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An Exploratory Study of Internet Use Pattern, Cognitive Flexibility and Quality of Life in Elderly Population

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ABSTRACT

Internet use has been rapidly increasing across all age groups, however, not much attention has been given towards its use in the elderly population. Internet use in the elderly population has been linked to an impact on their cognitive functioning as well as an overall quality of life which includes both personal and interpersonal aspects. The present study aimed to explore the pattern of internet use and its association with the quality of life and cognitive flexibility in old age. A total of 50 subjects (both males and females), who were in the age group of 60–75 years, were selected by purposive sampling method. Stroop Neuropsychological Screening Test (Trenerry, M.R., Crosson, B., Deboe, J., and Leber, W.R., 1989): and the World Health Organisation Quality of Life-Old Module (WHOQOL-BREF) were administered to assess cognitive flexibility and quality of life, respectively. Results indicated greater internet use in males and the average duration of internet use in this group was 1 hour 20 minutes, Findings indicate that among the elderly population internet use has a positive relationship with cognitive flexibility, but a negative relationship with the overall quality of life. It suggests that internet use may improve their cognitive functioning however quality of life may be compromised.

Keywords: Cognitive Flexibility, Quality of Life, Elderly population

A common interest area of psychological researches is to understand how particular population or age group functions, behaves, adapts to the environment, and perceives the world. Things that can have a positive and negative impact on them are analysed along with the mental and physical health issues that are associated with them. One such commonly researched population is the elderly population or old age. A commonly agreed cut off of 60 years marks the beginning of old age. Ageing can be seen from a biological perspective which usually involves physical and mental decline, it can also be seen from the perspective of life transitions such as retirement, the moving away of children, the death of family and friends. Another perspective focuses upon the psychological experiences of the elderly population such as the experience of loneliness, experience of helplessness, or on the contrary, may be seen as adopting new ways of living, enjoying leisure activities that were not accomplished during a young age. As there are several perspectives, so are many diversities in the age group, and there are no typical old age characteristics especially with the advancement in medicine and increased life expectancy. While considering the above perspectives, one important perspective is an adaptation to technology. Technology has replaced old ways of working, interacting, learning skills, and ways of acquiring resources. Because for a substantial period of their lives they have lived, functioned, or adapted to certain habitual ways, how they accept new changes especially which required learning newer skills is extremely crucial. Among such technological modification is the use of the internet.

Internet use in old age is increasing in recent times. As per 2017 reports, in the United States, around four in ten (42%) adults aged 65 and older own a smartphone increased from a certain 18 per cent in 2013. 67 per cent of seniors use the internet – a 55 per cent percentage point increase in just two decades. (Anderson and Perrin, 2017). In India as of 2016, share of internet users above 35 years of age comprise 26 per cent of the distribution which is expected to rise to 33 per cent in 2020. Although far less than the younger population, the percentage is increasing. (Statista Reseach Department, 2018). The use of the internet can have huge psychological and social implications for the elderly population. Internet use in old age has been found to have

important implications in cognitive functioning. It can serve as a preventive tool from cognitive decline. Findings suggest that the use of online cognitive training programmes, may have a positive effect on the improvement of cognitive functions in healthy older adults. As it serves to provide personalized intervention, reduction of administrative and treatment costs. (Klimova, 2016). The study focussed upon finding the association between social media use and cognitive capacities in old age. The domains chosen included attention, processing speed, working memory, and inhibitory control. Post-test findings indicated improvement of intervention participants in inhibitory control as opposed to the control group who did not receive the social media training. The study concluded that the benefits of social media use at older age extend beyond social engagement and into other domains of everyday well-being. (Quinn, 2018). In research that compared computer anxiety in 20 young adults and 20 old adults, results revealed that older adults had significantly higher computer anxiety, the anxiety also was found about performance as measured by decision-making. (Laguna and Babcock, 1997). When focussing on cognitive functioning in old age in association with the use of the internet, an interesting domain is also cognitive flexibility.

Cognitive flexibility is the human ability to adapt the cognitive processing strategies to face new and unexpected conditions in the environment. Thus, cognitive flexibility implies a process of learning which could be acquired through experience, it involves the adaptation of cognitive process strategies and the adaptation will occur to new and unexpected environmental changes after a person has performed a task for some time. In situations where a person should be flexible to deal with changes in the environment but fails to do so reflects cognitive inflexibility. To be cognitively flexible, one needs to perceive the environmental situations that can serve as a hindrance to the task at hand and a need to invest resources to abort an automatic response to plan a new sequence of actions. (Cansas, *et al.*, 2006). A study aimed at investigating the role of cognitive flexibility and vocabulary abilities in explaining the age-related differences in information searching with a search engine. The older participants obtained poorer search performance with fewer correct answers and lower task completion speed. The older adults did not leverage their increased

vocabulary in forming new keywords. The decline in cognitive flexibility was found to play a role in the age-related differences observed in searching for information. (Dommes, A., *et al.*, 2011). Studies have also emphasised on the negative effects of problematic internet use and internet addiction in older adults which have led to contradictory findings. On one hand, Internet use has been reported to bring improvements in interpersonal interaction at an individual level, providing improved access to resources and empowered social inclusion. (Quintana, D., *et al.*, 2018). On the other hand, in certain psychiatric conditions, opposite results have been found. For example, older adults who are depressed may use the internet to alleviate depressive symptoms and problematic use could lead to an adverse effect on daily life thus leading to a vicious circle between depression and excessive use of the internet. A correlation has been found between internet addiction and suicidal ideation and aggressive behaviour. Contradictory findings have been found in the context of the relationship between loneliness and engagement in the digital world. As reported when social technologies are used to escape the social world and pain of interaction, feelings of loneliness increases. However, when it is used as a route to enhance the existing relationship and form new connections loneliness reduces. Loneliness also serves as a determinant to the nature of use. Thus, lonely individuals are likely to replace offline activities with the use of the internet for social interaction. Causations, however, are difficult to establish as most studies are cross-sectional. (Nowland, *et al.*, 2018)

Internet addiction could also lead to increased sedentary behaviour, in turn, harming the physical health. (M'hiri K, *et al.*, 2015)

When considering the above factors, one can assume that internet usage has a widespread effect on the entire life. In this regard, the discussion on the quality of life becomes important. As defined by the World Health Organisation, 'Individuals' perception of their position in life in the context of the culture and value system in which they live and concerning their goals, expectations, standards and concern is a broad-ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, and their relationship to salient features of their environment'. (WHOQOL Group, 1995, p. 1403) In other words,

how the person evaluates his or her life determines the quality of life. Diverse and inconsistent viewpoints exist while relating quality of life to internet use According to Boz and Karatas (2015), Internet use improves the quality of life by decreasing loneliness and social isolation, which serves as a source of leisure, increases self-efficiency and perception of self-control and integrates them into society. Contrary to the above research findings it has also been indicated that some individuals exposed fear about becoming victims of crime when using Information and communication technology and perceive a threat to their physical sense of security. It was also reported in a study that ICT did not necessarily lead to the experience of social participation and inclusion, rather it was used with reluctance as it was the only way to stay connected to the family. (Marston, *et al.*, 2019). Thus, from the above overview, it can be inferred research findings that associate internet use with psychological functioning and overall quality of life in the elderly population shows a lot of discrepancies, and hence further exploration in the field is required, which is precisely the aim of the present study.

Method

Study Design: This is a cross-sectional exploratory study and the participants were selected using a purposive sampling technique

Participants: 50 participants belonging to the age-group 60–75, both genders were selected. The inclusion criteria include the specified age group and both the genders. Those individuals belonging to the middle socioeconomic status and having basic education were selected.

Those individuals who were below or above the age group were excluded from the study and those individuals who had any kind of psychiatric condition were not selected in the study.

Instruments

Information Schedule: The information schedule involved details about name, age, sex, gender, educational qualification, socio-economic status, family type, presence of any psychiatric/physical conditions, information regarding internet use included-access to the internet, duration of usage per day in terms of minute, medium, purpose, and opinion about internet use.

STROOP Neuropsychological Screening Test: STROOP test has been used to measure cognitive flexibility. It measures the ease with which a perceptual set can be shifted both to conjoin demands and suppressing a habitual response in favour of an unusual one. The prefrontal areas are essential for response inhibition. In this test, the colour names 'blue', 'green', 'red', and 'yellow' are printed in capital letters on a paper. The colour of the print occasionally corresponds with the colour designated by the word. The words are printed in 16 rows and 11 columns. Test-retest reliability was assessed and the correlation of the Colour-Word Scores from the first and second administration was 0.90 suggesting a high degree of temporal stability. When considering construct validity for neuropsychological measures, it is important to consider evidence of sensitivity to central nervous system (CNS) dysfunction. (Trenerry, *et al.,* 1989)

The World Health Organisation Quality of Life-Old (BREF FORMAT): The WHOQOL is a quality of life assessment which was developed by the WHOQOL Group with fifteen international field centres, in an attempt to develop a quality of life assessment that would be applicable across cultures. The WHOQOL-OLD module consists of 24 Likert-scaled items assigned to six facets: 'Sensory Abilities' (SAB), 'Autonomy' (AUT), 'Past, Present and Future Activities' (PPF), 'Social Participation' (SOP), 'Death and Dying' (DAD) and 'Intimacy' (INT). Each of the facets has 4 items, for each facet, the minimum possible score is 4 and the maximum possible score being 20. The scores of these six facets can be combined to produce an overall score for quality of life in older adults, denoted as the WHOQOL-OLD module 'total score'. The 'Sensory Abilities' subscale is used to assess sensory functioning and the impact of the loss of sensory abilities on the quality of life. The 'Autonomy' facet implies to the independence in old age about decision-making. The 'Past, Present, and Future Activities' facet describes satisfaction about achievements in life and the 'Social Participation' facet indicates participation in activities of daily living, especially in the community. The 'Death and Dying' facet is related to concerns, worries, and fears about death and dying, and the 'Intimacy' facet assesses being able to have a personal and intimate relationship.

Results and Discussion

Based on obtained information in the sample of 50 elderly participants, belonging to the age group 60–75, the following nature of distribution was found-

Table 1
Distribution of the sample in the context of Internet use

Internet Usage	*Males*	*Females*	*Total*
Percentage of Participants	70	30	100
Percentage of Internet Users	82.85	93.33	88
Percentage of Non-Users	14.28	6.66	12
Duration of Internet Use (average time in minutes)	97.67	80.00	92.05

From the above Table 1, it can be implied that the percentage of female participants in a sample of 50 was 30 per cent (N=15) and the rest 70 per cent comprised of male participants (N=35). The total percentage of internet users was 88 and the rest 12 per cent did not use the internet. The average duration of internet use for the entire sample was approximately 1 hour 30 minutes. For males, the average duration of use was approximately 1 hour 40 minutes and the average duration of use for females was found to be 1 hour 20 minutes. In the interviews with the participants, they revealed that the internet was mostly used by them as a means of interacting on social networking sites, acquiring information about news, business purposes, online purchases, and bookings, for entertainment purposes and for watching videos such as cooking recipes. The Internet was also used by some respondents to remain updated with trends in the share-market. The most common mode for getting access to the internet was the use of a smartphone. In a study conducted on 140 individuals belonging in the elderly group in the city of Bangalore, 70 individuals were found to be non-internet users. Among them, 12 individuals did not have accessibility to any device, 10 individuals did not use the internet while owning internet supported devices. 12 individuals lacked awareness about internet facilities and 26 individuals did not use the internet due to health-related concerns.

Of those individuals who did use the internet the common mode of usage was found to be cell phones and laptops. Even among internet

users, 45 did not use social media due to a lack of awareness, security reasons, fear, and anxiety associated with new technology. (Jaiswal, C, and G, 2015). In the present study majority of the elderly population using the internet, the primary source was found to be smartphones, and involvement in social media was also found.

Table 2
Distribution of the sample in the context of Stroop score (Mean and SD)

Stoop Scores	*Males*	*Females*	*Internet Users (Male)*	*Internet Users (Female)*	*Non-Users*	*Total*
Stroop Effect	107±5.71	108.40±3.40	106.93±5.72	109±2.57	106.17±6.40	107.42±5.13
Duration of Stroop	3.64±1.84	3.14±0.63	3.52±1.87	3.05±0.56	4.35±1.42	3.49±1.58

From Table 2, it can be inferred that the Stroop scores did not indicate any form of cognitive impairment in any of the groups. Based on mean scores on both accuracy and duration required to complete the Stroop task, it can be said that females performed better on Stroop task as compared to males. The results are consistent with findings by Khader and Bader, 2006. In their study, they found that gender differences existed in Stroop performance whereby, Women read faster on the colour word card tests as compared to males. This result is also consistent with the findings of a study that saw a female advantage in Stroop colour-word task. The advantage was found to be significant across ages and cultures. (Sjoberg, *et al.*, 2017).

Table 3
Distribution of the sample in the context of Quality of Life scores (Mean and SD)

Quality of Life Dimension	*Males*	*Females*	*Internet Users (Male)*	*Internet Users (Female)*	*Non-Users*	*Total*
Sensory Abilities	14.51±3.32	14.47±2.97	14.27±3.37	14.64±3.00	15.33±3.01	14.5±3.19
Autonomy	14.20±2.97	13.13±2.77	14.50±3.06	13.14±2.88	12.50±1.38	13.88±2.93

Cont'd...

Cont'd...

Past, present and future abilities	14.60±2.51	13.67±3.83	14.87±2.61	13.79±3.95	12.83±0.75	14.32±2.96
Social Partici-pation	13.74±3.45	14.13±3.27	13.93±3.67	14.29±3.34	12.50±1.22	13.86±3.37
Death and Dying	17.69±4.28	15.93±5.31	17.27±4.33	16.21±5.39	18.83±4.40	17.16±4.63
Intimacy	13.23±2.85	13.60±2.10	13.43±2.90	13.57±2.17	12.33±2.34	13.34±2.63
Total	87.97±10.33	84.93±14.84	88.27±11.02	85.64±15.14	84.33±6.25	87.06±11.79

Table 3, is indicative of mean scores of quality of life and its facets for each of the groups. The mean total score for quality of life in males was found to be 87.97 and in females, the score was found to be 84.93. For male internet users score was found to be 88.27 and for female internet users the score was found to be 85.64. For non-users, the score was found to be 84.33.

Thus, on the basis of mean scores, it can be inferred that males were found to have a better quality of life as compared to females. This finding is supported by previous researches. In a study based on the elderly population that took into account 4 dimensions of quality of life namely, physical health, psychological health, social relations, and environment found that overall, the quality of life of women was worse than males. (Shah, *et al.*, 2017). Taking into account the domains of quality of life, Highest raw score was obtained in the facet of death and dying for both males and females (17.69 and 15.93 respectively), while the lowest score was found in the facet of Intimacy for males (13.23) and Autonomy for females (13.13) Similar results were found across both the groups of internet and non-internet users. (Table 3). Thus, it can be said that, on average, the elderly population who participated in the research study, experience less concerns, worries, and fears about death and dying. Experience of involvement in deep interpersonal relationships was a problem area for males and females' experience of independence, being able to take decisions autonomously was a problem area for females. An interesting finding, was that while social participation was found to be high; experience of intimacy in the relationship was low, particularly so in males.

According to Luong, *et al.*, (2011), evidence suggests that social relationships improve with age as a result of efforts made by them, as they begin perceiving life getting shorter they become motivated to improve their social experience, they rebuild their social networks and avoid conflict with others.

Tiilikainen and Seppanen (2016) indicated that behind emotional loneliness includes loss and unfulfilled relationships, absence of partner, complex parenthood, and childhood experiences, which are difficult to resolve.

Table 4

Correlational values between Duration of Internet use and Stroop scores, Duration of Internet use, and Quality of Life scores.

Measures	*Duration of Internet Use r value (p value)*
Stoop effect	0.078 (0.589)
Sensory Abilities	–0.135 (0.348)
Autonomy	0.037 (0.797)
Past, present and future abilities	–0.160 (0.266)
Social participation	0.171 (0.236)
Death and Dying	–0.45 (0.758)
Intimacy	–0.165 (0.251)
Total	–0.73 (0.631)

* Values are statistically significant at 0.05 level of significance.

Table 4 depicts the correlation between duration of internet use and the Stroop effect score, the value so obtained is 0.078. The values indicate a positive, however, not a statistically significant relationship between duration of internet use and cognitive flexibility which has been assessed using the Stroop effect score. It implies that a higher duration of internet use may be associated with higher cognitive flexibility, an important aspect of cognitive functioning. The results are consistent with previous studies. It has been indicated that increased internet use in old age implies digital literacy, represents the ability to engage, plan, execute and evaluate digital actions such as emails, web-browsing, etc. to facilitate daily life tasks. In a study improvement in delayed recall was found in those who engage in internet use and access to emails when compared with those who were non-users. The

age group studied in this research comprised of 50–89 years. (Xavier, *et al.,* 2014). The table also indicates the correlation between the duration of internet use and quality of life as well as its various facets. Based on present findings, it can be inferred that a negative, although the not statistically significant relationship has been found between quality of life and duration of internet use. In other words, there is a possibility that a higher duration of internet use may be related to reduced quality of life and vice-versa. However, the same cannot be said with confidence. The result is inconsistent with a study conducted by Khailala and Vitman, 2018 according to which internet use is positively associated with quality of life. This relationship was however moderated by factors such as time spent with family members and loneliness. A review conducted on Internet use and Quality of life of the Elderly in the year 2015, also indicated that functional use of computers and the internet enhances the quality of life. (Hayat and Karatas, 2015). Positive although the not statistically significant relationship has been found between duration of internet use and the two domains of quality of life namely, autonomy and social participation. The results are consistent with the finding that a negative correlation exists between going online and social isolation and that quality of communication improves with the social world due to the use of the internet (Cotten, *et al.*, 2013). A review of literature by Damant, *et al.* (2016) indicated that using computers and the internet gives the elderly a sense of control over their daily lives. A sense of control implies independence, mobility, and activities of daily living. A negative but not statistically significant relationship exists between duration of internet use and the other facets of quality of life namely, sensory abilities, past, present and future abilities, death and dying and intimacy. Inconsistent findings exist when relating internet use with experience of intimacy. Sum *et al*., (as cited in Damant, Knapp, Freddolino, and Lombard 2016) indicated that loneliness was positively correlated with the use of the internet, on the other hand as mentioned, Blazun *et al*., found a positive relationship between making new friends and sending emails and attending computer training respectively.

Studies by Cotten, *et al.,* (2013) also indicated that besides social isolation, the experience of loneliness also reduces with the use of the internet.

Implication

The rise in the use of the internet among the elderly population was reflected in the study, whereby only 6 individuals in a sample of 50 participants were non-internet users. The study revealed the importance of the internet and social networking in forming social relationships among the elderly. Although the social interactions improved, it was also revealed that it did not transform into deep emotional bonds and an absence of intimacy was experienced. Overall, internet use was associated with cognitive advantages, however, it did not seem to add value to the quality of life. Thus internet can be used to enhance one's cognitive functioning, improve decision-making, taking control of one's life, and also increase interaction with others, however, judicious use is also required as perhaps behind the screens, face to face conversations and emotional sharing is diminishing.

Conclusion

From previous literature, it can be said that research into internet use in old age and various manifestations associated with it is relatively new. Researches till now have provided inconsistent results. The causal factors have also been difficult to establish as most of these studies are cross-sectional and not longitudinal. Moreover, several confounding factors for example when comparing age groups in terms of cognitive capacities may be producing false results. There are also very few studies in India focussing on these aspects. Hence there is a lot of scope for exploration of how technology is perceived in this age group.

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Relationship between Quality of Life, Social Support and Loneliness among Male and Female Older Adults

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ABSTRACT

The objective of this study was to find out the relationship between loneliness, quality of life, and social support among randomly selected 30 elderly adults (15-male and 15-female), age ranging from 60 yrs to 75 yrs with a mean age of 65.5 yrs. UCLA Loneliness Scale – Version 3 (Russell, D.W. 1994), P.G.I Quality of Life Scale-Revised form (Moudgil, Verma and Kaur, 1986), P.G.I Social Support Questionnaire (Nehra, Kulhana, and Verma, 1987) were administered individually to assess their loneliness, quality of life, and social support. Results revealed a significant difference between male and female subjects on Quality of Life and Social Support while on Loneliness scale both the groups did not differ significantly. Further, results showed a significant negative correlation between Quality of Life and Social Support.

Keywords: Geriatric, Quality of life, Loneliness, Social Support.

The link between lifestyle and health in older age is well documented. According to the National Health Committee report (National Health Committee, 1998), much of the physical decline associated with old age can be attributed to inactivity rather than the

ageing process. Income is a predictor of health status. The links are two-way. Lower incomes limit options for purchasing health care, health insurance, appropriate housing, and other goods and services that can assist in the maintenance of health. In addition, poor health tends to limit income-earning opportunities.

Environmental factors that help older people maintain their independence are attitudes and perceptions. The diversity of older people means there is no general experience of living as an older person. The support of family and friends is an important component of independent living. Family relationships are especially important. They can offer an opportunity for mutual emotional and practical support between the generations, and for 'the exchange of knowledge, experience and insights, enablement and caring'. The presence or absence of family support directly affects older people's ability to live independently.

Geriatric loneliness: Loneliness might be described as negative feelings or sadness brought on by a lack of communication, companionship, or relationships with other people. Loneliness can affect anyone of any age, but older people are particularly vulnerable to feeling lonely. As people grow older they are more likely to lose loved ones and may live alone. Loneliness is the quality of social contact that makes all the difference. It typically includes anxious feelings about a lack of connection or communication with other beings, both in the present and extending into the future. Thus, Loneliness is a complex and usually unpleasant emotional response to isolation.

Lunstad, *et al.,* (2010) did a meta-analysis of 148 studies focusing on the relationship between social isolation and mortality. They found that having more or more supportive social relationships was indeed related to a decreased mortality risk. They concluded that a lack of social relationships is a strong risk factor for mortality as are smoking, obesity, or lack of physical activity.

Quality of life: Quality of life (QOL) is defined by the World Health Organization (WHO 1997) as 'individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards, and concerns.' The WHO further notes that QOL is a concept with

several domains, including physical and mental health, social functioning, and emotional well-being.

The various factors of quality of life are mainly of two types: Satisfactory conditions and Satisfying Conditions. The satisfactory conditions include factors like group cohesiveness, sharing of each other's experiences, helping attitudes, understanding and sharing each other's problems, absence of conflict among members or type of relationship among members; absence of any severe physical illness, etc. The satisfying conditions include factors such as a sense of belongingness; the presence of positive attitude; subjective feelings of physical, psychological, mental, social and spiritual well being; absence of unhealthy experience, etc (Verma, and Verma, 1989).

Both these types of factors directly or indirectly affect the quality of life of a person. Moreover, Maslow (1954) emphasized that the behaviuor and quality of life of a person depend upon the fulfillment of needs throughout his life. The quality of life is directly influenced by Maslow's hierarchy of needs, i.e., the quality of life of a person is dependent on the needs of life being fulfilled.

Social support: Social support is a powerful predictor of living a healthy and long life. Social support refers to positive exchanges with network members that help people stay healthy or cope with adverse events (Thoits, 2011). Two characteristics of social support is that it involves behavioral exchanges (giving and receiving) that are intended as helpful and are perceived as such. Social support needs to be distinguished conceptually from the other ways through which people benefit from having close relationships. The first is that networks provide opportunities for companionship and social engagement. Social control, a second mechanism responsible for the healthful effects of social relationship operates directly when network members consciously attempt to modify a person's health behavior, or indirectly when people internalize norms for healthful behavior. Third, relationships provide access to resources that transcend an individual's means. To have relationships is to have access to other people's connections, information, money, and time life. Social support is positive. Two theoretical models have been dominant in the literature. The direct effects model (Cohen and Wills, 1985) maintains that social support operates at all times. The support people receive

helps them maintain an overall sense of stability and self-worth and helps them in their efforts to improve their situation. According to the buffering effects model, social support operates when people are under stress. Social support helps people cope with setbacks and serves as a protective barrier against threats to well-being.

There is conceptual and empirical overlap between the concepts of loneliness and social support, but results suggest that loneliness following widowhood cannot be remedied by interventions aimed only at increasing social support. Social support, especially from friends, appears to be most effective if it is readily accessible and allows the newly bereaved an opportunity to express him/herself.

Relationship between Loneliness and Quality of Life

Musich, *et al.,* (2015) suggest that loneliness significantly affects the quality of life and patient satisfaction with medical services. While medical interventions for other less prevalent chronic conditions are common, surprisingly few interventions for loneliness currently exist, especially considering the high prevalence of loneliness among at-risk older populations. Taking into account the potential for improvements in quality of life and patient satisfaction, screening for loneliness may be warranted, along with the interventions which provide emotional support, enhanced coping strategies, and/or problem-solving therapies.

