# Chapter – III

# *Results*

## 3.1 Descriptive and comparative analyses

Table 3.1.1 Age distribution of the study participants, by sex

| Age groups | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 - 84 | 151 | 60.64 | 151 | 60.16 | 0.11 |
| 85 - 89 | 62 | 24.90 | 66 | 26.29 | -0.36 |
| 90 - 94 | 29 | 11.65 | 24 | 9.56 | 0.76 |
| 95 & above | 7 | 2.81 | 10 | 3.98 | -0.72 |

Table 3.1.1 depicts the age distribution of the study population, by sex. Just above 60% of the participants are found to be in the age group 80 – 84 years, irrespective of sex. As expected, the lowest frequency of study participants is lying in the age group 95 years and above. No age group shows any statistical difference in the distribution of sex.

Table 3.1.2 Marital status of the study participants, by sex

| Marital status | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Currently in wedlock | 128 | 51.41 | 80 | 31.87 | 4.52* |
| Unmarried/widow/widower/ separated/divorced | 121 | 48.59 | 171 | 68.13 | -4.52* |

* significant at p<0.01 level

Table 3.1.2 shows the marital status of the study population, by sex. Significantly higher (p<0.05) percentage of males are currently in wedlock, while females show

significantly higher ($p<0.05$) percentage of other group containing widow, unmarried, separated individuals.

Table 3.1.3 Educational status of the study participants, by sex

| Educational status | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Non-literate | 33 | 13.25 | 51 | 20.32 | -2.13* |
| Upto class X | 87 | 34.94 | 94 | 37.45 | -0.58 |
| School final & above | 129 | 51.81 | 106 | 42.23 | 2.16* |

* significant at $p<0.05$ level

Table 3.1.3 depicts the educational status of the study population, by sex. Irrespective of sex, highest numbers of study participants have attained their education beyond school final level. Significantly higher ($p<0.05$) percentage of females are found to be non-literate, while males shows significantly higher ($p<0.05$) percentage of educational status in the category of school final and above.

Table 3.1.4 Occupation before attaining 60 years of age of the study participants, by sex.

| Occupation before attained 60 years of age | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Government Dept. | 104 | 41.77 | 63 | 25.10 | 4.01* |
| Non-Government /any private sector | 72 | 28.92 | 22 | 8.76 | 5.96* |
| House wife | - | - | 133 | 52.99 | - |
| Labourer & others | 73 | 29.32 | 33 | 13.15 | 4.51* |

* significant at $p<0.01$ level

Table 3.1.4 shows the occupation of the study participants before attaining their 60 years of age, by sex. Significantly higher ($p<0.01$) percentage of males are found to

be government service holder when they were below 60 years. Again, significantly higher ($p<0.01$) percentage of males are also found to be involved in the non-government or any private sectors. Occupations like farmer, shop keeper, household chores in neighbours family, small scale business etc. at their age below 60 years are included in other group, where males show significantly ($p<0.01$) higher percentage.

Table 3.1.5 Family type of the study participants, by sex

| Family type | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Nuclear family | 96 | 38.55 | 73 | 29.08 | 2.25* |
| Joint family | 101 | 40.56 | 105 | 41.83 | -0.29 |
| Broken family & family of accretion | 52 | 20.88 | 73 | 29.08 | -2.13* |

* significant at $p<0.05$ level

Table 3.1.5 depicts the family type of the study participants, by sex. Significantly higher ($p<0.05$) percentage of males are currently living in a nuclear family, whereas females are found to be significantly higher ($p<0.05$) in the other group which is termed here as broken family since this type of family is marked by the features like solitary living, leading widow life with unmarried son or daughter etc. or in the family of accretion which termed as the family where the members are not in blood relations.

Table 3.1.6 Current working status of the study participants, by sex

| Working status | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Worker | 206 | 82.73 | 162 | 64.54 | 4.72* |
| Non-worker | 43 | 17.27 | 89 | 35.46 | -4.72* |

* significant at $p<0.01$ level

Table 3.1.6 shows the working status of the study participants, by sex. Significantly higher ($p<0.01$) percentage of males are found to be worker in terms of their ability of working in their present age, and eventually, females shows significantly higher ($p<0.01$) percentage as non-worker.

Table 3.1.7 Spouse status of the study participants, by sex

| Spouse status | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| With spouse | 128 | 51.41 | 80 | 31.87 | 4.52* |
| Without spouse | 121 | 48.59 | 171 | 68.13 | -4.52* |

* significant at $p<0.01$ level

Table 3.1.7 depicts the spouse status of the study participants, by sex. Significantly higher ($p<0.05$) percentage of males are living with their spouse and eventually females show significantly higher ($p<0.05$) percentage of other group containing widow, unmarried, separated individuals.

Table 3.1.8 Total number of offspring of the study participants, by sex

| No. of offspring | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| No offspring | 36 | 14.46 | 26 | 10.36 | 1.39 |
| 1 – 5 | 94 | 37.75 | 125 | 49.80 | -2.74* |
| > 5 | 119 | 47.79 | 100 | 39.84 | 1.80 |

* significant at $p<0.05$ level

Table 3.1.8 shows the total number of offspring of the study participants, by sex. It appears that a significantly higher ($p<0.05$) percentage of females are having one to five number of offspring, while there are no significant differences on the other categories i.e. childless and having more than 5 offspring.

Table 3.1.9 Children Sharing Common house but not common kitchen with the study participants, by sex.

| No. of offspring | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| ≤ 2 offspring | 15 | 6.02 | 2 | 0.80 | 3.24* |
| > 2 offspring | 24 | 9.64 | 5 | 1.99 | 3.70* |

* significant at p<0.05 level

Children sharing common house but not common kitchen with the study participants, by sex, has been shown in table 3.1.9. Significantly higher (p<0.05) percentage of males are found to share common house but not common kitchen with more than two and/or equal to two and less than two offspring than their female counterparts.

Table 3.1.10 Living arrangement of the study participants, by sex

| Living arrangements | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Living alone | 16 | 6.43 | 38 | 15.14 | -3.17* |
| Joint family | 37 | 14.86 | 54 | 21.51 | -1.94 |
| With spouse only | 32 | 12.85 | 19 | 7.57 | 1.96* |
| With married son and his family | 77 | 30.92 | 59 | 23.51 | 1.87 |
| With un-married son | 6 | 2.41 | 7 | 2.79 | -0.27 |
| With married daughter and his family | 6 | 2.41 | 3 | 1.20 | 1.02 |
| With un-married daughter | 40 | 16.06 | 40 | 15.94 | 0.04 |
| Other relatives | 27 | 10.84 | 18 | 7.17 | 1.44 |
| Family not related to respondents | 8 | 3.21 | 13 | 5.18 | -1.10 |

* significant at p<0.05 level

Table 3.1.10 depicts the living arrangement of the study participants, by sex. Irrespective of sex, highest numbers of participants are staying with their married son and his family. The table also shows that significantly higher (p<0.05) percentage of

females are living alone than their male counterparts. Moreover, a fairly good number of study participants, irrespective of sex, are living with their unmarried daughter.

Table 3.1.11 Prevalence of Pension status by sex

| Pension status | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | N | % | n | % | |
| Pensioner | 100 | 40.16 | 112 | 44.62 | -1.01 |
| Non-pensioner | 149 | 59.84 | 139 | 55.38 | 1.01 |

Table 3.1.11 shows the distribution of study participants, by sex, who earns their livelihood by pension. The table shows no statistical difference between the pensioner and the non-pensioner in both males and females.

Table 3.1.12 Financial support received from the relatives by the study participants, by sex

| Financially supported | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Financially supported | 77 | 30.92 | 113 | 45.02 | -3.28* |
| Financially not supported | 172 | 69.08 | 138 | 54.98 | 3.28* |

* significant at $p<0.05$ level

Table 3.1.12 shows the distribution of the study participant by sex, as per financial support received from their relatives. It reveals that significantly higher ($p<0.05$) percentage of females are found to be financially supported from their relatives, whereas males shows the reverse trend.

Table 3.1.13 Savings detail of the study participants, by sex

| Mode of savings | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Bank only | 35 | 14.06 | 36 | 14.34 | -0.09 |
| Post office only | 43 | 17.27 | 28 | 11.16 | 1.96* |
| Both bank & post office | 103 | 41.37 | 129 | 51.39 | -2.26* |
| Different govt. scheme, share certificate, etc. | 16 | 6.43 | 16 | 6.37 | 0.03 |
| No deposit | 52 | 20.88 | 42 | 16.73 | 1.19 |

* significant at p<0.05 level

The savings detail of the study participants, by sex, has been shown in Table 3.1.13. Majority of the study participants was found to keep their money both in banks as well as in post offices. However, while some of them have purchased different shares under Govt. schemes, many of them do not have any deposit scheme. Significantly higher (p<0.05) male study participants also keep their money in post office only.

Table 3.1.14 Regularity of financial support from relatives of the study participants, by sex

| Financially supported | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Regularly | 32 | 12.85 | 54 | 21.51 | -2.58* |
| Irregularly | 45 | 18.07 | 62 | 24.70 | -1.81 |

* significant at p<0.05 level

Table 3.1.14 depicts the percentage of study participants receiving financial assistance from their relatives in a regular basis. Significantly higher (p<0.05) percentage of females are found to be financially supported by their relatives on regular basis than their male counterparts. However, around 24% and 18% of females and males, respectively, are getting financial support from their relatives irregularly.

