Chapter – IV

Discussion

4.1 Oldest-old and psychosocial health: Some observations

Aging is a very common phenomenon of human life cycle and it is one of the most important issues of research since decades. Fact remains that the increasing life expectancy at birth is the outcome of massive improvement in medical sciences. It has been observed worldwide that the accelerating trend among the elderly people is highest among the individuals who are aged 80 years and above. Such scenario is expectedly being observed in Indian perspective, too. In India, the initiative of research on aging was taken by the Indian Gerontological Association (IGA) during late 1960s. Since then, quite a handsome number of studies on the old age people have been carried out, and the issue has started getting much interest from the public, social activists, media and policy makers. As the aged population growing much faster, 21st century is widely being considered the century of elderly person and the 22nd century is expected to witness the phenomenon of the 'ageing of the aged', that is a major shift in the age group of 80 years and above, which is known as the 'oldest-old'. In addition to medical advances, success in the domain of different public health issues was supposed to be one of the major issues pertaining to betterment of life expectancy at birth and increase in the prevalence of oldest-old population.

It has been noticed that the Indian elderly as well as the oldest-old people are affected by both communicable and non-communicable diseases at the same time, where the later can be noticed in a higher prevalence in urban metropolis and towns. Major

causes of higher prevalence of non-communicable diseases among the urban people rests on the fact of lifestyle transition from traditional rural to modernized urban way of living (Sarkar, 2006).

Among the non-communicable diseases, psychosocial disorders are very much prevalent among the individuals of different age groups in general and among the oldest-old people in particular. Interests of anthropologists, both social-cultural and biological, pertaining to psychosocial health has been observed since decades. Multidisciplinary research approaches were followed to address this burning issue in several countries, including India, where different psychosocial traits like depression, loneliness, cognitive impairments and others were dealt separately and their socioeconomic associates were also evaluated.

The prevalence of depression, cognitive impairment and loneliness are gradually increasing among elderly in general and people of oldest-old age group in particular in the developed and developing countries, including India. The effect of various bio-behavioural, demographic and socioeconomic variables like increased age, pension status, lack of regular financial and other supports from children, living arrangements, current working status and most importantly inability to perform regular work like movement without support, taking bath alone and other such works have found to be associated with depression, cognitive impairment and loneliness. Additionally, many of the above mentioned demographic, socioeconomic and behavioural variables were found to have effect of the nutritional status of the oldest-old people of any country. Paucity of data exists on the plausible association of a set of socio-demographic variables on different psychosocial or mental health traits.

In Indian perspective, however, research considering a set of psychosocial traits, viz. depression, loneliness and cognitive function, along with quality of life, activity and instrumental activity of daily living and nutritional aspects among the oldest-old people has never been attempted in any single ethnic group or among any multiethnic group. Moreover, evaluating plausible socioeconomic and demographic correlates of each aforementioned psychosocial traits, along with the profile of nutritional aspects of the super senior citizens in a single research has never been attempted in India. This forced to undertake the present study among the oldest-old Bengali speaking Hindu people, residing in the urban town of Midnapore of Paschim Medinipur District of West Bengal.

The principal aim of the present study is to assess the psychosocial health status of the study population depending on depression, cognitive function, loneliness and quality of life. Additionally, the study aims to examine the association of socio-demographic variables on the aforementioned traits of psychosocial health. Moreover, the study also has tried to identify the particular adiposity and obesity related variables that has significant effect on the nutritional status of the study participants, and finally, the morbidity profile has also been evaluated in the present study. The study participants of the present study were genetically heterogeneous, as, although they belong primarily to Hindu religious group, they are further divided into many caste groups. The individuals who do not have any hearing or vocal impairment were considered in the present study after statistical random sampling.

In the present study, the combination of demographic and socioeconomic variables, as mentioned earlier, were considered as the predictor variables. These characteristic includes education, occupation, economic status, family type, no. of children, living

arrangements, present and previous working status, pension status and so on. Exposure to different support like physical and financial has also been considered.

4.2 Recapitulations and implications of the results

In the present study, it has been found that just more than half of the study participants are from the age group of 80 – 84 years, irrespective of sex. Expectedly, the frequency of individuals decreased with increasing age. Similar finding has been shown in another study conducted among the Caucasian oldest-old people of Sao-Paulo, Brazil (Santos *et al.,* 2017). No significant difference in frequency exists between male and female in the youngest age group of the present study.

An overwhelming majority of oldest-old male are found to be currently in wedlock rather than females. It shows that more than 50% oldest-old male study participants are still married i.e. their spouse is alive and staying with them. On the other hand, much below 50% females are found to be married and living with their husbands. However, significantly higher prevalence (68.13%) of females is found in other category, which includes predominantly widowed, very small number of unmarried and separated individuals. This result is corroborated with another study done by Gjonca *et al.* (2010). Bhatia *et al.* (2007) also observed high percentage of widows (49.3%) than the widowers (25.7%) among the old age population in an urban area of Chandigarh. Another study conducted among the elderly of India by Kujur and Ekka (2010), reported 64%widows compared to 19% widowers. Although, it is interesting to note that not a single case of divorce is found among the study population that reflects the stability of married life pattern among the oldest-old population of the Midnapore town.