Relationship between Quality of Life and Social Support

The established models of quality of life are rarely multi-level or multi-domain. They range from basic, objective and subjective needs-based approaches, often derived from Maslow's (1954) hierarchy of human needs, to classic models based on psychological well-being, happiness, morale and life satisfaction (Andrews and Withey, 1976), physical health and functioning (Bowling, 2001), social expectations (Calman, 1983), and the individual's unique perceptions. Social gerontologists also focus on the importance of social and personal resources, self-mastery or control over life, autonomy, and independence. The care needs of dependent older were emphasized at the expense of rehabilitation, prevention, and curative treatment (Roos and Havens, 1991). Research based on this model inevitably under-estimated the quality of life of older people.

The relationship between loneliness, social support, and Quality of life

Tiikainen and Heikkinen (2005) found that the absence of friends, spousal loss, and limited social support networks are major factors that increase loneliness in the population. However, older adults with more social support were likely to have less loneliness and depression. Hyun-WookKang *et al.,* (2018) examined the relationship between loneliness and perceived social support among South Korean older adults and suggested that the greater the perceived social support of the older adult, the less loneliness they experience. Loneliness can lead to several other mental and physical health problems in older adults. Social support can promote health by providing persons with positive experiences, socially active roles, or improved ability to cope with stressful events.

Old age is not only a physiologic state but also a social and emotional state that every person who had long life years come across through life span. It has also a social dimension that unfortunately some older people become dependent on other people because of complex health problems, being isolated from society, feel anxiety, depression, loneliness, and hopelessness because of health problems or death of a spouse and significant others. The link between social relations and health had been studied and established. Thus, with the objective of how social support, quality of life, and loneliness are related to each other in elderly adults. The following hypotheses were tested in the present study:

1. There will be a significant difference in Social Support among both the genders.
2. Males and females will differ significantly in Quality of life.
3. Males and females will differ significantly in their feeling of loneliness.
4. There will be a positive correlation between Quality of life and Social Support among older adults.

Method

Sample

The study was conducted on 30 elderly adults (15 male and 15 female) who were randomly selected from Varanasi city. Their age ranged from 60 to 75 years with an average age of 65.5 years.

Tools Used

UCLA Loneliness Scale Version 3 developed by Daniel W. Russell, (1994), was used to assess the health behavior and loneliness of the older adults. This scale is a modified and complemented version of the UCLA Loneliness Scale.35. The scale consists of 17 items classified into 3 sub-factors i.e friendly acquaintance, social acquaintance, and emotional loneliness. Each item represents the frequency of feeling of loneliness and the degree to which the older adults feel lonely.

P.G.I Social Support Questionnaire (P.G.I–S.S.Q) is the translated version of the Pollack and Harries scale (1983) for use in Indian Psychiatric patients by Nehra and Kulhara in 1987. The scale consists of 19 items that were translated in Hindi. The scale has high reliability of (r= .59).

P.G.I Quality of Life Scale-Revised Form (P.G.I–QOLS-R) prepared by Moudgil *et al.,* (1986) was used in the present study It consists of 26 items. Each item has 5 levels of responses (ranging from low to high).

Procedure

Participants were randomly selected. Rapport was established, consent was taken, and then the demographic details were taken from the participants. Then each participant was given appropriate instructions related to the questionnaires used. For Quality of life following instructions were given:

> 'This scale has 26 statements associated with your daily life. There are five response options given for each item which range from 1 indicating minimum relation and 5 indicates extreme relation with the statements. You have to put a tick in any one response criteria for the statement that suits you most. Your responses will be kept confidential. If you have any query you can ask.'

For Loneliness Scale following instructions were given:

> 'There are 18 questions in this questionnaire. There are four response options for each item. If you agree then put a mark in 4, if moderate then in box 3, if little bit then in box 2, and if disagree then put a mark in box 1. Please follow the instruction for doing all the

questions. Your response will be kept confidential. If you have any query you can ask.'

For Loneliness Scale following instructions were given:

'This is UCLA Loneliness Scale. There are 20 questions with four response options; first labeled as never, second as rarely, third as sometimes and fourth as often. You have to put a mark for anyone option which suits you the best. Your responses will be kept confidential. If you have any queries regarding this, you can ask.'

After giving the above instructions the questionnaire related to that was given to the participant. After they recorded their responses, they were thanked for their time and cooperation. Further, the scoring was done and data was analysed using suitable statistics.

Result

On social support scale females scored higher 88.00(SD= 10.04) than the male subjects 82.46 (SD= 12.56) and the difference between both the means (t=1.09) is significant at 0.05 level. The mean of males on Quality of Life is 91.93 (SD= 7.41) and the mean of females on Quality of Life is 80.86 (SD= 14.05). The difference between both the means (t = 2.79) was significant at the 0.01 level. Results on the loneliness scale show that male subjects scored higher 48.66 (SD=6.62) than females subjects 47.00(SD=4.55). However, the difference was not significant (t =0.83). The results are shown in Table 1 and graphically in Figure 1.

Table 1

Mean and standard deviation (in parenthesis) on Loneliness, Social support, and Quality of life of male and female participants

Variables	*Male*	*Female*
Loneliness	48.66 (6.62)	47.00 (4.55)
Social Support	82.46 (12.56)	88.00 (10.04)
Quality of Life	91.93 (7.41)	80.86 (14.05)

The combined average score of both male and female subjects on Quality of Life, Social Support, and Loneliness scale are shown in Table 2. Results show that mean of participants on Quality of Life is 86.40 (SD= 12.39), on Social Support is 85.23 (SD=14.4) and on Loneliness is 47.83 (SD=5.6). The correlation between Quality of Life and Social Support is –0.308 which is significant at 0.05 levels. Correlation between Quality of Life and Loneliness is –0.123 which states the negative correlation between both the variables. The correlation between Social Support and Loneliness is 0.048. However, the correlation between the quality of life and loneliness and social support and loneliness are not significant.

Table 2

Mean and standard deviation (in parenthesis) of male and female participants on Quality of Life, Social Support, and Loneliness.

Variables	*Mean*
QOL	86.4 (12.39)
SS	85.23 (14.4)
Loneliness	47.82 (5.6)

Table 3

Correlation (Pearson r) between Quality of Life, Social Support, and Loneliness.

Variables	*Quality of Life*	*Social Support*	*Loneliness*
Quality of Life	1.0	–0.308*	–0.123
Social Support		1.0	0.048
Loneliness			1.0

Discussion

The present study tried to analyze the relationship between social support, quality of life, and loneliness among older adults and whether male and female participants differ on these variables. Quality of Life and Social Support has a significant negative correlation (–0.308) i.e., when Social Support increases Quality of Life decreases or when

Quality of Life increases Social support decreases. However, this finding is in contradiction with the previous study by Unsar, *et al.*, and Sut (2013) who found a positive correlation between Social Support and Quality of life. Other studies also reported a positive association between increased level of social support and wellbeing and quality of life of older adults (Holmen and Furukawa 2002, Jeannette Golden *et al.,* 2009, Shin and Sok 2012). Thus, based on the results we can conclude that the hypothesis framed i.e 'There will be a positive correlation between Social Support and Quality of Life', is rejected.

The present study also analysed gender differences in Social Support, Quality of Life, and Loneliness. The result revealed a significant difference in the perception of social support, females perceived more Social Support (88.00) than their male counterparts (82.46). The result gets support from the previous study by Caetano, *et al.,* (2013) who found the gender differences in Social Support across the ageing process in the Brazilian population. They proposed that men tend to maintain intimate relationships with only a few people, while women identify more people as being important to them or as people they care about. Thus, based on the results we can conclude that the hypothesis framed, i.e., 'There will be a significant difference in Social Support among both the genders' is accepted.

The result of Quality of life also showed a significant difference between male and female participants, male subjects perceived better quality of life (91.93) than female (80.86) subjects. This finding also gets support from the previous study by Deshmukh *et al.,* (2015) which showed that old men perceived better quality of life than old women. Thus, the hypothesis which formed, i.e., 'Male and female will differ significantly on Quality of Life' gets accepted.

While on the loneliness scale although males perceived more (48.66) loneliness than females (47.00) the difference between the groups was not significant. This result is in contradiction with the previous study by Prince, *et al.,* (1997) who concluded that more women than men reported being lonely. Thus, based on findings it can be concluded that the hypothesis framed, i.e., 'Male and female will differ significantly in the feeling of Loneliness' gets rejected.

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Psychosocial Support Needs of the Elderly in Ikare Akoko Community of Ondo State, Nigeria

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ABSTRACT

This study was designed to explore the psychosocial needs of the 400 elderly (Male 220 and Female 180), age varying from 60 years and above were selected by using multistage sampling technique from Ikare-Akoko, Ondo State, Nigeria. At the first stage of the sampling, three Communities were selected through a simple random sampling from the list of communities in the local government area. At the second stage of sampling, three quarters were selected also by simple random sampling. In the third stage of sampling, 15 houses in each quarter were selected by systematic random sampling technique that is house-hold with elderly persons

in every fourth house were selected until the sample size was attained. A pilot tested structured interview schedule (questionnaire) was used to collect data. The research instrument used was a self-designed questionnaire to explore the psychosocial needs of the elderly. The instrument was validated and the reliability was established using the test retested method and a retest coefficient of 0.84 was arrived at. The study revealed the psychosocial needs, the barriers and the coping strategies of the elderly. The psychosocial needs experienced by majority of the elderly include; the feeling of loneliness, ill treatment from family members, caregivers and members of the society, physical and emotional abuse, anxiety, restlessness, fear and rejection. Among barriers experienced by the elderly were; distance from spouse, loved ones and other social needs, loss of spouse, the environment and ageing. Amongst the coping strategies adopted by elderly include; to be informed about their condition of health and treatment regimen as well as maintaining social contacts through a social system. There was a significant relationship between psychosocial needs to both barriers to accessing these psychosocial needs and the coping strategies adopted by elderly in the study area to these psychosocial needs. The study revealed that the psychosocial needs and health of the elderly can be protected through mass education of family and care givers. Therefore, psychosocial needs of the elderly and ageing should be given its due attention so as to properly understand the changes which occur as a result of ageing and boost the health and well-being of the elderly.

Keywords: Elderly, Psychosocial support, psychosocial support needs.

Elderly people as one of the most vulnerable sectors of the general population with a variety of health risks including psychosocial needs which includes psychosocial (i.e., depression, anxiety and stress) and social problems (i.e., less social support) due to variety of factors such as changes in function of body systems, decline in social involvement, gradual increase in dependence on others and decline in the quality of life (Mazloom, *et al.*, 2014).

Globally, the population of elderly is increasing and their well-being is becoming a public health concern (Adebowale, *et al.*, 2012; Omisakin, *et al.*, 2016).

The projection of the elderly population is globally increasing by 75 per cent to 350 million in 1975 and rising dramatically to 630 million in 2002 and by the year 2025, it is estimated to be 1.2 billion people with Africa inclusive (Demssew, *et al.,* 2016).

People above 65 years of age are a group of persons with increasing demographic representativeness, which requires new model of resource delivery, organization and resource allocation (OECD, 2015). As a result of this, there is need to meet up with the special needs and requirements that are unique to this group of persons called the elderly (Shiaka, *et al.,* 2016).

Along with the increase in elderly population, inequality in income distribution and insufficient access to health and social support services has increased, causing disease burden and global health risks. These health risks are associated with insufficient access to health services and poverty in most developing countries. Also, there is small quantity of literature on meeting the psycho-social needs of the elderly in the developing countries (Steptoe, *et al.*, 2015). The epidemiological profiles are directed by a number of factors such as rapid urbanization, changing nutrition habits or physical activity; however, valid and effective outcomes have been obtained in developed countries (Ibid). Whilst there is no doubt that the older population is growing, increasing the need for adequate psychosocial and health care for Nigerian older people, the culture dictates that it is the family that is primarily responsible for their care. Such cultural and religious considerations pose unique challenges to service providers especially nurses (Omisakin, *et al.,* 2016).

Ageing comes with pleasure, pains and various challenging problems; it should be noted that when one ages, there is degeneration and dysfunction of body cells, which leads to decline in strength and ability to move about (Ibid). The psychosocial needs that are not met leads to loneliness among the elderly which has effect on their health status and it leads to progressive spontaneous reduction of daily milieu and social requirements as well as an impression of dependence that cannot be easily overcome (Patil and Udgiri, 2018).

There is a noticeable inequality in the availability of evidence concerning the psychosocial support needs of the elderly between

high-income countries and the resource-constrained countries, which constitutes a serious knowledge gap (Steptoe, *et al.*, 2015).

The increasing percentage of the elderly population in the total population has brought health, environmental, economic and social problems (Ergin, *et al.*, 2018). Many elderly individuals want to live as long as possible in their own home, independently and in good health. Therefore, although there is an emerging body of evidence focusing on the psychosocial needs of the elderly, significant knowledge gaps remain. Elderly people's social and economic difficulties and disability both cause them to feel more dependent in their own home (Suzman, *et al.*, 2015). The needs of an elderly population have not been seen as important and as a consequence it has been noted that increasing alms begging at major streets, public motor parks and other public places in Nigeria by elderly people is a result of poor care and support they receive (Shofoyeke and Amosun, 2014).

In Nigeria, the people of age sixty-five and above are important and growing segment of Nigeria population, there remains a gap in knowledge as there has been limited research on wellbeing of elderly, especially in rural settings where people are most beset by poverty and poor health conditions. Studies of psychosocial needs of the elderly are quite common in developed countries compared to developing ones due to perceived strain on social security caused by increasing ageing population. In view of the aforementioned, coupled with the fact that there are only a few home care facilities and nursing homes for the elderly in Nigeria and none in the area of study despite the increasing number of the elderly people, there is therefore need to assess psychosocial support needs of the elderly in Ikare-Akoko, Ondo State.

The elderly needs to adjust to a changed environment leading to serious psychosocial problems particularly loneliness and dependency, also innately present in the community_based persons (Raut, *et al.*, 2014).

Having identified the elderly as a group of persons having special psychosocial needs, this study is aimed at the exploration of the psychosocial needs of the elderly in Ikare-Akoko, Ondo State.

The specific objectives for the study were:

1. to identify the psychosocial needs of the elderly in Ikare-Akoko, Ondo State.
2. to determine the barriers to psychosocial needs of the elderly in Ikare-Akoko, Ondo State.
3. to identify coping strategies of the elderly in Ikare-Akoko, Ondo State.

Significance of the Study

However, there is paucity of documented data on the exploration of the psychosocial needs of the elderly in Nigeria which constitutes a serious knowledge gap. This study will bridge the gaps and form the basis for the psychosocial needs of the elderly; it will also determine the barriers of psychosocial needs of the elderly and this will help to improve the health status of the elderly in the community. The study will also identify the coping strategies with the aim of increasing awareness about psychosocial needs of the elderly as well as informing the policy makers, for subsequent inclusion into their district plan to provide the elderly longer periods of disability-free old age.

Research Hypotheses

1. There is no significant relationship between psychosocial needs and barriers to psychosocial needs of the elderly in Ikare-Akoko, Ondo State.
2. There is no significant relationship between barriers to psychosocial needs and coping strategies of the elderly in Ikare-Akoko, Ondo State.

The Conceptual Framework

Murray's Theory of Psychogenic Needs was the conceptual framework used for the study. American psychologist Henry Murray (1893–1988) developed a theory of personality that was organized in terms of motives, presses, and needs. Murray described a need as a 'potentiality or readiness to respond in a certain way under certain given circumstances' (1938).

Theories of personality based on needs and motives suggest that our personalities are a reflection of behaviors controlled by needs.

While some needs are temporary and changing, other needs are more deeply seated in our nature. According to Murray, these psychogenic needs function mostly on the unconscious level but play a major role in our personality.

Murray Identified Two Types' Needs

1. Primary Needs: Primary needs are basic needs that are based upon biological demands, such as the need for oxygen, food, and water.
2. Secondary Needs: Secondary needs are generally psychosocial, such as the need for nurturing, independence, and achievement. While these needs might not be fundamental for basic survival, they are essential for psychosocial well-being.

The following is a list of needs identified by Murray. According to Murray, all older people have these needs, but each individual tends to have a certain level of each need. Each person's unique levels of needs play a role in shaping his or her individual personality. They are:

Ambition Needs: The ambition needs are related to the need for achievement and recognition.

Materialistic Needs: The materialistic needs center on acquisition, construction, order, and retention.

Power Needs: The power needs tend to center on our own independence as well as our need to control others.

Affection Needs: The affection needs are centered on our desire to love and be loved.

Information Needs: The information needs center around both gaining knowledge and sharing it with others.

Influences on Psychogenic Needs: Each need is important in and of itself, but Murray also believed that needs can be interrelated, can support other needs, and can conflict with other needs.

Methodology

Research Design

A community base quantitative design was used for this study.

Preparation of the Community

The interviewer booked appointment with each of the elderly separately and the researchers had visited each of the elderly once before data collection. This enhanced high response rate and co-operation from the elderly.

Target Population

For this study, the elderly living in Ikare-Akoko, Ondo State at the time of the research will be used. An estimated 10,490 elderly persons (according to the 2006 national census) will be the target Population of the study.

Sample and Sampling Technique

The sample size of 400 elderly people who are above 65 years of age and were able and willing to participate were used in the study. Multistage sampling technique was used. At the first stage of the sampling, three Communities (Ikado, Ilepa and Iyometa) were selected through a simple random sampling from the list of communities in the local government area. At the second stage of sampling, three quarters were selected also by simple random sampling. In the third stage of sampling, 15 houses in each quarter were selected by systematic random sampling technique, i.e. house-hold with elderly persons in every fourth house were selected until the sample size was attained.

Instruments for Data Collection

The data for the study was collected using a structured self-developed interviewer administered questionnaire which was developed from extensive literature search obtained data from respondents. The questionnaire consists of 4 sections. Section A comprises of demographic data of the respondents. Sections B identified the psychosocial needs of the elderly while Section C determines the barriers to psychosocial needs of the elderly and Section D Identified coping strategies of the elderly in Ikare-Akoko, Ondo State.

The instruments were developed in English by the researchers, based on an extensive review of the literature and translated into Yoruba language. The researchers, being aware that most of the

elderly participants might not understand English, a research assistant was recruited to assist in translation.

Validity and reliability of the Instrument

A pilot tested structured interviewer-administered questionnaire was used to collect data. The research instrument used was a self-designed questionnaire to explore the psychosocial needs of the elderly. The instrument was validated and the reliability was established using the test retested method and a retest coefficient of 0.84 was arrived at. Pilot study was conducted in Ikare-Akoko, Ondo State to assess whether the questions are clear and well understood by the participants.

Procedure for Data Collection and Analyses

A pilot tested structured interviewer-administered questionnaire was used to collect data on psychosocial needs of the elderly in Ikare-Akoko of Ondo State. Letters of permission were written to the head of community where respondents were selected for permission to carry out the study. The instrument was made without the respondents' names in order to ensure anonymity and confidentiality. Respondents' consent was obtained after explanations about the nature and purpose of the study. Households were visited to list and identify eligibility. After initial listing, researchers and research assistants visited each household for data collection. The respondents were asked questions based on the questionnaire and explanations made were necessary to elicit the right thought of the respondents.

Descriptive statistics in the form of frequency, percentages, bar chart, and inferential statistics (chi-square) was used to establish the relationship between psychosocial needs and coping strategies of the elderly in Ikare-Akoko, Ondo State. In all analyses, $P < 0.05$ was considered as significant to establish the significant relationship between the variable. The data was inputted into SPSS (Version 22).

Ethical Consideration

In order to safe guard against elderly ethical dilemmas, the researcher ensured that various ethical considerations were put in

place throughout all phases of the study to ensure that the rights of all the participants of the study were respected and protected. The principles of beneficence, respect for human dignity and justice was recognized and embraced throughout the research process. Letters of permission were written to the Chairman/Ruler of Ikare-Akoko, Ondo State to secure entrance into their communities. Prior to the commencement of data collection, informed consent was obtained from each participant.

The purpose of the research and the extent to which the participants were involved in the research was explained to all the participants. Written informed consent was obtained from willing participants before their participation in the study. Their participation was made voluntary. Information provided by the participants was made confidential. Thus, participants' names were not required while answering the interview questions. The identities of participants were also not disclosed during report writing and article publication. Audiotape- and/or videotape-recordings during interview was done only on permission. Question items were structured in such a way that protected the culture of the participants and participants were not forced to respond to any question they were not comfortable with.

Results

Table 1
Socio-Demographic Data of Respondents (n = 400)

S. No.	*Variable*	*Frequency (%)*
1.	**Age (Years)**	
	65–70	145(36.3)
	71–75	155(38.8)
	76 and above	100(25.0)
2.	**Marital Status**	
	Single	89(22.3)
	Married	127(31.8)
	Divorced/Separated	140(35.0)
	Widow/Widower	44(11.0)
3.	**Educational Qualification**	
	Primary	173(43.3)

Cont'd...

Cont'd...

	Secondary	95(23.8)
	Polytechnic	86(21.5)
	University	46(115)
4.	**Religion Affiliation**	
	Christianity	251(62.7)
	Islam	7(1.8)
	Traditional	142(35.5)
5.	**Occupation**	
	Farming	99(24.8)
	Retired	94(23.5)
	Civil servant	102(25.5)
	Trading	95(23.8)
	Combined (Trading and Civil Servant)	10(2.5)
6.	**Monthly Income**	
	<#10,000	104(26.0)
	#10,000-#20,000	203(50.7)
	>#20,000	93(23.3)
7.	**Ethnic background**	
	Igbo	76(19.0)
	Ijaw	208(52.0)
	Epie	99(24.8)
	Others	17(4.3)
8.	**Number of children**	
	One	150(37.5)
	Two	99(24.8)
	Three	93(23.3)
	Above 3	58(14.5)
9.	**Habits**	
	Smoking	15(3.8)
	Tobacco	64(16.0)
	Alcohol	79(19.8)
	No addictive habits	242(60.6)
10.	**Physical activity**	
	Regular walk	97(24.3)
	Only routine work	149(37.3)
	Only household	96(24.0)
	No activity	58(14.5)

Cont'd...

Cont'd...

11.	**Financial dependence**	
	Yes	208(52.0)
	No	192(48.0)
12.	**Living with**	
	Spouse	106(26.5)
	Children and spouse	143(35.8)
	Children only	120(30.0)
	Relatives	17(4.3)
	Alone	14(3.5)
13.	**Prefers to live with**	
	Only Spouse	143(35.8)
	Children and Spouse	257(64.3)

The socio-demographic data of respondents as obtained from the field study is detailed in table 1. Findings show the response of the elderly on different socio-demographic aspects of the ageing in the study locale.

Research Objective One: To identify the psychosocial needs of the elderly in Ikare-Akoko, Ondo State

Table 2

Showing the psychosocial needs of the elderly in Ikare-Akoko, Ondo State (n = 400)

S. No.	*Statement*	*Frequency (%)*
1.	**Feeling lonely**	
	Strongly Agree	183(45.8)
	Agree	188(47.0)
	Disagree	17(4.3)
	Strongly disagree	12(3.0)
2.	**Ill Treatment**	
	Strongly Agree	236(59.0)
	Agree	147(36.8)
	Disagree	12(3.0)
	Strongly disagree	5(1.3)
3.	**Perpetrators**	
	Strongly Agree	89(22.3)

Cont'd...

Cont'd...

	Agree	125(31.3)
	Disagree	169(42.3)
	Strongly disagree	17(4.3)
4.	**I am often anxious**	
	Strongly Agree	116(29.0)
	Agree	92(23.0)
	Disagree	171(42.8)
	Strongly disagree	21(5.3)
5.	**I cannot relax and rest**	
	Strongly Agree	182(45.5)
	Agree	97(24.3)
	Disagree	89(22.3)
	Strongly disagree	32(8.0)
6.	**I am afraid of life with the disease**	
	Strongly Agree	97(24.3)
	Agree	246(61.5)
	Disagree	35(8.8)
	Strongly disagree	22(5.5)
7.	**I do not have confidence in my ability to resume or continue my normal work**	
	Strongly Agree	89(21.5)
	Agree	149(37.3)
	Disagree	150(37.5)
	Strongly disagree	15(3.8)
8.	**I feel physically less productive than prior to falling sick**	
	Strongly Agree	102(25.5)
	Agree	167(41.8)
	Disagree	94(23.5)
	Strongly disagree	37(9.3)
9.	**I fear that people will reject me because of my altered appearance**	
	Strongly Agree	101(25.3)
	Agree	174(43.5)
	Disagree	88(22.0)
	Strongly disagree	37(9.3)
10.	**Talking to my close relatives about my sorrows and fears is difficult**	
	Strongly Agree	133(33.3)
	Agree	170(42.5)
	Disagree	79(19.8)

Cont'd...

Cont'd...

