INF6029 Data Analysis Report

Exploring the Relationship Between Depression and Demographic, Health, and Behavioural Factors: A Focus on Gender, Marital Status, Ethnic Group, Physical Impairments, Smoking, and Drinking Frequency

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Abstract

Aim: This study aims to investigate the association between depression and demographic, health, and unhealthy behaviour factors, including gender, marital status, ethnic group, long-term illness, smoking and drinking behaviour among older adults in the UK.

Methods: A cross-sectional analysis was conducted on data from 532 participants in English Longitudinal Study of Ageing (ELSA) Wave 7. Depression was measured as a binary outcome. Sample characteristics were summarised using descriptive statistics, and bivariate relationships were evaluated using chi-square tests. Finally, the overall association is modelled by binary logistic regression to identified significant independent variables associated to depression.

Results: Only long-standing illness (OR = 1.595, p = 0.033) and smoking (OR = 1.763, p = 0.021) were found statistically significantly associated with depression, while other factors, including gender, race, marital status, and drinking frequency, showed no significant relationship. The results emphasise how smoking habits and chronic health conditions affect mental health of older population aged 50+.

Conclusion: This study highlights the need for psychological interventions for older adults with long-term illness and smoking behaviour, as they are more likely to be depressed. Although it provided a comprehensive analysis of demographic, behavioural and health factors, the study was limited by the reliance on self-reported data and uneven sample in some categories, which might introduce biases.

Introduction

Depressive disorder (commonly known as depression) is a prevalent mental condition characterised by a prolonged period of poor mood or lack of enjoyment or interest in activities (WHO, 2023). The World Health Organization (WHO) identified major depression as the third leading cause of disease burden globally in 2008 and predicted it would become the leading cause by 2030 (Malhi & Mann, 2018). This disorder will not only affect individual mental health, but also lead to a huge amount of societal cost. According to the data in 2000 in the US, the estimated annual cost of depression ranges from $33 billion to $44 billion with a much more worsen situation recent years (Ainsworth, 2000).

The world population is rapidly ageing, with the number of old individuals (aged 60 and above) predicted to double to more than 2 billion by 2050, according to WHO (2024). The demographic transition poses significant challenges to healthcare systems. Compared to younger individuals, older adults are often more vulnerable to depression, as it is frequently underdiagnosed and undertreated in this population, coupled with their generally declining health status (Dibato et al., 2022). By using the Geriatric Mental State Examination-Automated Geriatric Examination for Computer-Assisted Taxonomy (GMS-AGECAT) algorithm, the European Depression in Older People (EURODEP) research group estimated that 12% of older adults experience depression in European countries (Copeland et al., 1999). Later study in the UK finds that the incidence of depression rose from 29% in 2006 to 43% in 2017 (McDougall et al., 2007). Given the rising prevalence of depression among the elderly population, understanding the prevalence and identifying factors potentially associated with depression in older adults is of critical importance, to designing effective prevention and intervention strategies for depression in the elderly.

Past research reveals that demographic factors, like gender and marital status, health conditions and impairment, and behavioural factors such as smoking and drinking may all play an important role in influencing depression risk (e.g., Copeland et al., 1999; Inaba et al., 2005; Du, Luo & Zhou, 2022).

Demographic factors:

Gender is a significant factor in depression, with women showing a prevalence rate twice as high as men (Culbertson & Fowler, 1997; Copeland et al., 1999; Cano et al., 2020). For example, Copeland et al.’s (1999) meta-analysis (n = 13,808) found that among individuals aged 65+ in nine European countries, 14.1% of women were diagnosed with depression compared to 8.6% of men. Marital status also correlates with depression, often interacting with gender (Inaba et al., 2005; Du, Luo & Zhou, 2022). Inaba et al. (2005) identified being single as a key factor contributing to loneliness and depression, with unmarried women in the US and Japan being significantly more affected. Although Du, Luo & Zhou (2022) found similar results in China, they believed that marital satisfaction plays a larger role than marital status in depression. However, by using data from the NSAL, Assari (2017) reported that only race, but not marital status, was linked to major depressive episodes (MDE) in the US. Their findings showed white women had the lowest MDE risks, while African American men had the highest, with gender affecting depression mainly through interactions with race.

Health factors:

Chronic illnesses like diabetes, cardiovascular disease, and arthritis are strongly linked to depression (Ke et al., 2019). Studies have found that individuals with diabetes face over a 60% higher risk of developing depression (Elamoshy et al., 2018; Khaledi, Haghighatdoost & Aminorroaya, 2019; Dibato et al., 2021). Ke et al. (2019) and Dibato et al. (2021) suggest that older adults with such conditions often experience physical limitations, reduced mobility, decreased social engagement, and greater susceptibility to social isolation, all of which increase their mortality risk. These factors may significantly heighten the likelihood of depression due to combined physical and psychological burdens. Moreover, Nanayakkara et al.’s (2018) research on Australia finds that depression is more common among the older population (> 60 years old) with chronic conditions, and Kant et al. (2021) have a similar conclusion in their study in India.

