
/PIE=PCT BY indsex.
```

Graph

Notes

Output Created		06-FEB-2021 14:50:22
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Syntax		GRAPH /PIE=PCT BY indsex.
Resources	Processor Time	00:00:00.66
	Elapsed Time	00:00:00.70

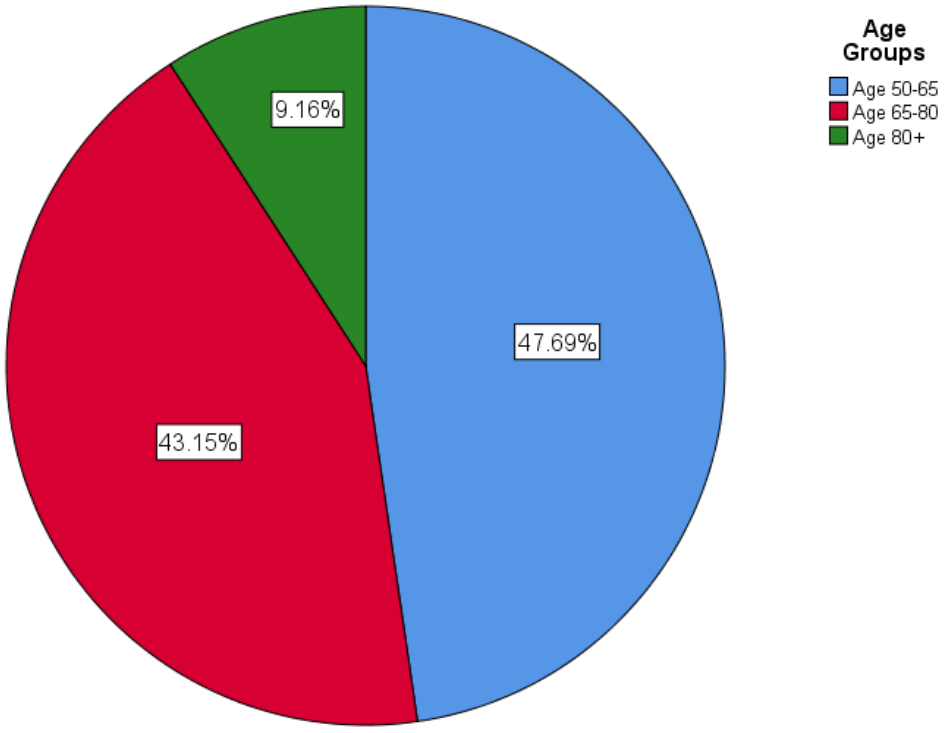


```
GRAPH
  /PIE=PCT BY ageGrp.
```

Graph

Notes

Output Created		06-FEB-2021 14:59:11
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Syntax		GRAPH /PIE=PCT BY ageGrp.
Resources	Processor Time	00:00:00.59
	Elapsed Time	00:00:00.67

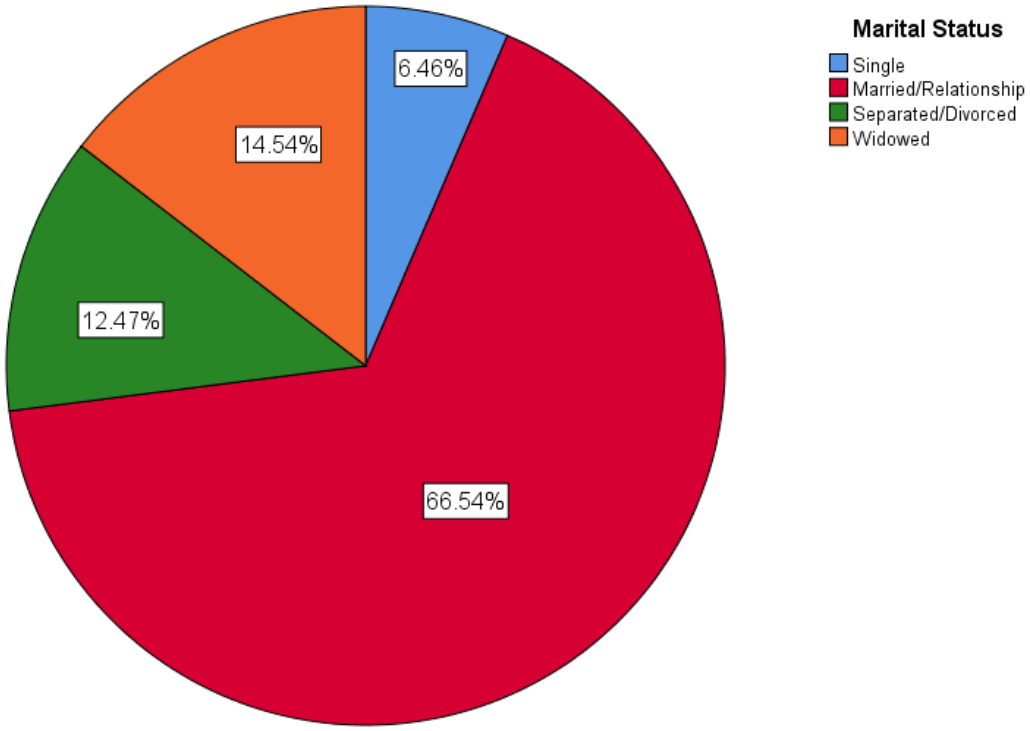