	Strongly disagree	18(4.5)
11.	**I feel insufficiently informed about my disease and the treatment**	
	Strongly Agree	59(14.8)
	Agree	160(40.0)
	Disagree	160(40.0)
	Strongly disagree	21(5.3)

In identifying the psychosocial needs of the elderly in Ikare-Akoko, Ondo State, the study revealed that there is feeling of loneliness as they aged as seen when majority of the respondents 183(45.8%) strongly agreed and 188(47.0%) agreed to the feeling of loneliness as a psychosocial need while only 17(4.3%) disagreed and 12(3.0%) strongly disagreed that the feeling of loneliness is a psychosocial need of the elderly.

Findings also showed that ill treatment is a major psychosocial need as majority of the elderly 236(58.0%) strongly agreed and 147(36.8%) agreed to this statement while about 12(3.0%) disagreed and 5(1.8%) strongly disagreed to it being a need. The elderly feel they are prone to being physically and emotional abused either by family members or caregivers as majority of respondents 214(53.5%) affirming that there are perpetrators of emotional abuse while 186(46.5%) disagreed with this statement. Often times, elderly feel anxious over situations arising and this is evident with research findings which show majority of respondents 116(29.0%) strongly agreed and 92(23.0%) agreed to this statement while 171(42.8%) disagreed that they feel anxious and 21(5.3%) strongly disagreed to the feeling of being anxious.

Comfortable relaxation and sleep is a major psychosocial need of the ageing. Results show majority of the respondents 182(45.5%) strongly agreeing and 97(24.3%) agreeing that as a result of ageing they no longer relax and sleep as they would have loved to. However, 89(22.3%) disagreed and 32(8.0%) strongly disagreed to this statement. Findings also show that they do not have confidence in their abilities to resume or continue their normal work as majority 238(59.5%) affirming to this statement while 162(40.5%) were of a contrary opinion. The elderly/ageing fear that people will reject them due to

their altered physical appearance as majority of the respondents 275(68.8%) affirming yes while about 125(31.2%) disagreed that they will be rejected by people. This shows that most elderly have low self image about themselves as a result of ageing.

Majority of the respondents 133(33.3%0 strongly agreed and 170(42.5%) agreed and noted that talking to close relatives about their sorrows and fears is very difficult while about 79(19.8%) disagreed and 18(4.5%) strongly disagreed and noted that they talk freely about their sorrows and fears with close relatives. Most elderly/aged feel they are not adequately informed about their state of health and treatment regimen as revealed by respondents' response which shows 59(14.8%) strongly agreeing, 160(40.0%) agreeing to this statement while 160(40.0%) disagreed and 21(5.2%) strongly disagreed to this opinion.

Research Objective Two: To determine the barriers to psychosocial needs of the elderly in Ikare-Akoko, Ondo State

Table 3

Respondents view on barriers to psychosocial needs of the elderly in Ikare-Akoko, Ondo State (n = 400)

S.No.	*Statement*	*Frequency (%)*
1.	**Distance**	
	Strongly Agree	167(41.8)
	Agree	166(41.5)
	Disagree	29(7.2)
	Strongly disagree	38(9.5)
2.	**Loss of Spouse**	
	Strongly Agree	136(34.0)
	Agree	115(28.7)
	Disagree	117(29.3)
	Strongly disagree	32(8.0)
3.	**Environment**	
	Strongly Agree	192(48.0)
	Agree	90(22.5)
	Disagree	98(24.5)
	Strongly disagree	20(5.0)

Cont'd...

Cont'd...

4.	**Availability of Social System**	
	Strongly Agree	126(31.5)
	Agree	178(44.5)
	Disagree	86(21.5)
	Strongly disagree	10(2.5)
5.	**Reduced functionality of special senses as a result of ageing**	
	Strongly Agree	177(44.3)
	Agree	176(44.0)
	Disagree	28(7.0)

Results on barriers to psychosocial needs of the elderly in Ikare-Akoko, Ondo State revealed as thus; 167(41.8%) of respondents strongly agreed and 166(41.5%) agreed that distance is a major barrier to accessing psychosocial needs of the elderly. However, 29(7.2%) disagreed and 38(9.5%) strongly disagreed that distance does not affect access. It was also revealed that loss of spouse is a major factor as 136(34.0%) strongly agreed and 155(28.7%) agreed that it greatly hinders them from getting their psychosocial needs met. But 117(29.3%) of the respondents disagreed to this statement while 32(8.0%) strongly disagreed to loss of spouse being a barrier. The environment in which these elderly live also play a major role as seen in the research findings where majority of the respondents 192(48.0%) strongly affirming and 90(22.5%) agreed that their environment serve as barrier to getting psychosocial needs met. However, 98(24.5%) disagreed and 20(5.0%) strongly disagreed that environment is a barrier. Results also show that availability of a social system that caters for the psychosocial needs of the elderly is a major barrier as majority of the respondents 129(31.5%) strongly agreed and 178(44.5%) agreed while 86(21.5%) disagreed and 10(2.5%) of the respondents strongly disagreed to this statement. Furthermore, reduced functionality of special senses as a result of ageing is seen as a major barrier to accessing psychosocial needs by the elderly as majority of respondents 177(44.3%) strongly agreed and 176(44.3%) agreed to this statement while only 28(7.0%) of respondents disagreed and 19(4.8%0 strongly disagreed to this statement.

Research Objective Three: To identify coping strategies of the elderly in Ikare-Akoko, Ondo State

Table 4

Showing responses to coping strategies of the elderly in Ikare-Akoko, Ondo State (n = 400)

S.No.	*Statement*	*Frequency (%)*
1.	**To be informed**	
	Strongly Agree	187(46.8)
	Agree	178(44.5)
	Disagree	22(5.5)
	Strongly disagree	13(3.3)
2.	**Maintaining the habits of life**	
	Strongly Agree	194(48.5)
	Agree	188(47.0)
	Disagree	14(3.5)
	Strongly disagree	4(1.0)
3.	**Maintaining social contact**	
	Strongly Agree	280(70.0)
	Agree	98(24.5)
	Disagree	13(3.3)
	Strongly disagree	9(2.3)
4.	**Include family or informal caregivers**	
	Strongly Agree	186(46.5)
	Agree	185(46.3)
	Disagree	17(4.3)
	Strongly disagree	12(3.0)

In identifying coping strategies of the elderly in Ikare-Akoko, Ondo State with respect to being informed, majority of respondents 187(46.8%) strongly opined they cope better when they are well informed about their ageing status, 178(44.5%) agreed also to this statement while about 22(5.5%) disagreed and 13(3.3%) strongly disagreed that being informed doesn't play much role to their coping with psychosocial needs. Majority of respondents 184(48.5%) strongly agreeing and 188(47.0) agreed that maintaining the habits of life help them cope better with their psychosocial needs while 14(3.5%)

disagreed and 4(1.0%) strongly disagreed to this coping strategy. Maintaining social contact is seen as a vital coping strategy for the elderly as majority of the respondents 280(70.0%) strongly agreed and 98(24.5%) agreed to this strategy while about 13(3.3%) of them disagreed and 9(2.3%) strongly disagreed to it. It was also observed from the results that family member or informal caregiver inclusion to the coping plan of the elderly is very vital as majority of the respondents 186(46.5%) strongly agreed and 185(46.3%) agreed while about 17(4.3%) disagreed and 12(3.0%) strongly disagreed to this coping strategy for the elderly in Ikare-Akoko, Ondo State.

Research Hypothesis and Inferential Statistics

1. There is no significant relationship between psychosocial needs and barriers to psychosocial needs of the elderly in Ikare-Akoko, Ondo State.

Table 5

Inferential statistics of psychosocial need – 'I feel physically less productive than prior to falling sick and Barriers to psychosocial need Reduced functionality of special senses as a result of aging

		Reduced functionality of special senses as a result of ageing					*Pearson Chi-Square Test*		
		Strongly agree	*Agree*	*Disagree*	*Strongly disagree*	*Total*	*Value*	*df*	*Asymp. Sig (2-sided)*
I feel physically less productive than prior to falling sick	Strongly agree	8 4.5%	82 46.6%	6 21.4%	6 31.6%	102 25.5%	150.950	9	0.000
	Agree	75 42.4%	78 44.3%	9 32.1%	5 26.3%	167 41.8%			
	Disagree	82 46.3%	0 0.0%	7 25.0%	5 26.3%	94 23.5%			
	Strongly disagree	12 6.8%	16 9.1%	6 21.4%	3 15.8%	37 9.3			
Total		177 100.0%	176 100%	28 100%	19 100%	400 100%			

From table 5 above, with a p-value of 0.000, there is a significant relationship between psychosocial needs and barriers to psychosocial

needs of the elderly in Ikare-Akoko, Ondo State. Therefore, the null hypothesis rejected.

2. There is no significant relationship between barriers to psychosocial needs and coping strategies of the elderly in Ikare-Akoko, Ondo State.

Table 6

Inferential statistics of psychosocial need 'I feel physically less productive than prior to falling sick' and Coping strategy 'Being involved in decision-making'

		Being involved in decision-making					*Pearson Chi-Square Test*		
		Strongly agree	*Agree*	*Disagree*	*Strongly disagree*	*Total*	*Value*	*df*	*Asymp. Sig (2-sided)*
I feel physically less productive than prior to falling sick	Strongly agree	93 52.0%	7 5.7%	2 2.5%	0 0.0%	102 25.5%	189.934	9	0.000
	Agree	29 16.2%	95 77.9%	34 42.0%	9 50.0%	167 41.8%			
	Disagree	44 24.6%	9 7.4%	32 39.5%	9 50.0%	94 23.5%			
	Strongly disagree	13 7.3%	11 9.0%	13 16.0%	0 0.0%	37 9.3%			
Total		179 100.0%	122 100.0%	81 100.0%	18 100.0%	400 100.0%			

Results from Table 6 revealed a p-value of 0.000 which therefore indicates that there is significant relationship between psychosocial needs and coping strategies of elderly to these psychosocial needs in Ikare-Akoko, Ondo State. Thus the null hypothesis is rejected.

Discussion

The results in Table 2 showed the psychosocial needs experienced by majority of the elderly in the study area. Most of these psychosocial needs identified include; the feeling of loneliness, ill treatment from family members, caregivers and members of the society, physical and emotional abuse by perpetrators, always anxious about circumstances of life, inability to relax and rest as and when needed, always afraid of life as a result of their new state of health with ageing and diseases, lack of confidence in their ability to resume or continue normal works, the

feeling of being less productive than prior to falling sick or aged, the fear that people will reject them because of their altered appearance, inability/difficulty to talk freely and share their sorrows and fears with close relatives and the feeling of insufficiently informed about their disease state and the treatment regimen by both family members and caregivers in the society.

The research findings agree with the findings of Kennon and Jonathan (2012) who several common abused psychosocial needs of the elderly. It also agrees with the findings of the Michael D Rawilns (2015). Therefore, psychosocial needs of the elderly and ageing should be given their due attention so as to properly understand the changes which occur as a result of ageing and boost the health and well-being of the elderly.

The result on Table 3 showed clearly the barriers and militating factors against the psychosocial needs of the elderly in the study area. Among barriers experienced by the elderly in this study area are; distance from spouse, loved ones and other social needs, loss of spouse, the environment in which they live in, availability of social system that caters for the psychosocial needs of the elderly and reduced functionality of special senses as a result of ageing. This is in line with the finding of Murray (1938) who outlined several psychosocial needs of the elderly and some factors that hinder access to these needs by the elderly. Therefore. the elderly and ageing should be properly enlightened on better ways of coping with these psychosocial needs when they arise.

Results from Table 4 revealed coping strategies of the elderly in Ikare-Akoko, Ondo State. Amongst the coping strategies adopted by elderly in the study as revealed by research finding to include; to be informed about their condition of health, treatment regimen and other relevant concerns of the aged. It also highlighted the maintenance of habits of life such as regular walks, tobacco, alcohol, etc. which they engaged in while younger. Some other coping strategies are; maintaining social contacts through a social system that encourages them to meet with old friends and colleagues, movies, technology etc., and the inclusion of family or informal caregivers, since they play a major role in assisting the elderly find satisfaction and a sense of well-being in the society. This finding affirms that of WHO

(2007), Kansas (2007) and Meiko (2010) who enumerated in their respective studies that the role of family members and caregivers in the care of the elderly and helping them cope with their psychosocial needs in society is of great impact. (WHO 2007)

Inferential statistics from Tables 5 and 6 revealed that there is a significant relationship between psychosocial needs to both barriers to accessing these psychosocial needs and the coping strategies adopted by elderly in the study area to these psychosocial needs.

Implication for Nursing Practice

The health expectations and psychosocial needs of the elderly and common adjustments that occur with ageing must be fully understood by the nurses, this is because the psychosocial needs that confront elderly persons are the result of priorities, policies and practices of societies associated with social isolation, apparent reduction in family support, inadequate housing, impaired functioning, mental illness, widowhood, limited options for living arrangement and dependent life. The nurses are well trained and equipped to resolve these. Therefore, barriers to psychosocial needs of the elderly in the study area can be reduced so as to enhance their coping strategies to the ageing process and ensure their satisfaction and well-being. Also the barriers and challenges faced and encountered by the elderly in accessing their psychosocial needs should be looked into.

In addition, nurses have a responsibility with regard to ageing; and are involved in the organization of care for older people in different care settings such as nursing homes, acute care and long-term care settings, and they need to understand the changes involved in the ageing process (Omisakin, *et al.,* 2016).

The government, policy makers, families, nurses and caregivers should ensure that these barriers are reduced to the minimal by providing support systems that caters for the well-being of the elderly in society.

Conclusion

Based on the findings of this study, the health expectations and psycho-social needs of the elderly and common adjustments that occur with ageing be fully understood so as to give a full care impact on the

psycho-social needs of the elderly. Therefore, barriers to psycho-social needs of the elderly in the study area be reduced so as to enhance their coping strategies to the ageing process and ensure their satisfaction and well-being.

Recommendations

1. Since it was found out that psycho-social needs and health of the elderly can be protected through mass education of family and care givers from all sources to help promote good self image in the elderly.
2. Also the barriers and challenges faced and encountered by the elderly in accessing their psycho-social needs should be looked into. The government, policy makers, families, caregivers should ensure that these barriers are reduced to the minimal by providing support systems that caters for the well-being of the elderly in society.
3. Also the coping strategies which were highlighted by this study be adopted while caring for the elderly in society.

Since this study was limited to Ikare-Akoko, Ondo State, further/more studies should be carried out in other local governments of Ondo state and regions of the country to fully understand the psychosocial needs of the elderly, barriers to these needs and coping strategies adopted by the elderly and ageing in society.

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Prevalence of Functional Limitations among Older Adults of South India

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ABSTRACT

Objectives of this cross-sectional study were to determine the prevalence of functional limitations, and sex difference among 140 randomly selected older men (N=55) and women (N= 85) elderly, age varying 60 years and above, living in Hyderabad city, (Telangana State) A Short Physical Performance Battery (SPPB) as a measurement of physical performance was used as a measure of data collection. Each participant was administered SPPB individually. Functional limitation was classified as a participant with SPPB score < 9. Other measures included, self-reported health status, history of smoking and alcohol, anthropometric measurements, physical functions, and disabilities. The data was analysed keeping in mind age, sex, marital status, education of participants. Chi-square test and t-test were used. Trend analysis was done using logistic regression to determine the pattern of difference in functional limitations in both the sexes. The prevalence of functional limitation was 62.9 per cent. Older women had poorer physical performance measures than older men (OR:2.63; 95%CI:

1.29–5.35). Older women had poorer physical functions than men counterparts. Components of SPPB showing sex differences were poor balance and poor lower limb muscle strength. The pattern of functional limitation with progressing age was different among men and women in the participants of this study.

Keywords: Elderly, Functional Limitation, SPPB, Sex difference

Mobility is the most important function for independent living in old age. Elders with impaired physical functions encounter early mobility disability (Janssen *et al.,* 2002), chronic diseases (Jindai *et al.,* 2016) and frequent hospitalisation (Fried *et al.,* 2001; Cawthon *et al.,* 2009). Functional limitation is also a predictor of early mortality (Nagi, 1964, 65, 91; Bernard *et al.,* 1997; Cooper *et al.*, 2010; Rolland *et al.,* 2006; Goldman *et al.,* 2014) suggested disablement model, that proposed three major consequences of disease or pathology – impairment resulting in anatomical and physiological abnormalities resulting from the pathological process; functional limitation as the loss of ability to perform tasks, obligations of usual roles and normal daily life and the third: disability to describe a person's pattern of behaviour in daily life. Disability is an end-stage disablement process measured by ADLs. Functional Limitation is a precursor to disability on the pathway (Verbrugge and Jette, 1994), which represents the interaction of performance ability with a person's environment.

With a growing older population globally, it is hypothesised that incidence/prevalence of functional limitation as well as disabilities would be higher (Sagardui-Villamor *et al.,* 2005; Parker *et al.,* 2008). Global prevalence of functional limitation, in older populations, is not known. Limited data from available independent studies suggests that there are considerable variations across countries in patterns of functional limitation, and within countries over time, with no noticeable explanations (Chatterji *et al.,* 2015); for example, in Nigeria functional limitation was reported to be 22.5 per cent over all; 12.4 per cent in elders aged 60 to 64 years and 98.3 per cent in the aged 75 years and above; prevalence was higher in women than men in all age groups (Abdul raheem *et al.,* 2011) another study from Sothern Italy, reported 15.7 per cent mobility impairment.

Low skeletal muscle mass, is considered to be the major factor associated with functional limitations in older ages (Evans, 1995;

Janssen *et al.,* 2002). Previous studies reported that loss of muscle mass is more in women than men in older ages and an increase in fat in the body coupled with the loss of muscle mass maximises the effects of functional limitations in women (Zamboni *et al.,* 1999). Women have a steeper rate of functional decline in old age across age groups (Beckett *et al.,* 1996; Crimmins *et al.,* 1997). Branch *et al.,* (1991), suggested that women enjoyed a longer life over men but men had the advantage of having a lower duration of disabled life. Ageing women have lower rates of some chronic diseases, (e.g. coronary artery disease or chronic lung disease), more utilization of health facilities and a higher incidence of self-reported disabilities (Kandrack *et al.,* 1991). A study done on components of the prevalence of mobility disability concluded that incidence, recovery, and mortality dynamically influenced sex differences in the prevalence of mobility disability, however, the incidence was the most prominent factor influencing the prevalence of mobility disability (Leveille *et al.,* 2000). The incidence of disability depends on functional limitations. Rising proportions of females in the older age groups are an on-going feature of the ageing population (Siegel, 1984; Soldo and Agree, 1988; Rosenwaike and Logue, 1985; Lutz *et al.,* 2008; United Nations, 2015), it is expected that proportion of women survivors will be more in oldest-old age groups and are more likely to be living alone.

The situation in low and middle-income countries has been much less extensively studied with very limited data available on the prevalence of severe disability among the elderly (Chatterji *et al.,* 2015). The implications of poor physical functions and gender-specific differences in relation to functional limitations are less-described in the Indian older population. For instance, elders with poor physical functions frequently fall. Sharma *et al.,* (2017) reported a difference in falling among elderly categorised by gender, upon trend analysis but they could not find objectively measured data on functional limitations of Indian elderly persons.

In this paper, we planned to measure functional limitation with subjective and objective performance measurements using Short Physical Performance Battery (SPPB), a test for lower extremity function was considered for performance measurement of physical functions (Guralnik *et al.,* 2000; Simonsick *et al.,* 2001), These

performance-measurements, as shown earlier, captured a hierarchy of functioning in non-disabled persons, and predicted the onset of incident disability as well (Seeman *et al.,* 1994; Guralnik *et al.,* 1994a, 1995; Gill *et al.,* 1995).

Objectives of the Study

It is hypothesised that the prevalence of functional limitations in the elderly participants would be higher than those reported from developed countries and there may be a difference in the pattern of functional limitations within sexes. The specific objectives of this research were, to study the prevalence of functional limitations in older men and women of urban south India, and determine the gender-specific differences in functional limitations using objective measurement.

Materials and Methods

Sample

In this cross-sectional study, 140 urban community-dwelling elders (55 men and 85 women) aged 60 years and above, were selected randomly from communities in urban parts of Hyderabad (Telangana State). All the participants were asked to provide written consent for participation in this study. Participants having terminal illnesses like (HIV/AIDS and cancers) and/or missing limbs were excluded.

Each participant was interviewed and clinically examined individually by a trained investigator. The information regarding age, sex, marital status, education, self-reported health status, medical history, physical functions, chronic diseases and functional disabilities was collected by using questionnaires and clinical examination forms developed from leading international studies – World Health Organization Study on global Ageing and adult health (SAGE) (Kowal *et al.,* 2012), Mobility and Independent Living in Elders Study (Singh *et al.,* 2017) and The Lifestyle Interventions and Independence for Elders (LIFE) (Fielding *et al.,* 2011) questionnaires.

Measurement of Functional Limitation

Physical performance measures were obtained by Short Physical Performance Battery (SPPB) which is a battery of three measurements

(Guralnik *et al.,* 2000; Seeman *et al.,* 1994; Jette *et al.,* 1999): balance measured by side by side, semi-tandem and tandem stands for 10 seconds, and lower limb strength measured by chair-stand test for 5 times in 10 seconds and walking gait speed for 4 meters. Each component's score ranges from 0–4 and a composite score of short physical performance battery is produced which measures from 0–12. (Guralnik *et al.,* 1994b) Elders with SPPB score of < 9 were classified as having functional limitations.

Physical Functions and Anthropometric Measurements

Subjective measures of physical functions were collected by using standard questions experiencing various difficulties in walking, standing, stooping, climbing, etc. in the past 30 days (Table. 2). Height was recorded in centimetres (cm), removing footwear, using Stadiometer; weight was recorded in kilogram (kg) by digital weighing machine calibrated with SICA scale, with light clothing; Body Mass Index (BMI) was calculated as weight (kg)/height (m^2) and waist and hip circumferences were recorded using standard procedures (Singh *et al.,* 2017). Data on demographic characteristics included age, sex, marital status, level of education, current working status, history of smoking, and alcohol consumption. Osteoarthritis was reported if diagnosed by any doctor.

Statistical Analysis

Analysis of data was done by using SPSS 21.0 (SPSS Inc., Chicago, IL, USA). For sex differences and basic characteristics of the study population means + standard deviation and odds ration with 95 per cent confidence interval. Distribution of physical functions of men and women were also calculated in proportions, means and standard deviation and odds ratio with 95 per cent confidence interval. Objective measurement of physical performance was calculated using a composite measure of balance, gait speed and chair stand test, and odds ratio and confidence interval was calculated for difference in men and women. Odds ratio (OR) for each component of SPPB separately for the difference in both the sexes were also calculated. chi-square (x^2) analysis for the categorical variables and t-test analysis for the continuous variable were used. Odds ratio and confidence intervals were calculated by bivariate linear logistic regression. Trend analysis

by age and sex for functional limitations to determine the difference in trend in both the sexes was performed.

Ethical clearance was obtained from the Institutional Review Board of MIMS.

Results

Demographic Characteristics

Table. 1, describes demographic characteristics of our study population: mean age of both men and women was similar; more women were living single than men; over all education status of our study population was 90 per cent educated, but women had less education than men; around 40 per cent men and 60 per cent women were still working; more women reported poor health status compared to men. height, weight and waist circumference was higher in men and more men consumed cigarettes and alcohol than women (Table 1.).

Table 1

Baseline Characteristics of Older Men and Women in the Study

Characteristics	*Women (n=85)*	*Men (n=55)*	*Total (n=140)*	*P value*	*Odds ratio (OR)*	*95% CI*
Age (years) (mean)*	68.20 ± 7.74	67.87 ± 7.23	68.07 ± 7.52	0.84	–	–
Marital status (single) (%)	65.9	16.4	46.4	< 0.001	9.87	4.28 – 22.94
No education (%)	15.3	1.8	10.0	0.007	9.75	1.23 – 76.83
Currently NOT working (%)	42.4	60.0	49.3	0.03	0.49	0.24 – 0.97
Body Mass Index (BMI) (mean)*	25.98 ± 6.24	25.22 ± 4.07	25.68 ± 6.24	0.42	–	–
Height (mean)*	153.81 ± 8.88	166.02 ± 8.22	158.61 ± 10.47	< 0.001	–	–
Weight (mean)*	61.38 ± 14.71	69.75 ± 13.06	64.66 ± 14.62	0.001	–	–
Waist circumference	98.72 ± 13.04	104.29 ± 11.49	100.91 ± 12.71	0.01	–	–
Smoking (%)	3.5	29.1	13.6	< 0.001	0.89	0.02 – 0.32
Alcohol (%)	5.9	34.5	17.1	< 0.001	0.11	0.04 – 0.34
Self-reported health status (poor) (%)	60.0	29.1	47.9	< 0.001	3.65	1.79 – 7.55

Physical Functions

In our study 62.9 per cent older people had functional limitation out of which women had more loss of physical functions than men in our population (Table 2). Odds ratios for walking for short distance, long distance, extending arms above the shoulders and osteoporosis were prominently higher for women gender on comparison between the sexes. Within sexes: Older women had more problems with osteoarthritis, body aches and pains, walking for long distances and difficulty in climbing stairs (>60%). Older men had more problems with osteoarthritis and difficulty in climbing stairs (> 50%).