Behavioural factors: drinking and smoking

Smoking and drinking frequency is also associated with depression (An & Xiang, 2015; McCarter et al., 2018; Hu et al., 2022). Paschall & Flewelling (2002) and Hu et al. (2022) find that unhealthy habits, such as excessive alcohol use and smoking, are often associated with stress and anxiety. A study in the US shows that smokers are 20% more likely to develop depression and 34% more likely to have heavy drinking habits than non-smokers, while hazardous drinking presents a weaker link to depression (An & Xiang, 2015). This suggests that smoking may be a risk factor for developing depression and heavy alcohol consumption in the future, and that depression may contribute to the development of unhealthy habits such as smoking and heavy drinking. In McCarter et al.’s (2018) study of head and neck cancer (HNC) patients, 21% of patients showed an association among smoking, hazardous alcohol use, and major depressive episode (MDE). However, only a few studies have examined these behaviours with regard to older adults.

While many existing studies have focused on the relationship between specific factors and depression, few have comprehensively examined these factors collectively, particularly in the context of older adults. The present study aims to address this gap by re-evaluating the effects of demographic, health, and behavioural factors on depression and exploring their combined association to depression. Specifically, it seeks to identify potential predictors of depression by investigating the association between depression and gender, marital status, ethnic group, self-reported long-standing illness, smoking, and drinking frequency, using data from the ELSA Wave 7 dataset. The research questions are:

RQ1: How are demographic, health, and behavioural factors individually associated with depression? Which factors show the strongest individual association?

RQ2: When considering demographic, health, and behavioural factors together, how do these factors collectively contribute to the risk of depression? Which factors remain significant in a combined model?

Methodology

All data comes from the English Longitudinal Study of Ageing (ELSA) Wave 7, a large cohort study of individuals aged 50+ from private UK households. Conducted between June 2014 and May 2015 with 9,666 participants, it was funded by the UK government (Departments of Health, Transport, and Work and Pensions) and the US National Institute on Aging (Banks et al., 2016; Zaninotto & Steptoe, 2019).

Variable Selection

The dependent variable is depression, assessed using a binary indicator (0 = not mentioned; 1 = mentioned). Table 1 below shows the independent variables chosen:

|  |  |  |  |
| --- | --- | --- | --- |
| Category | Variable Name | Description | Data Type |
| Demographic  factors | Gender | Respondent sex | Binary  (1 = Male; 2 = Female) |
| Marital status | Current legal marital status | Nominal |
| Ethnic group | Ethnic group | Nominal |
| Health factor | Long-standing illness | Whether has self-reported long term illness | Binary  (1 = Yes; 2 = No) |
| Behaviour  factors | Smoking | Whether smokes cigarettes at all nowadays | Binary  (1 = Yes; 2 = No) |
| Drinking frequency | How often respondent has had an alcoholic drink during the last 12 months | Ordinal |

Table 1 Description of independent variables

Data Processing

The data processing and analysis procedures are done by SPSS. All independent variables are selected by their nominal number to eliminate missing and useless data, such as ‘Refusal’ and ‘Don’t know.’ This analysis included individuals with complete responses for the selected variables, resulting in a final sample size of 532 participants.

Statistical Analysis

1. Descriptive Statistics

A pie chart illustrating depression and a summary statistics table, including total participants and the composition of all independent variables, will be generated to examine sample characteristics.

1. Univariate Analysis

Both dependent and independent variables are categorical, thus, cross-tabulations and chi-squared tests for independence (H0 = there is no association between two variables) are conducted to explore their association with depression after checking the satisfaction of assumption, including numbers of observations in total and in different categories. All binary independent variables, including gender, long-standing illness, and smoking, will use the statistics from the continuity correction of the SPSS chi-square test output. For marital status and ethnic group, Pearson chi-square statistics will be used as they both have more than 2 categories. Linear-by-linear association will be used for drinking frequency as it is an ordinal variable and has more than three categories.

1. Binary Logistic Regression

For evaluating the combined association of demographic, health, and behavioural factors to depression, a binary logistic regression model is employed. An enter approach in SPSS is used to build the model, and all the independent variables will be defined as categorical (i.e. dummy), in order to avoid SPSS treating the nominal value of a categorical variable as a continuous variable with numerical meaning, and to designate reference categories for an accurate calculation of odds ratio (OR). The p-value and Exp(B)(ORs) with 95% confidence intervals will be reported to assess the strength and significance of associations.