The study population shows that a good number of oldest-old, irrespective of sex, have attained their education beyond school final i.e. graduation and above. This percentage is significantly higher among the males than their female counterparts. Deka and Nath (2011) stated that only 30.1% elderly reported having education more than 10th grade in an urban area of Assam. Similar findings have been shown in some other studies by Burman *et al.* (2014), Madhu and Sreedevi (2013) and Gurav *et al.* (2002) on the urban elderly populations of Bihar, Kurnool and Thane, respectively. However, an opposite trend was reported by Santos *et al.* (2017) among the Brazilian oldest-old population. Elsewhere, a substantially low level of education was found among the oldest-old Chinese population, especially a large number of female oldest-old people had no education and the sex differences were very wide (Yi *et al.*, 2002). The percentage of non-literate is relatively low among the oldest-old in the present study but there exists significant sex difference. Similar findings have also been reported by Mudey *et al.* (2011), Udhayakumar and Ponnuswamy (2012), and Nagoor *et al.* (2014) among the elderly people of Wardha district of Maharastra, Thruchirapalli district of South India and Kadapa region of South India, respectively.

As the majority of the study participants were educated, so reasonably a good number of the male study participants were found to be Government service holders before their attainment of 60 years of age and that is significantly higher than female, as expected. Rather, significantly higher percentage (52.99%) of oldest-old females is house wife. It is well established that Bengali Hindus were traditionally patriarchal and male dominated. The household head would earn for the family, while the female members would take care of the kitchen and other household works as housewife. Previously, the essential qualification for getting a job in Government sectors was comparatively lower than recent times, which has been reflected in the present study.

Majority of the study participants are found to be living in the joint families, irrespective of sex. Earlier, living in joint family was widely practised in many places in India (Golandaj *et al.* 2013; Kumari and Sekher 2010). Similar trends werealso found among the elderly people of Bihar and Kurnool, as reported by Burman *et al.* (2014) and Madhu and Sreedevi (2013), respectively. Significantly higher female study participants are found to live in the other groups which are termed either as 'broken family', since this type of family is marked by the features like solitary living, leading widowed life with unmarried son or daughter etc. or termed as 'family of accretion' which includes the members who are not blood relatives.

Quite a good number of oldest old males (82.73%) are found to be worker in terms of their ability to work in this vulnerable age group, rather than females, who are not in a good condition to perform such daily works. It is noteworthy that a large number of oldest old people of Midnapore town still earning their living by various occupations like household chores in neighbouring families, selling vegetables in nearby daily market, running small tea stalls and so on.

It appears from the present study that oldest old female shows a significantly higher prevalence of having one or more than one to five offspring than their male counterparts, while no significant sex differences on the other categories i.e. childless and having more than 5 offspring have been found. However, childlessness among the study participants is very less prevalent (M: 14.46% & F: 10.36%), irrespective of sex. Here, unmarried individuals are also put under the category of childless. Most of them thought that at least one child is important for the future support and care during their old age. Similar findings are reported by Zimmer and Kwong (2004), Lin (1994) and Shen (1987) among the elderly of China.

The tendency of the elderly individuals to stay with their own children for mental and financial support is very much universal. As a matter of fact, at this highest age of life, one may lose his/her spouse and become financially dependent on his/her children. Few more studies stated that elderly persons with large number of surviving children are more likely to co-reside and less likely to live alone (Kramarow, 1995; Wolf, 1990; Yount, 2005). Although elderly living in joint family is mostly found in India. It has also beendepicted in the present study that older parents wished to live with their children. Similar finding is reported by Kumari and Sekher (2010) among the elderly of Punjab. The present study shows that, irrespective of sex, majority of participants are staying with their married son and his family. Similar findings are also reported by few more scholars that in some countries where patrilineal system exists, old age people prefer to live with their son and taken care by the daughter-in-law (Ahn *et al.,* 1997; Ofstedal *et al.,* 1999; Aykan and Wolf, 2000; Ogawa and Retherford, 1997; Mason, 1992; Shah *et al.,* 2002). A study among the elderly of Punjab in India, carried by Golandaj *et al.* (2013) stated that 17% of older people are living with their spouse only, only 2% is living alone and majority of elderly were living with their children. However, in the present study a good number of oldest old males are found to live with their spouse only (12.85%) that is significantly higher than females (7.57%). This finding corroborated with another study conducted by Yi *et al.* (2002) among the oldest old people of China. Moreover, it is also found from the present study that a fairly good number of study participants, irrespective of sex, are living with their unmarried daughter. Similar finding is reported by Cameron (2002) among the elderly of Indonesia. Again, present study also depicts that higher proportion of females are living alone, than their male counterparts. On the contrary, study shows an opposite trend where higher percentages of male (18.6%) are living

alone than females (11.9%) among the elderly of Orissa (Panigrahi, 2009). A study from South East Asia has shown that a much higher proportion of elderly are living alone (Martin, 1989). In most of the European countries the scenario reveals the same among the elderly (Grundy, 2000).