```
GRAPH
  /PIE=PCT BY MaritalStatus.
```

Graph

Notes

Output Created		06-FEB-2021 15:08:10
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data .sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Syntax		GRAPH /PIE=PCT BY MaritalStatus.
Resources	Processor Time	00:00:00.59
	Elapsed Time	00:00:00.67




```
FREQUENCIES VARIABLES=ageGrp indsex MaritalStatus
  /ORDER=ANALYSIS.
```

Frequencies

Notes

Output Created		06-FEB-2021 15:12:40
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.

Syntax		FREQUENCIES VARIABLES=ageGrp indsex MaritalStatus /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.45
	Elapsed Time	00:00:00.44

Statistics

		Age Groups	Definitive sex variable: priority disex, dhsex	Marital Status
N	Valid	9666	9666	9664
	Missing	0	0	2

Frequency Table

Age Groups

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Age 50-65	4610	47.7	47.7	47.7
	Age 65-80	4171	43.2	43.2	90.8
	Age 80+	885	9.2	9.2	100.0
	Total	9666	100.0	100.0	

Definitive sex variable: priority disex, dhsex

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4298	44.5	44.5	44.5
	Female	5368	55.5	55.5	100.0
	Total	9666	100.0	100.0	

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	624	6.5	6.5	6.5
	Married/Relationship	6430	66.5	66.5	73.0
	Separated/Divorced	1205	12.5	12.5	85.5
	Widowed	1405	14.5	14.5	100.0
	Total	9664	100.0	100.0	

Missing	System	2	.0		
Total		9666	100.0		

```
RECODE sclifec (1 thru 3=1) (5 thru 7=2) INTO lifeSat.
VARIABLE LABELS  lifeSat 'Life Satisfaction'.
EXECUTE.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav'
  /COMPRESSED.
RECODE sclifec (1 thru 3=1) (5 thru 7=2) INTO lifesatisfaction.
VARIABLE LABELS  lifesatisfaction 'Life Satisfaction'.
EXECUTE.
DATASET ACTIVATE DataSet1.

SAVE OUTFILE='H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav'
  /COMPRESSED.
FREQUENCIES VARIABLES=lifesatisfaction PScedA PScedE
  /ORDER=ANALYSIS.
```

Frequencies

Notes

Output Created		06-FEB-2021 15:42:44
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.

Syntax		FREQUENCIES VARIABLES=lifesatisfaction PScedA PScedE /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.48
	Elapsed Time	00:00:00.44

Statistics

		Life Satisfaction	Whether felt depressed much of the time during past week	Whether felt lonely much of the time during past week
N	Valid	7341	9001	8995
	Missing	2325	665	671

```
FREQUENCIES VARIABLES=lifesatisfaction PScedA PScedE
  /ORDER=ANALYSIS.
```

Frequencies

Notes

Output Created		06-FEB-2021 17:25:07
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics are based on all cases with valid data.

Syntax		FREQUENCIES VARIABLES=lifesatisfaction PScedA PScedE /ORDER=ANALYSIS.
Resources	Processor Time	00:00:00.52
	Elapsed Time	00:00:00.53

Statistics

		Life Satisfaction	Whether felt depressed much of the time during past week	Whether felt lonely much of the time during past week
N	Valid	7341	9001	8995
	Missing	2325	665	671

Frequency Table

Life Satisfaction

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	6418	66.4	87.4	87.4
	Disagree	923	9.5	12.6	100.0
	Total	7341	75.9	100.0	
Missing	System	2325	24.1		
Total		9666	100.0		

Whether felt depressed much of the time during past week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	1043	10.8	11.6	11.6
	No	7958	82.3	88.4	100.0
	Total	9001	93.1	100.0	
Missing	Refusal	50	.5		
	Don't Know	18	.2		
	Item not applicable	597	6.2		
	Total	665	6.9		
Total		9666	100.0		

Whether felt lonely much of the time during past week

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Yes	959	9.9	10.7	10.7
	No	8036	83.1	89.3	100.0
	Total	8995	93.1	100.0	
Missing	Refusal	51	.5		
	Don't Know	23	.2		
	Item not applicable	597	6.2		
	Total	671	6.9		
Total		9666	100.0		

```
SORT CASES  BY ageGrp.
SPLIT FILE LAYERED BY ageGrp.
NPAR TESTS
  /CHISQUARE=Hehelf
  /EXPECTED=EQUAL
  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created		06-FEB-2021 17:45:47
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	Age Groups
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.

Syntax		NPAR TESTS /CHISQUARE=Hehelf /EXPECTED=EQUAL /STATISTICS DESCRIPTIVES /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.52
	Elapsed Time	00:00:00.52
	Number of Cases Allowed[a]	786432

a. Based on availability of workspace memory.

Descriptive Statistics

Age Groups		N	Mean	Std. Deviation	Minimum	Maximum
Age 50-65	Self-reported general health	4290	2.65	1.110	1	5
Age 65-80	Self-reported general health	3959	2.89	1.070	1	5
Age 80+	Self-reported general health	817	3.23	1.054	1	5

Chi-Square Test

Frequencies

Self-reported general health

Age Groups		Observed N	Expected N	Residual
Age 50-65	...excellent,	684	858.0	-174.0
	very good,	1326	858.0	468.0
	good,	1361	858.0	503.0
	fair,	644	858.0	-214.0
	or, poor?	275	858.0	-583.0
	Total	4290		
Age 65-80	...excellent,	356	791.8	-435.8
	very good,	1144	791.8	352.2
	good,	1348	791.8	556.2
	fair,	809	791.8	17.2
	or, poor?	302	791.8	-489.8