Table 3.1.15 Perceived notion on health status of the study participants, by sex

| Perceived notion on Health | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | N | % | n | % | |
| Very healthy | 47 | 18.88 | 76 | 30.28 | -2.99* |
| Fairly all right | 62 | 24.90 | 67 | 26.69 | -0.46 |
| Unhealthy | 49 | 19.68 | 71 | 28.29 | -2.27* |
| Feels week | 25 | 10.04 | 14 | 5.58 | 1.86 |
| Health deteriorating day by day | 66 | 26.51 | 23 | 9.16 | 5.20** |

* significant at p<0.05 level; ** significant at p<0.01 level

Table 3.1.15 depicts the perceived notion on health status of the study participants, by sex. Significantly higher (p<0.05) percentage of females perceived their health as excellent than their male counterpart participants. Interestingly, significantly higher (p<0.05) percentage of females also perceived their health as unhealthy, than their male counterparts. Significantly higher (p≤0.01) percentage of males has reported that their health is deteriorating day by day.

Table 3.1.16 Self-reported morbidity of the study participants, by sex

| Self-reported morbidity | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Cough and cold | 28 | 11.24 | 23 | 9.16 | 0.77 |
| Acute indigestion/Hyper acidity/ Abdominal pain/Diarrhea | 189 | 75.90 | 235 | 93.63 | -5.69** |
| Muscle pain/cramp/joint pain | 147 | 59.04 | 179 | 71.31 | -2.90* |
| Headache/Bodyache/Backache | 29 | 11.65 | 37 | 14.74 | -1.02 |
| None | 11 | 4.42 | 3 | 1.20 | 2.19* |

* significant at p<0.05 level; ** significant at p<0.01 level

The prevalence of self-reported morbidity of the study participants, by sex, has been shown in table 3.1.16. Majority of study participants are suffering from acute

indigestion, hyper-acidity, abdominal pain, diarrhoea etc., irrespective of sex, and it reveals that females are found to be significantly higher ($p<0.01$) prevalence of such illness than their male counterparts. Additionally, significantly higher ($p<0.05$) percentage of females have reported their common ailments like muscle pain, cramp, joint pain, than males.

Table 3.1.17 Methods of treatment for common ailments of the study participants, by sex.

| Methods of Treatment | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Homoeopathy only | 62 | 24.90 | 84 | 33.47 | -2.12* |
| Allopathic only | 63 | 25.30 | 41 | 16.33 | 2.48* |
| Ayurvedic only | 27 | 10.84 | 15 | 5.98 | 1.96* |
| Both Homoeopathy and Allopathic | 47 | 18.88 | 56 | 22.31 | -0.95 |
| Both Homoeopathic and Ayurvedic | 9 | 3.61 | 2 | 0.80 | 2.15* |
| Both Allopathic and Ayurvedic | 7 | 2.81 | - | - | - |
| Different methods for different diseases | 34 | 13.65 | 53 | 21.12 | -2.22* |

* significant at $p<0.05$ level

Table 3.1.17 shows the methods of treatment for the common ailments seek by the study participants, by sex. Significantly higher ($p<0.05$) percentage of females are likely to get homeopathic treatment for common ailments, while males prefer the reverse trend of treatment as allopathic and ayurvedic. Moreover, significantly higher females have shown their interest to adopt different treatment methods for different disease.

Table 3.1.18 Prevalence of self-reported common mental disorders, by sex

| Common Mental Problems | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Depression | 89 | 35.74 | 167 | 66.53 | -7.24** |
| Claustrophobia | 32 | 12.85 | 57 | 22.71 | -2.91* |
| Altophobia/Acrophobia | 17 | 6.83 | 72 | 28.69 | -6.68** |
| Thanatophobia | 68 | 27.31 | 39 | 15.54 | 3.24* |
| Autophobia/Monophobia | 54 | 21.69 | 123 | 49.00 | -6.67** |

* significant at p<0.05 level; ** significant at p<0.01 level

The prevalence of self-reported common mental disorders, by sex, has been depicted in Table 3.1.18. Except for Thanatophobia, where males show significantly higher prevalence, females show significantly higher (p<0.05 and p<0.01) prevalence of different common mental disorders than their male counterparts.

Table 3.1.19 Chronic Mental Disorders of the study participants, by sex

| Chronic Mental Disorder | Male (n=249) | | Female (n=251) | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| Dementia/Alzheimer/Forgetfulness | 133 | 53.41 | 167 | 66.53 | -3.02* |
| Epilepsy | 23 | 9.24 | 70 | 27.89 | -5.53** |

* significant at p<0.05 level; ** significant at p<0.01 level

Table 3.1.19 shows the prevalence of chronic mental disorders of the study participants as prescribed by doctors/psychiatrist, by sex. Irrespective of sex, females show significantly higher (p<0.05 and p<0.01) prevalence of dementia/forgetfulness/Alzheimer's and epilepsy than their male counterparts. No cases of Schizophrenia, amnesia and other chronic mental illnesses were reported by the study participants or their doctors/psychiatrists and hence not shown in the table.

Table 3.1.20 Prevalence of depression level (GDS-15 scale) among the study participants, by sex and age group

| Age Group | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 – 84 | | | | | |
| Normal | 35 | 14.06 | 32 | 12.75 | 0.42 |
| Mild Depression | 44 | 17.67 | 53 | 21.12 | -0.98 |
| Moderate Depression | 40 | 16.06 | 32 | 12.75 | 1.05 |
| Severe Depression | 32 | 12.85 | 34 | 13.55 | -0.23 |
| 85 – 89 | | | | | |
| Normal | 14 | 5.62 | 8 | 3.19 | 1.33 |
| Mild Depression | 20 | 8.03 | 13 | 5.18 | 1.28 |
| Moderate Depression | 20 | 8.03 | 30 | 11.95 | -1.47 |
| Severe Depression | 8 | 3.21 | 15 | 5.98 | -1.48 |
| 90 – 94 | | | | | |
| Normal | 6 | 2.41 | 5 | 1.99 | 0.32 |
| Mild Depression | 8 | 3.21 | 6 | 2.39 | 0.56 |
| Moderate Depression | 7 | 2.81 | 10 | 3.98 | -0.72 |
| Severe Depression | 8 | 3.21 | 3 | 1.20 | -1.53 |
| 95 and above | | | | | |
| Normal | 3 | 1.20 | 2 | 0.80 | 0.45 |
| Mild Depression | 2 | 0.80 | 3 | 1.20 | -0.45 |
| Moderate Depression | 1 | 0.40 | 2 | 0.80 | -0.58 |
| Severe Depression | 1 | 0.40 | 3 | 1.20 | -1.01 |

Table 3.1.20 shows the prevalence of depression level, in terms of GDS-15 scale among the study participants, by sex, in different age groups. It has been found that in all the age groups, majority of the study participants, irrespective of sex, are found to have mild to moderate level of depression. However, severely depressed individuals are found to be higher in the youngest age group.

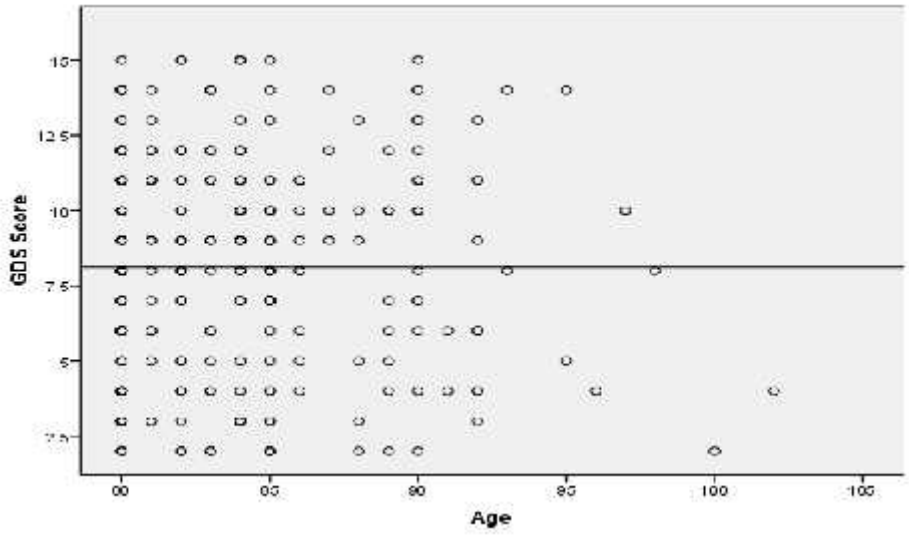


Figure 3.1.1 Scatter diagram of age and depression score of males, with best fit line.

Figure 3.1.1 demonstrates the scatter diagram with best fit line showing the age related increase in depression level among the male study participants. The depression level was found to be marginally higher with increasing age.