It is found from the present study that statistical difference between the pensioner and the non-pensioner in both males and females is not significant. But a good number of oldest old people are observed to get pension irrespective of sex and they claim that they are economically as well as mentally independent because of that. As people grow older, their scope of earning from employment becomes very less or not at all. In case of highly educated professionals, they may often continue well-salaried occupations in their older ages and after that they may also get a handsome amount of pension. But in the present study population, it has been observed that majority of the participants is usually excluded from access to well-paid jobs at older ages. Although in some cases interest from savings and assets including housing or land ownership make a difference, but most people are usually not having an adequate level of income security until the end of their lives. Moreover, it is very essential that all individuals wanted to spend their liveswith a good sources of income security throughout their old age as because they face unavoidable and heavy expenses pertaining to medical treatment.

As the age of the study population is 80 years and above, they are more likely to be dependent financially on their children as well as relatives. From the present study it is observed that significantly higher percentage of females is found to be financially supported by their relatives, whereas males show the reverse trend. It has also been

found that females are financially supported by their relatives on a regular basis in a much higher percentage than their male counterparts.

It is observed among the study population that most of them used to keep their money both in banks as well as in post offices. However, while some of them have purchased different shares under Government schemes like senior citizen schemes, as because they have age old faith on Government sectors and also towards attitudes of staffs in banks and post offices. Similar result has been observed among the senior citizens of Sivakasi located in South Tamil Nadu, India (Rajeswari and Jayalakshmi, 2015). It is also found from the study that oldest old male participants preferred to keep their savings only in post office as it is easier to operate. Interestingly, many of them do not have any deposit scheme.

Majority of study participants irrespective of sex, are suffering from acute indigestion, hyper-acidity, abdominal pain, diarrhoea etc. and it has been noticed that such illnesses are significantly higher among the females than their male counterparts. Additionally, significantly higher percentage of females has also reported the presence of common ailments like muscle pain, cramp, joint pain, than those of males. A study stated that morbidity among the elderly is significantly associated with self-reported depression (Thakur *et al.*, 2013).

Significantly higher percentage of females is likely to get homeopathic treatment to get rid of common ailments, while males prefer the allopathic and ayurvedic modes of treatment. Apart from the oldest old females of the Midnapore town, the homeopathic treatment method is easier than allopathic treatment and also money saving. Moreover, significantly higher females have shown their interest to adopt different treatment methods for different disease.

4.2.1 Psycho-social/ Mental health traits: General observation

The results evidently suggest clear sex difference in many of the psychosocial traits as has been reported elsewhere (Ma *et al.,* 2019; Murata *et al.,* 2008; Goswami *et al.,* 2017). Moreover, an apparent increase in depression, cognitive impairment and loneliness has also been revealed with increasing age which also corroborates with some other studies (Beland *et al.,* 2018; Maiheh *et al.,* 2008; Thilak *et al.,* 2016). The reasons behind this sex and age differences lie in the matter of family structure as well as both working and financial scenario of the study population. Women, when they became widow, used to begin a feeling of helplessness, which plays an important role in declining their working capability. Moreover, women are generally physically weaker than men and as a result static life is the principal way they live in most of the families. On the contrary, the males of the present study were mostly Government service holders and presently under pension scheme, which was found as a significant supporting predictor against depression and other psychosocial traits. This finding of the present study is in the same line of few studies conducted in India (Nautiyal *et al.,* 2015; Dutta *et al.,* 2015; Thilak *et al.,* 2016).

4.2.1.1 Psycho-social/ Mental health traits: Depression

It is observed from the study that in all the age groups, majority of the study participants, irrespective of sex, are found to have mild to moderate level of depression, which corroborates a study in South India, which stated that 79.5% elderly people had mild depression (Naik and Nirgude, 2015). However, severely depressed oldest old people are found to be higher in the age group of 80-84 years. However, the present study does not show any statistically significant sex difference in association with depression as because they are the oldest old people. The findings

of the present study are also similar with the study by Barua *et al.* (2007), Ramachandran *et al.* (1979), where the depression was found to be similar in both sexes. On the contrary, opposite trends in prevalence of depression has been reported by some other studies conducted among the elderly across the different parts of India (Visal *et al.*, 2010; Barua and Kar, 2010; Tiwari, 2000; Ramachandran *et al.*, 1982; Tiwari and Srivastava, 1998). In the state of Tamil Nadu, India a study was carried out by Sinha *et al.* (2013), which show that depression was found to be very common among the elderly women than elderly men. However, findings of the present study is in the line of many studies done among the elderly and oldest-old populations of India both in urban and rural settings (Barua *et al.*, 2010; Murrell *et al.*, 1983; Braune and Berger, 2005; Ostbye *et al.*, 2005; Kingle and Nath, 2008; Taqui *et al.*, 2007; Copeland *et al.*, 2004; Ekinci *et al.*, 2004; Woo *et al.*, 1994).