Results

Descriptive Statistics

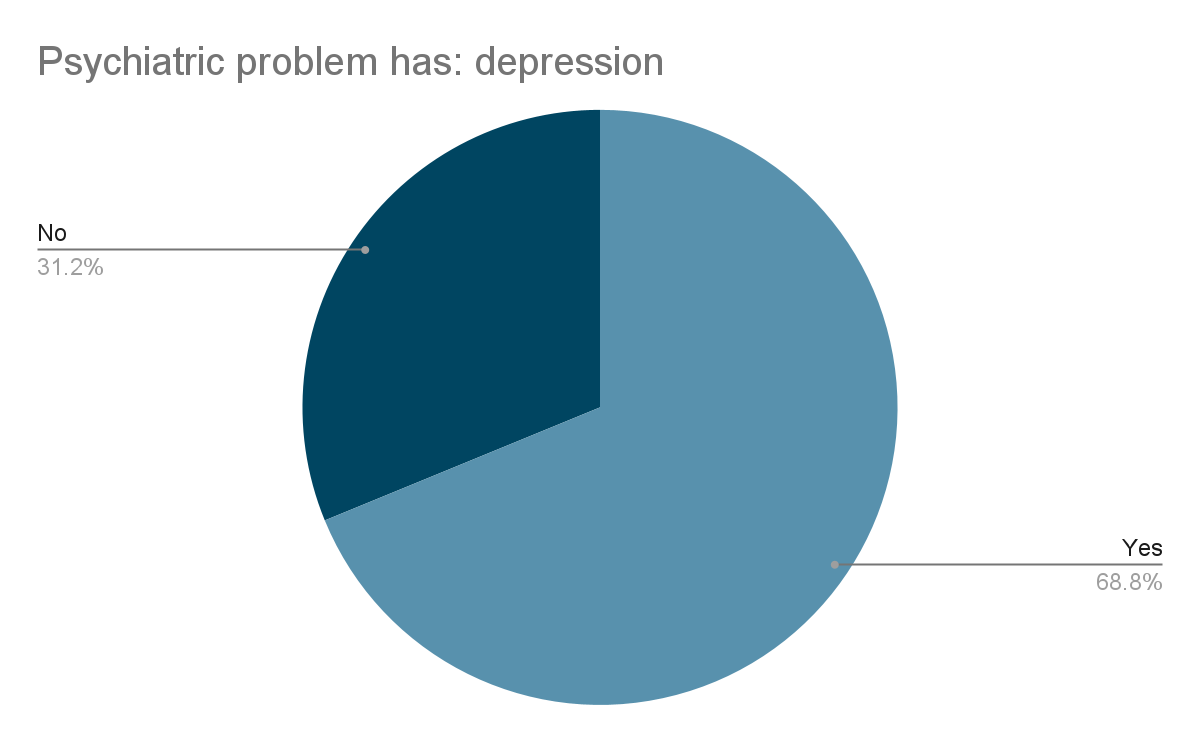


Figure 1 Distribution of depression

|  |  |  |
| --- | --- | --- |
| Independent Variables | Total participants | Distribution  (number, proportion) |
| Respondent sex | 532 | Male (212, 39.8%) |
| Female (320, 60.2%) |
| Respondent current legal marital status | 532 | Single (51, 9.6%) |
| First married (226, 42.6%) |
| Remarried (71, 13.3%) |
| Divorced (105, 19.7%) |
| Widowed (79, 14.8%) |
| Ethnic group | 532 | White (416, 78.2%) |
| Mixed (24, 4.5%) |
| Black (28, 5.4%) |
| Black british (21, 3.9%) |
| Asian (22, 4.1%) |
| Asian british (21, 3.9%) |
| Long-standing illness | 532 | Yes (391, 73.5%) |
| No (141, 26.5%) |
| Smoking | 532 | Yes (130, 24.4%) |
| No (402, 75.6%) |
| Alcoholic drinking frequency | 532 | Almost every day (71, 13.3%) |
| Five or six days a week (26, 4.9%) |
| Three or four days a week(42, 7.9%) |
| Once or twice a week (127, 23.9%) |
| Once or twice a month (55, 10.3%) |
| Once every couple of months (54, 10.2%) |
| Once or twice a year (67, 12.6%) |
| Not at all in the last 12 months (90, 16.9%) |

Table 2 Distribution of independent variables

The sample comprised 532 participants, with a distribution of males (212, 39.8%) and females (320, 60.2%). The majority of the sample identified as White (416, 78.2%), followed by Black British (28, 5.4%). Among the participants, as shown in figure 1, 68.8% (n=366) reported having depression, while 31.2% (n=166) did not. Of the participants, 73.5% (n=391) reported having a long-term illness, while 26.5% (n=141) did not. Regarding smoking behaviour, 24.4% (n=130) were smokers, and 75.6% (n=402) were non-smokers, while most people had alcoholic drinks once or twice a week in the past 12 months (127, 23.9%), followed by the number of people who did not drink (90, 16.9%). Detailed distribution is listed in the Table 2.