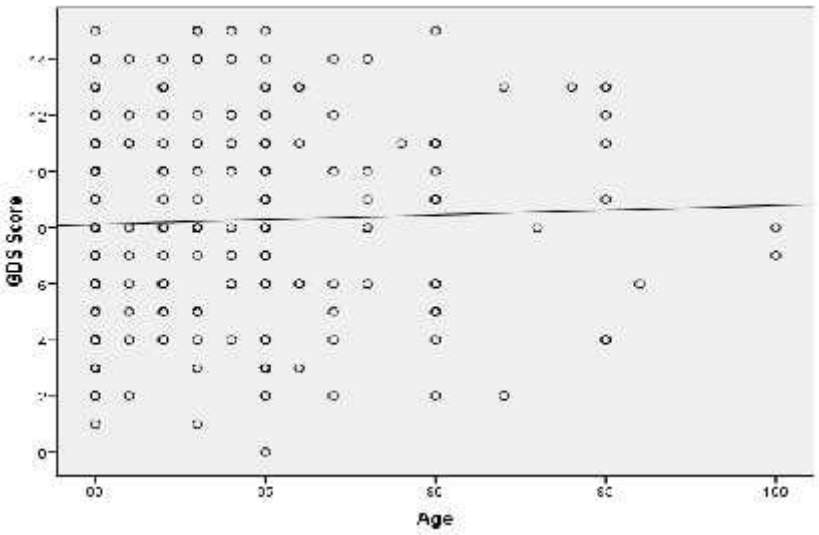


Figure 3.1.2 Scatter diagram of age and depression score among the females with best fit line.

Figure 3.1.2 illustrates the scatter diagram with best fit line that shows the age related increase in depression level among the female study participants. A significant age related increase has been observed in depression level among the females.

Table 3.1.21 Prevalence of Cognitive function (MMSE scale) among the study participants, by sex and age group

| Age Group | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 - 84 | | | | | |
| Uncertain CI | 51 | 20.48 | 43 | 17.13 | 1.69 |
| Mild to Moderate CI | 49 | 19.68 | 65 | 25.90 | -1.66 |
| Severe CI | 51 | 20.48 | 43 | 17.13 | 1.69 |
| 85 - 89 | | | | | |
| Uncertain CI | 18 | 7.23 | 5 | 1.99 | 2.81* |
| Mild to Moderate CI | 19 | 7.63 | 32 | 12.75 | -1.90 |
| Severe CI | 25 | 10.04 | 29 | 11.55 | -0.54 |
| 90 - 94 | | | | | |
| Uncertain CI | 8 | 3.21 | 1 | 0.40 | 2.37* |
| Mild to Moderate CI | 12 | 4.82 | 3 | 1.20 | 2.38* |
| Severe CI | 9 | 3.61 | 20 | 7.97 | -2.10* |
| 95 and above | | | | | |
| Uncertain CI | 3 | 1.20 | 0 | 0.00 | 1.74 |
| Mild to Moderate CI | 2 | 0.80 | 1 | 0.40 | 0.58 |
| Severe CI | 2 | 0.80 | 9 | 3.59 | -2.14* |

*significant at $p<0.05$ level; CI = Cognitive Impairment.

Table 3.1.21 depicts the prevalence of cognitive function, in terms of Mini Mental State Examination (MMSE) scale among the study participants, by sex, in different age groups. Significantly higher ($p<0.05$) percentage of male are found to be under uncertain cognitive impairment in 85-89 years of age group. Again, it has been found

that in the age group of 90 – 94 years, except for severe CI where females show significantly higher ($p<0.05$) prevalence, male shows significantly higher ($p<0.05$) prevalence in the categories of uncertain CI and mild to moderate CI. But, in the age group of 95 years and above, females shows significantly higher ($p<0.05$) prevalence in the severe CI category than their male counterparts.

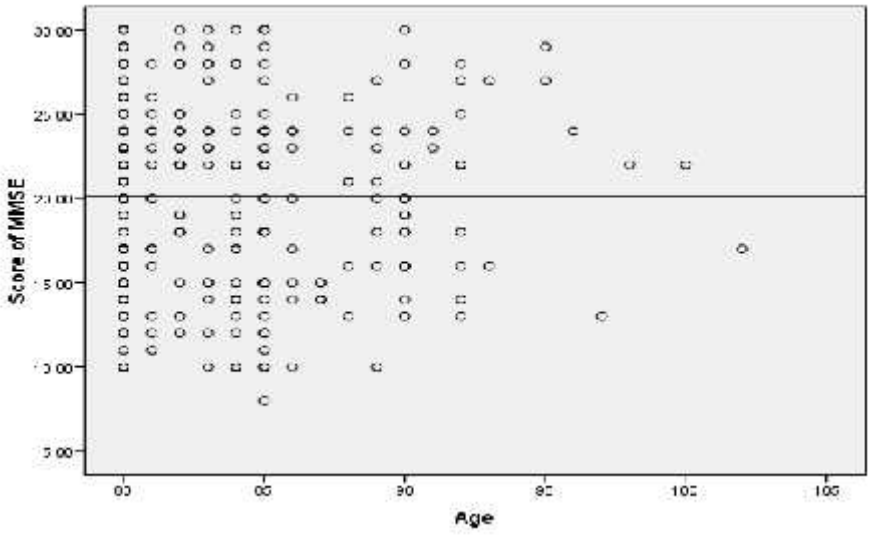


Figure 3.1.3 Scatter diagram of age and Cognitive function (MMSE) score of male study participants with best fit line.

Figure 3.1.3 illustrates the scatter diagram with best fit line showing the age related increase in cognitive function among the male study participants. The cognitive function score are found to be marginally higher with increasing age.

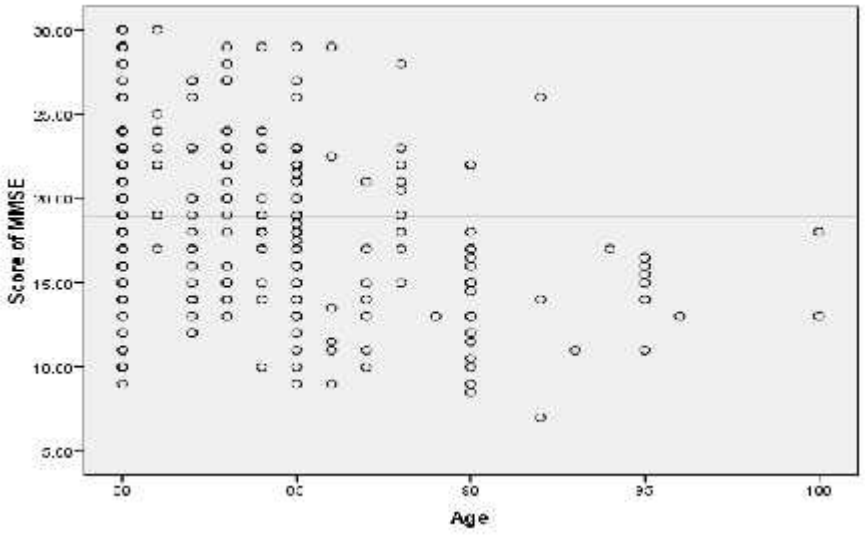


Figure 3.1.4 Scatter diagram of age and Cognitive function (MMSE) score of female study participants with line of best fit.

Figure 3.1.4 demonstrates the scatter diagram with best fit line that shows significantly increase in cognitive function with the increasing of age among the female study participants.

Table 3.1.22 Prevalence of Loneliness (UCLA loneliness scale) among the study participants, by sex and age group

| Age Group | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 – 84 | | | | | |
| Normal | 91 | 36.55 | 69 | 27.49 | 2.18* |
| Loneliness | 44 | 17.67 | 63 | 25.10 | -2.03* |
| Severe Loneliness | 16 | 6.43 | 19 | 7.57 | -0.50 |
| 85 – 89 | | | | | |
| Normal | 34 | 13.65 | 20 | 7.97 | 2.05* |
| Loneliness | 17 | 6.83 | 39 | 15.54 | -3.12* |
| Severe Loneliness | 11 | 4.42 | 7 | 2.79 | 0.98 |
| 90 – 94 | | | | | |
| Normal | 18 | 7.23 | 5 | 1.99 | 2.81* |
| Loneliness | 10 | 4.02 | 6 | 2.39 | 1.04 |
| Severe Loneliness | 1 | 0.40 | 13 | 5.18 | -3.29* |
| 95 and above | | | | | |
| Normal | 4 | 1.61 | 0 | 0.00 | 2.02* |
| Loneliness | 3 | 1.20 | 6 | 2.39 | -1.00 |
| Severe Loneliness | 0 | 0.00 | 4 | 1.59 | -2.01* |

*significant at $p<0.05$ level

Table 3.1.22 shows the prevalence under different categories of loneliness, in terms of UCLA loneliness scaleamong the study participants, by sex, in different age groups. Majority of the males show significantly higher ($p<0.05$) prevalence under the category of normal and loneliness than their female counterparts among the age group of 80-84 years. It has also been shown that females are found to be significantly higher ($p<0.05$) under the category of loneliness in the age group of 85-89 years and severe loneliness after attaining 90 years and above. Moreover, significantly higher ($p<0.05$) prevalence of males are found to be in the category of normal than their female counterparts in all the age groups.