Significant association of marital status with depression was not found in the present study. This finding is corroborated with another study by Sanjay *et al.* (2014). Married people are reported to be more depressed than the others as has been reported elsewhere (Xie *et al.*, 2010; Maulik and Dasgupta 2012). But, it is observed from the present study that depression is most prevalent among the widowed people, although the adjusted multinomial logistic regression analysis does not show any significant association with depression. Many studies reported significantly higher prevalence of depression among the older people who are never married, separated/divorced and widowed (Vishal *et al.*, 2010; Chen *et al.*, 2005; Jones *et al.*, 2003; Minicuci *et al.*, 2002; Beekman *et al.*, 1995). Indeed, widowhood was found to be sturdily associated with depression in several studies (Zisook *et al.*, 1994; Turvey *et al.*, 1999). Elsewhere, marital status and female sex were reported to be associated with depression (Chou and Cheung, 2013 and Goswami *et al.*, 2017). The widowed

participants of the present study reported that they have almost lost the working ability due to age. But, other members of their family wanted them to do certain household works, which sometimes they perform untidily. Some inadvertent mistakes in such works forced them to feel guilty and invite unwanted quarrel with other members. They narrated these facts as one of the most important reasons of their depression.

Present study evidently shows that the oldest old people who are literate (upto class X) show significant association with mild depression level. The higher rate of depression was also found to be associated with literates among the elderly of Surat city, India (Vishal *et al.,* 2010). However, a negative scenario was also found from few more studies among the elderly of Kerala and Maharashtra that reported the prevalence of depression was high among the illiterate people and those achieved education level below or equal to fifth standard (Naik and Nirgude, 2015; Yadav *et al.*,2013; Sandhya, 2010). Few studies also stated that the prevalence of depression was decreased with increasing education level (Patil *et al.,* 2015; Rajkumar *et al.,* 2009). Additionally, higher prevalence of depression has also found to be associated with lower education and lower number of children among the oldest old people of the Midnapore town. Logically, it can be stated that higher educational status will bring a better job opportunity with a handsome salary. Moreover, amount of pension would be expectedly higher and the life after retirement would be comparatively more comfortable. This anticipated scenario was observed among the study participants of the present study. Thus, the depression level was found to be lesser among the individuals with higher education level.

The present study shows significantly higher prevalence of depression among the study participants who are living in joint families and who are living with their son and his family. The study participants are overwhelmingly from lower middle class family. Although, the pension status does not significantly associated with depression but it is observed that depression is related with pension status of the study participants, as they feel mentally more relaxed and independent at the time of withdrawing pension. Few more studies reported that depression was less pronounced in those who are receiving financial assistance such as old age and retirement pension (Sanjoy *et al.,* 2014; Gupta *et al.,* 2010). It has been observed during the fieldwork that both males and females make financial contribution to their family on a monthly basis as a part of day to day expenditure. At the same time, they sometimes have to face financial crisis at the time of illness. Moreover, lower level of education provided the males with a job of low income in the past and as a consequence, the pension is also less. To fulfil the demand of a larger family with a fixed monthly income as pension creates depression among the males. It was also reported from few studies that those who belonged to low income family, those who had no source of personal income and were dependant for financial support were significantly more depressed (Maulik and Dasgupta, 2012; Ramchandra *et al.,* 1982; Murrell *et al.,* 1983). On the other hand, for the females, who were mostly housewives, play a crucial role as a home maker in her son's family at this age, which sometimes becomes tedious for them. Dual couple earning has been found in many families which is essential for the current financial explosion throughout the country, and as a result, most of the household related work comes to the shoulders of elderly females, which increases their depression and physical weakness.

4.2.1.2 Psycho-social/ Mental health traits: Loneliness

Loneliness is also a common mental health trait that is complex and usually very common unpleasant emotional response to being alone or isolated. Isolation not always meant the physical isolation. It has sometimes been treated as mental isolation. Present study has evaluated the significant predictors of loneliness among the oldest old age group people residing in the town of Midnapore. The higher prevalence of loneliness was reported in many studies among elderly populations of the developed as well as developing countries (Sheikholeslami *et al.,* 2011; Theeke, 2009; Lauder *et al.,* 2006; Victor *et al.,* 2006; Routasalo *et al.,* 2006; Jakobsson and Hallberg, 2005; Savikko *et al.,* 2005; Lauder *et al.,* 2004; Holmen and Furukawa, 2002; Mullins *et al.,* 1988; Lindgren *et al.,* 1994) and the present study also shows the similar findings among the oldest-old people of Midnapore town. The prevalence of severe loneliness among the study population is found to be closer among the elderly in Britain, which was reported to be 7% (Victor *et al.,* 2005).