Bivariate Descriptions

Chi-square tests

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
|  | | Psychiatric problem has: depression | | Total | Chi-square Tests |
| **Not mentioned** | **Mentioned** | Test choice  (**χ²**, p-value, df) |
| Respondent Sex | Male | 59 (27.8%) | 153 (72.2%) | 212 | Continuity correction  (1.616, 0.204, 1) |
| Female | 107 (33.4%) | 213 (66.6%) | 320 |
| Marital status | Single, that is never married and never registered in a same | 14 (27.5%) | 37 (72.5%) | 51 | Pearson Chi-square (6.974, 0.137, 4) |
| Married, first and only marriage | 69 (30.5%) | 157 (69.5%) | 226 |
| Remarried, second or later marriage | 27 (38%) | 44 (62%) | 71 |
| Divorced | 25 (23.8%) | 80 (76.2%) | 105 |
| Widowed | 31 (39.2%) | 48 (60.8%) | 79 |
| Ethnic group | White | 132 (31.7%) | 284 (68.3%) | 416 | Pearson Chi-square (1.371, 0.927, 5) |
| Mixed ethnic group | 6 (25%) | 18 (75%) | 24 |
| Black | 7 (25%) | 21 (75%) | 28 |
| Black British | 6 (28.6%) | 15 (71.4%) | 21 |
| Asian | 8 (36.4%) | 14 (63.6%) | 22 |
| Asian British | 7 (33.3%) | 14 (66.7%) | 21 |
| Long-standing illness | Yes | 110 (28.1%) | 281 (71.9%) | 391 | Continuity correction  (5.949, 0.015, 1) |
| No | 56 (39.7%) | 85 (60.3%) | 141 |
| Whether smokes | Yes | 29 (22.3%) | 101 (77.7  %) | 130 | Continuity correction  (5.805, 0.016, 1) |
| No | 137 (34.1%) | 265 (65.9%) | 402 |
| Frequency of alcoholic drink during the last 12 months | Almost every day | 24 (33.8%) | 47 (66.2%) | 71 | Linear-by-Linear association  (2.566, 0.109, 1) |
| Five or six days a week | 9 (34.6%) | 17 (65.4%) | 26 |
| Three or four days a week | 14 (33.3%) | 28 (66.7%) | 42 |
| Once or twice a week | 47 (37%) | 80 (63%) | 127 |
| Once or twice a month | 19 (34.5%) | 36 (65.5%) | 55 |
| Once every couple of months | 11 (20.4%) | 43 (79.6%) | 54 |
| Once or twice a year | 14 (20.9%) | 53 (79.1%) | 67 |
| Not at all in the last 12 months | 28 (31.1%) | 62 (68.9%) | 90 |

Table 3 Cross-tabulation of depression and independent variables

As shown in Table 3, chi-square tests of independence were performed to assess the relationship between depression and gender, marital status, ethnic group, long-standing illness, smoking, and drinking behaviour, respectively.

There are significant relationships only when independent variables are long-standing illness (χ² = 5.949, p-value = 0.015, d.f. = 1) and smoking (χ² = 5.805, p-value = 0.016, d.f. = 1). Of the 532 participants who were depressed, 281 participants with long-term illness (71.9%) and 101 are smoking (77.7%), while 85 without long-term illness (60.3%) and 265 not smoking (65.9%). Gender (χ² = 1.616, p-value = 0.204, d.f. = 1), marital status (χ² = 6.974, p-value = 0.137, d.f. = 4), ethnic group (χ² = 1.371, p-value = 0.927, d.f. = 5), and drinking frequency (χ² = 2.566, p-value = 0.109, d.f. = 1) are not statistically significantly associated with depression.

|  |  |  |  |
| --- | --- | --- | --- |
| Independent Variable (Reference Category | Categories | Odds ratio (95% CI) | p-value |
| Respondent Sex  (Female)ns | Male | 1.329 (0.888, 1.991) | 0.167 |
| Marital status  (Single)ns | Overall |  | 0.15 |
| First married | 0.94 (0.466, 1.897) | 0.864 |
| Remarried | 0.572 (0.253, 1.291) | 0.179 |
| Divorced | 1.148 (0.522, 2.529) | 0.731 |
| Widowed | 0.602 (0.271, 1.337) | 0.212 |
| Ethnic group  (White)ns | Overall |  | 0.965 |
| Mixed ethnic group | 1.269 (0.475, 3.391) | 0.634 |
| Black | 1.423 (0.576, 3.517) | 0.444 |
| Black British | 0.918 (0.335, 2.514) | 0.868 |
| Asian | 0.942 (0.363, 2.445) | 0.902 |
| Asian British | 1.202 (0.456, 3.167) | 0.71 |
| Long-term illness  (No)\*\* | Yes | 1.595 (1.039, 2.451) | 0.033\*\* |
| Smoking  (No)\*\* | Yes | 1.763 (1.09, 2.85) | 0.021\*\* |
| Drinking frequency  (Not at all in 12 months)ns | Overall |  | 0.28 |
| Almost every day | 0.835 (0.419, 1.664) | 0.608 |
| Five or six days a week | 0.909 (0.349, 2.371) | 0.846 |
| Three or four days a week | 0.979 (0.432, 2.219) | 0.96 |
| Once or twice a week | 0.743 (0.407, 1.356) | 0.333 |
| Once or twice a month | 0.85 (0.408, 1.772) | 0.665 |
| Once every couple of months | 1.774 (0.783, 4.021) | 0.169 |
| Once or twice a year | 1.71 (0.797, 3.671) | 0.168 |