Table 2

Physical Functions of Older Men and Women: Differences in Both Sexes

Physical Functions	*Women (n=85)*	*Men (n=55)*	*Total (n=140)*	*P value*	*Odds Ratio (OR)*	*Confidence Interval (CI) (95%)*
Difficulty in walking for short distance (100 m) (self-reported) (%)	38.8	7.4	26.6	<0.001	7.93	2.62 – 24.02
Difficulty in standing for long periods (self-reported) (%)	42.4	20.0	33.6	0.005	2.93	1.33 – 6.46
Difficulty in standing from sitting position (self-reported) (%)	55.3	30.9	45.7	0.004	2.76.	1.35 – 5.64
Difficulty in stooping, keeling (self-reported) (%)	58.8	41.8	52.8	0.03	1.98	0.999 – 3.95
Difficulty in extending arms above the shoulder (self-reported) (%)	31.8	7.3	22.1	<0.001	5.95	1.94 – 18.10
Difficulty in climbing stairs (self-reported) (%)	65.1	51.9	59.9	0.08	1.72	0.86 – 3.47
Difficulty in walking for long distances (1 Km) (self-reported) (%)	69.4	34.7	55.4	<0.001	4.72	1.97 – 9.26
Body aches and pains (last 30 days) (%)	70.2	45.5	60.4	0.003	2.83	1.39 – 5.74
Osteoarthritis (%)	81.2	54.5	70.7	0.001	3.59	1.36 – 2.96
Use of assistive device for walking (%)	10.6	9.1	10.0	0.50	1.81	0.37 – 3.74

Functional Limitation

The prevalence of functional limitation measured by short physical performance battery, in our study population, was 62.9 per cent of which 30.7 per cent were men and 69.3 per cent were women. Detailed measurements are described in Table 3. Women had a poorer mean physical performances compared with men ($p < 0.05$). A greater proportion of women (71.8%) had functional limitation than men (49.1%) ($p < 0.05$). On analysing by components of short physical performance battery, it was observed that significantly more women had poor balance ($p < 0.05$) and lower limb strength (chair stand) ($p < 0.05$) than men. The proportion of women and men having poor 4-meter walking speed, (gait speed) was not significantly different ($p = 0.34$) but higher in both sexes and overall population around 40.

Table 3
Objective Measurement of Functional Limitations by Sex

Functional limitation	*Women (n = 85)*	*Men (n = 55)*	*Total (n = 140)*	*P value*	*Odds ratio (OR)*	*95% Confidence interval (CI)*
Short Physical Performance battery (score) (mean ± SD)	6.89 ± 3.65	8.51 ± 3.33	7.53 ± 3.61	0.009	–	–
Functional Limitations (SPPB score ≤ 9) (%)	71.8	49.1	62.9	0.006	2.63	1.29 – 5.35
• Balance (poor < 3) (three tandem stands) (%)	72.9	47.3	62.9	0.002	3.00	1.47 – 6.13
• Gait speed (poor < 3) (4 meter walk) (%)	41.2	36.4	39.3	0.34	1.22	0.60 – 2.46
• Chair stand (poor < 3) (lower limb muscle strength) (%)	37.6	20.0	30.7	0.02	2.14	1.09 – 5.33

Table 4
Trend Analysis of Functional Limitation by Age and Sex

Functional limitation by (Age x Sex interaction)	*P value*	*Odds ratio (OR)*	*95% Confidence Interval (CI)*	
			Lower	*Upper*
Trend analysis of Functional limitation measured by SPPB by age and sex interaction	*0.006*	*1.28*	*1.07*	*1.54*

Upon trend analysis patterns of functional limitation, with increasing age was found to be different in both the sexes – women having higher odds than men (OR:1.28; 95% CI:1.07–1.54)

Discussion

The present study was aimed at examining sex differences and prevalence of functional limitation among community-dwelling, urban elderly population. Functional limitation, measured using short physical performance battery, recorded older women having significantly poorer mean scores than older men in our study. Nearly half of older men and two-thirds of the older women were found to have poor physical performance (SPPB score < 9), indicating a high prevalence of functional limitation in the Indian elderly. Zunzunegui *et al.,* (2015), reported lower mean physical performance scores among older women compared with older men, the study was done among sampled populations from Canada, Albania, Brazil, and Colombia. A study on American Indians (Goins *et al.,* 2018) also reported more elderly women to have low physical performance scores than elderly men. Nakano *et al*., (2014) measured poor physical function among Brazilian elderly women aged 70 and above using SPPB, too reported poor physical functions are higher in women than men at a higher age group. Singh *et al.,* (2017) reported poor median scores of SPPB in elderly women than elderly men from rural Indian elders above 60 years of age. This has been attributed to the fact that older women are predisposed earlier to frailty syndrome resulting from a greater loss of muscle mass and muscle strength compared with older men and to survival bias among older women. The pattern showing increased odds of functional limitations with increasing age was supported by this Brazilian study (Nakano *et al.,* 2014).

A greater proportion of women in this study had poor balance than men. Most researches in the past have studied balance as a risk factor for falls. Wolfson *et al.,* (1994) for instance, reported impairments in balance among elderly women due to limited postural control under conditions stressing balance among them, when compared with men. Some others, however, found no sex differences in balance, (Nakagawa *et al.,* 2014) or found men having poor balance compared with women (Gale *et al.,* 2016). It is worthwhile to note that

studies that found men having poorer balance in comparison with women also showed frailty among women as an independent risk factor of falls (Ibid) and therefore women may be equated to having worse parameters wherein frailty takes precedence over most others.

Performance to do chair stand test was significantly poorer among older women than older men in our study. Chair stand tests used universally as a marker for sarcopenia, and lower limb muscle strength capability (Pinheiro *et al.,* 2016), as well as detecting the decline in functional independence. Previous studies reported that lower extremity performance measures (chair stand test and 6-meter walk) are correlated with body composition and skeletal muscle parameters: smaller muscle area and reduced muscle attenuation leading to greater fat infiltration into the muscle – was associated with poorer lower extremity performance (Visser *et al.,* 2002) Most important body composition form poor performance was muscle area in older men and total body fat in older women. Both lower muscle mass and higher fat infiltration was more prevalent in older women than older men (Sibbritt *et al.,* 2007). A significantly greater proportion of women reported inability to walk for short and long distances and perform a wide range of movements including raising arms above shoulders, stooping, kneeling, and getting up from sitting on the floor or a chair. They also reported significantly more body aches and pains than men. Difficulties with walking for short distances and walking for long distances were found to be poorer in women of rural Indian population (Singh *et al.,* 2017).

More women than men reported poor self-rated health. A very large proportion (>80%) of the women were found to be suffering from osteoarthritis, which is a common cause of physical difficulty and may directly impact the ability to perform movements. Sibritt *et al.,* (2007) showed an association between pain and stiff joints with declining physical function among older Australian women. Osteoarthritis was significantly higher in men for falls in the rural Indian population in our previous study (Sharma *et al.,* 2017). and was independently associated with falls in Indian older men with odds of 6.9 folds increased risk.

Conclusion

We concluded that women had poorer physical performance or in other words greater functional limitations, than their men counterparts. Sex differences in functional limitations were due to poor balance and lower limb muscle strength which have a composite effect on the physical functions of older men and women. The pattern of functional limitation in men was found to be significantly different from women with progressing age in our study population.

Recommendation

The investigators recommend that specific interventions should be planned and followed routinely in clinics to improve balance and lower limb muscle strength, with a greater focus towards women. Global gender-based evaluations are needed in the elderly population to look into sex differences while dealing with their health problems.

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Health Problems of the Elderly Santhal Population of Medinipur (West Bengal)

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ABSTRACT

This cross-sectional, ex-post-facto research was conducted to examine the prevalence of different common physical health problems to understand the overall health condition of 321 elderly (141 males and 180 females) tribals (Santhal) Medinipur Sadar block. A structured interview schedule was used for data collection. Data of different physical problems/diseases were collected from self-report of the participants or previous diagnosis. The present study revealed that the prevalence of most of the problems/diseases-studied was high among the study population. Vision problems, joint pain, excessive intestinal gas, hypertension, and abdominal pain were very common among the elderly Santhal population. The elderly population doesn't take medical help in most of the cases. Most troubling is their belief that these problems are inevitable, and part of the old age. Government health insurance schemes, more accessible health care facility and awareness programmes can help improve the situation.

Keywords: Old age, Geriatric, Tribal population, Disease, Health.

With the rapid changes in technology and the advancement in science, as well as improvement in health services people are living

longer (Gaurav *et al.,* 2015). India presently has around 90 million elderly (Kusuma 2015) and by 2050 the number is expected to increase to 315 million (Nagoor *et al.,* 2014). Traditionally elderly members of the household had control and power but now in changing social roles, they have become one of the most neglected and vulnerable sections of the community (Singh 2015). Though the share and number of the elderly population are increasing rapidly, not enough attention has been given towards the problem of the elderly (Sahu *et al.,* 2018). Health problems of the elderly prevent them from living in peace and wellbeing in the last part of their life (Reji and Kaur 2013).

The tribes of India comprise about 8 per cent of the total population of the country (Arlappa *et al.,* 2013) having probably the largest number of tribal communities in the world (Bisai *et al.,* 2009). Santhal is the largest Adivasi (indigenous) community in the Indian subcontinent and mainly found in Jharkhand, West Bengal, Bihar, Odisha, and Assam (Dash and Adhikari 2018). The elderly tribal population is one of the most neglected sections even to the academic society in India. Limited data is available on the problems of the elderly tribal population and needs rigorous study.

Ageing is a very crucial stage and needs focused medical care (Kusuma 2015). Information on the morbidity profile of the elderly is the basis of any meaningful plan of action to improve the quality of life of this section of the population (Kamble *et al.,* 2012). Generally, with declining health, an individual can lose their independence, social roles, experience economic hardship, become isolated, and change self-perception (Dzuvichu 2005). Numerous studies were conducted in different areas to understand the problems of the elderly population (Sidik *et al.,* 2004; SPO 2007 Paltasingh and Tyagi 2012; Ramchandra and Salunkhe 2014; Mane 2016; Bhattacharyya 2017; Tanyi *et al.,* 2018)

Objective

The objective of the present study was to examine the prevalence and treatment of different common physical health problems to

understand the overall health condition of the elderly (60 years and above aged) Santhal population of Medinipur Sadar Block, Paschim Medinipur, West Bengal, India. It was also aimed to find out the sex differences in the prevalence of the health problems in the present sample.

Method

The sample in this cross-sectional study and also, the ex-post-facto study consisted of 321 elderly Santhal tribes (141 were males and 180 were females), age varying 60 years and above. The respondents were selected by purposive sampling method from 12 villages (Saterdanga, Malida, Pachra, Khaldangi, Vadulia, Jagul, Intilika Chak, Shiromoni, Satgerya, Shankati, Kuikota, Panchkhuri) of Medinipur Sadar Block of Paschim Medinipur district, (West Bengal). All the available/accessible elderly people from the above-mentioned villages were included in this study. Participation in this study was voluntary and only those elderly persons were included who agreed to participate voluntarily. As most of the villagers don't have a large number of Santhal population, villages were selected using a purposive sampling method.

Data was collected using a structured scheduled and interview method. Some common physical problems/diseases such as eye problems, hearing problems, stroke, diabetes, skin problems, symptoms of arthritis, diarrhea, nausea, vomiting, constipation, symptoms of asthma were included in the present study. Data on different physical problems/diseases were collected from the self-report of the participants. Data on different other problems/diseases (Tuberculosis, Cardiac morbidity, Diabetes) were collected from previous medical diagnosis and blood pressure was measured to understand the hypertension status.

The analysis data was done using the Statistical Package for Social Science (SPSS) version 16.0. P-value < 0.05 was considered as statistically significant.

Findings and Analysis

Table 1
Socio-demographic Profile of Study Population

Socio-demographic Status	*Male*		*Female*		*Total*	
	n	*%*	*n*	*%*	*n*	*%*
Age-group (in years) wise distribution of study population						
60–69	104	73.76	137	76.1	241	75.08
70–79	35	24.82	37	20.6	72	22.43
≥80	2	1.42	6	3.3	8	2.49
Total	141	100	180	100	321	100
Educational Status of the study participants						
Pre-literate	130	92.2	174	96.6	304	94.7
Primary	3	2.1	3	1.7	6	1.9
Upper Primary	8	5.7	3	1.7	11	3.4
Total	141	100	180	100	321	100
Marital Status of the participants						
Unmarried	0	0	4	2.2	4	1.3
Married	117	82.98	75	41.7	192	59.8
Widow/Widower	24	17.02	101	56.1	125	38.9
Total	141	100	180	100	321	100
Occupational status of the participants						
Homemaking	66	46.80	128	71.1	194	60.5
Farmer	69	48.94	46	25.7	115	35.9
Labor	3	2.13	3	1.6	6	1.8
Others	3	2.13	3	1.6	6	1.8
Total	141	100	180	100	321	100

Table 1 depicts a clear picture of the socio-demographic status of the study population. Among 321 participants, 75.08 per cent of individuals were young-old (60–69 years) and 22.43% of individuals were middle old (70–79 years). Only 2.49 per cent of study participants were older old (80 years and above). Illiteracy is very high among the study participants. Most of the study participants were illiterate. Only

6 per cent and 11 per cent of individuals had crossed the primary and upper primary levels. 59.8 per cent of participants were married and 38.9 per cent of individuals were widow/widower. Most of the study participants didn't have a permanent occupation and helped in household activity and earning members (60.5%). 35.9 per cent of individuals were farmers and 1.6 per cent were labour. Others included guards, shopkeepers.

Table 2
Prevalence of Various Physical Problems among the Study Population

Physical problems and diseases	*Male*				*Female*				χ^2 *Value*
	Yes	*%*	*No*	*%*	*Yes*	*%*	*No*	*%*	
Vision Problems	74	52.5	67	47.5	112	62.2	68	37.8	3.078
Hearing Problems	2	1.4	139	98.6	2	1.1	178	98.9	0.061
Skin Problems	7	5.0	134	95.0	12	6.7	168	93.3	0.411
Joint Pain	117	83.0	24	17.0	156	86.7	24	13.3	0.846
Chronic cold and cough	10	7.1	131	92.9	32	17.8	148	82.2	7.939*
Abdominal Pain	33	23.4	108	76.6	36	20.0	144	80.0	0.543
Diarrhea	5	3.5	136	96.5	7	3.9	173	96.1	0.026
Vomiting	5	3.5	136	96.5	3	1.7	177	98.3	1.149
Nausea	11	7.8	130	92.2	20	11.1	160	88.9	0.993
Constipation	6	4.3	135	95.7	10	5.6	170	94.4	0.282
Excessive intestinal gas	22	15.6	119	84.4	52	28.9	128	71.1	7.868*
Tuberculosis	3	2.1	138	97.9	3	1.7	117	98.3	0.092
Diabetes	0	0	141	100	7	3.9	173	96.1	5.606*
Cardiac disease	0	0	141	100	1	0.6	179	99.4	0.786
Hypertension	80	56.7	61	43.3	110	61.5	69	38.5	.727

* $p < 0.05$

Table 2 shows the various physical problems of the study population. Most of the individuals reported vision problems. Vision problems were reported by 52.5 per cent of males and 62.2 per cent of female participants. A few participants (1.4% males and 1.1% female) had hearing problems. Skin problems were found among 5 per cent males and 6.7 per cent females. Few of the participants were diagnosed with diabetes. Joint pain was very common in the study population. Most of the participants (83% male and 86.7% female) reported having

joint pain. Chronic cold and cough were higher among females (17.8%) compared to males (7.1%). Abdominal pain was reported by 23.4 per cent of males and 20 per cent of females of the study population. A few individuals (3.5% male and 3.9% female) had reported diarrhea. It was found that 2.1 per cent of males and 1.7 per cent of females had tuberculosis. Only a few participants reported vomiting problems (3.5% male and 1.7% female). More female participants (11.1%) reported nausea than male participants (7.8%). From this study, it is also found that 4.3 per cent of males and 5.6 per cent of females were suffering from constipation. The prevalence of hypertension was very high among the study population, 56.7 per cent of males and 61.5 per cent of females had hypertension.

Table 3

Ever Visited a Doctor for the Specific Problem

Problems	*Male*		*Female*		*Total*	
	n	*%*	*n*	*%*	*n*	*%*
Visited doctor for vision problems						
Yes	20	14.2	30	16.7	50	15.6
No	121	85.8	150	83.3	271	84.4
Visited doctor for hearing problems						
Yes	0	0	0	0	0	0
No	141	100	180	100	321	100
Visited doctor for skin problems						
Yes	5	3.5	3	1.7	8	2.5
No	136	96.5	177	98.3	313	97.5
Visited doctor for joint pain						
Yes	13	9.2	31	17.2	44	13.7
No	128	90.8	149	82.2	277	86.3
Visited doctor for chronic cold and cough						
Yes	0	0	3	1.7	3	0.9
No	141	100	177	98.3	318	99.1
Visited doctor for abdominal pain						
Yes	1	0.7	1	0.6	2	0.6
No	140	99.3	179	99.4	319	99.1
Visited doctor for diarrhea						
Yes	3	2.1	3	1.7	6	1.9
No	138	97.9	177	98.3	315	98.1
Visited doctor for vomiting						

Cont'd...

Cont'd...

Yes	0	0	0	0	0	0
No	141	100	180	100	321	100
Visited doctor for nausea						
Yes	0	0	0	0	0	0
No	141	100	180	100	321	100
Visited doctor for constipation						
Yes	0	0	0	0	0	0
No	141	100	180	100	321	100
Visited doctor for excessive intestinal gas						
Yes	8	5.7	6	3.3	14	4.4
No	133	94.3	174	96.7	307	95.6
Visited doctor for diabetes and tested						
Yes	0	0	7	3.9	7	2.2
No	141	100	173	96.1	314	97.8

Table 3 represents the percentage of respondents, who ever visited a doctor or took medical help for specific problems they are facing. Most of the study participants never visited a doctor for their problem. In the case of eye problems 14.2 per cent males and 16.7 per cent females ever visited a doctor in their lifetime. Nobody among the study participant visited the doctor or medical facility for hearing problems and the only 2.5 per cent of people went to a doctor for skin diseases. 13.7 per cent, 0.3 per cent, 0.9 per cent study participants went to visit a doctor for symptoms of arthritis, stroke, and symptoms of asthma respectively. In the case of abdominal pain, diarrhea and vomiting, 0.6 per cent, 1.9 per cent, and 0 per cent of the study population respectively ever visited doctors. None of the participants ever visited the doctors for nausea and vomiting and constipation. Only 7 female participants visited a doctor and tested for diabetes.

Table 4

Eye Treatment in the Study Population

Eye treatment	*Male*			*Female*			*Total*		
	n	%**	%***	*n*	%**	%***	*n*	%**	%***
Use glasses (Only 50 individuals visited a doctor for their eye problem)									
Yes	8	5.7		13	7.2		21	6.5	
No	133	94.3		167	92.8		300	93.5	

Cont'd...

Cont'd...

Eye operation (Only 50 individuals visited a doctor for their eye problem)						
Yes	12	8.5	16	8.9	28	8.7
No	129	91.5	164	91.1	293	91.3

%** =Percentage in total participants; %*** =percentage of 50 people (who visited doctor)

Table 4 represents the treatment of the eye problems of the study participants. This table gives us a very clear idea about when the participants visit the doctor/medical facility. Only 50 participants ever visited a doctor for their eye problem. And among those 50 individuals, 28 (56%) needed an operation in the eye and 21 (42%) used glasses. So it is very clear that the participants only visited a doctor/medical facility when the problem was out of hand. As a result, the condition of the eye was so poor that 56 per cent needed surgery. Others with eye problems never visited doctor/medical facility because the problem could be tolerated and unless it was out of hand they would not visit a doctor or medical facility.

Discussion

Ageing is inevitable and comes with physical, psychological, hormonal, and social changes (Hameed *et al.,* 2014). Lack of social security system, substandard pension system, and rapidly changing social norms are causing difficulties for the average Indian elderly population (Roy 2019). Asthma, poor eyesight, cold and cough, joint pains, and problem-related to general physical weakness are very common among the older population. Most of the rural elderly are not covered by any health insurance scheme and find it very difficult to access healthcare. The quality of life of the elderly population has become more relevant to the demographic shift towards an ageing society (Kaur *et al.,* 2015).

The present study depicts that illiteracy is very high among the study population (94.7%). Very few among them have crossed the primary and upper primary levels of formal education. Most of the study population are house workers as they don't have a permanent occupation. But often they help the earning members of the family in their work. The female participants mainly involve themselves in household activity and child-rearing. Despite their age, many of them

(52.20% males and 28.9% of females) were working as farmers, labour, and others to meet their day to day needs. It was also found that most of the female participants were widows (56.1%). And only 17.02 per cent of male participants were widower, which is much lower than the widow population.

In the present study-population, 52.5 per cent of males and 62.2 per cent of females have eye problems and only 1.4 per cent of males and 1.1 per cent of females reported hearing problems. The prevalence of joint pain was most common among the study participants. Hypertension and abdominal pain were also high among the study population. Other problems/diseases such as skin disease, asthma, cardiac disease, tuberculosis, constipation, nausea, diarrhea, vomiting, etc. were found among the study population. According to CSO (2016), the most common problems of the elderly population in India were locomotor disability and visual disability. Balamurgan (2012) in his study found that 45.0 per cent of males and 31.1 per cent of females have good eyesight without glasses and 80.0 per cent of males and 67.9 per cent of females are good in hearing. He also found that other problems of aged people such as joint pains, asthma, nervous disorder, skin disease, tuberculosis, etc. were common in the elderly population.

In other studies, eye problems, diabetes, hypertension, asthma, arthritis, hearing problems, urinary problems, anemia, etc. were commonly found among aged people (Thakur *et al,.* 2013; Banker *et al.,* 2017; Lena *et al.,* 2009; Rafiq *et al.,* 2016; Amiri 2018; Roy 2019; Kusuma 2015; Zare *et al.,* 2018). Few studies (Kambley *et al.,* 2012; Amiri 2018) reported a lesser percentage of hypertension compared to the present study. Only a few participants (7 females) went to the doctor and tested for diabetes before and all seven were tested positive. Others never went for a diabetes diagnosis. So there is no way to understand the true status of diabetes of the study participants. Only it is clear that the participants are not well aware of healthcare and take the problems very casually.

The present study found that the differences between male and female elderly Santhal population are statistically significant in the case of chronic cold and cough ($\chi^2 = 7.939$; $p < 0.05$), excessive intestinal gas ($\chi^2 = 7.868$; $p < 0.05$) and diabetes ($\chi^2 = 5.606$; $p < 0.05$). In other physical health problems namely, vision problems ($\chi^2 = 3.078$;

$p > 0.05$), hearing problems ($\chi^2 = 0.061$; $p > 0.05$), skin problems ($\chi^2 = 0.411$; $p > 0.05$), joint pain ($\chi^2 = 0.846$; $p > 0.05$), cardiac arrest ($\chi^2 = 0.786$; $p > 0.05$), abdominal pain ($\chi^2 = 0.543$; $p > 0.05$), diarrhea ($\chi^2 = 0.026$; $p > 0.05$), vomiting ($\chi^2 = 1.149$; $p > 0.05$), nausea ($\chi^2 = 0.993$; $p > 0.05$), constipation ($\chi^2 = 0.282$; $p > 0.05$), tuberculosis ($\chi^2 = 0.092$; $p > 0.05$), hypertension ($\chi^2 = 0.727$; $p > 0.05$) the differences between male and female elderly Santhals are not statistically significant.

The aged Santhal participants only visit a doctor if the situation is out of control. Most of the participants believe the problems are a part of old age and there is nothing to do about it. Many believe that it is the last part of life and these problems are inevitable and there is no point in spending money on these problems. Some of the villagers said that the distance from the village to the hospital is too far and the non-availability of a proper transport system made it impossible for them to visit the government hospital. So, they use a temporary home remedy to ease the problems. It should be mentioned the economic inability and distance of proper health facilities are the major problems and need to be addressed. Government old age health insurance schemes can solve the economic problem but the availability of proper health facilities should be addressed. Only a few of the participants ever visited doctors to address the problem they are facing, it shows a lack of awareness among the participants. Overall the health condition of the elderly Santhal population is not satisfactory.