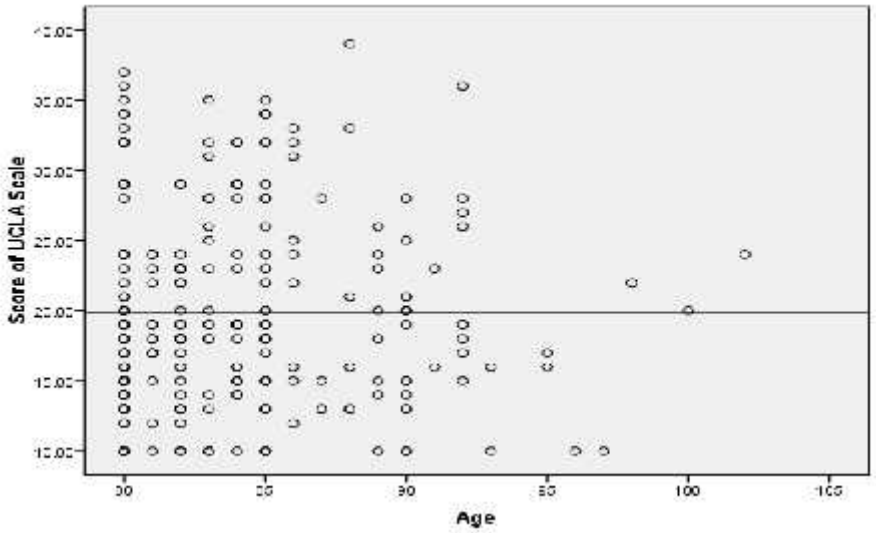


Figure 3.1.5 Scatter plot of age and loneliness (UCLA loneliness scale) score of male study participants with lines of best fit.

Figure 3.1.5 demonstrates the scatter diagram with best fit line that shows significant age related increase in the score of loneliness among the male study participants.

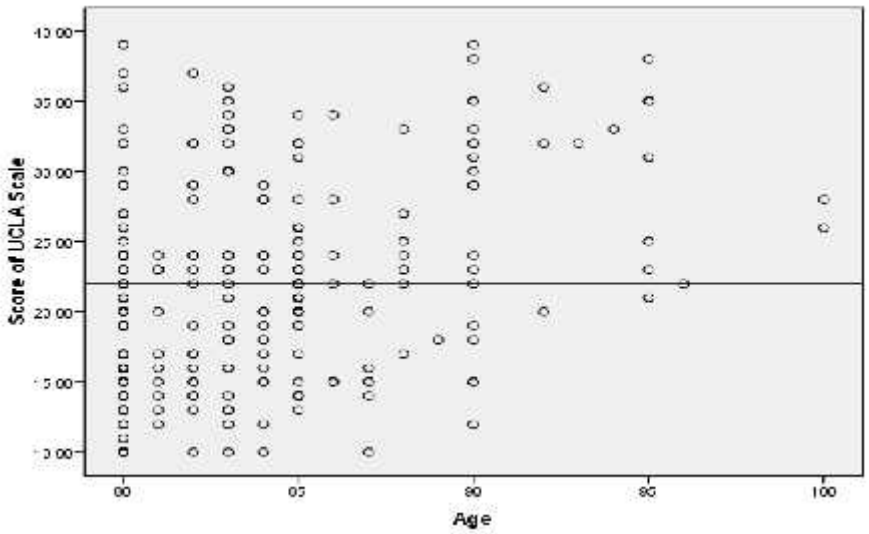


Figure 3.1.6 Scatter diagram of age and loneliness (UCLA loneliness scale) score of female study participants with lines of best fit

Figure 3.1.6 demonstrate the scatter diagram with best fit line that shows significant age related increase in the score of loneliness among the female study participants.

Table 3.1.23 Prevalence of Nutritional Status (MNA) among the study participants, by sex and age group

| Age Group | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 – 84 | | | | | |
| Normal Nutritional Status | 67 | 26.91 | 48 | 19.12 | 2.08* |
| Malnourished | 84 | 33.73 | 103 | 41.04 | -1.69 |
| 85 - 89 | | | | | |
| Normal Nutritional Status | 17 | 6.83 | 28 | 11.16 | -1.70 |
| Malnourished | 45 | 18.07 | 38 | 15.14 | 0.88 |
| 90 - 94 | | | | | |
| Normal Nutritional Status | 8 | 3.21 | 10 | 3.98 | -0.46 |
| Malnourished | 21 | 8.43 | 14 | 5.58 | 1.25 |
| 95 and above | | | | | |
| Normal Nutritional Status | 4 | 1.61 | 2 | 0.80 | 0.83 |
| Malnourished | 3 | 1.20 | 8 | 3.19 | -1.52 |

* significant at $p<0.05$ level

Prevalence of Nutritional Status (MNA) among the study participants by sex and age group, has been shown in Table 3.1.23. Significantly higher ($p<0.05$) prevalence of males are found in the category of normal nutritional status in the age group of 80-84 years than their female counterparts. It has been found that in all the age groups, majority of the study participants, irrespective of sex, are found to be malnourished.

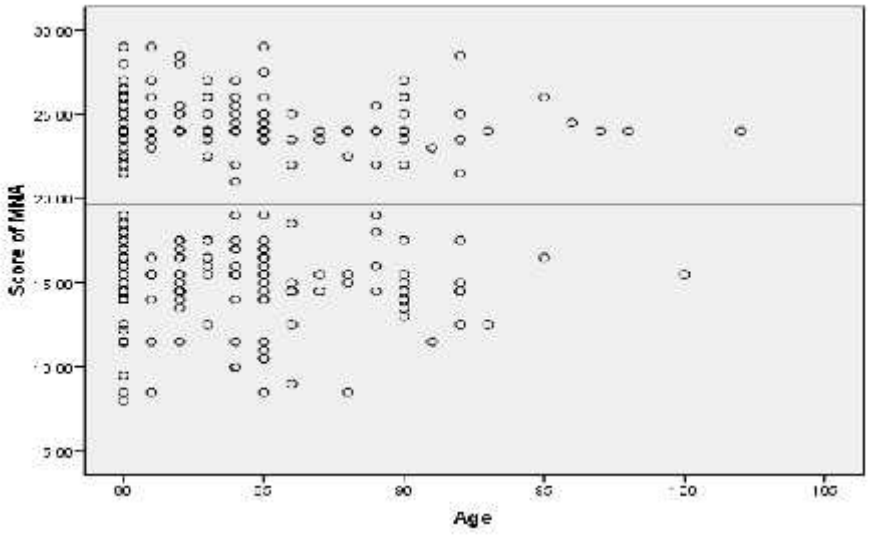


Figure 3.1.7 Scatter plot of age and Nutritional status (MNA) score of male study participants with lines of best fit

Figure 3.1.7 Illustrates the scatter diagram with best fit line that shows significant age related increase in nutritional status among the male study participants.

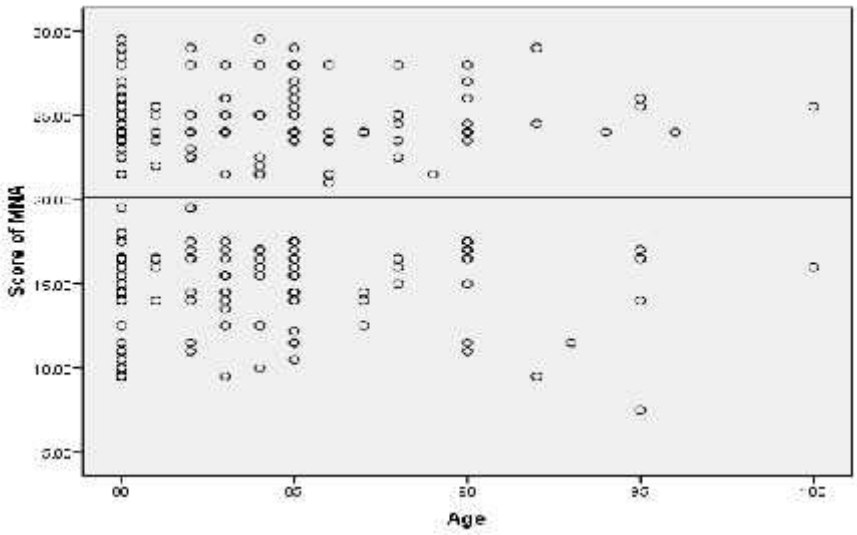


Figure 3.1.8 Scatter diagram of age and Nutritional status (MNA) score of female study participants with lines of best fit.

Figure 3.1.8 demonstrates the scatter diagram with best fit line that shows no significant age related increase in the score of nutritional status among the female study participants.

Table 3.1.24 Prevalence of Activities of Daily Living (ADL) among the study participants, by sex and age group

| Age Groups | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 - 84 | | | | | |
| Full Function | 74 | 29.72 | 49 | 19.52 | 2.67* |
| Moderate Impairment | 51 | 20.48 | 60 | 23.90 | -0.92 |
| Severe Functional Impairment | 26 | 10.44 | 42 | 16.73 | -2.06* |
| 85 - 89 | | | | | |
| Full Function | 26 | 10.44 | 24 | 9.56 | 0.33 |
| Moderate Impairment | 28 | 11.24 | 26 | 10.36 | 0.32 |
| Severe Functional Impairment | 8 | 3.21 | 16 | 6.37 | -1.66 |
| 90 - 94 | | | | | |
| Full Function | 14 | 5.62 | 6 | 2.39 | 1.85 |
| Moderate Impairment | 10 | 4.02 | 9 | 3.59 | 0.25 |
| Severe Functional Impairment | 5 | 2.01 | 9 | 3.59 | -1.07 |
| 95 and above | | | | | |
| Full Function | 0 | 0.00 | 0 | 0.00 | 0.00 |
| Moderate Impairment | 2 | 0.80 | 6 | 2.39 | -1.42 |
| Severe Functional Impairment | 5 | 2.01 | 4 | 1.59 | 0.35 |

* significant at $p<0.05$ level

Table 3.1.24 reveals the prevalence of Activities of Daily Living (ADL) among the study participants, by sex and age group. Significantly higher ($p<0.05$) prevalence of males are found to be in the category of full function in the age group of 80-84 years, while female shows significantly higher ($p<0.05$) prevalence in the category of severe functional impairment in the same age group. Moreover, no significant sex difference

has been found on the functional status of the respondents at the highest three age groups.