For many reasons, age can be a most important significant predictor of loneliness among the oldest old people. It is resulted from the present study that age has been found to be significantly associated with loneliness. Severe loneliness has been found among the oldest old aged between 80-89 years. When the oldest-old people reach at an age of 90 years and above, the frequency of feeling loneliness decreases. Because in that mature age, their behaviour becomes very much childlike and they don't want to feel anything except recalling their past memories. Neto (2000) reported that the feelings of loneliness decreases by age. Bhatia *et al.* (2007) has found higher prevalence of loneliness among the old age people aged 75 years and above rather than below 75 years. Significant relationship between age and feeling of loneliness

were also reported elsewhere (The *et al.,* 2014; Hazer and Boylu, 2010). There are few more studies where the authors did not found any age effect on loneliness scores (Fees *et al.,* 1999; Rokach and Bauer, 2004; O'Luanaigh and Lawlor, 2008). The similar results also reported by Victor *et al.* (2005) and Barretta *et al.* (1995) in their respective studies in UK and USA.

Significant association of sex with loneliness among the oldest old people of Midnapore town was found in the present study. Being female is the most significant predictor of both moderate and severe loneliness. Another study stated that prevalence of loneliness was found to be higher (89.8 %) among the elderly women in Gonabad (Khosravan *et al.*, 2014). The results corroborated with few other studies (Bhatia *et al.,* 2007; Gangrade, 1989; Jakobsson and Hallberg, 2005; Singh *et al.,* 1996). On the contrary, an opposite trend was also reported by Singh and Mishra (2009) that no significance sex difference was found between sex and prevalence of loneliness.

In addition to age, sex and marital status, educational and occupational statuses are some other significant associated factors of mild to severe loneliness among the study participants. Higher educational attainment, more income, previous job and current working status were associated with less loneliness. 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. It is observed during fieldwork that better socioeconomic status and work engagement lead to reduced loneliness among the oldest old people. The results of the present study corroborates with the study conducted by Courtin and Knapp (2017), Vakili *et al.,* (2017), Larsson *et al.,* (2017), Adak and Ray (2015) and many more who evidently shown that females are more prone to social loneliness as well as those who are devoid of any work, feels

more lonely than those who are engaged in some works, may be household or for earning some wages. An opposite relationship between level of education and loneliness was also found in other studies (Zhang *et al.,* 2010; Chen *et al.,* 2014). At the time of fieldwork, the oldest old people reported that presence of healthy family and intergenerational interaction with grandchildren also seems to be important in reducing their loneliness. However, family conflicts often leads to the feelings of loneliness among the elderly, even when the individual is surrounded by other elements. Similar findings were reported by many other researchers (Azeredo and Afonso, 2016; Hossen, 2012; Waldow and Borges, 2011; Azeredo, 2013; Jullamate *et al.,* 2006).

4.2.1.3 Psycho-social/ Mental health traits: Cognitive function

Cognitive function of an individual relating to conscious intellectual activity like thinking, reasoning, remembering etc., based on or capable of being reduced to empirical factual knowledge. All elderly people used to develop some degree of decline in cognitive capacity like forgetfulness, decreased ability to maintain focus, decreased problem solving capacity, memory problem etc. with increasing age. Most elderly people with cognitive disability are found in developing countries. The rate of increase in cognitive impairment over the decades is around 300% in India, whereas it is likely to be 100% in developed countries (Ferri *et al.,* 2005). A study in India reported that the prevalence of adverse cognitive function were 33.4% in Southern India, 24.4% in Western India and 13.6% in Northern India (Biswas *et al.,* 2005). The prevalence rate of cognitive function from other countries were 84% elderly in Italy (Rocca *et al.,* 1990), 58% elderly in Japan (Shibamaya *et al.,* 1986), 26.8% in China

(Wang *et al.,* 2001), 22.9% in Nigeria (Hendrie, 1995), and 17.3% in USA (Schoenberg *et al.,* 1985).

Increasing age is an important factor of higher prevalence of cognitive disability and it is also an important cause of morbidity among elderly population (Rajkumar *et al.,* 1997; Shaji *et al.,* 1996; Das *et al.,* 2006). Many studies have revealed a negative impact of age on cognitive function, which is overwhelmingly predominant at the highest age group pertaining to demographic table (Lynch *et al.,* 1997; Kang *et al.,* 2018; Beland *et al.,* 2018). Ma *et al.* (2019) reported that cognitive functioning was negatively correlated with age among the community-dwelling elderly of China. Advanced age, illiteracy, widowhood, unemployment and lower monthly per capita income were found to be significant predictors of cognitive impairment in few previous studies (Sengupta *et al.,* 2014; Sharma *et al.,* 2013). In a similar study among the elderly of West Bengal usingthe MMSE shown that age, sex, marital status, economic source, family size and number of living children were important predictors of cognitive impairment (Maity and Mukhopadhyay, 2014).