Conclusion

The economic and educational status of the participants is very low. Illiteracy is very high among the study population. As a result, the awareness of the participants about health and wellbeing is also very poor, which is reflected in the treatment of the problems. A high prevalence of many of the common physical problems can be observed among the study participants. The study concludes that the elderly Santhal population is facing a lot of difficulties and their health condition is not satisfactory. Govt. health insurance scheme can help elderly people to get a proper medical facility. The availability of a healthcare facility and doctors in those facilities should be increased. Other studies should be conducted to better understand the problems of the elderly population.

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Effect of Socio-Economic Status on Nutritional Status of Elderly People

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ABSTRACT

The study was undertaken to understand the nutritional status and to gather some information about the perceived health needs of 300 elderly persons (both male and female) age varying between 60 years and above belonging to urban and rural communities of Patna district (Bihar). An attempt was also made to describe the nutrient intake and major health problems faced by these elderly. Data on socio-economic background, living condition, health-related problems of respondents was collected with the help of household census surveys, interview technique aided by structured question schedule. Food and nutrient intake was assessed using a 24-hour dietary recall method. The results revealed that 20 to 25 per cent of respondents suffered from substantial inadequacy of vital nutrients like calcium, iron, and vitamin A respectively. The mean intake value of only a few items shows a correlation with the income group of elderly women. The mean intake value of items like cereals and roots and tubers in urban areas and pulses, oils and fats in the rural area has the highest value at the low-income group level and decreased with the increase in income of the respondents. Hypertension/B.P., Arthritis, heart trouble, and gastrointestinal problems were more prevalent than other diseases among elderly females. It is significant to note that the

prevalence of diseases is higher among female elderly belonging to the high-income group. It may be because elderly families of females with better income are less inclined to spend on health care of aged women of their families.

Keywords: Socio-economic, Health status, Diseases, Nutrient Adequacy

Ageing is a developmental process and part of the cycle beginning at conception and ending with death. In old age, the combined effect of ageing, social changes, and diseases are likely to cause a breakdown in health. An increase in longevity and decline in fertility have contributed to people living much longer today than ever before during the last 50 years. Among numerous environmental factors that modulate ageing, nutrition plays a significant role. Nutrition is found to be a key factor for successful ageing (Arulmani and John, 2004). Ageing is accompanied by a variety of physiological, psychological, economic, and social changes that compromise nutritional status and/or affect nutritional requirements (Danford and Munro, 1989).

Old age is also associated with many health problems and difficulties and is regarded as physical and mental deterioration. There are significant individual differences in every aspect of life in old age. Health at old age is fully dependant upon lifestyle, lifestyle practices, habits, and work-life, family life which was lived during childhood, youth and adulthood by individual and these life experiences will have a positive or negative impact on individual health at old age. In the present modern-day life drastic changes in the lifestyle, food pattern, relationships between family members besides economic, social, cultural, political aspects have become more mechanical compared to previous decades. These factors partially affect the health of individuals adversely when they reach old age. There is a close association between ageing and disease. The elderly people living in urban areas of India are less in number compared to their rural counterparts. Most of them are dependents which influences socio-economic pattern, nutritional status, diet profile, and anthropometry of elderly people.

The demographic profile of the world is changing. At the heart of transition is the growth in the number and population of older people. This is because there have been advances in medical and immunization, sanitation, and nutrition, which have increased life expectancy (Kibuga, F.K., 1999). Traditionally, high birth rates and a high proportion of the population under the age of fifteen years characterize the demographic structure of developing countries (Kalache, A., 1991).

Disability can affect nutritional status by impending participation in production, acquisition, and preparation of food as well as in eating. Therefore, elderly people present different characteristics, which make them an especially vulnerable group with a higher risk of nutritional deficiency. The early detection of under nutrition using non-invasive anthropometrical techniques can easily be applied to these persons (Manandhar *et al.,* 1997).

Objectives

- To Study the socio-economic status and its effects on dietary and nutrient intakes of elderly people.
- To Study the adequacy of food and nutrient intakes of elderly people.
- To study the health problems of the urban and rural elderly

Method

The present cross-sectional study was conducted among 300 elderly males and females age 60 years and above selected from one Block of Patna and five wards from the Municipal area of a Patna. A stratified random sampling method was used to select the respondents. An equal number (150) was chosen from rural as well as urban areas. The respondents were randomly selected from the list of older people prepared from each selected village and ward. 30 elderly people each were selected from each of these identified villages and wards.

The elderly were classified as belonging to low, middle, and high-income groups according to their per capita monthly income. Information on socio-economic status was based on the schedule adopted by HUDCO regional office, Patna. Data was collected with

the help of the schedule through an interview regarding the intake of food and food consumption pattern of the respondents. Standard household measures including containers of five consecutive sizes, spoons, and glasses were shown to the subjects to help them to indicate the exact amount of food consumed by them. The dietary survey was carried out by the 24-hour recall method. The mean daily intake of different food groups was calculated and compared with a balanced diet given by NIN (National Institute of Nutrition). After obtaining the quantities of different raw foods consumed by the individuals, the nutrients were calculated using the table of 'Nutritional Values of Indian Foods'. The nutrients calculated were energy, protein, fat, calcium, iron, vitamin A, thiamin, riboflavin, and vitamin C, and results were compared with RDA (Recommended Dietary Allowances) given by ICMR (Indian Council of Medical Research, 2010). Simple arithmetic mean with standard deviation was calculated to interpret the results. The Normal test of significance of difference was used to test the difference between mean food intake and nutrient intake according to R.D.A.

Nutrient Adequacy Ratio (NAR) was calculated as:

Nutrient intake × 100

Findings and Discussion

Table 1
Nutrient Adequacy Level (%RDA) of Elderly people

Nutrients	*% of RDA (N = 300)*			
	> 100 (Adequate)	*100–75 (Marginally adequate)*	*75–50 (Marginally inadequate)*	*< 50% of RDA (substantially inadequate)*
Energy (k. Cal.)	211 (70.3)	84 (28.0)	4 (1.3)	1 (0.3)
Protein(g)	240 (80.0)	50 (16.7)	10 (3.3)	0
Fat (g)	188 (62.7)	77 (25.7)	29 (9.7)	6 (2.0)
Calcium (mg)	127 (42.3)	65 (21.7)	45 (15.0)	63 (21.0)
Iron (mg)	46 (15.3)	55 (18.3)	141 (47.0)	58 (19.3)
Vitamin A (µg)	78 (26.0)	57 (19.0)	88 (29.3)	77 (25.7)
Thiamin (mg)	279 (93.0)	19 (6.3)	2 (0.7)	0
Riboflavin (mg)	170 (56.7)	61 (20.3)	52 (17.3)	17 (5.7)

Nutrient Adequacy Ratio (NAR) of elderly respondents has been presented in table 1 above. It is evident from the table that 93 per cent of respondents have an adequate intake of thiamin and 80 per cent have an adequate intake of protein respectively. Similarly, intakes of energy, fat, and riboflavin have been reported to be adequate by 70.3 per cent, 62.7 per cent, and 56.7 per cent of respondents respectively. About two-thirds of elderly males claimed adequacy of calcium, but among them, more than 20 per cent reported marginal adequacy of calcium. The majority of the respondents reported that intake of iron and vitamin A was inadequate, however, 20 to 25 per cent reported that intake of iron and vitamin was substantially inadequate.

The analysis shows that 20 to 25 per cent of respondents suffered from substantial inadequacy of vital nutrients like calcium, iron and vitamin A respectively. It is a serious nutritional problem for the elderly to counter this deficiency (resulting mainly from ageing) through improved intake of calcium, iron, and vitamin A and maintain the present level of intake of other nutrients mentioned above.

The mean food intake of elderly males is presented in Table 2. The pattern of food consumption is different between low, middle, and high-income groups. It is inferred from the table that the mean intake of rice, wheat, and other cereals are significantly lower in families of the high-income group than in those of low-income groups of both urban and rural elderly males. The intake of qualitative food such as milk and milk products, fruits, pulses, and legumes increased significantly with the increase in monthly income. The other vegetables, meat and fish and egg, sugar, fats, and edible oils and condiments and spices are also consumed more in families of higher income group but roots and tubers are consumed more in low-income group families of both urban and rural elderly males. The high intake of roots and tubers by low-income groups probably could be since roots and tubers were the major crops and relatively cheaper, therefore being within their reach.

As compared to the standard value, the mean intake of roots and tuber, oil and fats and sugar, consumption was lower whereas cereals,

Table 2

Mean Food Intake of Elderly Males according to different income groups

Food Items		*Low Income Group (N=36)*			*Middle Income Group (N=66)*			*High Income Group (N=70)*			*Total (N=172)*			*RDA (g)*
		Mean	*S.D.*	*'Z' value*	*Mean*	*S.D.*	*'Z' value*	*Mean*	*S.D.*	*'Z' value*	*Mean*	*S.D.*	*'Z' Value*	
Cereals(g)	U	357.78	93.51	0.263	339.50	78.23	–0.735	311.88	69.33	–3.478	327.59	76.56	–2.618	350
	R	373.20	83.69	1.414	292.08	64.21	–5.412	289.23	79.35	–4.195	313.43	82.88	–4.232	
Pulses(g)	U	113.33	53.54	3.740	91.30	45.59	4.962	90.74	53.52	4.815	92.99	50.09	7.676	50
	R	86.88	21.44	8.772	95.94	42.47	6.490	101.50	45.18	6.243	96.22	40.17	11.036	
Roots and Tubers(g)	U	138.89	48.59	–3.977	87.50	46.55	–13.238	92.59	47.44	–14.32	99.04	49.99	–18.064	200
	R	131.25	83.16	–4.215	75.86	39.24	–18.984	92.50	33.54	–17.555	98.63	60.65	–16.031	
Green leafy vegetables(g)	U	200.00	115.47	4.108	267.86	128.5	9.284	298.33	127.63	12.31	274.62	128.43	15.643	50
	R	242.50	90.721	10.820	223.21	110.12	9.438	232.69	127.23	7.865	231.76	110.59	15.764	
Other vegetables(g)	U	194.44	113.04	2.642	205.00	133.49	4.308	238.13	115.47	7.566	220.57	122.20	8.825	100
	R	179.55	106.52	3.808	206.25	105.45	6.045	230.17	135.85	5.248	207.47	116.96	8.814	
Fruits(g)	U	200.00		0.000	138.46	76.80	–4.389	254.17	109.90	3.118	205.47	110.30	0.444	200
	R	300.00	182.57	2.793	217.11	130.19	0.789	148.53	75.25	–3.747	196.25	122.55	–0.294	
Milk(g)	U	320.00	189.08	0.334	387.04	171.86	2.774	453.85	217.46	4.475	419.01	201.13	5.292	300
	R	234.62	131.32	–2.539	417.14	217.93	3.225	382.76	201.46	2.250	373.38	207.68	3.389	

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Oils and fats(g)	U	25.00	10.80	0.000	23.17	7.71	−1.300	26.50	8.49	1.118	25.06	8.53	0.063	25
	R	20.80	4.49	−4.769	24.31	6.34	−0.653	24.40	6.11	−0.538	23.37	5.97	−2.621	
Meat and fish(g)	U			0.000	230.00	97.47	10.115	237.50	106.07	11.180	234.62	98.71	16.729	50
	R	266.67	115.47	9.568	210.00	82.16	11.685	200.00	163.94	5.012	214.71	132.01	11.968	
Eggs (g)	U			0.0000	100.00	0.00	0.000	83.33	25.82	8.164	87.50	23.15	14.491	50
	R			0.0000	125.00	50.00	9.000	62.50	25.00	2.739	93.75	49.55	8.469	
Sugar and jaggery (g)	U	10.00	3.54	−8.943	17.86	10.32	−1.136	19.56	10.69	−0.260	18.17	10.37	−1.578	20
	R	13.00	6.75	−5.289	18.23	8.42	−1.261	16.48	6.91	−2.791	16.76	7.72	−4.028	

* Dietary Tips for the Elderly, NIN, Hyderabad, (2010)

pulses, green leafy vegetables, other vegetables, milk and milk products, and fruits consumption was higher among the elderly males. Meat, fish and egg consumption was least, especially among urban elderly males.

The average intake of Green leafy vegetables, other vegetables, fruits, milk and milk products, sugar and jaggery was higher among rural elderly than among their urban counterparts. The popularity of green leafy vegetables and fruits consumption among rural elderly may be because rural people generally use these fruits which are locally available and cheap especially in the low-income group. Again rural elderly males generally take morning and sometimes evening tea which may be the cause of higher consumption of sugar among them.

The mean intake of roots and tubers, sugar and oil (meat, fish, and egg only in the low-income group) was considerably poor among all the income groups and lower than the Recommended Dietary Allowances (RDA) given by the Indian Council of Medical Research (ICMR). The poor purchasing power of these people also might have resulted in suboptimum food intake. Otherwise in most food groups mean intake was higher or equal to the recommended dietary allowance.

Table 3 discuss the mean food intake of female elderly persons living in urban and rural areas according to different income groups. It is clear from the table that means food intake value regarding 9 out of 11 listed food items was higher than the Recommended Dietary Allowances (RDA). Only two items, i.e., roots and tubers and sugar and jaggary show lower mean intake than the RDA value. The mean intake value of items such as cereals, green leafy vegetables, oils and fats, meat and fish and roots, and tubers was higher among elderly women living in rural areas than those living in the urban area. There were no rural-urban differences in the mean intake value of pulses, other vegetables, fruits, sugar, and jaggary respectively. Only in the case of milk, the intake value was higher among urban than rural elderly women.

The table also reveals that the mean intake value of only a few items shows a correlation with the income group of elderly women.

Table 3

Mean Food Intake of Female Elderly According to Different Income Group

Food Items		*Low Income Group (N=83)*			*Middle Income Group (N=23)*			*High Income Group (N=22)*			*Total (N=128)*			*RDA (g)*
		Mean	*S.D.*	*'Z' value*	*Mean*	*S.D.*	*'Z' value*	*Mean*	*S.D.*	*'Z' value*	*Mean*	*S.D.*	*'Z' Value*	
Cereals(g)	U	323.33	68.89	8.56	296.88	75.32	3.82	255.59	92.94	1.40	300.51	80.68	7.83	225
	R	334.13	68.03	10.99	268.33	53.45	2.15	312.50	22.17	7.89	325.54	67.11	11.41	
Pulses(g)	U	90.54	52.78	5.75	90.31	58.35	3.45	112.50	45.64	6.74	96.33	52.60	8.960	40
	R	98.33	42.26	9.46	93.33	49.16	2.87	86.25	18.88	4.90	96.63	41.16	10.48	
Roots and Tubers(g)	U	126.00	86.75	–1.66	92.86	61.57	–3.71	83.33	35.36	–8.00	108.33	73.99	–4.718	150
	R	151.28	92.12	0.10	75.00	61.24	–3.24	93.75	12.50	–9.00	137.24	88.99	–1.09	
Green leafy vegetables(g)	U	230.36	112.50	9.62	321.43	136.88	7.93	275.00	141.42	6.750	264.66	130.12	13.80	50
	R	277.27	163.98	9.50	650.00	1,155.42	1.37	250.00	158.11	2.53	326.74	445.66	4.73	
Other vegetables(g)	U	196.43	89.14	6.49	187.50	76.38	4.53	208.82	126.54	3.65	197.43	96.02	8.490	100
	R	182.56	98.13	5.77	333.33	222.86	2.77	168.75	74.65	1.84	198.58	123.49	6.08	
Fruits(g)	U	200.00	115.47	0.00	214.29	106.90	0.54	210.00	137.03	0.31	209.52	117.92	0.68	200
	R	228.57	141.00	1.39			0.0000	100.00	0.00	0.0000	200.00	134.63	0.00	
Milk(g)	U	328.00	201.08	0.84	481.25	224.26	3.233	482.35	177.61	4.36	415.52	212.18	4.555	300
	R	296.15	151.61	–0.17	466.67	87.56	5.036	425.00	210.16	1.19	338.89	162.18	1.83	

Cont'd...

Cont'd...

Oils and fats(g)	U	23.43	6.51	0.84	23.75	6.71	2.236	23.24	8.83	1.56	23.46	7.09	4.09	20
	R	23.61	8.45	2.93	30.83	8.01	3.577	36.25	7.50	4.33	25.29	9.04	4.4	
Meat and fish(g)	U	166.67	57.74	13.16	100.00	0.00	0.0000	150.00	70.71	6.600	142.86	53.45	16.10	40
	R	300.00	212.13	8.40			0.0000	150.00		0.0000	250.00	173.21	9.23	
Eggs (g)	U	100.00	0.00	0.000	50.00		0.000			0.0000	83.33	28.87	12.56	40
	R			0.000			0.000			0.0000			0.00	
Sugar and jaggery (g)	U	15.95	10.32	–2.35	24.00	11.83	1.352	17.73	8.17	–1.18	18.94	10.78	–0.82	20
	R	16.20	9.274	–2.81	17.50	9.57	–0.691	16.25	11.09	–0.68	16.36	9.21	–3.01	

* Dietary Tips for the Elderly, NIN, Hyderabad, (2010)

The mean intake value of items like cereals and roots and tubers in urban areas and pulses, oils and fats in the rural area has the highest value at the low-income group level and decreased with the increase in income of the respondents. Similarly, the intake value of pulses and fruits in the urban area was lowest among the low-income group and increased with the rise in income. Intake of oils and fats, as well as sugar and jaggery, was the same in all the income groups. All other food items did not show any relationship with the income group of elderly women.

Table 4
Distribution of Male Elderly by Prevalent Diseases According to Income Group

Prevailing diseases	*Income group*						*Total*	
	High-Income group		*Middle-Income group*		*Low-Income group*			
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Hypertension/B.P.	7	13.7	18	35.3	26	51.0	51	100.0
Diabetes	4	9.1	25	56.8	15	34.1	44	100.0
Arthritis	2	6.1	11	33.3	20	60.6	33	100.0
Heart trouble	7	14.6	14	29.2	27	56.3	48	100.0
Gastrointestinal disease	7	21.9	9	28.1	16	50.0	32	100.0
Respiratory disease	9	25.0	12	33.3	15	41.7	36	100.0
Skin disease	6	22.2	12	44.4	9	33.3	27	100.0
Stroke	2	11.8	8	47.1	7	41.2	17	100.0
Depression	2	6.7	16	53.3	12	40.0	30	100.0
Tuberculosis	4	23.5	7	41.2	6	35.3	17	100.0
Kidney disease	2	10.5	9	47.4	8	42.1	19	100.0
Nervous disorders	2	8.0	13	52.0	10	40.0	25	100.0

The above table gives a distribution of types of prevalent diseases in income group of elderly males. At a glance, the table reveals that hypertension, heart trouble, and diabetes are more prevalent than other diseases among the male elderly respondents. All the identified diseases show some relationship with the income group of elderly males. Hypertension/B.P., Arthritis, heart trouble, and

gastrointestinal and respiratory diseases are more prevalent than other diseases among the elderly of low-income groups. The diseases like diabetes, skin disease, stroke, depression, tuberculosis, kidney problem, and nervous disorder were prevalent among elders of the middle-income group. High-income group elderly suffered less than middle and low-income groups regarding the various type of diseases. It may be due to their better economic conditions they can tackle these diseases at an early stage.

Table 5

Distribution of Female Elderly by Prevalent Diseases According to Income Group

Prevailing diseases	*Income group*						*Total*	
	High-Income group		*Middle-Income group*		*Low-Income group*			
	No.	*%*	*No.*	*%*	*No.*	*%*	*No.*	*%*
Hypertension/B.P.	28	51.9	12	22.2	14	25.9	54	100.0
Diabetes	18	54.5	7	21.2	8	24.2	33	100.0
Arthritis	30	62.5	7	14.6	11	22.9	48	100.0
Heart trouble	19	47.5	9	22.5	12	30.0	40	100.0
Gastrointestinal disease	31	70.5	8	18.2	5	11.4	44	100.0
Respiratory disease	22	78.6	3	10.7	3	10.7	28	100.0
Skin disease	18	75.0	4	16.7	2	8.3	24	100.0
Stroke	5	71.4	2	28.6		0.0	7	100.0
Depression	9	75.0	3	25.0		0.0	12	100.0
Tuberculosis	4	66.7	2	33.3		0.0	6	100.0
Kidney disease	6	60.0	3	30.0	1	10.0	10	100.0
Nervous disorders	10	50.0	7	35.0	3	15.0	20	100.0

The table above gives the distribution of female elderly by prevalent diseases according to Income group. Hypertension/B.P., Arthritis, heart trouble, and gastro-intestinal disease are more prevalent than other diseases among elderly females. It was observed that the prevalence of diseases is higher among female elderly belonging to the high-income group. However, the pattern of prevailing diseases across different income groups is not consistent. It

shows that the income of the families of elderly females is not related to their disease pattern. It may be hypothesized that families of elderly females are less inclined to spend on prevailing diseases among them. The elderly females seem to suffer from neglect and care by their family members.

Conclusion

The majority of the respondents reported that the intake of iron and vitamin A was inadequate. The average intake of Green vegetables, fruits, milk products, and sugar was higher among rural elderly than among the urban respondents. The mean intake value of items like cereals and roots and tubers in urban areas and pulses, oils and fats in the rural area has the highest value at the low-income group level and decreased with the increase in income of the respondents. All other food items did not show any relationship with the income group of elderly women. All the identified diseases show some relationship with the income group of elderly males. Hypertension/B.P., Arthritis, heart trouble, and gastro-intestinal are more prevalent than other diseases among elderly females. The prevalence of diseases is higher among female elderly belonging to the high-income group. One of the reasons may be those high-income group families seem reluctant to spend on the medical care of elderly females in the family. There is an urgent need for programmes specifically for the elderly in Patna that would improve their food intake, functional capacity, and economic status.

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Economic Determinants of Household Headship among Older Adults in India: Evidence from Who-Sage Wave–1

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ABSTRACT

One of the major changes happening today is the increasing proportion of aged in the population with less value and utility. The changing household composition, in turn, is changing the dynamics of household headship among older adults in India. This paper tries to explore the determinants of household headship among older adults. The data used for analysis was carved out from (WHO-SAGE Wave–1; 2013), which was conducted in 2007–08. Descriptive statistics, multivariate regression model, and Interaction model were used to identify the significance of the predictor for gender and type of participation while controlling other background characteristics. 78.17 per cent of older adults aged 50 years and above were household heads. Older adults who were retired or never worked, belong to poor wealth quintile and does not receive any pension were less likely to be the household head. The situation in educated older adults was quite surprising that older adults who were graduate and above were less likely to be

household heads. When the interaction was observed between gender and other economic profiles, women were found disadvantageous in every situation. From a policy perspective, such analysis has relevance on several fronts. Access to pensions might well be even more important among older adults whose employment potential is further compromised by age and gender.

Keywords: Household-headship; Older adults; Gender Economics; WHO-SAGE.

One of the major changes happening today is the increasing proportion of the aged population with less value and utility. It is the outcome of demographic processes that took place along with the sociological processes fostering the degradation of old people (Cowgill, 1974). Contrarily, cross-cultural research concludes that the rapid and extensive societal changes of recent years have not eroded the status of the elders, rather it has assigned more societal and familial roles to the elderly persons (Rhoads, 1984).

In India, there is a large increase over the years in the proportion of elderly males and females who have been able to maintain themselves as heads of households. According to Census 2011, Almost 85 per cent of elderly males in the age group 60–64 reported themselves as heads of household as against 15 per cent among women. Even at the time of death (90 years and above), half of the elderly Indian males are reported as heads of the households (Rajan and Kumar, 2003). Besides, the head usually as the oldest person in the household may reflect structures of authority that are age-related (Murphy, 1991). It is also argued that the ageing is not simply an objective condition but a deeply contested, socially structured condition centered on claims over resources (Vera-Sanso, 2006). On the other hand, Bruce points out that there is a tendency in many cultures for household members to name the oldest male affiliated with the household as its head, even when he is no longer economically active or even in regular residence (Bruce, *et al.,* 1995). With the growing age and deteriorating health, the next eldest male, generally the eldest son, gradually assumes the authority over the family maintenance (Kumar, 1999).

Literature suggests that income and employment show a significant independent effect on household headship which suggests that the income from retirement and savings play a role in the preservation

of household headship. Taken together the variables of age, sex, location, employment status, and weekly income explain 31 per cent of the variation in household headship (Gordon, *et al.,* 1981). Another study examined the association of age with household size and found that the older adult's household heads are likely to live in smaller assemblages than middle-aged heads or even very junior heads. That is to say, the head's increasing age is correlated with shrinking household size (Smith, 1978) which is the reverse causation of what Kuznets found that 'a dominant proportion of the one- and two-person households, which loom so large in the United States, is accounted for by households with advanced ages of the head' (Kuznets, 1978). Another similar study suggests that there is a significantly lower household headship rate of older persons living either with other relatives or non-relatives as compared with the rates associated with other living arrangements. Older persons living with non-relatives may sometimes be lodgers or servants, for instance.