Table 4 Logistic regression results (Dependent variable: reported depression; -2 log likelihood = 629.574; Nagelkerke R Square = 0.079; n = 532).

Overall significance: ns = non-significant; \* < 0.1; \*\* < 0.05; \*\*\* < 0.01

Table 4 shows the results of the adjusted logistic regression model to identify factors associated with depression. As can be seen from Table 4, only long-term illness (p < 0.05) and smoking habits (p < 0.05) were showing significant associations with depression among the older adults. Participants with long-term illness were more likely to suffer from depression than those without long-term illness, with 1.595 (95% CI = 1.04, 2.45) times more likely of not having long-term illness, and p-value = 0.033, illustrating a statistically significant association of results. Smokers are more likely to suffer from depression than non-smokers, with a 1.763 (95% CI = 1.09, 2.85) times more likely chance than non-smokers. The results were also significant (p-value = 0.021), indicating a statistically significant association between smoking and depression.

OR and p-value were not significant in other categories, indicating that the effect of gender (p-value = 0.167, OR 95% CI = 0.89, 1.99), race (overall p-value = 0.965, all subcategories OR 95% CI include 1), marital status (overall p-value = 0.15, all subcategories OR 95% CI include 1), and drinking frequency (overall p-value = 0.28, all subcategories OR 95% CI include 1) on depression was not significant in this data.

Discussion

The results of the study showed that older individuals with chronic illness were 1.595 times more likely to develop depression compared to individuals (age >= 50) without chronic illness, which is consistent with previous findings, for example, both Ke et al. (2019), Khaledi, Haghighatdoost & Aminorroaya (2019), and Dibato et al. (2022) conclude an approximately 60% risk. In older people, as Ke et al. (2019) and Dibato et al. (2021) noted, this phenomenon may be attributed to the mental distress caused by chronic health conditions that reduce quality of life and exacerbate physical limitations.

Similarly, smokers were 1.76 times more likely to report depression than non-smokers, consistent with the findings of studies that revealed a bidirectional relationship between smoking and depression (An & Xiang, 2015; McCarter et al., 2018; Hu et al., 2022). As explained in this research, smoking may increase the risk of depression through neurobiological mechanisms (e.g., neurotransmitter imbalances) and nicotine dependence, and depressive states may also influence smoking behaviour by social triggers (e.g., social isolation). It is worth noting that the statistical results (OR = 1.763) of this study were higher than those reported in the previous literature. For example, the study of An and Xiang (2015) and McCarter et al. (2018) found that smoking increased the likelihood of depression by an additional 20%. This difference may be due to the fact that previous studies have focused on the effect on all populations, and in older adults, the association between smoking and depression may be reinforced by physical, psychological, and social factors specific to old age, ultimately leading to a higher risk in this study.

An interesting finding in this study is that demographic factors (including gender, marital status, and ethnicity) did not show significant predictive value for depression, either individually or in a binary logistic regression model, in contrast to the conclusions of previous studies. The reasons for this discrepancy might be, firstly, the differences in social environment and lifestyle in different regions, which may have an impact on the association between depression and demographic factors, as past literature focuses on other countries like the US, China, and Japan. Second, the relative scarcity of sample sizes in some ethnic categories and the under-representation of the sample make it impossible to accurately reflect the relationship between demographic factors and depression. In addition, unmeasured confounding factors, such as socioeconomic status and cultural stigma surrounding mental health issues, may vary widely across studies, interfering with the predictive effect of demographic factors on depression (Link, Lennon & Dohrenwend, 1993; Freeman et al., 2016; Krendl & Pescosolido, B. A. (2020).

For alcohol use, it may be statistically significant in other studies, such as An and Xiang (2015) and Hu et al. (2022), but may not be statistically significant in this study due to sample limitations or variable characteristics (i.e., the present study focus primarily on older adults).