Result of adjusted multinomial logistic regression evidently showed that being female as an important significant predictor for both mild to moderate and severe level of cognitive impairment. The result of present study corroborates with few more studies (Schoenberg *et al.,* 1985; Das *et al.,* 2008; Vas *et al.,* 2001; Weissman *et al.,* 1985). Additionally, number of offspring, educational and occupational status and not having pension are some other significant predictors of mild to severe cognitive impairment among the study participants. A similar finding was reported in Indonesia that higher education, better economic status and living in urban areas were associated with better cognitive functioning (Pengpid *et al.,* 2019). Few more previous studies was

consistent with the present findings (Fu *et al.,* 2018; Miu *et al.,* 2016; Yount *et al.,* 2016; Peltzer and Phaswana-Mafuya, 2012; Van Hooren *et al.,* 2007). It is widely expected that increasing age has its independent effect on many physiological and psychological systems of a human being. Effect of age on central nervous system affects the regular working pattern, thought process and memory loss. These are some of the principal traits found to be associated with the cognitive function of an individual. In many families of the study participants, such symptoms have been reported. The reasons behind such impairment could be lower financial support from pension, which is the result of low salaried job before their retirement age. Many other studies have also shown similar trends of declining cognitive function among elderly (Devenney *et al.,* 2017; Puvill *et al.,* 2016). Maity and Mukhopadhyay (2014) reported a significantly higher prevalence of cognitive impairment among the rural elderly than urban people. The role of education and occupation remained significant predictors for cognitive impairment in the study conducted by White *et al.,* (1994), which is in the same line of the present study. Additionally, they have also reported a higher prevalence of cognitive impairment among the females in the age group of 90-94 years, than males, which again corroborates the present study. Although, the present study does not show any statistically significant association with the other demographic and socioeconomic factors like marital status, spouse status, family type and living arrangements, but family type and living arrangements has been noticed to have a clear influence on cognitive functioning during the fieldwork.

4.2.1.4 Psycho-social/ Mental health traits: Quality of life

Quality of Life is a multidimensional and subjective concept that gradually being well-known as a useful parameter in health and social care research. Quality of life

differs from individual to individual and depends on different factors in different age. In these advanced age groups (80 years and above), quality of life often deteriorates due to many factors. In the present study, except their current working status none of the other socio-demographic variables are significantly associated with the quality of life among the study participants. Many other studies among the elderly people stated that the quality of life deteriorates with increasing age (Datta *et al.,* 2015; Joshi *et al.,* 2003; Laxmi Devi *et al.,* 2013; Lahariya *et al.,* 2012; Lokare *et al.,* 2011). But in the present study, quality of life among the oldest old does not show any association with age, irrespective of sex. As the present study population is from an advanced age of 80 years and above, the health related problems and demographic factors related to quality of life are very common. Gradually their power to work decreases and they are more restricted in their own house and their social interaction also decreases with the advancement of age. As they are the oldest old, majority of them belongs in widow or widower group. This fact pushes them to a world of loneliness. The prevalence of quality of life score has not been associated with the sex, although it is observed during the fieldwork that the oldest old females perceived relatively unhealthy quality of life than oldest old male. Some other studies in India also reported that females seem to have lower quality of life as compared to their male counterparts (Datta *et al.,* 2015; Qadri *et al.,* 2013; Lahariya *et al.,* 2012; Lokare *et al.,* 2011; Joshi *et al.,* 2003; Kumar *et al.,* 1994). Also in the other countries, elderly males perceived a better quality of life than the females (Ibrahim *et al.,* 2010; Muhwezi *et al.,* 2010; Tsai *et al.,* 2004).

It is also revealed from two-way ANOVA that current working status of the study population has been significantly related with the quality of life among the oldest old people. It is evident from the present study that the socio-demographic variables such

as marital status, educational status, spouse status, number of offspring, pension status, living arrangements, occupation before 60 years of age and family type do not have any significant association with quality of life among the study population. A study by Bhattathiri (2008) reported that the elderly those who either remained unmarried or lose their spouse consistently showed low quality of life.

4.2.2 Nutritional Status: observation and correlates

Oldest-old people are vulnerable to malnutrition for many reasons including physiological and functional changes that occur with age, years of living alone, lack of financial support and getting not enough food. Declined ability of consuming sufficient nutritive food is another important factor for malnutrition among the elderly. The functional status of the elderly is their ability to carry out their day to day activities including preparation of food and intake, thereby affecting nutritional status. In India, the problem of the health of the elderly is multifaceted by poor nutrition together with medical issues, including both communicable and non-communicable diseases. Malnutrition and morbidity create a vicious cycle as because the nutrition of the older people is often neglected. Present study depicted number of children and pension status as significant predictors of nutritional status of the study participants. Similar findings have also been reported in the studies conducted by Garry *et al.,* (1994) and Bleda *et al.,* (2002). However, Kansal *et al.,* (2016) did not find any association of higher age with poor nutritional status. Significantly higher prevalence of males is 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. The previous studies in Karnataka, India and other parts of world revealed that