	Total	3959		
Age 80+	...excellent,	36	163.4	-127.4
	very good,	170	163.4	6.6
	good,	280	163.4	116.6
	fair,	229	163.4	65.6
	or, poor?	102	163.4	-61.4
	Total	817		

Test Statistics

Age Groups		Self-reported general health
Age 50-65	Chi-Square	1034.958[a]
	df	4
	Asymp. Sig.	.000
Age 65-80	Chi-Square	1090.584[b]
	df	4
	Asymp. Sig.	.000
Age 80+	Chi-Square	232.211[c]
	df	4
	Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 858.0.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 791.8.

c. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 163.4.

```
NPAR TESTS
  /CHISQUARE=lifesatisfaction
  /EXPECTED=EQUAL
  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created	06-FEB-2021 17:54:08
Comments	

Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	Age Groups
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /CHISQUARE=lifesatisfaction /EXPECTED=EQUAL /STATISTICS DESCRIPTIVES /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.59
	Elapsed Time	00:00:00.63
	Number of Cases Allowed[a]	786432

a. Based on availability of workspace memory.

Descriptive Statistics

Age Groups		N	Mean	Std. Deviation	Minimum	Maximum
Age 50-65	Life Satisfaction	3459	1.14	.349	1	2
Age 65-80	Life Satisfaction	3319	1.11	.313	1	2
Age 80+	Life Satisfaction	563	1.12	.328	1	2

Chi-Square Test
Frequencies

Life Satisfaction

Age Groups	Observed N	Expected N	Residual

Age 50-65	Agree	2969	1729.5	1239.5
	Disagree	490	1729.5	-1239.5
	Total	3459		
Age 65-80	Agree	2955	1659.5	1295.5
	Disagree	364	1659.5	-1295.5
	Total	3319		
Age 80+	Agree	494	281.5	212.5
	Disagree	69	281.5	-212.5
	Total	563		

Test Statistics

Age Groups		Life Satisfaction
Age 50-65	Chi-Square	1776.653[a]
	df	1
	Asymp. Sig.	.000
Age 65-80	Chi-Square	2022.682[b]
	df	1
	Asymp. Sig.	.000
Age 80+	Chi-Square	320.826[c]
	df	1
	Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1729.5.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1659.5.

c. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 281.5.

```
SORT CASES  BY indsex.
SPLIT FILE LAYERED BY indsex.
NPAR TESTS
  /CHISQUARE=lifesatisfaction
  /EXPECTED=EQUAL
  /STATISTICS DESCRIPTIVES
  /MISSING ANALYSIS.
```

NPar Tests

Notes

Output Created		06-FEB-2021 17:59:59
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	Definitive sex variable: priority disex, dhsex
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing.
	Cases Used	Statistics for each test are based on all cases with valid data for the variable(s) used in that test.
Syntax		NPAR TESTS /CHISQUARE=lifesatisfaction /EXPECTED=EQUAL /STATISTICS DESCRIPTIVES /MISSING ANALYSIS.
Resources	Processor Time	00:00:00.64
	Elapsed Time	00:00:00.67
	Number of Cases Allowed[a]	786432

a. Based on availability of workspace memory.

Descriptive Statistics

Definitive sex variable: priority disex, dhsex		N	Mean	Std. Deviation	Minimum	
Male	Life Satisfaction	3269	1.11	.318	1	
Female	Life Satisfaction	4072	1.14	.342	1	

Chi-Square Test

Frequencies

Life Satisfaction

Definitive sex variable: priority disex, dhsex		Observed N	Expected N	Residual
Male	Agree	2897	1634.5	1262.5
	Disagree	372	1634.5	-1262.5
	Total	3269		
Female	Agree	3521	2036.0	1485.0
	Disagree	551	2036.0	-1485.0
	Total	4072		

Test Statistics

Definitive sex variable: priority disex, dhsex		Life Satisfaction
Male	Chi-Square	1950.329[a]
	df	1
	Asymp. Sig.	.000
Female	Chi-Square	2166.233[b]
	df	1
	Asymp. Sig.	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 1634.5.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 2036.0.

```
LOGISTIC REGRESSION VARIABLES lifesatisfaction
  /METHOD=ENTER meetingChild
  /CONTRAST (meetingChild)=Indicator(1)
  /SAVE=PRED PGROUP
  /CLASSPLOT
  /PRINT=GOODFIT CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		07-FEB-2021 22:12:47
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1

	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES lifesatisfaction /METHOD=ENTER meetingChild /CONTRAST (meetingChild)=Indicator(1) /SAVE=PRED PGROUP /CLASSPLOT /PRINT=GOODFIT CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:01.89
	Elapsed Time	00:00:02.02
Variables Created or Modified	PRE_2	Predicted probability
	PGR_2	Predicted group

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	5842	60.4
	Missing Cases	3824	39.6
	Total	9666	100.0
Unselected Cases		0	.0
Total		9666	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Agree	0

Disagree	1

Categorical Variables Codings

			Parameter coding	
		Frequency	(1)	(2)
Meeting Children	A lot	1219	.000	.000
	Some	4475	1.000	.000
	A little	148	.000	1.000

Block 0: Beginning Block

Classification Table[a,b]

			Predicted		
			Life Satisfaction		Percentage
	Observed		Agree	Disagree	Correct
Step 0	Life Satisfaction	Agree	5165	0	100.0
		Disagree	677	0	.0
	Overall Percentage				88.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-2.032	.041	2471.384	1	.000	.131

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Meeting Children	24.055	2	.000
		Meeting Children(1)	1.720	1	.190
		Meeting Children(2)	24.039	1	.000
	Overall Statistics		24.055	2	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	19.173	2	.000

	Block	19.173	2	.000
	Model	19.173	2	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	4171.236[a]	.003	.006

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.000	0	.