There are some limitations to this study. Firstly, research data relied on self-report forms, which are highly susceptible to social expectation bias (Kaushal, 2014). In the process of self-reporting, respondents may conceal or exaggerate their actual situation due to their expectation of meeting the socially accepted standards, which will affect the authenticity and reliability of the data. Also, the problem of uneven sample distribution is prominent, for example, the sample size of some ethnic categories is very small. This situation is very likely to affect the statistical significance so that the statistical results cannot accurately reflect the overall characteristics and reduce the credibility of the research conclusions.

Conclusion

To sum up, this study identifies the association between long-term illness, smoking behaviour, and depression, and this finding emphasises the necessity of focused interventions for senior populations with long-term medical problems and unhealthy lifestyles. Through a comprehensive review of demographic, behavioural, and health factors, this study aim to gain a more comprehensive insight into the relevant situation of depression in the elderly. However, there are some limitations to this study. Data acquisition relies on self-report, which is easily disturbed by subjective factors, and there is an imbalance in sample distribution. Thus, future research should focus on and improve the limitations of this study, optimise the collection and processing of self-reported data, adjust the sample structure, and solve the problem of uneven sample distribution. In addition, the use of longitudinal data to carry out research will help to reveal the causal relationship between factors and depression.

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Appendix with SPSS output

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crosstab | | | | | |
|  | | | Psychiatric problem has: depression | | Total |
| Not mentioned | Mentioned |
| Respondent sex | Male | Count | 59 | 153 | 212 |
| % within Respondent sex | 27.8% | 72.2% | 100.0% |
| Female | Count | 107 | 213 | 320 |
| % within Respondent sex | 33.4% | 66.6% | 100.0% |
| Total | | Count | 166 | 366 | 532 |
| % within Respondent sex | 31.2% | 68.8% | 100.0% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Chi-Square Tests | | | | | |
|  | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | 1.868a | 1 | .172 |  |  |
| Continuity Correctionb | 1.616 | 1 | .204 |  |  |
| Likelihood Ratio | 1.882 | 1 | .170 |  |  |
| Fisher's Exact Test |  |  |  | .182 | .102 |
| Linear-by-Linear Association | 1.864 | 1 | .172 |  |  |
| N of Valid Cases | 532 |  |  |  |  |

|  |
| --- |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 66.15. |
| b. Computed only for a 2x2 table |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Crosstab | | | | |
|  | | | Psychiatric problem has: depression | |
| Not mentioned | Mentioned |
| Respondent current legal marital status | Single, that is never married and never registered in a same | Count | 14 | 37 |
| % within Respondent current legal marital status | 27.5% | 72.5% |
| Married, first and only marriage | Count | 69 | 157 |
| % within Respondent current legal marital status | 30.5% | 69.5% |
| Remarried, second or later marriage | Count | 27 | 44 |
| % within Respondent current legal marital status | 38.0% | 62.0% |
| Divorced | Count | 25 | 80 |
| % within Respondent current legal marital status | 23.8% | 76.2% |
| Widowed | Count | 31 | 48 |
| % within Respondent current legal marital status | 39.2% | 60.8% |
| Total | | Count | 166 | 366 |
| % within Respondent current legal marital status | 31.2% | 68.8% |

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Crosstab | | | |  |
|  | | | Total |  |
|  |
| Respondent current legal marital status | Single, that is never married and never registered in a same | Count | 51 |  |
| % within Respondent current legal marital status | 100.0% |  |
| Married, first and only marriage | Count | 226 |  |
| % within Respondent current legal marital status | 100.0% |  |
| Remarried, second or later marriage | Count | 71 |  |
| % within Respondent current legal marital status | 100.0% |  |
| Divorced | Count | 105 |  |
| % within Respondent current legal marital status | 100.0% |  |
| Widowed | Count | 79 |  |
| % within Respondent current legal marital status | 100.0% |  |
| Total | | Count | 532 |  |
| % within Respondent current legal marital status | 100.0% |  |

|  |  |  |  |
| --- | --- | --- | --- |
| Chi-Square Tests | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 6.974a | 4 | .137 |
| Likelihood Ratio | 6.972 | 4 | .137 |
| Linear-by-Linear Association | .287 | 1 | .592 |
| N of Valid Cases | 532 |  |  |