Table 3.1.25 Prevalence of Instrumental Activities of Daily Living (IADL) among the study participants, by sex and age group

| Age Group | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| 80 - 84 | | | | | |
| Low function, dependent | 58 | 23.29 | 83 | 33.07 | -2.45* |
| High function, Independent | 93 | 37.35 | 68 | 27.09 | 2.47* |
| 85 - 89 | | | | | |
| Low function, dependent | 34 | 13.65 | 49 | 19.52 | -1.77 |
| High function, Independent | 28 | 11.24 | 17 | 6.77 | 1.75 |
| 90 - 94 | | | | | |
| Low function, dependent | 16 | 6.43 | 22 | 8.76 | -0.98 |
| High function, Independent | 13 | 5.22 | 2 | 0.80 | 2.91* |
| 95 and above | | | | | |
| Low function, dependent | 7 | 2.81 | 9 | 3.59 | 0.50 |
| High function, Independent | 0 | 0.00 | 1 | 0.40 | -1.00 |

* significant at $p<0.05$ level

Table 3.1.25 depicts the Prevalence of Instrumental Activities of Daily Living (IADL) among the study participants, by sex and age group. Significantly higher ($p<0.05$) prevalence of females are found to be in the category of low function, dependent in the age group of 80-84 years, while male shows significantly higher ($p<0.05$) prevalence in the category of high function, independent in the same age group. Moreover, it has been found that significantly higher ($p<0.05$) prevalence of male are to be found in the category of high function, dependent than their female counterparts in the age group of 90-94 years.

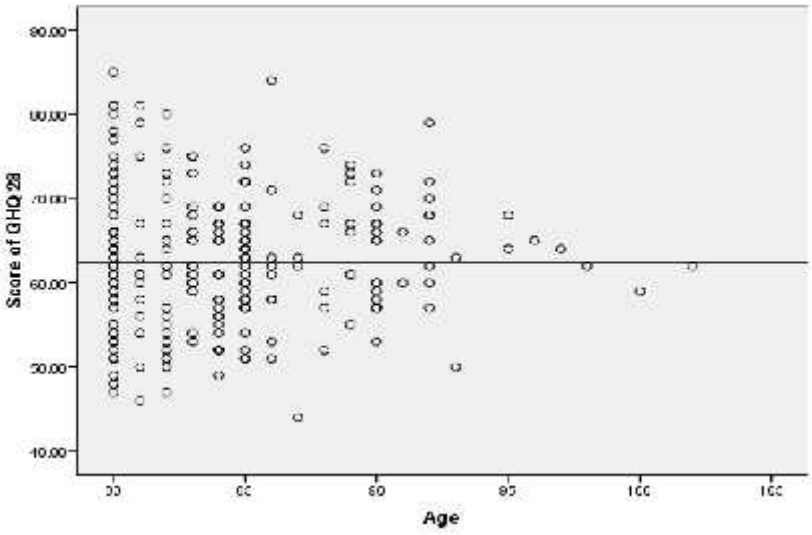


Figure 3.1.9 Scatter diagram of age and Quality of life (GHQ-28) score of male study participants with lines of best fit

Figure 3.1.9 demonstrates the scatter diagram with best fit line that shows the age related increase in quality of life among the male study participants. Males are showing negative relationship of quality of life with increasing age.

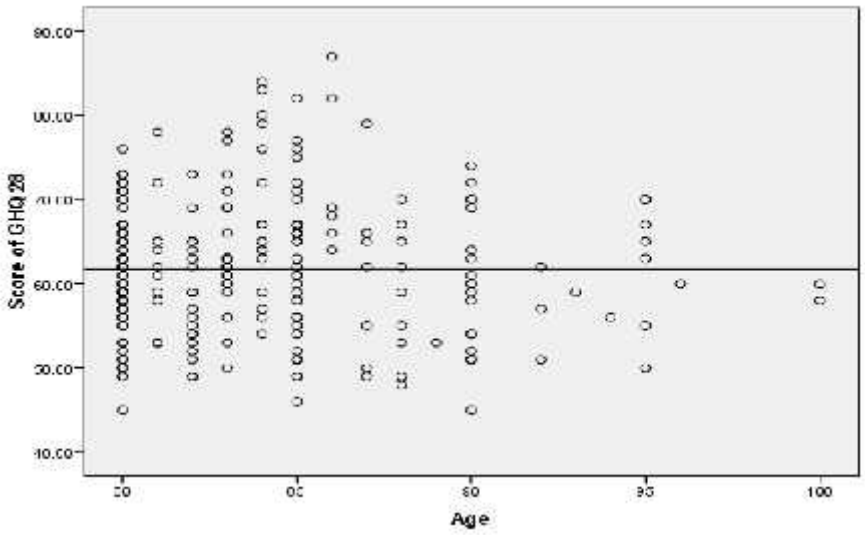


Figure 3.1.10 Scatter diagram of age and Quality of life (GHQ-28) score of female study participants with lines of best fit

Figure 3.1.10 demonstrates the scatter diagram with best fit line that shows a linear relationship of age with score of quality of life among the female study participants.

Table 3.1.26 Result of Chi-square test between the categories of psychosocial traits, by sex and age group

| Sex | Psychosocial trait variable | Age group (in years) | | | |
|---|---|---|---|---|---|
| | | 80 – 84 | 85 – 89 | 90 – 94 | 95 and above |
| Male | GDS-15 (df=3) | 2.25 | 6.39 | 0.38 | 1.57 |
| | MMSE (df=2) | 0.05 | 1.39 | 0.89 | 0.29 |
| | UCLA (df=2) | 57.07*** | 13.77** | 14.97** | 0.14 |
| | MNA (df=2) | 8.32* | 3.90 | 0.89 | 2.00 |
| | IADL (df=1) | 8.11* | 0.26 | 0.31 | 0.14 |
| Female | GDS-15 (df=3) | 8.29* | 3.09 | 4.33 | 0.40 |
| | MMSE (df=2) | 6.41* | 19.91*** | 27.25*** | 6.40* |
| | UCLA (df=2) | 29.62*** | 23.55*** | 4.75 | 0.40 |
| | MNA (df=2) | 0.65 | 2.55 | 0.75 | 1.40 |
| | IADL (df=1) | 3.50 | 0.55 | 0.67 | 0.40 |

* significant at p<0.01 level; ** significant at p<0.001 level; *** significant at p<0.0001 level

The result of chi-square analysis to find the statistical difference in prevalence of study participants in different categories under different psychosocial traits has been presented in Table 3.1.26 for males and females. The chi-square values are given in the table. Study participants of each sex below 90 years of age show significant differences in prevalence between different categories of loneliness (p<0.0001 & p<0.001). On the other hand, the difference in prevalence in different categories under MMSE is found to be significant in all age groups for females. Significantly higher percentage of males is found to be malnourished and having poor instrumental activity level in the younger age groups.

Table 3.1.27 Descriptive statistics (mean & s.e.) of psychosocial and nutritional status, by sex and age group

| Age Group | Male (n=249) | | Female (n=251) | | t-value |
|---|---|---|---|---|---|
| | Mean | s.e. | Mean | s.e. | |
| 80 - 84 | | | | | |
| Geriatric Depression Scale– 15 | 8.20 | 0.29 | 8.32 | 0.30 | -0.30 |
| UCLA loneliness Scale | 19.70 | 0.55 | 20.85 | 0.57 | -1.45 |
| Mini Mental State Examination | 20.38 | 0.46 | 20.21 | 0.43 | 0.28 |
| General Health Questionnaire -28 | 62.04 | 0.68 | 61.99 | 0.61 | 0.05 |
| Mini Nutritional Assessment | 19.92 | 0.44 | 20.03 | 0.44 | -0.18 |
| 85 - 89 | | | | | |
| Geriatric Depression Scale – 15 | 7.76 | 0.43 | 8.08 | 0.45 | -0.51 |
| UCLA loneliness Scale | 20.82 | 0.98 | 21.64 | 0.68 | -0.69 |
| Mini Mental State Examination | 19.18 | 0.72 | 18.07 | 0.61 | 1.18 |
| General Health Questionnaire -28 | 62.90 | 0.94 | 62.18 | 1.13 | 0.49 |
| Mini Nutritional Assessment | 18.99 | 0.68 | 20.68 | 0.66 | -1.78 |
| 90 - 94 | | | | | |
| Geriatric Depression Scale – 15 | 8.83 | 0.72 | 8.04 | 0.76 | 0.76 |
| UCLA loneliness Scale | 19.10 | 1.13 | 27.67 | 1.61 | -4.46*** |
| Mini Mental State Examination | 20.34 | 0.91 | 14.60 | 0.93 | 4.43*** |
| General Health Questionnaire -28 | 63.59 | 1.20 | 59.29 | 1.57 | 2.17* |
| Mini Nutritional Assessment | 19.24 | 1.01 | 19.73 | 1.19 | -0.31 |
| 95 and above | | | | | |
| Geriatric Depression Scale – 15 | 6.71 | 1.58 | 8.70 | 1.10 | -1.03 |
| UCLA loneliness Scale | 17.00 | 2.08 | 28.40 | 1.91 | -4.04** |
| Mini Mental State Examination | 22.00 | 2.09 | 14.60 | 0.64 | 3.91** |
| General Health Questionnaire -28 | 63.43 | 1.07 | 61.80 | 2.05 | 0.62 |
| Mini Nutritional Assessment | 22.07 | 1.59 | 18.85 | 1.95 | 1.28 |

* significant at $p<0.05$ level; ** significant at $p<0.001$ level; *** significant at $p<0.0001$ level; s.e. = standard error of mean

The mean and standard error of mean of scores of different traits of psychosocial health and nutritional status of the study participants, by sex and age group, have been

shown in Table 3.1.27. In the youngest age groups (80-84 and 85-89) no sex difference has been observed in any of the traits. In the third age group, i.e., 90-94 years, significantly higher ($p<0.0001$ and $p<0.05$) mean values are found among the males for MMSE score and GHQ-28 score, while females show significantly higher ($p<0.0001$) mean value for loneliness related variables. In the oldest age group, males and females show significantly higher ($p<0.001$) mean values of MMSE and loneliness related variable, respectively.