Contingency Table for Hosmer and Lemeshow Test

		Life Satisfaction = Agree		Life Satisfaction = Disagree		
		Observed	Expected	Observed	Expected	Total
Step 1	1	1083	1083.000	136	136.000	1219
	2	4082	4082.000	541	541.000	4623

Classification Table[a]

			Predicted		
			Life Satisfaction		Percentage
	Observed		Agree	Disagree	Correct
Step 1	Life Satisfaction	Agree	5165	0	100.0
		Disagree	677	0	.0
	Overall Percentage				88.4

a. The cut value is .500

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Meeting Children			22.488	2	.000			
	Meeting Children(1)	.013	.103	.016	1	.900	1.013	.829	1.238
	Meeting Children(2)	.940	.212	19.637	1	.000	2.560	1.689	3.879
	Constant	-2.075	.091	520.153	1	.000	.126		

a. Variable(s) entered on step 1: Meeting Children.

```
             Step number: 1

             Observed Groups and Predicted Probabilities

    8000 +
+
         I
I
         I
I
F        I
I
R   6000 +
+
E        I           D
I
Q        I           A
I
U        I           A
I
E   4000 +           A
+
N        I           A
I
C        I           A
I
Y        I           A
I
    2000 +           A
+
         I           A
I
         I           A
I
         I           A
I
Predicted ---------+---------+---------+---------+---------+---------+-------
--+---------+---------+----------
  Prob:   0       .1        .2        .3        .4        .5        .6
.7        .8        .9         1
  Group:
AAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAADDDDDDDDDDDDDDDDDDDDDDDDDDDDD
DDDDDDDDDDDDDDDDDDDDDDDD

          Predicted Probability is of Membership for Disagree
          The Cut Value is .50
          Symbols: A - Agree
                   D - Disagree
          Each Symbol Represents 500 Cases.


LOGISTIC REGRESSION VARIABLES PScedE
```

```
  /METHOD=ENTER Hehelf
  /CONTRAST (Hehelf)=Indicator
  /SAVE=PRED PGROUP
  /CLASSPLOT
  /PRINT=GOODFIT CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
```

Logistic Regression

Notes

Output Created		07-FEB-2021 22:24:00
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES PScedE /METHOD=ENTER Hehelf /CONTRAST (Hehelf)=Indicator /SAVE=PRED PGROUP /CLASSPLOT /PRINT=GOODFIT CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:02.58
	Elapsed Time	00:00:02.68
Variables Created or Modified	PRE_4	Predicted probability

PGR_4	Predicted group

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	8993	93.0
	Missing Cases	673	7.0
	Total	9666	100.0
Unselected Cases		0	.0
Total		9666	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

			Parameter coding			
		Frequency	(1)	(2)	(3)	(4)
Self-reported general health	...excellent,	1073	1.000	.000	.000	.000
	very good,	2622	.000	1.000	.000	.000
	good,	2965	.000	.000	1.000	.000
	fair,	1663	.000	.000	.000	1.000
	or, poor?	670	.000	.000	.000	.000

Block 0: Beginning Block

Classification Table[a,b]

Observed	Predicted: Whether felt lonely much of the time during past week		Percentage Correct
	Yes	No	

Step 0	Whether felt lonely much of the time during past week	Yes	0	959	.0
		No	0	8034	100.0
	Overall Percentage				89.3

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	2.126	.034	3870.679	1	.000	8.377

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Self-reported general health	413.436	4	.000
		Self-reported general health(1)	49.009	1	.000
		Self-reported general health(2)	93.464	1	.000
		Self-reported general health(3)	5.136	1	.023
		Self-reported general health(4)	84.826	1	.000
	Overall Statistics		413.436	4	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	362.442	4	.000
	Block	362.442	4	.000
	Model	362.442	4	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	5742.529[a]	.040	.080

a. Estimation terminated at iteration number 6 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	.000	3	1.000

Contingency Table for Hosmer and Lemeshow Test

		Whether felt lonely much of the time during past week = Yes		Whether felt lonely much of the time during past week = No		
		Observed	Expected	Observed	Expected	Total
Step 1	1	193	193.000	477	477.000	670
	2	282	282.000	1381	1381.000	1663
	3	285	285.000	2680	2680.000	2965
	4	151	151.000	2471	2471.000	2622
	5	48	48.000	1025	1025.000	1073

Classification Table[a]

			Predicted Whether felt lonely much of the time during past week		
	Observed		Yes	No	Percentage Correct
Step 1	Whether felt lonely much of the time during past week	Yes	0	959	.0
		No	0	8034	100.0
	Overall Percentage				89.3