Usually, living arrangement is explained in terms of the type of family in which the older adults live, the headship they enjoy, the place they stay in and the people they stay with, the kind of relationship they maintain with their kith and kin, and on the whole, the extent to which they adjust to the changing environment (Irudaya, *et al.,* 2001). Study shows that for never-married men and women, headship rates continue to rise with age. They too may prefer to live alone as they grow old, but since they have no children, as their parents die, they have no close relatives to live with. Nor after middle age do they find it easy to marry, even though for the men at least there are many willing brides (Carliner, 1975). At the same time, most prefer to live near but not with, their children, a situation that has been described as a wish for 'intimacy at a distance' (Rosenmayr, 1970).

Virtually no married couples go to live with their family of orientation (i.e., married couples form their independent nuclear households). Hence, there has been a decline in the overall number of multigenerational households reflecting the greater tendency of female widows to live by their own and the equal tendency of males to remain married or remarry and maintain themselves as heads of their households (Mindel, 1979). The same study suggests that older adult men

tend to remarry and live with their spouses while older female widows live alone in their independent households. Whether this indicates reluctance on the part of children and kin to take care of their older adults, a reaffirmation of independent living norms on the part of the older adults, or greater financial well-being due to the presence of pension systems, is difficult to interpret from this data (Ibid). Nonetheless, a case study in Korea found that pension transfers prevent co-resident elders from forming one-person households (Kim, 2015). At the same time, a few natural experiments in the US and studies in developed countries show that such support increases elders' living alone owing to their preferences for privacy (Engelhardt and Greenhalgh-Stanley, 2010). Another substantial determining factor of older adult's headship may be explainable in terms of economic dependence. That is to say when the children living in the household with an older adults parent are still in school or not yet considered ready to marry the likelihood is that parents will be considered heads of the household, but when the children are economically independent and eligible to marry, even if they remain unmarried, the likelihood of the parent not being the head of the household increases (Gordon *et al.,* 1981).

Debate over Headship

The designation 'head of the family' is often an honorary title rather than an indication of an economic position within the family (Steiner and Dorfman, 1957). And the concept of household or family headship continues to be meaningful in many societies and its loss represents an important life-stage transition that is associated fundamentally with questions of independence and authority that give sociological meaning to the concept of old age (Budlender, 2003). He concludes that household headship should not be defined in terms of any one criterion, such as ownership of the housing unit, primary income-earning, gender, age, or primary decision-making. There are two major approaches to defining the meaning of 'head of household.' First, 'a person who controls the maintenance of the household that is, exercises the authority to run the household' (Youssef and Hetler, 1983). Second, 'the main supporter' (chief earner) of the household. Consequently, a major impediment to studying older adult's headship has been the lack of quality data. Some scholars argued that the

definition of head of household as a single decision-maker representing members' shared interests (Varley, 1996) is inadequate and inappropriate when this role is automatically assigned to a senior male (Dwyer and Bruce, 1988; Rosenhouse, 1989).

The shift in the status of the aged from dominant to subordinate position occurs quite prominently with the advancing age, though a few members, irrespective of age and marital status, act as head of the family, even in the case of males, advancing age deprives them of the status of being head of the family (Kumar, 1999). Hence, 'the concept of the head of household; a single decision-maker representing members' shared interests; is regarded as particularly inadequate and inappropriate, especially when this role is automatically ascribed to the senior male' (Posel, 2001). Moreover, the category of headship and how headship data are used in the analysis, however, are not unanimously endorsed in the literature.

Thus, the category of headship has been incorporated into researches as a way of distinguishing among household types and household access to resources (Ibid). While most of the older adults may prefer extended living arrangements, their preferences are constrained by economic and social disadvantages over their lives. At the same time, earlier studies focused mainly on household demography and elderly headship rather than economic and demographic implications of headship in the later age giving an incomplete picture of elderly Indians who are often consigned to their relative poverty.

This paper tries to explore the determinants of household headship among older adults. It looks into the importance of household wealth in keeping the older adults from being household heads and how much do marital status, education, employment status, and other economic factors of the elder people affect their headship. The effects of sex, age, race, motherhood, location, and income on older adults are discussed in detail, as well as changes in headship rates among older adult's household members. Here, we hypothesize that the currently employed older adults are more likely than unemployed to head their households; And with increased age, the likelihood that a person 50 and older will head his or her household increases. Further, the linkage between living arrangements and older adult's headship has been examined in the study.

Methods

The data used for analysis was carved out from World Health Organization's Study on Global Ageing and adult health (WHO-SAGE), which was conducted in 2007–08 to measure the field like Health behavior, chronic condition and treatment, employment, income and expenditures and wellbeing among adults. It is a multi-country study conducted in six of the 70 countries that participated in the 2003 world health survey. The study was then conducted in six countries including India, Ghana, Russian Federation, South Africa, and Mexico. In India, the study was conducted in six states including Assam, Uttar Pradesh, West Bengal, Karnataka, Maharashtra, and Rajasthan (37% of India Population). A multi-staged clustered sample design and probability proportional to size sampling method were used to conduct the survey.

Descriptive statistics with percentages have been shown using a chi-square test. We applied a multivariate regression model and Interaction model to identify the significance of the predictor for gender and type of participation while controlling other background characteristics. To measure the impact of gender concerning economic wellbeing on household headship among older adults, it was necessary to observe the interaction between gender and working status, gender and wealth quintile, and gender and pension for older adults. We applied logistic regression model as our outcome variable was binary. We applied four different models to identify the significance of the economic wellbeing of older adults in terms of gender for their household headship. Model 1 was the full effect model that took into consideration the effect of household and individual characteristics on household headship of the older adults in the household. In Model 2 the interaction of gender and working status was observed after controlling other background characteristics. In Model 3 the interaction of gender and wealth quintile was observed after controlling other background characteristics. In Model 4 the interaction of gender and pension was observed after controlling other background characteristics.

Independent Variables

We took the age group 50 years and above for the analysis as they are being considered as younger old in WHO-SAGE data. This analysis is a household level analysis so we can find out what are the determinants of household headship for older adults in India. We have not considered age as an independent variable as we have categorized households into two types that are households having a person aged 50 and above but he/she is not a household head and households having a person aged 50 and above and he/she is a household head.

Gender of household head was categorized as 'men' and 'women', Place of residence as 'urban' and 'rural', religion as 'Hindu', 'Islam' and 'others', caste as 'scheduled caste/scheduled tribe (SC/ST) and non-scheduled caste/scheduled tribe (non-SC/ST), marital status of household head as 'currently married', 'never married/separated/divorced' and 'widowed', family type as 'nuclear' and 'others', education as 'illiterate', primary completed', secondary completed', high school completed' and 'university and above', working status as 'currently working', 'retired' and 'never worked', wealth quintile as 'poor', 'middle' and 'rich', pension as 'yes' and 'no' and land ownership as 'yes' and 'no'. The working status of the household head variable was created as a combination of 'ever worked' and 'currently working' responses. Responses to 'previously worked and not working presently' generated the 'retired' variable. 'Never worked' was another category.

Outcome Variable

Household headship was our outcome variable. We divided households into two categories that are households having a person aged 50 and above but he/she is not a household head and household having a person aged 50 and above and he/she is a household head. The first category was coded as '0' and the second was coded as '1'.

Results

Table 1. Shows the percentage distribution of older adults aged 50 years and above, who are household heads by background characteristics.

Table 1
Percentage Distribution of Head of Households (50 years and above) by Background Characteristics in India

Variables	*N (House-holds)*	*Head of Household (Less than 50 years)*	*Head of Household (50 Years and above)*	*P-value (95% CI)*
Gender				0.001
Male	5,612	95.17	88.59	
Female	602	4.83	11.41	
Religion				0.084
Hindu	5,034	77.47	81.5	
Islam	677	11.57	10.46	
Others	503	10.96	8.03	
Caste				0.023
Sc/St	1,380	23.54	21.85	
Non-Sc/St	4,834	76.46	78.15	
Residence				0.195
Urban	1,578	26.04	26.99	
Rural	4,636	73.96	73.01	
Marital Status				0.001
Currently Married	5,132	89	80.03	
Never Married/Separated/Divorced	156	6.74	0.95	
Widowed	926	4.25	19.03	
Education				0.001
Illiterate	2,005	19.85	36.16	
Primary Completed	1,825	27.56	29.03	
Secondary Completed	945	21.59	14.1	
High School Completed	907	18.68	12.91	
University And Above	532	12.32	7.81	
Working Status				0.001
Currently Working	3,035	32.88	56.22	
Retired	1,588	24.18	25.83	
Never Worked	1,313	42.93	17.94	
Pension				0.882
No	5,333	86.86	86.25	

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Yes	881	13.14	13.75	
Family Type				0.001
Nuclear	1,059	1.07	20.52	
Others	5,155	98.93	79.48	
Wealth Quintile				0.003
Poor	2,423	45.24	42.09	
Middle	793	14.61	11.72	
Rich	2,998	40.16	46.19	
Land Ownership				0.204
No	1,010	17.52	14.08	
Yes	5,204	82.48	85.92	

SC/ST: Scheduled caste/Scheduled tribe

Table 2. Older adults who were retired or never worked were significantly less likely to be the household head. For instance, older adults who were retired were 45 per cent significantly less likely to be household head [OR = 0.55, $p > 0.05$] and older adults who never worked were 79 per cent significantly less likely to be household head [OR = 0.21, $p > 0.05$]. When gender differentials are looked into, in case of a male who never worked were 81 per cent less likely to be household head [OR = 0.19, $P > 0.05$] whereas in case of women who got retried were 77 per cent less likely to be household head [OR = 0.23, $P > 0.05$]. Older adults who were widowed were almost 7 times more likely to be head of household [OR = 6.94, $P > 0.05$]. In the case of a male, the odds are 5.32 whereas in the case of women the odds are 16.63. The women were having much higher odds because in older ages the number of widowed women is quite high. Older adults belonging to the rich category were 2.69 times more likely to be household head [OR = 2.69, $p > 0.05$]. The situation is the same in the case of older males [OR = 2.60, $p > 0.05$] and older women [OR = 3.78, $P > 0.05$].

The situation in educated older adults is quite surprising that older adults who were graduate and above were 85 per cent less likely to be household head [OR = 0.15, $p > 0.05$]. In the case of males the situation is the same for graduate people and above [OR = 0.15, $p > 0.05$]. However, for older women the results are ambiguous. Older adults who belong to the nuclear family were more likely to be the

head of the household [OR = 0.03, p > 0.05]. Similarly for older males who belong to the nuclear family were having more likelihood of being the household head [OR = 0.02, p > 0.05]. However, in the case of older women who belong to the nuclear family were having lower odds of being a household head but the result is insignificant. Older adults who received pension were 29 per cent significantly more likely to be household head [OR = 1.58, p > 0.10]. In the case of older males who received a pension were 37 per cent more likely to be the household head [OR = 1.60, p > 0.05]. In the case of women, the result is just the opposite but insignificant. The land was household variable, and we found that the household who own land was having a higher likelihood to have an older household head [OR = 1.58, p > 0.05].

Table 2

Multivariate Logistic Regression with selected background characteristics to predict the household headship of the Older Men and Women in India, 2007–08

Variables	*Total*	*Men*	*Women*
Gender			
Men	Ref.		
Women	0.88(0.5,1.55)		
Religion			
Hindu	Ref.	Ref.	Ref.
Islam	0.8(0.6,1.08)	0.78(0.57,1.06)	0.98(0.31,3.07)
Others	0.93(0.54,1.63)	1.08(0.59,1.97)	0.3(0.06,1.44)
Caste			
Sc/St	Ref.	Ref.	Ref.
Non Sc/St	1.33*(1.06,1.68)	1.44*(1.13,1.82)	0.7(0.26,1.88)
Residence			
Urban	Ref.	Ref.	Ref.
Rural	0.91(0.69,1.19)	0.96(0.73,1.27)	0.55(0.21,1.46)
Marital Status			
Currently Married	Ref.	Ref.	Ref.
Never Married/Separated/ Divorced	0.2*(0.12,0.33)	0.18*(0.11,0.29)	0.96(0.16,5.61)
Widowed	6.94*(3.93,12.26)	5.32*(2.93,9.64)	16.63*(7.42,37.27)

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Education			
Illiterate	Ref.	Ref.	Ref.
Primary Completed	0.46*(0.35,0.61)	0.48*(0.37,0.64)	0.25*(0.08,0.81)
Secondary Completed	0.26*(0.18,0.36)	0.26*(0.18,0.36)	0.34(0.04,2.66)
High School Completed	0.23*(0.16,0.32)	0.24*(0.17,0.33)	0.08*(0.01,0.58)
University And Above	0.15*(0.1,0.22)	0.15*(0.1,0.23)	1.73(0.09,33.1)
Working Status			
Currently Working	Ref.	Ref.	Ref.
Retired	0.55*(0.43,0.7)	0.58*(0.45,0.74)	0.23*(0.07,0.75)
Never Worked	0.21*(0.17,0.27)	0.19*(0.15,0.25)	0.59(0.19,1.88)
Pension			
No	Ref.	Ref.	Ref.
Yes	1.29(0.98,1.71)	1.37*(1.02,1.84)	0.51(0.18,1.48)
Family Type			
Nuclear	Ref.	Ref.	Ref.
Others	0.03*(0.02,0.06)	0.02*(0.01,0.04)	1.33(0.16,11.19)
Wealth Quintile			
Poor	Ref.	Ref.	Ref.
Middle	1.23(0.9,1.68)	1.17(0.84,1.62)	2.06(0.53,8.03)
Rich	2.69*(2.1,3.44)	2.6*(2.01,3.35)	3.78*(1.09,13.13)
Land Ownership			
No	Ref.	Ref.	Ref.
Yes	1.58*(1.15,2.18)	1.6*(1.14,2.25)	0.63(0.19,2.11)

*if $p < 0.05$

Ref: Reference category; SC/ST: Scheduled caste/Scheduled tribe

Table 3. Represent the estimates from the multivariate logistic regression analysis for the household headship among older adults in India by selected background characteristics. Model 1 if the full effect model, it predicted that belonging to SC/ST category, being currently married, belonging to other family types, being graduate and above, had never worked, belonging to poor wealth quintile and household having no land ownership had significantly lower odds for older adults to be the head of the household. Model 2 yielded the odds ratio for the interaction between gender and working status. It was found that older women who were currently working had lower odds of being a

household head than the older male who was currently working [OR = 0.53, p > 0.05].

Table 3

Multivariate Logistic Regression with selected background characteristics to predict the household headship of the elderly in India, 2007–08, in 4 models

Variables	*Model–1*	*Model–2*	*Model–3*	*Model–4*
Gender				
Male	Ref.			
Female	0.88(0.5,1.55)			
Religion				
Hindu	Ref.	Ref.	Ref.	Ref.
Islam	0.8(0.6,1.08)	0.79(0.59,1.06)	0.81(0.6,1.08)	0.8(0.6,1.08)
Others	0.93(0.54,1.63)	0.97(0.56,1.67)	0.94(0.54,1.64)	0.94(0.54,1.63)
Caste				
Sc/St	Ref.	Ref.	Ref.	Ref.
Non Sc/St	1.33*(1.06,1.68)	1.35*(1.07,1.69)	1.34*(1.07,1.69)	1.34*(1.06,1.68)
Residence				
Urban	Ref.	Ref.	Ref.	Ref.
Rural	0.91(0.69,1.19)	0.92(0.7,1.2)	0.91(0.7,1.19)	0.91(0.69,1.19)
Marital Status				
Currently Married	Ref.	Ref.	Ref.	Ref.
Never Married/ Separated/ Divorced	0.2*(0.12,0.33)	0.21*(0.13,0.35)	0.2*(0.12,0.33)	0.2*(0.12,0.33)
Widowed	6.94*(3.93,12.26)	7.03*(4,12.37)	7.02*(3.96,12.45)	7.14*(3.98,12.79)
Education				
Illiterate	Ref.	Ref.	Ref.	Ref.
Primary Completed	0.46*(0.35,0.61)	0.45*(0.34,0.6)	0.46*(0.35,0.61)	0.46*(0.35,0.61)
Secondary Completed	0.26*(0.18,0.36)	0.25*(0.18,0.35)	0.26*(0.18,0.36)	0.25*(0.18,0.35)
High School Completed	0.23*(0.16,0.32)	0.23*(0.16,0.32)	0.23*(0.16,0.32)	0.23*(0.16,0.32)
University And Above	0.15*(0.1,0.22)	0.15*(0.1,0.22)	0.15*(0.1,0.22)	0.15*(0.1,0.22)

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Working Status				
Currently Working	Ref.		Ref.	Ref.
Retired	0.55*(0.43,0.7)		0.55*(0.43,0.7)	0.55*(0.43,0.7)
Never Worked	0.21*(0.17,0.27)		0.21*(0.17,0.26)	0.21*(0.17,0.27)
Pension				
No	Ref.	Ref.	Ref.	
Yes	1.29(0.98,1.71)	1.3(0.98,1.72)	1.3(0.98,1.72)	
Family Type				
Nuclear	Ref.	Ref.	Ref.	Ref.
Others	0.03*(0.02,0.06)	0.03*(0.02,0.06)	0.03*(0.02,0.06)	0.03*(0.02,0.06)
Wealth Quintile				
Poor	Ref.	Ref.		Ref.
Middle	1.23(0.9,1.68)	1.22(0.89,1.67)		1.22(0.89,1.67)
Rich	2.69*(2.1,3.44)	2.66*(2.08,3.41)		2.7*(2.11,3.45)
Land Ownership				
No	Ref.	Ref.	Ref.	Ref.
Yes	1.58*(1.15,2.18)	1.54*(1.12,2.13)	1.57*(1.14,2.16)	1.58*(1.15,2.17)
Gender Vs Working Status				
Male □ Working		Ref.		
Male □ Retired		0.57*(0.45,0.73)		
Male □ Never Worked		0.19*(0.15,0.25)		
Women □ Working		0.53(0.21,1.33)		
Women □ Retired		0.21*(0.09,0.48)		
Women □ Never Worked		0.37*(0.18,0.79)		
Gender Vs Wealth Quintile				
Male □ Poor			Ref.	
Male □ Middle			1.16(0.84,1.61)	
Male □ Rich			2.62*(2.04,3.35)	
Women □ Poor			0.7(0.36,1.35)	
Women □ Middle			2.22(0.65,7.54)	

Cont'd...

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Women □ Rich	2.86*(1.11,7.37)
Gender Vs Pension	
Make □ No	Ref.
Male □ Yes	1.35*(1.01,1.81)
Women □ No	0.96(0.52,1.77)
Women □ Yes	0.71(0.32,1.59)

*if $p < 0.05$

Ref: Reference category

SC/ST: Scheduled caste/Scheduled tribe

□ Interaction symbol

Model 3 carved out the interaction between gender and wealth quintile. It was found that older women who were poor had a lower likelihood of being into household headship than poor men [OR = 0.70, $p > 0.05$]. Moreover, when seen within-group rich older men were having significantly more likelihood of being into household headship than poor older men [OR = 2.62, $p < 0.05$]. Model 4 depicts the interaction between gender and pension received, it was found that older men who received pension had significantly higher odds of being a household head than older men who do not receive pension [OR = 1.35, $p < 0.05$]. Moreover, older women who received pension had lower odds of being a household head than older men who do not receive pension [OR = , $p < 0.05$].

Discussion

Drawing on a nationally representative dataset, this paper has comprehensively investigated the factors determining household headship of the older adult's people in India by identifying some important interactions which have interesting interpretations. According to the WHO-SAGE, Wave–1 (2013) data, 78.17 per cent of older adults aged 50 years and above were household heads in India in comparison to 21.83 per cent whose age is 50 years and below in the household. Along with the significant implications of age on household headship, gender differentials can also be well observed in terms of household headship at older ages which will be discussed later in the context of gender differences.

The results show that the marital status may operate as an indicator of household integrity and be tied in as a fundamental determinant of household headship. Here, the headship does seem to be related to marital status. In the case of widowhood, the men and women were significantly more likely to be the household head than currently married older men and women. Here, it is to be noted that the older population differ from younger ones in marital status by their gender due to the differential mortality. Moreover, since we do not take the single-member households and younger headship, and older adult's people either live alone, with their spouse, or with children who are heads, both need to be considered concerning the findings from other developing countries. Another finding shows that the older adults who were educated were less likely to be the household head in comparison to respondents who were not educated. The older men who were graduate and above, have lower odds of being a household head. However, for older women the results are ambiguous. In other words, evidence for the relationship between education and headship is much weaker among older women.

Even though the economic security of older adults depends on their living arrangements, there is a positive linkage between older adult's headship and economic forces such as employment, pension receipt, land ownership, and household wealth index. It was found that older adults who never worked had a lower likelihood of being into household headship in comparison to older adults who were currently working. Older adults who were receiving pension who belong to rich wealth quintile and own land at a household level were having more likely to be the household head in comparison to their counterparts. It shows that the effect of income on the likelihood of headship has important policy implications. By running separate regressions, it is found that the economic status may influence the headship as much as headship may influence the economic status of older adults.

Gender Differences

The estimates of the study show that out of 78.17 per cent as a whole, 88.59 per cent of older men were household head and only 11.41 per cent of older women were household heads. The potential

explanation lies in the cultural construction of traditional gender roles in a family, namely, the patriarchal authority of masculinity, but there was no such cultural expectation for women (Chang, *et al.,* 2019). The gender differences that have emerged from the analysis are explored more systematically through multivariate models. In particular, we establish what the relative contribution of gender is in determining older adults positioning as heads of households controlling for age. In other words, we disentangle what the gender variable captures and to what extent it reflects status and power, both of which are proxied by household headship. When we do the multivariate analysis in table 2, it was found that older women were less likely to be the household head in comparison to men. The estimates by the interaction of gender and working status consistently demonstrate that programs may need to bolster support differently for older women and men. When gender differentials were observed in the headship of older adults, it was found in table 3 it was found that women who were working were less likely to be household heads in comparison to men who were working.

The study also found that poor women were less likely to be a household head in comparison to poor men. This being said, it should be explored whether gendered roles and responsibilities and not-working status make older women even more likely than older men to take on the headship of economically vulnerable households. Notably, men who were not receiving pension were less likely to be household heads in comparison to men who were receiving a pension, and women who were receiving pension were less likely to be household heads in comparison to a male who was not receiving the pension. Indeed this is an interesting discord that merits further examination. A study in South Africa suggests that a link between pension receipt and headship does not necessarily mean that elders attain higher symbolic status. Their indispensability as income-earners does not automatically confer higher symbolic status and prestige in the household or community. In this sense, it is unclear if financial exigencies would lead to a change in how older persons are perceived (Schatz and Madhavan, 2011).

Conclusion

The main conclusions of this paper are that age, marital and working statuses, education, economic conditions, pension, and by and large, gender are most important determinants of household headship. From a policy perspective, such analysis has relevance on several fronts. Access to pensions might well be even more important among older adults whose employment potential is further compromised by age and gender. Finally, the more focused analysis might yield important differences in the role of age and gender in influencing household headship and, in particular, the positioning of the older adults as heads of households.

Limitations

It is important to remember the analysis in this study did not capture all interactions related to older adults' household headship therefore future research continues to be necessary to understand the factors that cause headship differentials among the older adults by age and gender in different living arrangements. Moreover, the data used for the analysis is old but still answers an important line of inquiry regarding the important determinants of household headship among older adults in India.

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Issues among Elderly Survivors and Provisions of Support in Disaster Response Policies and Programme in India

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ABSTRACT

In disaster response and rehabilitation programme one of the least prioritized groups for support is elderly survivors. In humanitarian responses the budgets spent for the elderly are quite meager and they become a silent victim with trauma, losses, injuries, insecurities, and inabilities. In India, while there is a lack of basic social security and protection measures, the elderly survivors become exposed to multiple challenging issues due to disasters. With several functional disabilities, ailment, and pre-existing social vulnerabilities, the disaster experiences make them double victims of the situation. Based on the author's experiences of working in disasters in India a longitudinal observational study is presented using a community-based participatory research approach with some case studies conducted, information collected through a daily, weekly, and monthly basis. Changes were tracked over time to develop a comprehensive understanding of the vulnerabilities and needs of the elderly survivors. In various disasters like earthquakes, communal riots, Tsunami, cloud blast, civil unrest, or terrorist attack, many elderly survivors were forced to presume parenting for grandchildren, reinitiate livelihood venture, or such daily life

responsibilities with their personal geriatric issues and trauma of multiple irrecoverable losses. Elderly members often face abuse and neglect within the family during and in post-disaster situation. Some of the successful community-based rehabilitation models that have helped the elderly men and women to reintegrate with the social and community life are highlighted to explore the key learning for practice. The recent pandemic (COVID–19) has pushed the elderly population to a severely threatening situation. There are a few international commitments, policy documents about specific disaster response for elderly survivors, yet India lacks a specific guideline for the elderly survivors that could highlight, geriatric well-being, socio-economic support, rehabilitation, and recovery strategies in short and long-term to guarantee successful 'active ageing'.