|  |
| --- |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 15.91. |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crosstab | | | | | |
|  | | | Psychiatric problem has: depression | | Total |
| Not mentioned | Mentioned |
| Ethnic group (IFFW.FqEthn) | White | Count | 132 | 284 | 416 |
| % within Ethnic group (IFFW.FqEthn) | 31.7% | 68.3% | 100.0% |
| Mixed ethnic group | Count | 6 | 18 | 24 |
| % within Ethnic group (IFFW.FqEthn) | 25.0% | 75.0% | 100.0% |
| Black | Count | 7 | 21 | 28 |
| % within Ethnic group (IFFW.FqEthn) | 25.0% | 75.0% | 100.0% |
| Black British | Count | 6 | 15 | 21 |
| % within Ethnic group (IFFW.FqEthn) | 28.6% | 71.4% | 100.0% |
| Asian | Count | 8 | 14 | 22 |
| % within Ethnic group (IFFW.FqEthn) | 36.4% | 63.6% | 100.0% |
| Asian British | Count | 7 | 14 | 21 |
| % within Ethnic group (IFFW.FqEthn) | 33.3% | 66.7% | 100.0% |
| Total | | Count | 166 | 366 | 532 |
| % within Ethnic group (IFFW.FqEthn) | 31.2% | 68.8% | 100.0% |

|  |  |  |  |
| --- | --- | --- | --- |
| Chi-Square Tests | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 1.371a | 5 | .927 |
| Likelihood Ratio | 1.403 | 5 | .924 |
| Linear-by-Linear Association | .000 | 1 | .991 |
| N of Valid Cases | 532 |  |  |

|  |
| --- |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 6.55. |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crosstab | | | | | |
|  | | | Psychiatric problem has: depression | | Total |
| Not mentioned | Mentioned |
| Whether has self-reported long-standing illness | Yes | Count | 110 | 281 | 391 |
| % within Whether has self-reported long-standing illness | 28.1% | 71.9% | 100.0% |
| No | Count | 56 | 85 | 141 |
| % within Whether has self-reported long-standing illness | 39.7% | 60.3% | 100.0% |
| Total | | Count | 166 | 366 | 532 |
| % within Whether has self-reported long-standing illness | 31.2% | 68.8% | 100.0% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Chi-Square Tests | | | | | |
|  | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | 6.477a | 1 | .011 |  |  |
| Continuity Correctionb | 5.949 | 1 | .015 |  |  |
| Likelihood Ratio | 6.313 | 1 | .012 |  |  |
| Fisher's Exact Test |  |  |  | .015 | .008 |
| Linear-by-Linear Association | 6.465 | 1 | .011 |  |  |
| N of Valid Cases | 532 |  |  |  |  |

|  |
| --- |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 44.00. |
| b. Computed only for a 2x2 table |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crosstab | | | | | |
|  | | | Psychiatric problem has: depression | | Total |
| Not mentioned | Mentioned |
| Whether smokes cigarettes at all nowadays | Yes | Count | 29 | 101 | 130 |
| % within Whether smokes cigarettes at all nowadays | 22.3% | 77.7% | 100.0% |
| No | Count | 137 | 265 | 402 |
| % within Whether smokes cigarettes at all nowadays | 34.1% | 65.9% | 100.0% |
| Total | | Count | 166 | 366 | 532 |
| % within Whether smokes cigarettes at all nowadays | 31.2% | 68.8% | 100.0% |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Chi-Square Tests | | | | | |
|  | Value | df | Asymptotic Significance (2-sided) | Exact Sig. (2-sided) | Exact Sig. (1-sided) |
| Pearson Chi-Square | 6.341a | 1 | .012 |  |  |
| Continuity Correctionb | 5.805 | 1 | .016 |  |  |
| Likelihood Ratio | 6.624 | 1 | .010 |  |  |
| Fisher's Exact Test |  |  |  | .012 | .007 |
| Linear-by-Linear Association | 6.329 | 1 | .012 |  |  |
| N of Valid Cases | 532 |  |  |  |  |

|  |
| --- |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 40.56. |
| b. Computed only for a 2x2 table |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Crosstab | | | | |  |
|  | | | Psychiatric problem has: depression | |  |
| Not mentioned | Mentioned | Total |
| How often respondent has had an alcoholic drink during the last 12 months | Almost every day | Count | 24 | 47 | 71 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 33.8% | 66.2% | 100.0% |
| Five or six days a week | Count | 9 | 17 | 26 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 34.6% | 65.4% | 100.0% |
| Three or four days a week | Count | 14 | 28 | 42 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 33.3% | 66.7% | 100.0% |
| Once or twice a week | Count | 47 | 80 | 127 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 37.0% | 63.0% | 100.0% |
| Once or twice a month | Count | 19 | 36 | 55 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 34.5% | 65.5% | 100.0% |
| Once every couple of months | Count | 11 | 43 | 54 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 20.4% | 79.6% | 100.0% |
| Once or twice a year | Count | 14 | 53 | 67 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 20.9% | 79.1% | 100.0% |
| Not at all in the last 12 months | Count | 28 | 62 | 90 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 31.1% | 68.9% | 100.0% |
| Total | | Count | 166 | 366 | 532 |
| % within How often respondent has had an alcoholic drink during the last 12 months | 31.2% | 68.8% | 100.0% |