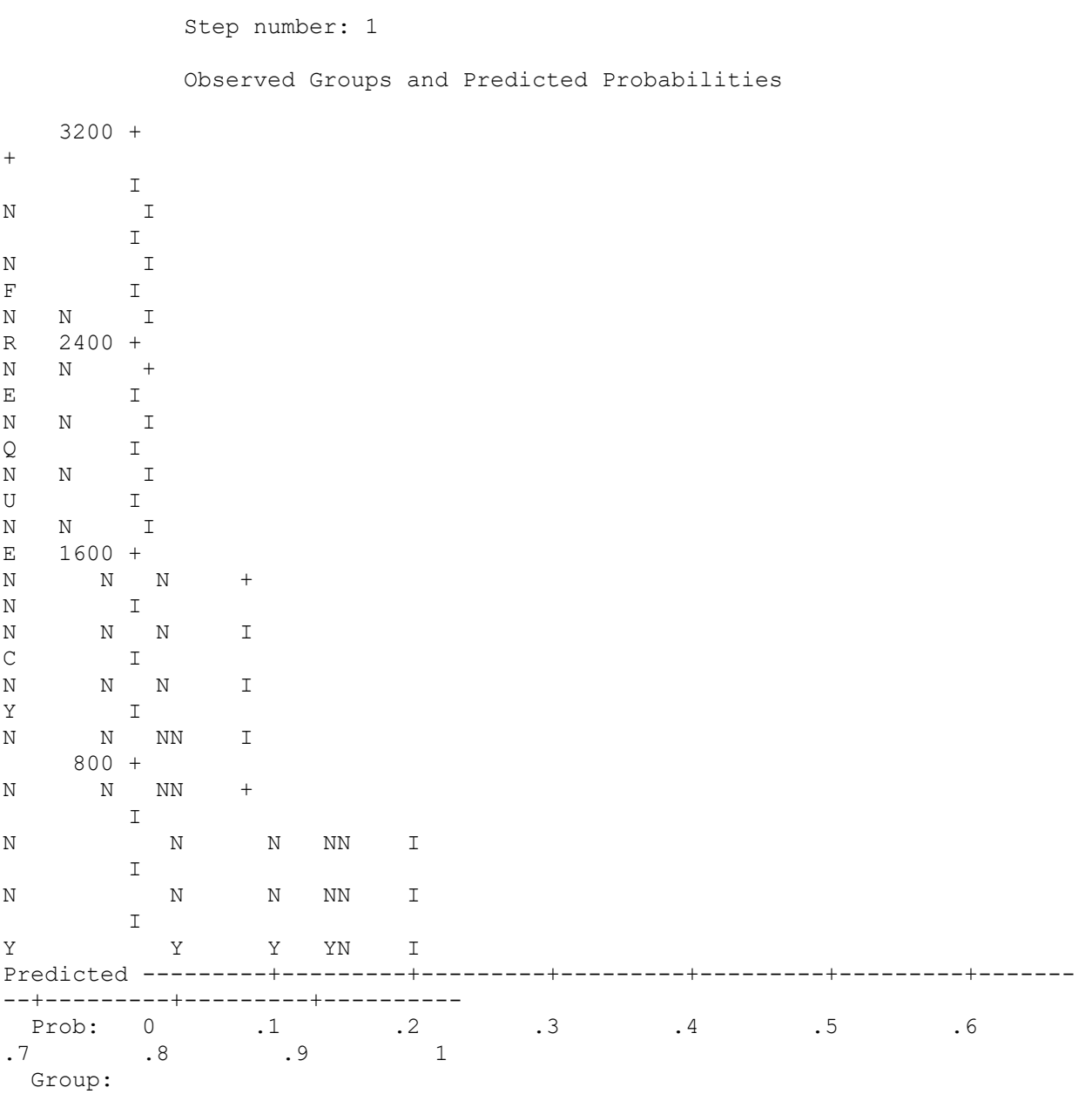
a. The cut value is .500

Variables in the Equation

								95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Self-reported general health			360.362	4	.000			
	Self-reported general health(1)	2.156	.171	159.872	1	.000	8.640	6.185	12.070

	Self-reported general health(2)	1.890	.120	249.782	1	.000	6.621	5.238	8.370
	Self-reported general health(3)	1.336	.106	160.003	1	.000	3.805	3.093	4.680
	Self-reported general health(4)	.684	.107	40.494	1	.000	1.981	1.605	2.446
	Constant	.905	.085	112.495	1	.000	2.472		