Table 3.1.28 Test of difference of obesity related variables of the study participants, between sexes.

| Obesity related variable | Male (n=249) | | Female (n=251) | | t-value |
|---|---|---|---|---|---|
| | Mean | s.e. | Mean | s.e. | |
| BMI | 20.41 | 0.22 | 20.51 | 0.24 | -0.30 |
| Waist-height Ratio | 0.49 | 0.01 | 0.50 | 0.01 | -1.64 |
| Waist-hip Ratio | 0.94 | 0.02 | 0.94 | 0.0) | 0.17 |
| Waist Circumference | 76.56 | 0.74 | 77.28 | 0.73 | -0.70 |
| MUAC | 24.41 | 0.32 | 24.15 | 0.32 | 0.56 |

Table 3.1.28 depicts the test difference of obesity related variables of the study participants between sex. All the variables, except WHR and MUAC, females show marginally higher mean values than their male counterparts. None of the obesity related variables shows any statistically significant difference, irrespective of sex among the study participants.

Table: 3.1.29 Prevalence of obesity among the study participants, by sex

| Obesity Related variable | Male (n=249) | | Female (n=251) | | z-value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| BMI | | | | | |
| Under-nutrition | 89 | 35.74 | 81 | 32.27 | 0.82 |
| Normal | 135 | 54.22 | 144 | 57.37 | -0.71 |
| Overweight | 23 | 9.24 | 19 | 7.57 | 0.67 |
| Obese | 2 | 0.80 | 7 | 2.79 | -1.68 |
| Waist to height ratio | | | | | |
| Obese | 130 | 52.21 | 149 | 59.36 | -1.61 |
| Waist to hip ratio | | | | | |
| Obese | 139 | 55.82 | 231 | 92.03 | -10.11** |
| Waist Circumference | | | | | |
| Obese | 5 | 2.01 | 48 | 19.12 | -6.49** |

** significant at p<0.01 level

Table 3.1.29 depicts the prevalence of obesity among the study participants, by sex. No significant statistical difference has been found among the study participants in their BMIcategories and waist-height ratio, irrespective of sex. Significantly higher (p<0.01) percentage of females are found to be obese in terms of Waist to hip ratio and Waist Circumference than their male counterparts.

Table 3.1.30 Chronic disease morbidity profile of the study population, by sex

| Chronic Disease | Male | | Female | | z value |
|---|---|---|---|---|---|
| | n | % | n | % | |
| CVD related | 110 | 44.18 | 97 | 38.65 | 1.26 |
| Gastric related | 189 | 75.90 | 235 | 93.63 | -5.69** |
| Nerve related | 83 | 33.33 | 72 | 28.69 | 1.12 |
| Bone & muscle related | 68 | 27.31 | 116 | 46.22 | -4.47** |
| Kidney related | 84 | 33.73 | 102 | 40.64 | -1.60 |
| Hormone related | 84 | 33.73 | 119 | 47.41 | -3.15* |
| Lung related | 63 | 25.30 | 41 | 16.33 | 2.48* |
| Cancer | 0 | 0.00 | 3 | 1.20 | -1.75 |
| Infectious | 92 | 36.95 | 107 | 42.63 | -1.30 |
| Blood related | 81 | 32.53 | 90 | 35.86 | -0.79 |
| Gynecological Problem | 0 | 0.00 | 146 | 58.17 | ----- |
| Eye & Ear | 245 | 98.39 | 243 | 96.81 | 1.16 |

* significant at p<0.05 level; ** significant at p<0.01 level;

Table 3.1.30 depicts the chronic disease morbidity profile of the study population, by sex. An overwhelming majority of the study participants, irrespective of sex, are suffering from ear and/or eye and/or gastric related problems. Significantly (p<0.01) higher females are sufferings from bone and muscle related problems, as well as hormone related issues.

### 3.2 Inferential analyses

In order to identify the significant socio-demographic predictor(s) of each psychosocial trait and nutritional status of the study participants, adjusted multinomial logistic regression analysis was performed. For each trait, the categorical variables pertaining to depression scale, cognitive function and loneliness were used as dependent where the normal categories were fixed as reference in the regression model and the odds ratio along with 95% confidence interval were obtained for the other categories. In the independent list, relevant categorical socio-demographic variables were taken. Sex was also added in the list of independent variable to examine the sexual dimorphism in predictor variables for each psychosocial trait. Here, any one of the sub-groups was used as reference category. Binary logistic regression analysis was performed separately for sex, to identify the significant anthropometric measurement related predictor(s) of nutritional status of the study participants. Two-way ANOVA was performed to identify the socioeconomic and demographic correlates of QoL. Sex was included in the independent variable list to ascertain the effect of the same on QoL. The following tables will show the results of the said inferential statistics, separately for all the psychosocial traits, as well as the nutritional status.

Table 3.2.1 Result of adjusted multinomial logistic regression analysis using depression scale as dependent and socio-demographic variables as independent

| Depression category | Socio-demographic variable | Odds ratio (OR) | 95 % CI |
|---|---|---|---|
| Mild Depression (Score: 5-8) | Age Group | | |
| | 80 - 84 | 1.160 | 0.267 – 5.038 |
| | 85 - 89 | 1.160 | 2.260 – 5.185 |
| | 90 - 94 | 1.007 | 0.201 – 5.046 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.497 | 0.238 – 1.037 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 0.930 | 0.485 – 1.784 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 1.530 | 0.649 – 3.604 |
| | Upto class X | 1.971* | 1.034 – 3.756 |
| | School Final & above | 1 | - |
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 0.935 | 0.248 – 3.530 |
| | Non-Government /any private sector | 1.000 | 0.415 – 2.411 |
| | House wife | 0.090 | 0.168 – 1.137 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 0.960 | 0.463 – 1.991 |
| | Joint Family | 1.552 | 0.775 – 3.110 |
| | Broken Family &Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 3.267 | 0.275 – 38.799 |
| | Without Spouse | 1 | - |

| | | | |
|---|---|---|---|
| | No. of offspring | | |
| | No offspring | 1.311 | 0.506 – 3.398 |
| | 1 - 5 | 1.435 | 0.810 – 2.542 |
| | > 5 | 1 | - |
| | Working Status | | |
| | Worker | 1.116 | 0.565 – 2.203 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 0.192 | 0.020 – 1.863 |
| | Joint family | 0.293 | 0.031 – 2.741 |
| | With spouse only | 0.188 | 0.018 – 1.993 |
| | With married son and his family | 0.244 | 0.026 – 2.266 |
| | With un-married son | 0.227 | 0.011 – 4.549 |
| | With married daughter and his family | 0.202 | 0.010 – 4.279 |
| | With un-married daughter | 0.267 | 0.028 – 2.581 |
| | Other relatives | 0.294 | 0.029 – 2.975 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 1.395 | 0.387 – 5.030 |
| | Non-Pensioner | 1 | - |
| Moderate Depression (Score: 9 – 11) | Age Group | | |
| | 80 - 84 | 2.055 | 0.380 – 11.123 |
| | 85 - 89 | 2.416 | 0.437 – 13.365 |
| | 90 - 94 | 1.812 | 0.304 – 10.802 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.513 | 0.240 – 1.096 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 0.927 | 0.458 – 1.877 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 2.037 | 0.848 – 4.893 |
| | Upto class X | 1.068 | 0.532 – 2.144 |

| | | | |
|---|---|---|---|
| | School Final & above | 1 | - |
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 1.377 | 0.354 – 5.353 |
| | Non-Government /any private sector | 1.242 | 0.497 – 3.107 |
| | House wife | 0.385 | 0.137 – 1.079 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 0.731 | 0.350 – 1.531 |
| | Joint Family | 0.969 | 0.478 – 1.965 |
| | Broken Family & Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 4.604E-9 | 4.604E-9 – 4.604E-9 |
| | Without Spouse | 1 | - |
| | No. of offspring | | |
| | No offspring | 1.649 | 0.599 – 4.539 |
| | 1 - 5 | 2.128* | 1.164 – 3.890 |
| | > 5 | 1 | - |
| | Working Status | | |
| | Worker | 0.819 | 0.402 – 1.670 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 0.123 | 0.013 – 1.171 |
| | Joint family | 0.072* | 0.008 – 0.680 |
| | With spouse only | 0.145 | 0.014 – 1.527 |
| | With married son and his family | 0.093* | 0.010 – 0.855 |
| | With un-married son | 0.400 | 0.024 – 6.635 |
| | With married daughter and his family | 0.214 | 0.011 – 4.000 |
| | With un-married daughter | 0.163 | 0.017 – 1.575 |
| | Other relatives | 0.169 | 0.017 – 1.677 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 1.728 | 0.457 – 6.527 |