Keywords: Older adults, Disaster, Survivors, Trauma, Rehabilitation,

Geriatric care in a disaster is comparatively a low priority area while other vulnerable groups take precedence. Within the demographic paradigm, older adults are often seen as the recipient of services and traditionally the service providers are the family and community, with some social security benefits for a handful of people. Disasters are a matter of concern for its adverse effects. All over the world, the proportion of aged people is growing faster as compared to any other age group. According to UNDESA (2015), about 12 per cent of the world population is above 60 years of age. By 2050 this figure is going to be 22 per cent and the number of older adults will be as many as the number of children below 15 years of age.

During a disaster, the vulnerability factors of the pre-disaster situation actively inter-phase with added complications due to disaster, specifically for the vulnerable sections of survivors, i.e., uncared children, women, disabled, and frilled older population. There are some common factors of vulnerability that even in normal circumstances cause difficulties to lead an active life in old age such as geriatric health issues, lack of dependable support systems, inaccessibility of social security benefits, lack of personal resources, etc. The 'vulnerability perspective,' in disaster-related studies, is gradually occupying the central place that explains, a real disaster occurs when it strikes an under privileged community (Piers Blaikie *et al.,* 2004). The damage due to disaster is always higher among the poor or underdeveloped

countries and the survivors living within poor infrastructure, facilities, and has fewer resources to build effective response (Silva and Cernat, 2012). Older adults are disproportionately impacted by disasters and face more challenges in recovery. As of now, less than one per cent of humanitarian financing is spent on the older population worldwide (Help Age International, 2016). The technological developments, new systems rarely target the needs of the aged population may it be the use of the advanced mobile device for receiving a pension or other benefits through the online banking system, making a digital identity card, or receiving compensation? Further, illiteracy, poverty, living in remote villages, underprivileged conditions adds to the vulnerability, inability, and social exclusion in the complex post-disaster situation.

Disaster gives rise to different patterns of problems and concerns in the lives of survivors that are beyond the ability of the survivors to control. The definition of disaster given by WHO explains that disasters cause severe disruptions of ecological and psychosocial balance that exceed the coping capacity of survivors and require external support for recovery. Disasters can cause a lot of negative social change, as well as the relationship, societal, emotional, and economic problems that humanitarian workers need to attend. Working in the area of disaster intervention is closely associated with resiliency building and enhancing the well-being of the survivors (Bhadra, 2013). While doing so, considering the human rights of the survivors, strengthening social justice, including marginalized groups, especially older adults, are crucial for disaster response programme.

Methodological Considerations

The quantitative method is adopted in this research work. The researcher was involved in the disaster intervention work with the survivors in Gujarat earthquake (2001), Communal conflict (2002), Indian Ocean Tsunami (2004), Kashmir earthquake (2005), and Himalayan Tsunami (2013). Based on personal experiences of working in different research projects and intervention programme this longitudinal observation study is developed. The present article is based on the qualitative observation made by the researcher while implementing rehabilitation projects. In these projects, vulnerable groups were special consideration for interventions at the individual,

family, and community level. Older adult survivors as a vulnerable section were considered in every intervention. Community-based participatory research (Padgett, 2008, p. 150) was followed to collect information and document the same in the form of weekly, monthly, or progress reports. In each of these disaster interventions at least, six hundred families were intervened with rehabilitation services. In each disaster, specific program components were designed for aged survivors according to the local context and culture. Case summaries of the survivors including the process of intervention were documented systematically. The developmental trend or changes were captured over a longer period (at least two years). The changes and trend of development of the groups of survivors were captured and older adult survivors of disasters were one of the groups. Thus, personal bias and social barriers are neutralized to bring a constructive understanding. In this qualitative research longitudinal observations (Ibid., p. 230) in different disasters are presented together in relation to the relevant review of literature from a similar context.

Older People and the Impact of a Disaster in India

The impact of disasters is not limited within any time frame; it has both immediate and long-term effects. The nature and intensity of the disaster determine the level of suffering of the survivors. The various impacts of disaster that the older adult survivors undergo are explained here.

Loss of 'sense of place': Sense of place is a concept given by Fullilove (1996) looking at the factors related to place psychology. The sense of place is an outcome of three basic aspects – attachment, familiarity, and identity. While a person lives in a place he or she develops a sense of belongingness with the neighbourhood, surrounding physical and social environment. Everyone strives to develop a better 'sense of place' that ensures a level of comfort and contributes towards a feeling of security. A disaster severely impacts this 'sense of place', by devastation, disturbances, and losses within the known environment. This circumstance imposes huge challenges in recovery. For older adult survivors who are living mostly in their retired life, away from serious responsibilities, and sustaining on saving, the impact of disaster tear their 'sense of place'.

Loss of sense of care and security: The geriatric health issues are due to common biological decay. There is a need for specific health care to maintain active ageing. Active ageing depends on providing a safe, secure, and caring environment to the elder individuals, through the informal and formal support systems. The informal support system includes the family, peer group, community net-works, neighbourhood, and the formal support system are from the government, from NGOs and other institutions. This includes various entitlements like health care provisions, pensions, subsidized products, and other welfare benefits. With wider variation in socio-economic conditions, living in a remote location, belonging to poor, marginalized community add to the vulnerability profile and expose the survivors in the worse reality of deprivation after the disaster. The older adult survivors being at the end of the priority list are often ignored in the post-disaster period.

Damage to public health infrastructure causes poor health service: Damage of public health infrastructure and delivery of health services are usually affected in any disaster. Provision of health services is an important need for geriatric health care, as often medical issues and health-related complications are common in old age. At least 80 per cent of the older adults have one chronic condition which contributes to their vulnerability more than any healthy person. The lack of facilities during disasters for emergency medical care and the non-availability of regular medications contribute to the worsening of chronic illnesses that the older adult may be suffering from. The common geriatric problems are arthritis, hypertension, heart disease, diabetes, and respiratory disorders that are leading causes of activity limitations. Such conditions and lack of treatment facilities, medical care can impair an older adult's ability to prepare, respond, or recover from a disaster (Aldrich and Benson, 2008).

Mental Health problem and high survivor's guilt: The psychological health issues of the older adult are common as they often lose their younger generations, lose the saving of whole life, residence, and many such materialistic and non-materialistic things that they would not be able to recover in a lifetime. Among the disaster affected elder survivors depression, anxiety, and experiencing severe stress, psychosomatic problems, and being withdrawn are common. Following the

Nepal earthquake, the study with the elder survivors reported various mental health symptoms like mood swings, crying alone, not interacting, no interest in life, low self-esteem, and becoming single-minded (Adhikari, *et al.,* 2017). Survivor's Guilt especially emerges while the older adults develop the self-blame as they witness the death of the children, grandchildren, or other close relatives. A study (Jia, *et al.*, 2010) in the Sichuan earthquake showed that elder survivors were more prone to develop PTSD (post-raumatic stress disorder) and general psychiatric morbidity, as compared to younger adult survivors. Living in a dangerous situation, having lost family members and associated guilt were a significant reason for developing PTSD. The similar problems among older adult survivors were reported following the severe flood in Uttarakhand state in 2013 known as 'Himalayan Tsunami' (Chandran, *et al.*, 2015).

Multiple negative 'life events' leading to high stress: Life events are the significant events in life, produce stress, and demand coping abilities to get readjusted. A life event is a significant occurrence involving a relatively abrupt change that may produce serious and long-lasting effects (Holmes and Rahe, 1967). The negative life event produces a very high level of stress. A disaster causes a number of negative life events at the same point in time. These events are loss of close family members or friends, loss of house and property, robbery or theft, death of a spouse, relocation, legal complications, major personal injury, a major change in social engagements, change in sleeping and food habit, etc. For elder survivors coping with such events becomes extremely stressful and they tend to be aloof, quite, or highly agitated. In a study with the survivors of Gujarat riots and earthquakes it was found that older adult survivors experience higher stress than younger adults (Bhadra, 2006).

Role reversal in 'life-cycle': In the normal course of life-cycle, the older age is marked for retirement, after active working life, and launching out of the children. But often disaster alters the life-cycle. The life-cycle is conceptualized considering the family of procreation and it starts from the phase of courtship, honeymoon, living with a toddler, living with school-going children, living with adolescent children, launching out of the children and retirement. In each of these phases of life-cycle, certain roles are expected and desirable. In normal

circumstances performing these roles according to the demands of each phase are obvious. While disaster stuck, stressful negative events occur and change in life-cycle produces huge stress. Like, an elder survivor taking rest in the retirement phase may again have to initiate livelihood venture to earn his living or may have to take-up parenting role for the grandchildren after the death of their adult children in the disaster. Such role reversals in life-cycle become very stressful for the older adult survivors of disaster (Sekar, *et al.,* 2005, p. 57).

Policy Guidelines for Aged Care in Disasters and Humanitarian Emergencies

Disaster management in India became a serious concern at the administrative and practical level in the twenty-first century. This gradually led to the development of a specific administrative structure for disaster management – the National Disaster Management Authority (NDMA), the State Disaster Management Authority (SDMA), and the District Disaster Management Authority (DDMA); legislation – such as the Disaster Management Act of 2005, disaster management policy guidelines, and training modules; the development of responsible institutional bodies – the National Disaster Response Force (NDRF), the State Disaster Response Force (SDRF), and civil defense; and academic institutions – training institutes, and specialized courses, including a postgraduate degree, diploma in disaster management (Bhadra, 2017)

In the National Policy on Disaster Management formulated in 2009, (GOI) older adult population, especially destitute, frail aged, are considered an important vulnerable group. Within the context of humanitarian response, the Sphere Handbook (The Sphere project, 2011) considered older persons as one the vulnerable sections that are disproportionally affected by the disaster and conflicts due to their marginalization and lack of claim even in the normal circumstances. According to Sphere (The Sphere project, 2011) 'special efforts must be made to identify and reach housebound older people and households headed by older people'. The IASC (Inter-Agency Standing Committee) Document on Humanitarian Action and Older Persons (IASC, 2008) mentioned the different areas of interventions specifically, health, water; sanitation and hygiene; food and nutrition,

shelter, camp coordination and management, early recovery and protection.

Older Adults in a Few Recent Disasters in India

In India, about 8 per cent of the population is above 60 years of age and about 75 per cent of them are living in rural areas. About one-third of these elder populations are living below the poverty line. Further, 33 per cent of the persons vulnerable to disaster are older adults (Government of India, 2016). Disasters are becoming grave and severe with the increasing threat of climate change and widespread human aggression.

Disasters threaten the development and increase the vulnerability of the weaker sections. The combination of a growing demographic change and increasing number of the humanitarian crisis in the middle and low-income countries are consistently increasing the number of older adults with higher vulnerabilities (Massey, *et al.*, 2017). India is highly prone to multiple disasters and no place of India is immune from disaster. Every disaster caused several difficulties for older adults. Older people were often being ignored as there was less focus on aged care in disaster management planning and interventions during preparedness, response, and rehabilitation. Here, the situation of the older adults in various recent disasters is highlighted to underpin the problem of the geriatric population in disasters in India.

Bhuj is the headquarter of the Kutchch District in Gujarat that was severely affected in the 2001 earthquake. While immediately after the earthquake injured survivors gathered in large numbers for medical care in Bhuj Civil hospital, at that time the doctors had to attend the young, and middle-aged survivors first. Many survivors demanded and pleaded that the younger people have more responsibilities to take care of, thus should be given priority in medical care. Some of the severely injured people were shifted by Indian Army airplane to Puna, another Indian city about 600 Kilo Meters away from Bhuj Town. The doctors had to identify the patients who could fly for hospitalization and treatment. While selecting the cases, a doctor shared his experience that 'I had no choice except selecting young people as they have family responsibilities to take care and their

lives were more precious than an older person'. It was a conscious decision to ignore the care for older adults.

The older adult survivors also lost their property holding in the post-disaster rehabilitation period in Gujarat earthquake, riots, south Indian Tsunami, and other disasters. While the families were relocated to houses in the post-disaster period the new property was registered in the name of their children. After the disasters often the grown-up married children moved out of the joint family, and the older parents were left alone uncared. In an incident of family-wise kitchen kit distribution in the post-Tsunami period, it was seen that the married children registered themselves as an independent family and claimed the Kitchen-kit from the NGO. The older persons could not reach out to the NGOs and failed to get the relief item. Due to disaster family disintegration became a common feature in many of these disaster-affected communities. To get relief item families started breaking in the smaller marital units. In such circumstances, the older parents were often ignored by their children.

Loss of relevant documents and the process for reissuing or recovering the same from various government offices is a very tedious, time taking process. In disaster loss of documents is a huge issue that imposes various socio-legal complications on the survivors. In many cases standing in the queue for long hours in the crowd become impossible for elder survivors. In all such situations, the elder survivors become major sufferers. In Gujarat riots, many of the elder survivors were in severe stress to get their ration, voter identity card, old electricity bills, or any other documentary proof of residence to get compensation or other benefits from Government. The situation was similar in other disaster-affected areas too where documents become crucial and older adults become helpless. Many of these elderly survivors were illiterate or semi-literate and had various difficulties to give appropriate information or fill-up forms that were necessary for reissue or documents or to get compensation.

In old age dependency on spectacles, hearing aid, walking stick or such equipment is common for daily living. In a disaster, most of the equipments were lost that suddenly increased their dependency on others and disability became very high (Halpern and Karla, 2017, p. 132). After losing such aid, many of them were quite immobile with

sensory-motor limitations or even unable to meet their own needs that they were usually capable of doing before a disaster. Procuring these equipments were quite time-consuming and difficult. Similarly, dependency on various medicines for issues like hypertension, blood sugar, or other problems is common in old age. Regular intake of these medicines is very crucial for maintaining health and well-being. During and in post-disaster context often the supply of medicines becomes a major crisis for the elder survivors. In Gujarat earthquake, riots, Uttarakhand flood, Sikkim earthquake, in Chennai flood this was a major complication as the supply chain of regular services in the disaster affected areas was severely disturbed. Often it is observed that in the supply of emergency medicines geriatric health needs are less prioritized.

Mudur reported that the relief packages were not designed as per the requirements of the older adult people in Tsunami intervention in India, Srilanka, Thailand, and Indonesia. In all these countries the sufferings of the elder survivors were quite high as often they had to fend for themselves and there was no special intervention as per the need of the geriatric population. In the case of food distribution, there was no special provision for nutritious food or foods as per the dilatory requirements of a person with chronic health problems like hypertension or diabetes. The data about death due to Tsunami clearly showed that older people are more likely to die in Disasters. In India, among the dead, more than 8 per cent was above 60 years of age.

Crisis due to disaster greatly hampers the livelihood and source of income for the elder survivors. Usually, after a disaster, while there is a crisis in livelihood, many young adults migrate to cities for a job. With physical mobility restrictions and psychological trauma, it becomes very difficult for the elder survivors to revive their livelihood. Strong financial insecurity was an added feature to their vulnerability in various Indian disasters. In Uttarakhand flood, while many young adult members died, the older people had to pick up various work to support their widowed daughter-in-law and young grandchildren. Inaccessibility of the social security benefits like old-age pension made their situation very stressful (Moudgil, 2017). It is seen that being neglected in these disasters the older survivors become silent sufferers without any power to demand or advocate for their rights. The passive

negligence and active violence against older people typically impact the rights and dignity of the elder survivors of disasters. The practice of marginalization and exclusion place the older people at the risk of being abused. Though in emergency violence and abuse are less likely to be reported, often older people suffer a lot of psychological, physical, social abuse and violence in the emergency period and long-term (Hutton, 2008).

Model of Interventions with Older Adults

Community participation and engagement was one of the major strategies to involve the survivors in the process of recovery in all the disaster interventions. Psychosocial support interventions were the entry point and it was integrated with another programme like livelihood promotion, micro-financing, self-help group initiatives, housing development, peace building, disaster preparedness, and other such diverse interventions. In Gujarat earthquake, Oxfam India society was one of the organizations that worked with the disabled survivors, their families, and the community through physiotherapy and psychosocial support interventions for rehabilitation and recovery (Ramappa and Bhadra, 2004). While about eleven hundred persons with spinal cord injury and amputation were reached-out in the affected villages and towns, it was about three hundred of them who were above 55 years of age and about one-third of the caregivers of the paraplegic patients were older adults. In such a situation beyond working with the injured and amputees, supporting the elder caregivers was the major challenge. In the community through 'Action Aid' (an International NGO) supported *Sneha Samudaya* programme a special cadre of community volunteers were developed called Viklang Bandhu (Friend of Disabled) who were trained to work with the caregivers to reduce their stress and help them to deal with their worries. The older persons with a disability were mostly depressed with strong death wishes as they were unable to accept their disability status and often expressed their situation as a punishment by God. Elder caregivers had many burdens as some of them had to reinitiate livelihood ventures, take additional household responsibilities, and run around to collect relief items or to access medical facilities. The community volunteers played a major role at this point to provide various services form the government and NGOs. The

community volunteers also took an effective role to ensure medical care provisions for persons with disabilities and for their elder caregivers. These community volunteers developed peer support groups for the disabled persons and community prayer groups (*Bhajan, Kirtan*) for elder caregivers. Supporting the elder caregivers at the community level to build their hope, resiliency, and capacity was crucial.

In Gujarat riots, the severe trauma among older people was observed as most of them felt the severity was unforgettable and there was gross deterioration in their health condition. Such a situation working with the older people was initiated through a project '*Aman Samudaya'* which evolved as a consortium of a few NGOs. In the relief camp, separate groups were developed and a few elder volunteers were identified specifically to be with elder survivors of riots. These volunteers were trained to understand the specific problems of the elder survivors and gained skills in providing psychosocial care.

In Tsunami, in various community interventions, inclusion of elders was considered but there was a lack of monitoring to assess the level of participation, thus often they were out of active engagement. In Kanyakumari district of Tamilnadu, as part of Tsunami recovery program, in each of the target communities, a community representative committee was developed to facilitate the work at the grassroots level. In each of these community representative groups, the participation of the elder people was ensured. These older people had traditional knowledge about environment protection mechanisms in the coastal zone, and about various livelihood activities. A group of elder men was active in planting coconut trees as a matter of restoring the environment. In the Cuddalur district (in Taminadu) and in Karikal (in Puducherry State) a few older adults took initiatives to plant mangroves. In each of these communities, various psychosocial support and health activities were conducted. Health activities were about cleanliness, prevention of various communicable diseases, health awareness, prevention of mosquito bites, and hand washing practice. In a psychosocial aspect, there were various community cultural events, organizing community fair, sports day, the celebration of days of national or local importance, developing children's parks, community libraries, and folk media campaigns to promote positive

coping. In these events, the participation of elder men and women was ensured and they were given honour. The older people were often involved in monitoring the activities, called on the stage to share experiences, views, and to inaugurate community events.

Elder groups became active to bring the children back to school and were engaged in non-formal schools to tell stories and to entertain the children. To a great extent in these communities, the older people became active agents for change. Group events at the community level were organised to facilitate the cultural healing process of the traumatic experiences among the elder survivors and to facilitate coping abilities with the changed situation. This included group meetings, group mourning, mutual support initiatives, reading of religious text, and also culturally appropriate recreational activities, like *Garba* (Traditional dance) in Gujarat, traditional singing in Uttarakhand, Tamilnadu, Kerala, and such other activities.

Key Learning for Disaster Intervention

For disaster interventions in an emergency setting, deploying the key learning for practice is very essential considering the features of changing society that include demographic transition, family disintegration, the emergence of institutional geriatric care, increasing poverty among the older adults, and incidences of abuse and neglect. The following points serve the crucial purpose in this regard.

Gender is always a cross-cutting theme in any disaster intervention. Among the elder survivors regaining the gender role in the household sphere and community become rudimentary for the hastening recovery process. Disaster intervention professionals should have an adequate understanding of the role of older men and women to facilitate normalcy. Though role reversals may happen, facilitating adjustment and coping become important with provisions of various social supports as needed.

Designated geriatric service provisions to reduce the physical health impact due to disaster should be a key focus of intervention. Geriatric medicine, various instruments, or aids for sensory and motor functioning, specific nutritional requirements should be prioritized in the relief and rehabilitation phase, till adequate systems are established for a regular supply of the same. Treating geriatric chronic disease

following a natural disaster is a must and therefore should become a public health and medical priority.

The psychological healing process through individual sessions, group meetings, and community-based care provisions should be developed to facilitate positive coping and meaningful participation of the older survivors. In case of need, there should be provisions of psychiatric referral for mental health care.

Security of physical environment should be considered, as often the vulnerable aged who belong to poor sections continue to live in dilapidated, unhygienic houses while being uncared. There are also issues like the inability to get suitable accommodation as often younger adults have more bargaining power and possess a better place in a relief camp, better house in the rehabilitation colony. Disaster intervention professionals need to be aware of the specific requirements, like, accommodation in the ground floor, near to toilet and water facility, etc. and ensure adequate safe housing for older adult survivors.

Financial support and suitable livelihood venture need to be part of rehabilitation for the elder adults in the post-disaster period. Often older people are not selected for cash-for-work or food-for-work programme or loan facilities considering their physical inability and advanced age. In such a situation developing financial security, network is very crucial for recovery. Strengthening the social security network, direct transfer of cash benefit or rationing of basic items, home delivery of food items become some suggested strategies.

Strengthening social relationships is very crucial, as often the elder survivors are the victim of loneliness and fail to reach out for any services. Displacement, losses due to disaster, loss of support system increase their helplessness. Rebuilding social net-works become equally important in such a situation.

Traditional culture, practice, and values are a very deep-rooted feature of every community. While disaster, loss, and displacement destroy these roots older people find it very difficult to get adjusted with the new situation. Therefore, humanitarian workers must design the local value-oriented contextual program that promotes cultural healing.

The capacity of older people should be recognized and effectively used within the context. Thus, designing such an intervention to facilitate the participation of older people is beneficial for the communities as well for older people.

Strong advocacy for the care and protection of older people needs to be developed with the increasing incidence of abuse and neglect. Monitoring of the existing law and stringent new law is needed to ensure the social security benefits and well-being of older citizen. India is yet to have separate guidelines for vulnerable groups, like women, children, disabled, older people for disaster management to ensure the responsibility of different stakeholders during disaster planning, intervention, and rehabilitation. No area in India is free from the risk of natural disaster or terrorist attacks, or emergencies. Thus, disaster preparedness planning is crucial for reducing the impact of the disaster. In such preparedness planning, the participation of the older people to develop a community safety plan is an important step to reduce vulnerability and marginalization.

COVID–19 and Geriatric Issues

In India, COVID–19 is declared as a 'notified disaster' on 14th March 2020 considering the severity of the threat and thereby to empower the government to take appropriate action and make the necessary funds available to manage the situation. This is a biological nature of disaster as per classification given by the High Power Committee on Disaster Management (1999), and further elaborated by UNDP (GOI-UNDP, 2012). WHO in its briefing in April 2020 has mentioned that 'Older people are at highest risk from COVID–19' and there is a need for special protective measures to be taken by the government and various authorities to facilitate adequate support with dignity and respect. In the European region, it is reported that over 95 per cent of the dead patients were above 60 years of age. Comorbid chronic medical condition like cardiovascular disease, hypertension, and diabetes, are also an important factor leading to higher death rates among the geriatric population (WHO Regional Office or Europe, 2020). The fact is not very different for India. About 63 per cent of the dead were above 60 years of age. There is no doubt that the older age group is severely vulnerable and they require very special attention

(Press trust of India, 2020). By assuming the threat the Union Health Ministry has issued a health advisory, listing some 'dos' and 'don'ts' for reducing the infection among aged people (Ministry of Health and Family Welfare, 2020). Still, a lot more needs to be done for the older age group for their safety and for securing dignified life in a post-carona situation. While there is a massive economic slowdown all over the country, with increasing unemployment and financial problem the older age group belonging to the poor sections of the society will have to face further severe survival challenges, in the absence of focused programmatic intervention for the geriatric population as a whole.

Conclusion

There are some crucial reasons for considering the older persons as a special vulnerable group for intervention in humanitarian emergencies. Specially, the number of older persons is increasing and they have equal rights for protection in the situation of crisis. The physical ailment due to age needs special attention to facilitate 'active aging', and well-being. In every disaster, the elders are disproportionally impacted and have higher suffering and greater difficulties in the post-disaster period. Any disaster makes an older adult a double victim of disaster with pre-existing vulnerabilities added to the multiple losses due to disaster. In disaster intervention working with the marginalized, underprivileged communities should be further prioritised to ensure the welfare and delivery of justice, keeping the human rights agenda at the forefront. Therefore, disaster response and planning should be more specific for serving older survivors with dignity.