a. Variable(s) entered on step 1: Self-reported general health.



```
YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYNNNNNNNNNNNNNNNNNNNNNNNNNNNNN
NNNNNNNNNNNNNNNNNNNNNNNNN

          Predicted Probability is of Membership for No
          The Cut Value is .50
          Symbols: Y - Yes
                   N - No
          Each Symbol Represents 200 Cases.


LOGISTIC REGRESSION VARIABLES PScedA
  /METHOD=ENTER ageGrp MaritalStatus
  /CONTRAST (ageGrp)=Indicator
  /CONTRAST (MaritalStatus)=Indicator
  /SAVE=PRED PGROUP
  /CLASSPLOT
  /PRINT=GOODFIT CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
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Logistic Regression

Notes

Output Created		07-FEB-2021 22:36:24
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666
Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing

Syntax		LOGISTIC REGRESSION VARIABLES PScedA /METHOD=ENTER ageGrp MaritalStatus /CONTRAST (ageGrp)=Indicator /CONTRAST (MaritalStatus)=Indicator /SAVE=PRED PGROUP /CLASSPLOT /PRINT=GOODFIT CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:01.64
	Elapsed Time	00:00:01.66
Variables Created or Modified	PRE_5	Predicted probability
	PGR_5	Predicted group

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	8999	93.1
	Missing Cases	667	6.9
	Total	9666	100.0
Unselected Cases		0	.0
Total		9666	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0
No	1

Categorical Variables Codings

		Frequency	Parameter coding (1)	(2)	(3)
Marital Status	Single	598	1.000	.000	.000
	Married/Relationship	5922	.000	1.000	.000
	Separated/Divorced	1154	.000	.000	1.000
	Widowed	1325	.000	.000	.000
Age Groups	Age 50-65	4259	1.000	.000	
	Age 65-80	3933	.000	1.000	
	Age 80+	807	.000	.000	

Block 0: Beginning Block

Classification Table[a,b]

			Predicted: Whether felt depressed much of the time during past week		
	Observed		Yes	No	Percentage Correct
Step 0	Whether felt depressed much of the time during past week	Yes	0	1043	.0
		No	0	7956	100.0
	Overall Percentage				88.4

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	2.032	.033	3806.778	1	.000	7.628

ariables not in the Equation

			Score	df	Sig.
Step 0	Variables	Age Groups	39.413	2	.000
		Age Groups(1)	3.320	1	.068
		Age Groups(2)	3.176	1	.075
		Marital Status	168.017	3	.000
		Marital Status(1)	8.225	1	.004
		Marital Status(2)	153.339	1	.000
		Marital Status(3)	20.750	1	.000
	Overall Statistics		183.467	5	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	169.607	5	.000
	Block	169.607	5	.000
	Model	169.607	5	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	6285.902[a]	.019	.036

a. Estimation terminated at iteration number 5 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	3.107	4	.540

Contingency Table for Hosmer and Lemeshow Test

		Whether felt depressed much of the time during past week = Yes		Whether felt depressed much of the time during past week = No		
		Observed	Expected	Observed	Expected	Total
Step 1	1	148	152.458	542	537.542	690
	2	125	125.239	577	576.761	702
	3	177	163.271	870	883.729	1047
	4	134	136.457	869	866.543	1003
	5	240	255.846	2724	2708.154	2964
	6	219	209.729	2374	2383.271	2593

Classification Table[a]

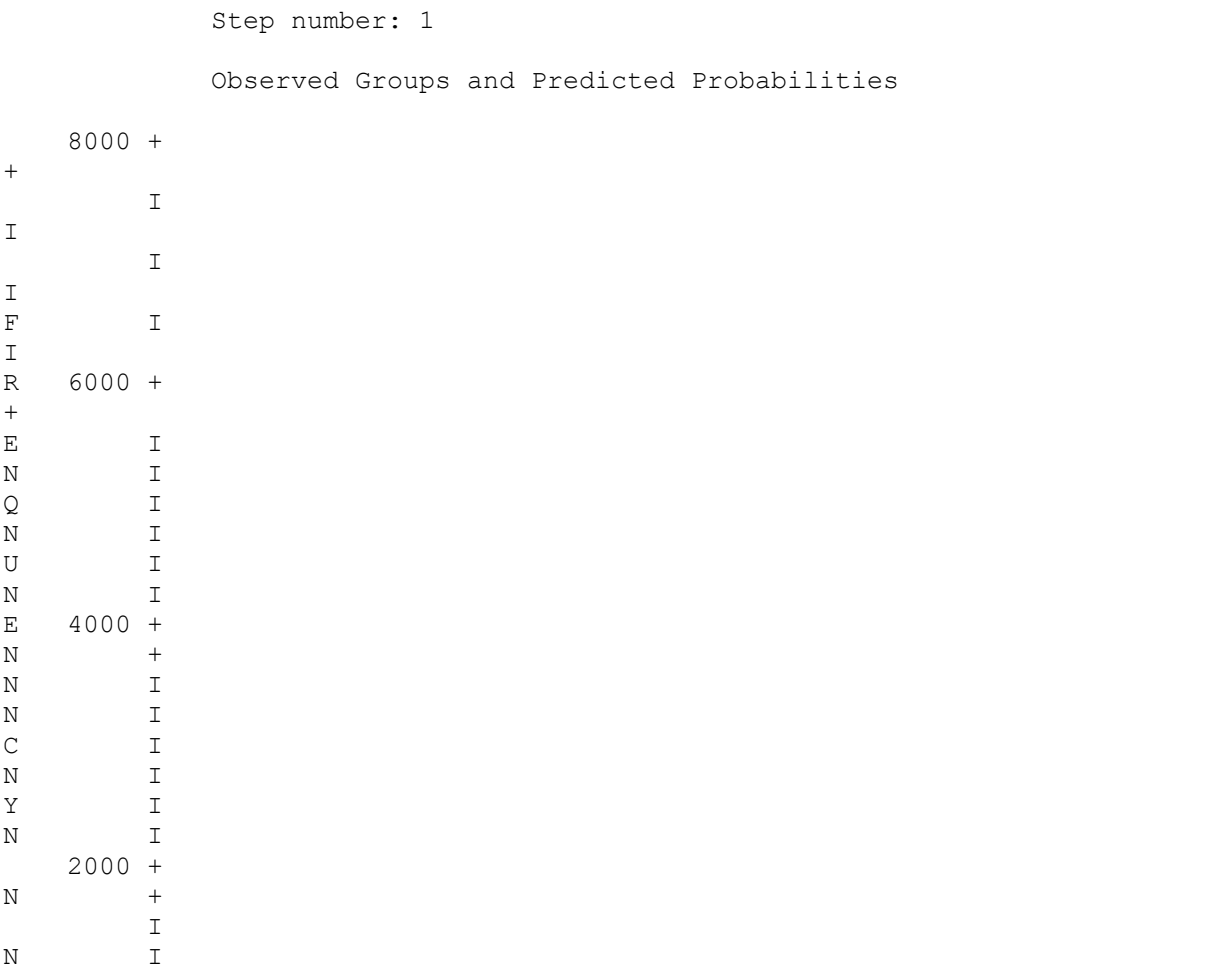
			Predicted		
			Whether felt depressed much of the time during past week		
	Observed		Yes	No	Percentage Correct
Step 1	Whether felt depressed much of the time during past week	Yes	0	1043	.0
		No	0	7956	100.0
	Overall Percentage				88.4

a. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)	95% C.I.for EXP(B) Lower	Upper
Step 1[a]	Age Groups			13.587	2	.001			
	Age Groups(1)	.331	.113	8.562	1	.003	1.392	1.115	1.737
	Age Groups(2)	.402	.109	13.582	1	.000	1.495	1.207	1.851
	Marital Status			136.739	3	.000			
	Marital Status(1)	.258	.139	3.451	1	.063	1.294	.986	1.700
	Marital Status(2)	.903	.089	103.937	1	.000	2.467	2.074	2.935
	Marital Status(3)	.217	.112	3.729	1	.053	1.242	.997	1.549
	Constant	1.125	.099	130.230	1	.000	3.081		

a. Variable(s) entered on step 1: Age Groups, Marital Status.