| | | | |
|---|---|---|---|
| | Non-Pensioner | 1 | - |
| Severe Depression (Score: 12 – 15) | Age Group | | |
| | 80 - 84 | 1.828 | 0.375 – 8.920 |
| | 85 - 89 | 1.151 | 0.225 – 5.885 |
| | 90 - 94 | 1.258 | 0.225 – 7.031 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.483 | 0.218 – 1.073 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 1.126 | 0.547 – 2.318 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 2.376 | 0.953 – 5.925 |
| | Upto class X | 1.428 | 0.683 – 2.985 |
| | School Final & above | 1 | - |
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 1.640 | 0.390 – 6.889 |
| | Non-Government /any private sector | 1.352 | 0.512 – 3.568 |
| | House wife | 0.409 | 0.141 – 1.187 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 0.897 | 0.416 – 1.933 |
| | Joint Family | 0.813 | 0.379 – 1.745 |
| | Broken Family & Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 1.269 | 0.087 – 18.540 |
| | Without Spouse | 1 | - |
| | No. of offspring | | |
| | No offspring | 0.650 | 0.211 – 1.997 |
| | 1 - 5 | 0.977 | 0.515 – 1.850 |
| | > 5 | 1 | - |
| | Working Status | | |

| | | | |
|---|---|---|---|
| | Worker | 0.775 | 0.368 – 1.632 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 0.341 | 0.029 – 3.945 |
| | Joint family | 0.252 | 0.022 – 2.882 |
| | With spouse only | 0.082 | 0.006 – 1.169 |
| | With married son and his family | 0.187 | 0.017 – 2.117 |
| | With un-married son | 0.727 | 0.036 – 14.499 |
| | With married daughter and his family | 0.327 | 0.013 – 8.024 |
| | With un-married daughter | 0.378 | 0.033 – 4.380 |
| | Other relatives | 0.394 | 0.032 – 4.849 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 3.325 | 0.755 – 14.639 |
| | Non-Pensioner | 1 | - |

Table 3.2.1 depicts the result of adjusted multinomial logistic regression analysis to identify significant socioeconomic and demographic predictor(s) of depression scale in terms of GDS-15. Education level shows significant association with mild depression level, whereas, numbers of offspring and living arrangements are the most significant predictors of moderate level of depression among the study participants. None of the socioeconomic and demographic variables are found to be associated with severe level of depression.

Table 3.2.2 depicts the result of adjusted multinomial logistic regression analysis to identify significant socio-demographic predictor(s) of loneliness in terms of UCLA. Being female is the most significant predictor of both moderate and severe loneliness. Additionally, educational and occupational statuses are some other significant predictors of mild to severe loneliness among the study participants. Again, it has also

been found that working status and increasing age are two important variables that predicts both mild and severe loneliness among the study participants.

Table 3.2.3 depicts the result of adjusted multinomial logistic regression analysis to identify significant socioeconomic and demographic predictor(s) of cognitive function in terms of MMSE. Sex is found to be an important significant predictor for both mild to moderate and severe level of cognitive impairment. Additionally, number of offspring, educational and occupational status and having pension are some other significant predictors of mild to severe cognitive impairment among the study participants.

Table 3.2.2 Result of adjusted multinomial logistic regression analysis using Loneliness scale as dependent and socio-demographic variables as independent

| Loneliness category | Socio-demographic variable | Odds ratio (OR) | 95 % CI |
|---|---|---|---|
| Loneliness (Score: 20 – 30) | Age Group | | |
| | 80 - 84 | 0.153* | 0.036 - 0.648 |
| | 85 - 89 | 0.249 | 0.058 - 1.068 |
| | 90 - 94 | 0.216* | 0.047 - 0.996 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.323** | 0.186 - 0.562 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 0.824 | 0.478 - 1.421 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 0.830 | 0.405 - 1.698 |
| | Upto class X | 1.612 | 0.960 - 2.706 |
| | School Final & above | 1 | - |
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 1.437 | 0.503 - 4.100 |
| | Non-Government /any private sector | 0.970 | 0.483 - 1.948 |
| | House wife | 0.985 | 0.460 - 2.108 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 1.424 | 0.801 - 2.534 |
| | Joint Family | 1.816* | 1.046 - 3.152 |
| | Broken Family & Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 2.861 | 0.398 - 20.575 |
| | Without Spouse | 1 | - |
| | No. of offspring | | |

| | | | |
|---|---|---|---|
| | No offspring | 0.813 | 0.379 - 1.743 |
| | 1 - 5 | 0.888 | 0.561 - 1.406 |
| | > 5 | 1 | 1 |
| | Working Status | | |
| | Worker | 1.304 | 0.761 - 2.232 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 1.050 | 0.317 - 3.482 |
| | Joint family | 0.834 | 0.259 - 2.686 |
| | With spouse only | 1.635 | 0.443 - 6.029 |
| | With married son and his family | 1.299 | 0.412 - 4.090 |
| | With un-married son | 0.901 | 0.169 - 4.807 |
| | With married daughter and his family | 0.589 | 0.080 - 4.348 |
| | With un-married daughter | 0.534 | 0.159 - 1.792 |
| | Other relatives | 1.299 | 0.377 - 4.477 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 1.282 | 0.462 - 3.559 |
| | Non-Pensioner | 1 | - |
| Severe Loneliness (Score: 30 + ) | Age Group | | |
| | 80 - 84 | 0.093* | 0.016 - 0.533 |
| | 85 - 89 | 0.153* | 0.026 - 0.907 |
| | 90 - 94 | 0.579 | 0.096 - 3.478 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.381** | 0.172 - 0.843 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 1.128 | 0.531 - 2.396 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 2.594* | 1.043 - 6.452 |
| | Upto class X | 1.450 | 0.650 - 3.232 |
| | School Final & above | 1 | - |

| | | | |
|---|---|---|---|
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 1.991 | 0.437 - 9.074 |
| | Non-Government /any private sector | 1.241 | 0.446 - 3.457 |
| | House wife | 1.512 | 0.525 - 4.350 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 0.974 | 0.428 - 2.220 |
| | Joint Family | 1.441 | 0.671 - 3.094 |
| | Broken Family & Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 3.058E-9 | 3.058E-9 - 3.058E-9 |
| | Without Spouse | 1 | - |
| | No. of offspring | | |
| | No offspring | 0.603 | 0.164 - 2.221 |
| | 1 - 5 | 1.516 | 0.807 - 2.848 |
| | > 5 | 1 | - |
| | Working Status | | |
| | Worker | 3.104** | 1.393 -6.917 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 1.343 | 0.253 - 7.120 |
| | Joint family | 1.393 | 0.278 - 6.985 |
| | With spouse only | 0.367 | 0.042 - 3.219 |
| | With married son and his family | 1.184 | 0.237 - 5.912 |
| | With un-married son | 0.840 | 0.058 - 12.237 |
| | With married daughter and his family | 1.045 | 0.064 - 17.108 |
| | With un-married daughter | 1.417 | 0.276 - 7.278 |
| | Other relatives | 2.178 | 0.407 - 11.644 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 2.551 | 0.592 - 10.988 |
| | Non-Pensioner | 1 | - |

Table 3.2.3 Result of adjusted multinomial logistic regression analysis using cognitive function scale as dependent and socio-demographic variables as independent

| Cognitive function variable | Socio-demographic variable | Odds ratio (OR) | 95 % CI |
|---|---|---|---|
| Mild to Moderate CI (Score: 18 – 23) | Age Group | | |
| | 80 - 84 | 1.726 | 0.271 - 11.009 |
| | 85 - 89 | 2.787 | 0.422 - 18.416 |
| | 90 - 94 | 2.065 | 0.283 - 15.087 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.394** | 0.198 - 0.784 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 1.110 | 0.592 - 2.083 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 1.119 | 0.507 - 2.470 |
| | Upto class X | 1.227 | 0.647 - 2.325 |
| | School Final & above | 1 | - |
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 0.888 | 0.265 - 2.979 |
| | Non-Government /any private sector | 1.428 | 0.619 - 3.293 |
| | House wife | 0.573 | 0.228 - 1.439 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 1.681 | 0.847 - 3.337 |
| | Joint Family | 1.693 | 0.892 - 3.213 |
| | Broken Family & Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 0.254 | 0.022 - 2.883 |
| | Without Spouse | 1 | - |
| | No. of offspring | | |

| | | | |
|---|---|---|---|
| | No offspring | 0.427 | 0.165 - 1.106 |
| | 1 - 5 | 0.539* | 0.315 - 0.923 |
| | > 5 | 1 | - |
| | Working Status | | |
| | Worker | 0.585 | 0.299 - 1.144 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 0.861 | 0.165 - 4.487 |
| | Joint family | 0.341 | 0.071 - 1.636 |
| | With spouse only | 0.456 | 0.083 - 2.504 |
| | With married son and his family | 0.421 | 0.090 - 1.962 |
| | With un-married son | 1.094 | 0.099 - 12.040 |
| | With married daughter and his family | 0.545 | 0.053 - 5.634 |
| | With un-married daughter | 0.270 | 0.055 - 1.322 |
| | Other relatives | 0.652 | 0.125 - 3.398 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 0.153** | 0.041 - 0.577 |
| | Non-Pensioner | 1 | - |
| Severe CI (Score: 0 – 17) | Age Group | | |
| | 80 - 84 | 0.190* | 0.041 - 0.878 |
| | 85 - 89 | 0.400 | 0.083 - 1.923 |
| | 90 - 94 | 0.719 | 0.137 - 3.774 |
| | 95 & above | 1 | - |
| | Sex | | |
| | Male | 0.436* | 0.218 - 0.875 |
| | Female | 1 | - |
| | Marital Status | | |
| | Currently in wedlock | 1.180 | 0.628 - 2.217 |
| | Unmarried/widow/widower/ separated/divorced | 1 | - |
| | Education Status | | |
| | Non-literate | 1.253 | 0.552 -2.843 |
| | Upto class X | 1.941* | 1.023 - 3.684 |
| | School Final & above | 1 | - |