|  |  |  |  |
| --- | --- | --- | --- |
| Chi-Square Tests | | | |
|  | Value | df | Asymptotic Significance (2-sided) |
| Pearson Chi-Square | 9.001a | 7 | .253 |
| Likelihood Ratio | 9.427 | 7 | .223 |
| Linear-by-Linear Association | 2.566 | 1 | .109 |
| N of Valid Cases | 532 |  |  |

|  |
| --- |
| a. 0 cells (0.0%) have expected count less than 5. The minimum expected count is 8.11. |

|  |  |  |  |
| --- | --- | --- | --- |
| **Model Summary** | | | |
| Step | -2 Log likelihood | Cox & Snell R Square | Nagelkerke R Square |
| 1 | 629.574a | .056 | .079 |
| a. Estimation terminated at iteration number 4 because parameter estimates changed by less than .001. | | | |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Classification Tablea** | | | | | |
|  | Observed | | Predicted | | |
|  | Psychiatric problem has: depression | | Percentage Correct |
|  | Not mentioned | Mentioned |
| Step 1 | Psychiatric problem has: depression | Not mentioned | 14 | 152 | 8.4 |
| Mentioned | 9 | 357 | 97.5 |
| Overall Percentage | |  |  | 69.7 |
| 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 1a | Respondent sex(1) | .285 | .206 | 1.911 | 1 | .167 | 1.329 | .888 | 1.991 |
| Respondent current legal marital status |  |  | 6.748 | 4 | .150 |  |  |  |
| Respondent current legal marital status(1) | -.061 | .358 | .029 | 1 | .864 | .940 | .466 | 1.897 |
| Respondent current legal marital status(2) | -.558 | .415 | 1.807 | 1 | .179 | .572 | .253 | 1.291 |
| Respondent current legal marital status(3) | .138 | .403 | .118 | 1 | .731 | 1.148 | .522 | 2.529 |
| Respondent current legal marital status(4) | -.508 | .407 | 1.556 | 1 | .212 | .602 | .271 | 1.337 |
| Ethnic group (IFFW.FqEthn) |  |  | .967 | 5 | .965 |  |  |  |
| Ethnic group (IFFW.FqEthn)(1) | .238 | .501 | .226 | 1 | .634 | 1.269 | .475 | 3.391 |
| Ethnic group (IFFW.FqEthn)(2) | .353 | .462 | .585 | 1 | .444 | 1.423 | .576 | 3.517 |
| Ethnic group (IFFW.FqEthn)(3) | -.085 | .514 | .028 | 1 | .868 | .918 | .335 | 2.514 |
| Ethnic group (IFFW.FqEthn)(4) | -.060 | .487 | .015 | 1 | .902 | .942 | .363 | 2.445 |
| Ethnic group (IFFW.FqEthn)(5) | .184 | .494 | .138 | 1 | .710 | 1.202 | .456 | 3.167 |
| Whether has self-reported long-standing illness(1) | .467 | .219 | 4.552 | 1 | .033 | 1.595 | 1.039 | 2.451 |
| Whether smokes cigarettes at all nowadays(1) | .567 | .245 | 5.350 | 1 | .021 | 1.763 | 1.090 | 2.850 |
| How often respondent has had an alcoholic drink during the last 12 months |  |  | 8.640 | 7 | .280 |  |  |  |
| How often respondent has had an alcoholic drink during the last 12 months(1) | -.180 | .352 | .262 | 1 | .608 | .835 | .419 | 1.664 |
| How often respondent has had an alcoholic drink during the last 12 months(2) | -.095 | .489 | .038 | 1 | .846 | .909 | .349 | 2.371 |
| How often respondent has had an alcoholic drink during the last 12 months(3) | -.021 | .417 | .003 | 1 | .960 | .979 | .432 | 2.219 |
| How often respondent has had an alcoholic drink during the last 12 months(4) | -.297 | .307 | .938 | 1 | .333 | .743 | .407 | 1.356 |
| How often respondent has had an alcoholic drink during the last 12 months(5) | -.162 | .375 | .188 | 1 | .665 | .850 | .408 | 1.772 |
| How often respondent has had an alcoholic drink during the last 12 months(6) | .573 | .417 | 1.888 | 1 | .169 | 1.774 | .783 | 4.021 |
| How often respondent has had an alcoholic drink during the last 12 months(7) | .537 | .390 | 1.898 | 1 | .168 | 1.710 | .797 | 3.671 |
| Constant | .361 | .435 | .688 | 1 | .407 | 1.435 |  |  |
| a. Variable(s) entered on step 1: Respondent sex, Respondent current legal marital status, Ethnic group (IFFW.FqEthn), Whether has self-reported long-standing illness, Whether smokes cigarettes at all nowadays, How often respondent has had an alcoholic drink during the last 12 months. | | | | | | | | | |