```
          I
N       N         I
          I
N       N NN   N   Y         I
Predicted ---------+---------+---------+---------+---------+---------+-------
--+---------+---------+----------
  Prob:    0        .1        .2         .3        .4         .5         .6
.7         .8         .9          1
  Group:
YYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYYNNNNNNNNNNNNNNNNNNNNNNNNNNN
NNNNNNNNNNNNNNNNNNNNNNN

           Predicted Probability is of Membership for No
           The Cut Value is .50
           Symbols: Y - Yes
                    N - No
           Each Symbol Represents 500 Cases.



LOGISTIC REGRESSION VARIABLES Heill
  /METHOD=ENTER ageGrp MaritalStatus indsex
  /CONTRAST (ageGrp)=Indicator
  /CONTRAST (MaritalStatus)=Indicator
  /CONTRAST (indsex)=Indicator
  /SAVE=PRED PGROUP
  /CLASSPLOT
  /PRINT=GOODFIT CI(95)
  /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
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ogistic Regression

Notes

Output Created		07-FEB-2021 22:52:23
Comments		
Input	Data	H:\Data analysis SPSS PRACTICAL MATERIAL\wave_7_elsa_data.sav
	Active Dataset	DataSet1
	Filter	<none>
	Weight	<none>
	Split File	<none>
	N of Rows in Working Data File	9666

Missing Value Handling	Definition of Missing	User-defined missing values are treated as missing
Syntax		LOGISTIC REGRESSION VARIABLES Heill /METHOD=ENTER ageGrp MaritalStatus indsex /CONTRAST (ageGrp)=Indicator /CONTRAST (MaritalStatus)=Indicator /CONTRAST (indsex)=Indicator /SAVE=PRED PGROUP /CLASSPLOT /PRINT=GOODFIT CI(95) /CRITERIA=PIN(0.05) POUT(0.10) ITERATE(20) CUT(0.5).
Resources	Processor Time	00:00:01.66
	Elapsed Time	00:00:01.72
Variables Created or Modified	PRE_6	Predicted probability
	PGR_6	Predicted group

Case Processing Summary

Unweighted Cases[a]		N	Percent
Selected Cases	Included in Analysis	9663	100.0
	Missing Cases	3	.0
	Total	9666	100.0
Unselected Cases		0	.0
Total		9666	100.0

a. If weight is in effect, see classification table for the total number of cases.

Dependent Variable Encoding

Original Value	Internal Value
Yes	0

No	1

Categorical Variables Codings

			Parameter coding		
		Frequency	(1)	(2)	(3)
Marital Status	Single	624	1.000	.000	.000
	Married/Relationship	6429	.000	1.000	.000
	Separated/Divorced	1205	.000	.000	1.000
	Widowed	1405	.000	.000	.000
Age Groups	Age 50-65	4608	1.000	.000	
	Age 65-80	4170	.000	1.000	
	Age 80+	885	.000	.000	
Definitive sex variable: priority disex, dhsex	Male	4295	1.000		
	Female	5368	.000		

Block 0: Beginning Block

lassification Table[a,b]

			Predicted		
			Whether has self-reported long-standing illness		Percentage
	Observed		Yes	No	Correct
Step 0	Whether has self-reported long-standing illness	Yes	5271	0	100.0
		No	4392	0	.0
	Overall Percentage				54.5

a. Constant is included in the model.

b. The cut value is .500

Variables in the Equation

		B	S.E.	Wald	df	Sig.	Exp(B)
Step 0	Constant	-.182	.020	79.737	1	.000	.833

Variables not in the Equation

			Score	df	Sig.
Step 0	Variables	Age Groups	245.030	2	.000
		Age Groups(1)	223.626	1	.000
		Age Groups(2)	97.466	1	.000

	Marital Status	139.235	3	.000
	Marital Status(1)	.895	1	.344
	Marital Status(2)	97.369	1	.000
	Marital Status(3)	12.728	1	.000
	Definitive sex variable: priority disex, dhsex(1)	.001	1	.972
Overall Statistics		324.611	6	.000

Block 1: Method = Enter

Omnibus Tests of Model Coefficients

		Chi-square	df	Sig.
Step 1	Step	330.230	6	.000
	Block	330.230	6	.000
	Model	330.230	6	.000

Model Summary

Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
1	12985.463[a]	.034	.045

a. Estimation terminated at iteration number 3 because parameter estimates changed by less than .001.