majority of the elderly were at risk of malnutrition but very less number of elderly was malnourished (Abdul *et al.,* 2013; Kansal *et al.,* 2016; Cuervo *et al.,* 2009; Baweja *et al.,* 2008; Salleti *et al.,* 2005; Beck *et al.,* 1999; de Groot *et al.,* 1998). Another study conducted in Bangladesh reported that 61.7% were at risk of malnutrition, 25.8% were suffering from malnutrition, and only 12.5% were normal (Zarina *et al.,* 2007). During the fieldwork it has been observed that level of education, food expenditure and common health problems are influencing the negative impact on nutritional status that may lead to a high prevalence of malnourished oldest old in the study area, although these factors does not show any statistically significant association with the nutritional status. The participants of the present study are above the age of 80 years and are rarely capable of earning any money by doing some kind of job. Hence, pension and family pension are the principal sources of income for them. Present study, thus, expectedly shown a better nutritional status among the pension holders than the non-pensioners. On the other hand, those with higher number of children are facing nutritional problems as a result of less savings due to higher expenditure to rare their children.

Present study also tried to find the association of some selected adiposity and obesity related variables on nutritional status of the study participants. None of the obesity related variables could predict the nutritional status of the males significantly. On the contrary, waist to height ratio, waist circumference and weight significantly predict the nutritional status in terms of MNA among the females. A clear sex difference in prevalence of obesity has been found in terms of BMI, WC and WHR. Similar finding has also been documented elsewhere (Reeder *et al.*, 1997; Abdul-Rahim *et al.*, 2003). Income is found to be one of the most important predictors that influence obesity in the study population. Again, prevalence of obesity is found to be higher among the

socioeconomically higher people than their corresponding low income individuals, which is in the line of few other studies (Hazuda *et al.,* 1988; Santos *et al.,* 2003).

4.2.3 Activities of Daily Living (ADL) and Instrumental Activities of Daily Living (IADL): some observations

Expected changes in physiological and psychological aspects due to increasing age, uninvited illness and hospitalization can lead to a decline in the ability to perform necessary activities by him- or her-self to live independently in the community. The functional abilities of a person gradually decrease with increasing age. The elderly of present study population are from a very advanced age group and thus, they naturally require the assessment of their functional abilities. As the old age people are likely to suffer from many types of health problems, an irreversible decline in functional abilities usually occurs and therefore, the essential issues of old age people are the health-related quality of life (HRQoL), that includes physical and mental health perceptions and their plausible associations with health risks and conditions, functional status, social support and socioeconomic status (Jylha, 2004; Fogelholm *et al.,* 2006; Kindig *et al.,* 2010). In India the prevalence rate of functional disability among oldest old (80 years and above) were 73.6% in Shimla (Sharma *et al.,* 2014), 45.2% in Manipur (Konjengbam *et al.,* 2007). In other countries the prevalence of functional disability among oldest old was 11.1% in Egypt (Mahfouz and Awadallah, 2007) and 48.3% in Brazil (Mattos *et al.,* 2013).

It is widely accepted that the functional ability in terms of ADL and IADL are decreasing with age. In the present study, statistically significant difference observed among the different age groups of oldest old population, irrespective of sex. A similar finding was reported by Ran *et al*. (2017) among the elderly of China. Present study

also reveals that the higher prevalence of ADL among the males has been found to be in the category of full function in the age group of 80-84 years, while female shows significantly higher prevalence in the category of severe functional impairment in the same age group. It is very interesting to state that a fairly good number of study participants are functionally independent, even if, they belong to the highest age groups of one's life. Among the oldest-old people of this small town, the reason of decreasing functional ability may be due to unavoidable diseases, loss of sensation, increasing tiredness day by day. Reason may also be hesitation in seeking help from others due to social isolation. However, no significant sex difference has been found for functional status of the participants at this higher age group.

Further, assessment in IADL among the oldest old also reveals that significantly higher prevalence of females are found to be low function, dependent, while oldest old male shows significantly higher prevalence in the category of high function, independent. The finding corroborates with a study conducted in Shimla which showed that the prevalence of ADL and IADL among elderly were more among female elderly than their male counterparts (Sharma *et al.*, 2014). Rather, an opposite finding was also reported in Manipur where it was demonstrated that males were more disabled as compared to females (Konjengbam *et al.*, 2007).

Moreover, it has been interesting to find that significantly higher prevalence of male are to be found in the category of high function, independent than their female counterparts in the age group of 90-94 years.