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Role of Happiness in Health of Elderly

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ABSTRACT

Happiness is a situation that describes the emotions felt by an individual, impacting on activities carried out in daily life. Happiness does predict longevity among healthy populations. Happiness does not cure illness but it does protect against becoming ill. Good health is positively associated with happiness, and health tends to decline as individuals age. Old age is a period of human life in which mental health, especially hope and happiness, may decline. The physical and mental changes in this age can cause disorders in one's functioning. There are many factors which affect happiness and health in the life of the elderly, such as personal, psychological, physical, social, economic, religious, and cultural. Happiness results in the creation of a far better life with greater efficiency. Happiness is interrelated with the healthier physical and psychological state, easier sleep, reduced level of stress and depression, improvement of cardiovascular function, higher longevity, better compatibility with life events, stronger system, higher quality of life, and eventually, life satisfaction. Happiness can improve our health and overall sense of well-being as reported by the Harvard School of Public Health.

Keywords: *Elderly, Geriatric, Happiness, Health, Old age.*

Old age is an inevitable developmental phenomenon that changes humans physically and mentally. An extended life provides a good range of opportunities, not just for the elderly and their families, but also for society. Besides this, every additional year also allows pursuing new activities like further education, a new career, or many long-neglected passions. Elderly individuals also contribute in many ways to their families and communities. Nevertheless, the extent of those opportunities and contributions depends considerably on happiness and health (World Health Organization, 2018).

Happiness and health are closely related, and this relationship could also be more important in adulthood, if only because the prevalence of chronic diseases increases with increasing age. As anticipation increases and treatment for all time threatening diseases becomes simpler, the difficulty of maintaining happiness is increasing significantly at a growing age. It has been learned from various studies that the evaluation of the standard of life is impacted the health status of the person, but it¡¯s often seen that the typical self-reported life assessment within the population with age has been revealing. The factors like the status of a person, social and family relationships, social roles, and activities that change with age. Research studies suggest that happiness also can be a protective thing for health. Researches have also found that more individual are suffering from psychological problems.

Happiness comes once you feel glad and consummated. Happiness in life forever awakens the sensation of quality. Once somebody feels pleasure regarding one thing, it's referred to as the 'happiness' of the person. Being happy makes a person feel inspired and helps someone to smile. This brings joy to all people, which everyone chooses for themselves. We can see it in the eyes of people. It promotes love within the soul (Courtney E., 2019). Researchers have demonstrated the benefits of happiness in three aspects of life (Seligman M., 2002; Khosravi Z. and Cheragh M. 2012).

- The first is pleasure, which is an effort to increase positive emotions related to current, past, and future conditions.

- The second is engagement, which is involved in fun activities.
- The third is meaning, which refers to the purpose of life that makes a person survive and understand the values of life (Diah K. 2019).

Of course, there are various sorts of happiness and every person has various things in life that make them happy and unhappy. It's important for people to be self-aware and to understand what makes them happy and content as individuals (Castel A. 2019). Happiness is the main objective of human existence (Sêneca D., *et al.,* 2009). Happiness is often defined as a fundamental emotion characterized as an enduring step which is combined with: The absence of negative emotions; the presence of positive emotions; satisfactory life; social attachment and aims in life (Allen *et al.,* 2007; Bekhet A., *et al.,* 2008; Cloninger C. and Zohar A., 2011). Health is the level of functional or metabolic efficiency of a living being. In humans, it¡¯s the overall condition of an individual¡¯s mind and body, usually aiming to be free from illness, injury, or pain. The World Health Organization defined health in its broader sense in 1946 as 'a state of complete physical, mental, and social well-being and not merely the absence of disease or infirmity.' Health may be a dynamic condition resulting from a body's constant adjustment and adaptation in response to stresses and changes within the environment for maintaining an inner equilibrium called homeostasis (World Health Organization, 1946; World Health Organization, 2006). Common conditions in older age include hearing disorder, cataracts, and refractive errors, back, and neck pain and osteoarthritis, chronic obstructive pulmonary disease, diabetes, depression, and dementia. Furthermore, as people age, they are more likely to experience several conditions at an equivalent time. Older age is additionally characterized by the emergence of several complex health states that tend to occur only later in life which does not fall under discrete disease categories. These are commonly called geriatric syndromes. They are often the consequences of multiple underlying factors and

include frailty, incontinence, falls, and delirium, and pressure ulcers (World Health Organization, 2018).

With gradual improvement in health-care delivery services, life expectancy has increased and thus the percentage of the elderly population. It has been estimated that the number of people aged 60 and over will increase to 1.2 billion in 2025 and subsequently to two billion in 2050. Further, by the year 2025, almost 75 per cent of this elderly population will be living in developing nations, which already have an overburdened health-care delivery system (World Health Organization, 2013).

Impact of Happiness on Health of Elderly

Happiness does have a pretty important role in our lives, and it's a large impact on the method we tend to live our lives. In common language, the term is employed for temporary feelings yet as for stable appreciation of life (Veenhoven R. 1997). Many factors affect happiness within the lifetime of the elderly, like individual, psychological, physical, social, economic, religious, spiritual, and cultural dimensions (Argyle M. (2013). Researches found that elderly happiness is influenced by an individual's internal factors, namely obsessing with the shortcomings or poverty that they had. Those that feel that they're not poorer than their neighbors feel happier than people that feel that their neighbors are richer or more capable than them (Gray R., *et al.*, 2008). The number of relations and activities with the family and community influence elderly life happiness. This is often according to the work of Chyi and Mao; 2017), who found that living with children and therefore the kinship has an impact on the happiness of the elderly. The happiness of the elderly is triggered by their closeness to their grandchildren. Those that accept grandchildren show a better level of happiness (Ibid). Elderly during different stages of life showed that family, socio-psychology, economy, social support, social networks, and community relations influence happiness. Besides, the lifestyle of the aged and their struggle against illness also influence their happiness in life. The elderly are presumably not bothered by changes in their social environment, but they may suffer with changes in their financial status. Better educated, married, and more

resourceful elderly tended to be more satisfied with their lives. This might be the result of available opportunities (Chan Y. and Lee R., 2006). There is also an influence of cultural values, namely respect, harmony, and acceptance towards the happiness of the elderly. Cultural values noted for 63.5 per cent in the formation of happiness among the elderly (Karmiyati D. and Amalia S., 2018).

Health has an empirical effect on the happiness of the elderly. Adverse changes in health have long-term negative effects on happiness. Just in case of any serious change in health, despite the potential of very strong recovery and handling, the group of individuals, who have suffered terrible accidents or illness, are going to be less happy. In a study by. Diener E. and Chan M., (2011) found that when being asked about happiness, people tend to forget their physical health problems. It' empirically shows that happiness is going to be useful to health and help increase the longevity Health is affected both positively and negatively; this effects not only human health but also the span of life. Psychologists have observed ageing coping skills in the elderly. It is believed that various factors such as social support, religion, and spirituality are actively associated with life and self-centeredness in coping with stressful life events at the end of life (Schulz R. and Heckhausen J. 1996; Diane F., *et al.,* 2003; Windsor T., *et al.,* 2007). Social support and personal control are probably the two most important factors that benefit the health of the elderly. Other factors that may have a healthy relationship with the elderly include social relationships (relationships with humans as well as animals) (Smith G., *et al.,* 2000). Individuals from different sides of the same retirement home have exhibited lower mortality risk and higher vigilance and have self-assessed health where residents had more control over their surroundings (Langer E. and Rodin J., 1976; Bowling A., 2005;), although personal controls have specific health measures (Windsor T., *et al.,* 2007).

Religion is an important factor in the elderly to cope with the desires of the last phase of life and manifests more at the end of life than any other factor (Bisconti T., and Bergeman C., 1999). Retirement is a common transition period faced by the elderly and can

have both positive and negative consequences (McFadden S., 2005). A study in Singapore has shown that retired individuals who have been involved in voluntary activities have performed well on their level of knowledge, reduced symptoms of depression, and improved mental health, as well as life satisfaction, which has been relatively high. Food, exercise, sleep, and stress affect physical health. Sleep-deprived older adults are at risk of cardiovascular diseases, weakened immune system, lack of sleep can also cause fatigue by affecting the physical and mental health of the person. Looking at the physical and cognitive decline of old age, a surprising fact is that the emotional experience improves with age (Panek P., and Hayslip B., 1989).

Conclusion

Elderly happiness is a situation that describes the positive and negative emotions felt by individuals. Elders who have a negative perception are less happy in old age and do not live longer than those who have a more positive outlook. The elderly can better control their emotions and experience far less negative affect than the youth and show positive effects on their attention and memory. Social support is an essential requirement in the life of the elderly for healthy living. It enhances their health and helps them adjust to being happy. The elderly having good relationships with family members tends to have higher levels of happiness and health. They also forget their health problems when they are with their family. Happy people live longer, probably because happiness protects health.

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Labour Force Participation Rates of Elderly and Its Correlates in the Indian States

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ABSTRACT

In the absence of full-fledged social security measures and an increase in their expectation of life, elderly persons have started to participate in one or more economic avenues for earning some income mostly to meet their livelihood. Such a situation is taking place slowly in India during the recent past. Because of this phenomenon, in the paper, an attempt is made to understand the patterns, differentials, and correlates of elderly persons' labour force participation rates based on the 2011 Census data for the States and Union Territories (UTs) of India at the aggregate level. The Labour force participation rates (LFPRs) of the elderly persons (60+ years) by gender that LFPRs are much higher for male elderly as compared to their female counterparts, but differentials do exist. LFPRs are negatively correlated with the indicators of socio-economic development such as the percentage of elderly living in urban areas, per capita income and sex ratio of elderly, whereas such rates are positively correlated with the percentage of SC/ST and illiteracy of the elderly population at the states/UTs. Appropriate policy implications have been suggested.

Keywords: Labour Force, Participation Rates, Elderly, Gender, 2011 Census, Correlates.

Introduction

During the recent, it is generally observed that, in less developed countries like India, the pace of continuation and/or participation of the elderly (60+ years) persons in labour force have started escalating slowly mainly due to their lower socio-economic conditions. Such a situation also arises due to the large supply of older persons, which is an outcome of demographic transition and also increasing the expectation of their life due to the mortality transition. At the same time, in most of the less developed countries, the social security measures for elderly are not up to the mark and many of them are not able to save money to meet their day-to-day affairs during their fag end of life (old age) as most of them are working on agriculture and related activities through which the earnings are much less, in addition, to look after the demands of their children/dependent family members.

In addition to the aforesaid demographic scenario, elderly persons belonging to Scheduled Castes/Tribes (SC/STs) – an indicator of lower socio-economic status – are more likely to participate in labour force as they are mostly illiterate, living in rural areas and ready to work largely in agricultural and related and/or lower-grade services, which fetch them paltry wages that are barely sufficient for their survival. Likewise, as most of the elderly are illiterate (another indicator of lower social status), they are more in demand in such unskilled occupations (mentioned earlier), and thereby, they may participate to a higher extent in labour force. In addition to these, in urban areas (another indicator of economic development), on the one side, the economic situation of elderly will be better and on the other side, the demand for their labour would be less because of their illiteracy and many jobs/income-generating activities, by and large, need persons with minimum education (say about 10th standard or so) and/or additional skills/training to perform those jobs (Devi and Audinarayana, 1984; Hazarika and Hazarika, 2018). Besides these, the sex ratio of the elderly persons – another social indicator of development, generally favourable to females due to their higher expectation of life, most will have a negative correlation with their labour force participation as elderly women (who survive large in number during old age) participate in labour force to much lesser

extent and further, majority of them are widowed/divorced/separated for whom social and cultural norms are not conducive to participate in labour force (Audinarayana, 2016). Above all these, as the present study is dealing with the macro-level dataset, the per capita income (in Rs) for the year 2011–2012 has been considered as overall economic development of the States/UTs and thereby, the LFPR of the elderly persons is likely to be negatively correlated with this indicator (Devi and Audinarayana, 1983). Keeping this scenario in mind, in this paper, an attempt is made to examine the patterns, differentials in labour force participation rates (LFPRs) of the elderly persons by their gender and their socio-economic correlates across the States and UTs of India.

Methods

Data for this study has been drawn from the 2011 Census of India, which is available in electronic mode – Excel format. All the data related to economic activities of the population are available under the heading *'Data on Workers'* in different tables of B-Series (www.censusindia.gov.in) and such data is available for all the States/UTs as well as their districts. For the present paper, the labour force participation rates (LFPRs) have been computed for elderly persons (60+ years of the population) by expressing the number of the elderly population in labour force (*main workers* only in the present case) as a percentage of their (total) population at the State and UT level. As per Census of India, 'A person who has worked (or participated in any economically productive work) for 6 months or more, i.e., 183 days or more in a year during the last one year (reference period)' is termed as '*Main Worker*' (RGCCI, 2011). Such rates have been computed for the elderly persons as a whole (total) as well as by their gender background (males and females, separately) for all the States and UTs of India, excluding very small-size populated UTs viz., Andaman and Nicobar Islands, Dadra & Nagar Haveli, Daman & Diu and Lakshadweep.

Concerning the selected socio-economic development indicators at the macro-level (State/UT level), some of the following variables are computed from the relevant data available in the Census of India, 2011. They include the percentage of urban elderly, percentage of

SC/ST elderly, percentage of illiterate elderly, percentage of never-married/widowed/divorced/separated elderly and sex ratio of elderly (number of females/males x 1,000), In addition to these, the per capita income (in Rs) is collected for the States and UTs as provided by the Central Statistical Organisation, New Delhi (www.csopb.gov.in). All these indicators broadly indicate the level of socio-economic development of the concerned States and UTs.

In the case of analysis of data, simple rates and ratios have been used to measure the indicators/variables specified earlier. Later, the zero-order correlation coefficients have been computed based on the Pearson's Product Moment Correlation Coefficient analysis between the LFRPs of the total, male and female elderly, and the selected measures of socio-economic development for this study.

Results and Discussion

Labour Force Participation Rates of Elderly by their Gender Across the States/UTs

At all India level, as a whole, the LFPR of elderly persons noted as 31.4 per cent, whereas such rate is about 3.5 times higher among male elderly (49.4) as compared to their female counterparts (14.0). Details of LFPRs of elderly persons for the total, males, and females across the states and UTs are provided in Table 1. Among the total elderly persons, by and large, the LFPRs are fairly higher (35.1 and above) in the States located in the north-eastern region of India – 6 out of 7 states (popularly known as *the Severn Sister States*) followed by Maharashtra, Madhya Pradesh, and Andhra Pradesh. Conversely, in 11 states/UTs, the LFPRs of elderly persons are comparatively lower (25.0 and less), the lowest being in Goa (16.9) closely followed by Puducherry (18.3), Kerala (18.3) and Chandigarh (19.1). The LFPRs of elderly persons of the remaining 11 states fall in the moderate group (25.1 – 35.0).

With regard to the LFPRs of male elderly, the patterns observed in the case of total elderly persons are almost the same with the following few exemptions. In the State of Karnataka, the LFPR is a little higher (52.1 and above) replacing Andhra Pradesh, whereas Himachal Pradesh goes down to the lower level group of LFPRs. (40.0

and below). On the other hand, the States of Odisha, Haryana, and West Bengal moved to moderate LFPRs group. Another point to be noted here is that as high as 13 States/UTs, the LFPRs of elderly males are at a moderate extent (40.1 – 52.0). Classification of States and UTs based on LFPRs of the female elderly though mostly fall in line with that of total elderly persons, following are some of the glaring exceptions. LFPRs of female elderly are found to be relatively higher side (16.0 and above) in Uttarakhand (17.5) followed by Karnataka (17.3) and Chattisgarh (16.7), whereas Punjab state has turned out as having the lowest female elderly LFPR (6.5), besides, the 9 States/UTs noted earlier. On the other hand, Jharkhand (10.0) and Tamil Nadu (15.6) moved to a moderate group of female LFPRs (8.1–15.6) from the lower female LFPRs group.

Table 1

Labour Force Participation Rates (in %) of Elderly Persons across States / Union Territories by Gender, 2011

Total / Males/ Females	*Low*		*Moderate*		*High*	
	≤ 25.0		*25.1 – 35.0*		*35.1 & Above*	
Total	Goa	(16.9)	Him. Pradesh	(25.1)	Andhra Pradesh	(35.1)
	Puducherry	(18.3)	Punjab	(28.4)	Madhya Pradesh	(35.1)
	Kerala	(18.5)	Tripura	(28.5)	Maharashtra	(36.3)
	Chandigarh	(19.1)	Gujarat	(29.4)	Sikkim	(38.3)
	Jam. & Kash.	(20.8)	Uttarakhand	(30.5)	Mizoram	(43.5)
	NCT Delhi	(21.7)	Rajasthan	(30.8)	Manipur	(43.8)
	Tamil Nadu	(23.3)	Chattisgarh	(31.2)	Meghalaya	(46.1)
	Jharkhand	(23.5)	Bihar	(32.6)	Aruna. Pradesh	(50.3)
	Odisha	(24.0)	Uttar Pradesh	(34.1)	Nagaland	(60.8)
	West Bengal	(24.1)	Karnataka	(34.3)		
	Haryana	(24.2)	Assam	(34.7)		
Males	*≤ 40.0*		*40.1 – 52.0*		*52.1 & Above*	
	Goa	(28.1)	Odisha	(41.4)	Karnataka	(53.1)
	Tamil Nadu	(31.4)	Haryana	(42.0)	Madhya Pradesh	(53.8)

Cont'd...

Cont'd...

	Chandigarh	(31.7)	West Bengal	(42.2)	Uttar Pradesh	(55.7)
	Puducherry	(32.0)	Uttarakhand	(43.9)	Mizoram	(57.3)
	Kerala	(33.7)	Rajasthan	(48.7)	Manipur	(57.4)
	Him. Pradesh	(35.4)	Chattisgarh	(49.0)	Assam	(58.1)
	Jam. & Kash.	(36.0)	Punjab	(49.9)	Meghalaya	(62.1)
	Jharkhand	(36.9)	Tripura	(49.3)	Aruna. Pradesh	(62.8)
	NCT Delhi	(38.0)	Maharashtra	(51.0)	Nagaland	(67.3)
			Andhra Pradesh	(51.2)		
			Bihar	(51.2)		
			Gujarat	(51.7)		
			Sikkim	(51.8)		
Females	*≤ 8.0*		*8.1 – 16.0*		*16.1 & Above*	
	Jam. & Kash.	(4.1)	Tripura	8.5	Chattisgarh	(16.7)
	NCT Delhi	(5.2)	Gujarat	(9.7)	Karnataka	(17.3)
	Chandigarh	(5.6)	Jharkhand	(10.0)	Madhya Pradesh	(17.5)
	Kerala	(6.1)	Assam	(10.7)	Uttarakhand	(17.5)
	West Bengal	(6.1)	Uttar Pradesh	(10.8)	Andhra Pradesh	(20.7)
	Punjab	(6.5)	Bihar	(11.4)	Sikkim	(21.6)
	Haryana	(6.6)	Rajasthan	(14.6)	Maharashtra	(23.1)
	Odisha	(6.7)	Him. Pradesh	(15.3)	Mizoram	(29.4)
	Puducherry	(7.3)	Tamil Nadu	(15.6)	Manipur	(30.3)
	Goa	(7.6)			Meghalaya	(31.2)
					Aruna. Pradesh	(36.7)
					Nagaland	(53.3)

Correlates of LFPRs of Elderly by Gender in the Indian States

Results based on the zero-order correlation analysis (Table 2) suggest that, among of the total elderly persons, of all the indicators under consideration, the LFPR of the elderly is positively correlated, to a higher extent ($r = 0.786$) with their percentage of SC/ST at the States and UTs and the magnitude of the coefficient has turned out as highly significant ($p < 0.001$). Conversely, the LFPR of elderly persons is found to be negatively and highly correlated with their percentage

living in urban areas at the States/UTs ($r = -0.455$; $p < 0.01$). Next to these, the LFPR of elderly persons is observed as negatively correlated with per capita income ($r = -0.406$) and sex ratio of the elderly ($r = -0.387$) at the states and UTs, but the test of significant results in this regard turned out as moderately significant ($p < 0.05$ and $p < 0.05$, respectively). As expected, while the LFPR of the elderly is positively correlated with their percentage of illiteracy ($r = 0.283$), such rate is negatively correlated with their percentage of never married/widowed/divorced/separated ($r = -0.082$). However, the test of significance levels in both these regards didn't turn out as statistically significant.

Table 2

Zero-order Correlation Coefficients between State-wise Socio-Economic Indicators and Work Force Participation Rates of Elderly by Gender, 2011

Socio-Economic Indicators	*Zero-order Correlation Coefficients*		
	Total	*Males*	*Females*
% of Urban Elderly	–0.455**	–0.535***	–0.314+
% of SC/ST Elderly	0.786***	0.667***	0.790***
% of Illiterate Elderly	0.283	0.407*	0.114
% of NM/Wi./Di./Sep. Elderly	–0.082	0.381*	–0.041
Sex Ratio of Elderly	–0.387*	–0.357*	–0.242
Per Capita Income (in Rs)	–0.406*	–0.534***	–0.229

Note: +, *, ** and *** = Coefficients are significant at 0.10, 0.05, 0.01 and 0.001 levels, respectively.

In the case of the male elderly, on the whole, it is conspicuous to note that the LFPR is correlated significantly (at different levels) with all the six indicators under study. For example, as noted in the case of total elderly persons, while the LFPR of male elderly is positively correlated and found to be highly significant with the percentage of SC/ST elderly ($r = 0.667$; $p < 0.001$), it has a negative correlation to a higher and significant extent with their percentage living in urban areas ($r = -0.535$; $p < 0.001$) and per capita income of the States and UTs ($r = -0.534$; $p < 0.001$). Likewise, the LFPR of male elderly is negatively correlated with their sex ratio ($r = -0.357$) and statistically

turned out as significant at a moderate level ($p < 0.05$), which indicates that the LFPR of males is found to be lower in States/UTs which have higher sex ratio (females higher than males per 1,000 elderly) and vice versa. On the other hand, it is striking to note that the LFPR of male elderly is positively correlated with their percentage of illiterates ($r = 0.407$) as well as the percentage of never married/widowed/divorced/separated ($r = 0.381$) and test of significance statistics in both these regards have emerged as significant at a moderate level ($p < 0.05$ and $p < 0.05$, respectively).

With regard to the correlates of female LFPR, overall, all the six indicators under consideration appear to have shown the expected signs of correlations, the magnitude of coefficients have turned out as statistically significant only in the case of two indicators. For instance, while the LFPR of female elderly is positively correlated ($r = 0.790$) and turned out as highly significant ($p < 0.001$) with the percentage of SC/ST elderly, such rate is negatively correlated with their percentage residing in urban areas ($r = -0.314$), but statistically the coefficient is found to be less significant ($p < 0.10$).

Conclusions and Implications

An examination of LFPRs of elderly persons enumerated during the 2011 Census of India showed that such rates are relatively higher among the States located in the north-eastern region and also in the States like Andhra Pradesh, Karnataka, Madhya Pradesh, and Uttar Pradesh, irrespective of their gender background. By and large, these States are mostly agricultural-based economies and/or slightly less developed states, wherein it is easy for the elderly to enter into labour force and earn little wages for their livelihood. Moreover, the LFPRs is higher among male elderly as compared to female elderly uniformly among all States/UTs. This is mainly due to the cultural stipulation that male persons should protect or support the family members (playing the role of breadwinners) by participating in one or the other income-generating activities. LFPRs of elderly persons, irrespective of their gender, are found to be higher in the States/UTs that have a higher percentage of elderly is SC/STs, whereas such rates noted as lower in the States/UTs that have a higher percentage of elderly living

in urban areas and vice versa. LFRPs of the elderly persons, especially males, are observed as lower in States/UTs in which per capita income, as well as sex ratio of elderly, are higher and vice versa. On the other hand, LFPR of male elderly is found to be moderately higher in States/UTs wherein the percentages of elderly who are illiterates and never married/widowed/divorced/separated and vice versa.

All these findings would lead to the conclusion that LFPRs of elderly persons are highly correlated to the socio-economic development (indicators) of the States/UTs to which they belong. Because of these findings, it may be suggested that the policymakers need to focus on the overall development of the States/UTs to reduce the burden of the elderly in participating labour force and thereby, live peacefully during their fag end of life. It is also suggested that the old-age pension amount which is the major source of social welfare measure to support the elderly mostly for their livelihood need to be enhanced over a period matching the inflation rate to so as to give the elderly a decent life and thereby, decrease their participation in labour force as well as in lessening the competition with adult labour force participation. Attempts also may be made to encourage the young/adult children to take care of their parents/grandparents by conveying the importance of elderly persons to the family and society so as to discourage their participation in income-generating activities during old age.

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