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	18.536	6	.005

Contingency Table for Hosmer and Lemeshow Test

		Whether has self-reported long-standing illness = Yes		Whether has self-reported long-standing illness = No		
		Observed	Expected	Observed	Expected	Total
Step 1	1	783	818.697	380	344.303	1163
	2	602	601.867	323	323.133	925
	3	974	958.000	674	690.000	1648
	4	803	779.927	578	601.073	1381
	5	528	487.368	371	411.632	899
	6	207	200.317	209	215.683	416

	7	631	654.148	828	804.852	1459
	8	743	770.676	1029	1001.324	1772

Classification Table[a]

			Predicted		
			Whether has self-reported long-standing illness		Percentage
	Observed		Yes	No	Correct
Step 1	Whether has self-reported long-standing illness	Yes	3690	1581	70.0
		No	2326	2066	47.0
	Overall Percentage				59.6

a. The cut value is .500

ariables in the Equation

							95% C.I.for EXP(B)	
		B	S.E.	Wald	df	Sig.	Exp(B)	Lower	Upper
Step 1[a]	Age Groups			180.755	2	.000			
	Age Groups(1)	.788	.082	91.831	1	.000	2.200	1.872	2.584
	Age Groups(2)	.267	.081	10.801	1	.001	1.307	1.114	1.532
	Marital Status			81.579	3	.000			
	Marital Status(1)	.340	.103	10.920	1	.001	1.405	1.148	1.718
	Marital Status(2)	.499	.066	56.655	1	.000	1.647	1.447	1.876
	Marital Status(3)	.110	.085	1.668	1	.196	1.117	.945	1.320
	Definitive sex variable: priority disex, dhsex(1)	-.054	.043	1.628	1	.202	.947	.871	1.030
	Constant	-1.026	.083	152.644	1	.000	.359		

a. Variable(s) entered on step 1: Age Groups, Marital Status, Definitive sex variable: priority disex, dhsex.

```
            Step number: 1

            Observed Groups and Predicted Probabilities

    2000 +
+
         I
I
         I                                                    N
I
F        I                                                    N
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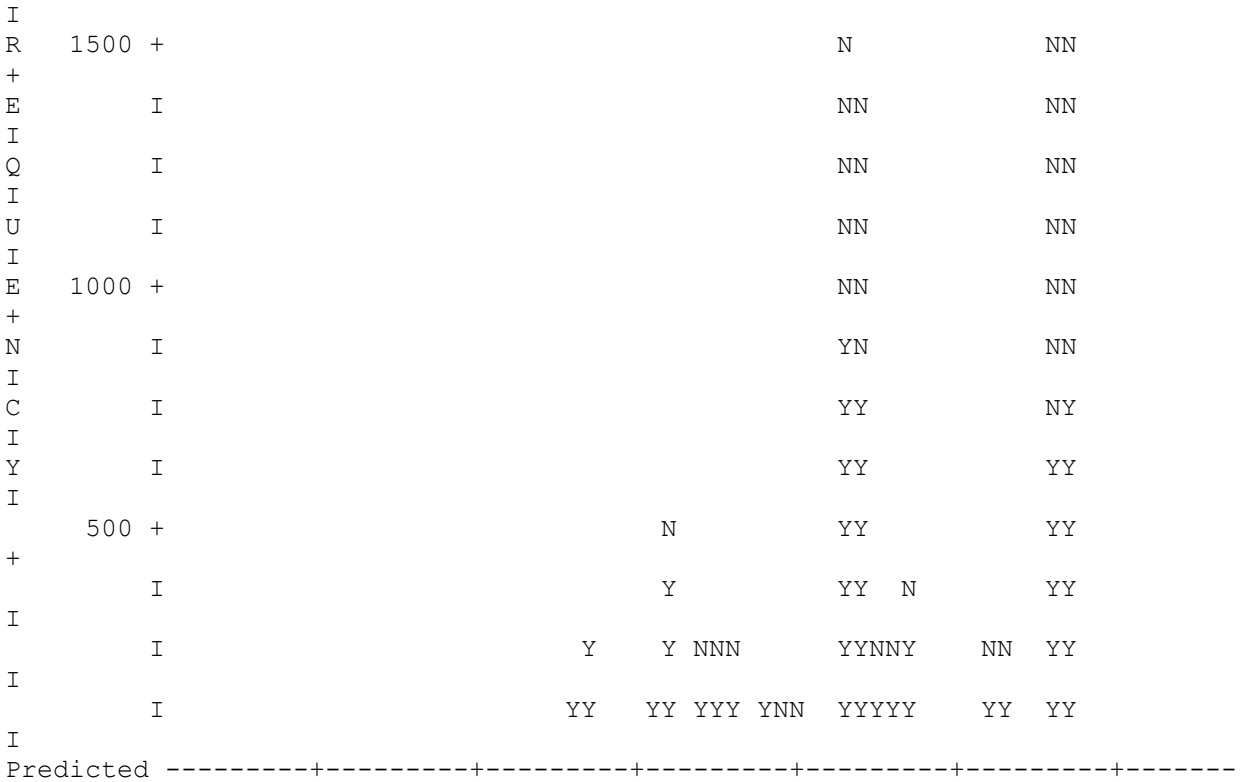

Predicted Probability is of Membership for No
The Cut Value is .50
Symbols: Y - Yes
N - No
Each Symbol Represents 125 Cases.