| | | | |
|---|---|---|---|
| | Occupation before attained 60 years of age | | |
| | Government Dept. | 1.727 | 0.525 - 5.687 |
| | Non-Government /any private sector | 2.543* | 1.083 - 5.973 |
| | House wife | 0.934 | 0.363 - 2.403 |
| | Labourer & Others | 1 | - |
| | Family Type | | |
| | Nuclear Family | 1.894 | 0.957 - 3.746 |
| | Joint Family | 1.368 | 0.716 - 2.617 |
| | Broken Family & Family of Accretion | 1 | - |
| | Spouse status | | |
| | With Spouse | 0.157 | 0.012 -2.038 |
| | Without Spouse | 1 | - |
| | No. of offspring | | |
| | No offspring | 0.631 | 0.254 - 1.564 |
| | 1 - 5 | 0.676 | 0.393 - 1.163 |
| | > 5 | 1 | - |
| | Working Status | | |
| | Worker | 0.869 | 0.446 - 1.692 |
| | Non-Worker | 1 | - |
| | Living Arrangements | | |
| | Living alone | 1.053 | 0.201 - 5.522 |
| | Joint family | 0.562 | 0.119 - 2.661 |
| | With spouse only | 0.457 | 0.083 - 2.532 |
| | With married son and his family | 0.448 | 0.095 - 2.103 |
| | With un-married son | 1.435 | 0.125 - 16.426 |
| | With married daughter and his family | 0.134 | 0.009 - 2.029 |
| | With un-married daughter | 0.407 | 0.083 - 2.004 |
| | Other relatives | 0.850 | 0.163 - 4.429 |
| | Family not related to respondents | 1 | - |
| | Pension status | | |
| | Pensioner | 0.494 | 0.137 - 1.791 |
| | Non-Pensioner | 1 | - |

Table 3.2.4 Result of adjusted multinomial logistic regression analysis using nutritional status scale as dependent and socio-demographic variables as independent

| Variables | Odds ratio (OR) | 95 % CI |
|---|---|---|
| Age Group | | |
| 80 - 84 | 1.151 | 0.725 - 1.828 |
| 85 - 89 | 1.105 | 0.533 - 2.290 |
| 90 - 94 | 1.008 | 0.316 - 3.218 |
| 95 & above | 1 | - |
| Sex | | |
| Male | 1.827 | 1.066 - 3.134 |
| Female | 1 | - |
| Marital Status | | |
| Currently in wedlock | 0.905 | 0.550 - 1.490 |
| Unmarried/widow/widower/ separated/divorced | 1 | - |
| Education Status | | |
| Non-literate | 1.264 | 0.711 - 2.247 |
| Upto class X | 1.110 | 0.598 - 2.061 |
| School Final & above | 1 | - |
| Occupation before attained 60 years of age | | |
| Government Dept. | 2.257 | 0.847 - 6.016 |
| Non-Government /any private sector | 0.772 | 0.301 - 1.982 |
| House wife | 2.311 | 0.880 - 6.069 |
| Labourer & Others | 1 | - |
| Family Type | | |
| Nuclear Family | 1.171 | 0.739 - 1.856 |
| Joint Family | 0.971 | 0.570 - 1.656 |
| Broken Family &Family of Accretion | 1 | - |
| Spouse status | | |
| With Spouse | 0.187 | 0.018 - 1.935 |
| Without Spouse | 1 | - |
| No. of offspring | | |

| | | |
|---|---|---|
| No offspring | 0.498 | 0.244 - 1.017 |
| 1 - 5 | 0.879* | 0.573 - 1.350 |
| > 5 | 1 | - |
| Working Status | | |
| Worker | 1.112 | 0.668 - 1.853 |
| Non-Worker | 1 | - |
| Living Arrangements | | |
| Living alone | 0.750 | 0.343 - 1.638 |
| Joint family | 0.625 | 0.236 - 1.653 |
| With spouse only | 0.671 | 0.312 - 1.447 |
| With married son and his family | 0.554 | 0.141 - 2.174 |
| With un-married son | 0.694 | 0.133 - 3.618 |
| With married daughter and his family | 0.761 | 0.329 - 1.758 |
| With un-married daughter | 0.668 | 0.276 - 1.615 |
| Other relatives | 0.706 | 0.223 - 2.239 |
| Family not related to respondents | 1 | - |
| Pension status | | |
| Pensioner | 0.401* | 0.130 - 1.240 |
| Non-Pensioner | 1 | - |

Table 3.2.4 shows the result of adjusted multinomial logistic regression analysis to identify significant socioeconomic and demographic predictor(s) of nutritional status variable in terms of MNA. Number of children and pension status were found to be the most significant predictors of nutritional status of the study participants.

Table 3.2.5 Result of two-way ANOVA using GHQ-28 score as dependent and socio-demographic variables as independent

| Variable | Type III Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|
| Intercept | 83200.491 | 1 | 83200.491 | 1.341E3 | .000 |
| Age group | 74.359 | 3 | 24.786 | .400 | .753 |
| Sex | 208.722 | 1 | 208.722 | 3.365 | .067 |
| Marital status | 214.903 | 2 | 107.452 | 1.732 | .178 |
| Educational status | 430.731 | 8 | 53.841 | .868 | .543 |
| Occupation before 60 years | 281.648 | 7 | 40.235 | .649 | .716 |
| Family type | 350.845 | 3 | 116.948 | 1.885 | .131 |
| Spouse status | 89.777 | 1 | 89.777 | 1.447 | .230 |
| Working status | 249.375 | 1 | 249.375 | 4.020 | .046 * |
| Living Arrangement | 339.869 | 8 | 42.484 | .685 | .705 |
| Pension status | 41.461 | 1 | 41.461 | .668 | .414 |
| No. of children | 241.423 | 6 | 40.237 | .649 | .691 |

* significant at $p<0.05$ level

To ascertain the significant socio-demographic associate(s) of general health condition, two way ANOVA was performed using the GHQ score as dependent and socio-demographic variables as independent variables, and the result has been shown in table 3.1.5. Only current working status was found to be significant ($F=4.020$; $p<0.05$) amongst all the independent variables.

Table 3.2.6 Result of adjusted binary logistic regression analysis using nutritional status scale as dependent and anthropometric related variables as independent among the males

| Anthropometric variable | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I. for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Body Mass Index | 0.026 | 0.417 | 0.004 | 1 | 0.950 | 1.026 | 0.453 | 2.324 |
| Waist-height Ratio | -24.028 | 32.334 | 0.552 | 1 | 0.457 | 0.000 | 0.000 | 1.222E17 |
| Waist-hip Ratio | 0.102 | 0.760 | 0.018 | 1 | 0.894 | 1.107 | 0.250 | 4.904 |
| Weight | -0.134 | 0.166 | 0.651 | 1 | 0.420 | 0.875 | 0.632 | 1.210 |
| Mid Upper Arm Circumference | 0.016 | 0.048 | 0.112 | 1 | 0.738 | 1.016 | 0.924 | 1.118 |
| Waist Circumference | 0.114 | 0.208 | 0.298 | 1 | 0.585 | 1.120 | 0.745 | 1.685 |

The anthropometric related predictor of nutritional status among the males has been shown in Table 3.2.6. Neither absolute nor the derived variables significantly predict nutritional status among the male study participants.

Table 3.2.7 Result of adjusted binary logistic regression analysis using nutritional status scale as dependent and anthropometric related variables as independent among the females

| Anthropometric variable | B | S.E. | Wald | df | Sig. | Exp(B) | 95.0% C.I. for EXP(B) | |
|---|---|---|---|---|---|---|---|---|
| | | | | | | | Lower | Upper |
| Body Mass Index | 0.708 | 0.382 | 3.443 | 1 | 0.064 | 2.030 | 0.961 | 4.291 |
| Waist-height Ratio | -71.592 | 31.893 | 5.039 | 1 | 0.025 | 0.000 | 0.000 | 0.000 |
| Waist-hip Ratio | -0.083 | 1.263 | 0.004 | 1 | 0.948 | 0.921 | 0.077 | 10.954 |
| Weight | -0.400 | 0.161 | 6.135 | 1 | 0.013 | 0.671 | 0.489 | 0.920 |
| Mid Upper Arm Circumference | 0.006 | 0.059 | 0.011 | 1 | 0.915 | 1.006 | 0.896 | 1.131 |
| Waist Circumference | 0.456 | 0.208 | 4.783 | 1 | 0.029 | 1.577 | 1.048 | 2.373 |

The anthropometric related predictor of nutritional status among the females has been shown in Table 3.2.7. Waist-height ratio, weight and waist circumference were found as significant predictor of nutritional status among the female study participants.