4.2.4 Morbidity status: some observations

Morbidity among oldest old people is a very serious problem for different communities in India due to increasing life expectancy. The elderly people have specific health problems that are basically different from adults or young persons. Most diseases in the aged are mainly chronic such as cardiovascular disease, arthritis, stroke, cataract, deafness, chronic infections, cancer etc. An overwhelming majority of the study participants, irrespective of sex, are suffering from ear and/or eye and/or gastric related problems. It is observed from the present study that multiple morbidities are found more in females than males. This pattern of morbidity profile was reported elsewhere in North India (Joshi *et al.,* 2003) and also in Haryana (Sunder *et al.*,1999). On the other hand, the self-reported morbidities among the study population showed that 4.42% male and 1.20% female oldest old reported not to have suffered from any illness since last six months. Another study by Munshi *et al.*,(2008) stated that no major disease had been found among any elderly in their study population of Kashmir valley. In the present study, significantly higher females are sufferings from bone and muscle related problems, as well as hormone related issues than their male counterparts, thus reflecting the hard life faced by women who never retired from household work unless totally disabled and spending maximum time at home. This scenario was also reported by some other researchers in their study (Yadav *et al.*, 2017; Niranjan and Vasundhra, 1996; Sharma *et al.*, 1999; Purty *et al.*, 2006). Some other studies in India, like in Uttaranchal (Kishore *et al.*, 2007), in Pune (Sakurkar and Bagga, 2006), in Rajasthan (Prakash *et al.,* 2004), in Chandigarh (Swami *et al.,* 2002) showed the similar results of high prevalence of musculoskeletal problems including arthritis. In the present study musculoskeletal problems are more common morbidity among the oldest old and the difference is significant between

sexes. Few more studies also gave emphasis on the musculoskeletal problems among elderly (Sing *et al.,* 2012; Shraddha *et al.,* 2012; Khokhar and Mehra, 2001; Shah and Prabhakar, 1997).

The high prevalence of lung related diseases are found among the males than the females and found to be statistically significantly different. It is observed during fieldwork that alcohol consumption and use of tobacco mainly smoking are the leading cause of lung related diseases. It is also stated by many authors in their studies (Yadav *et al.,* 2017), but further statistical analysis needed to establish this in the present study population. Few more previous studies reported that involuntary smoking linked with increased risk of lung cancer (Vineis *et al.,* 2004; Hackshaw *et al.,* 1997). Infectious diseases, kidney related diseases and nerve related diseases increased along with age are being observed during the fieldwork but no significant sex difference has been found may be because of their matured age.

However, the trend of declining sex differences in life expectancy with increasing age are well documented and has been observed in several countries (Hackshaw *et al.,* 1997; Rimm *et al.,* 1995), less is reported about the development of sex differences in health expectancy over time (Eliasson *et al.,* 1996).

Furthermore, majority of the study population of Midnapore town 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 prevalence of such illness than their male counterparts. Additionally, significantly higher percentage of females have reported their common ailments like muscle pain, cramp, joint pain, than males and this is may be due to the decreases of physical fitness with increasing

age. This finding was found to be corroborated with the findings reported by Joshi *et al.* (2003).

4.3 Strengths and limitations of the study

Of the multifaceted strengths of the present study, firstly, that it has reported different types of imperative evidences on psychosocial and physiological health related issues of the highest age group population in a semi-urban setting in one of the important towns of West Bengal. Secondly, this study, for the first time, has considered a set of psychosocial, functional and nutritional traits and evidently shown sexual dimorphism in each trait. Thirdly, and most importantly, this study has evaluated the socioeconomic and demographic correlates of all those traits, which is extremely rare, if not completely absent in any previous research. Depending on the aforementioned facts, this research can serve as the yardstick in framing plans and policies for the people of this vulnerable age group for their comfortable and smooth “end-life”.

On the other hand, in addition to the strong points, the present study indeed has some limitations. The sample size remains relatively smaller. Comparison of the traits was not made with elderly populations living in urban and rural settings, and those who are residing in different old age homes.

4.4 Concluding remarks

The present small scale cross sectional study, carried out among the Bengali speaking Hindu oldest-old population inhabiting the historical town of Midnapore, District of Paschim Medinipur, West Bengal on the psychosocial health, has been the first of its own kind, in which, the evaluation of socioeconomic and demographic correlates of each psychosocial trait was done, along with the examination of nutritional status.

The study evidently demonstrates sex differences in many psychosocial traits, where females show a poorer condition than male study participants. Such differences are also evident in socioeconomic and demographic parameters along with biological, behavioural and social aspects. The study also reveals a mixed type of socioeconomic and demographic as well as psychosocial factors, which is the outcome of difference in family structure, social support, financial assistance at so on between individual to individual.

The association of each socioeconomic and demographic factor with each psychosocial trait and nutritional aspects remains heterogeneous. Present study expectedly unravel those common issues, like continuous hard working for decades, financial deprivation, ill-behaviour from nearest relatives and so on as causal factors for depression, loneliness and cognitive impairments among the oldest-old people of Midnapore town. Many other studies also reported such research output both in developed and developing countries, including India. However, the outcome of the present study would definitely help in formulating further research in the same line. Thus, the general hypotheses, mentioned in the first chapter, can be rationally accepted.

Admittedly again, no data on any conventional psychosocial factors was available for study community. The principal input of this study rests on the fact that it described a psychosocial factor profile in relation to certain socioeconomic, demographic and other bio-behavioural factors. This was of an urgent necessity owing to paucity of relevant data. This small scale study will be of worth if it can be useful in formulating plans for healthy living for the people who are at the verge of their life.

Finally, depending on the findings of the present study, further studies can be undertaken considering newer and novel bio-behavioural, psychological as well as social-cultural factors, to understand healthy and unhealthy aging of the people residing in different habitats and people of different ethnic origin.