AN OVERVIEW OF POPULATION AGEING AND HEALTH OF THE RURAL ELDERS

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ABSTRACT

Globally, the population is rapidly ageing. What was once mostly a concern of the developed countries, has gained momentum in the developing countries. Furthermore, in many developing countries and countries with economies in transition, the ageing population is marked in rural areas, owing to the exodus of young adults. Though rural ageing can boast of healthier lifestyle, healthier dietary habits, spacious accommodations, lower stress, rich social relationships and social support, etc, it is often plagued by absence of retirement pension, limited material resources, lack of access to formal services and lack of transportation which reduce the well-being of the elders. This paper will contain a descriptive discourse on the health status of the rural Chakhesang elders along with other studies carried out in rural areas of India, and also attempt to make a comparisonwith those of elderly health in urban and other communities where researches have been carried out.

INTRODUCTION

Population Ageing

Ageing is the process of becoming older. In humans, ageing represents the accumulation of changes in a human being over time, encompassing physical, psychological and social change. The rapid and fast technological progress made in medical science has controlled the fertility and mortality rates considerably and the average composition exhibits a relatively larger proportion of the elderly person.

This global phenomenon comes attached with extensive economic and social consequences. At the moment, United Nations standard numerical criterion for definition of 'elderly' person is 60 years (WHO, 2002) and most gerontological literature accords the cut-off to refer to the older population. The World Health Organization (WHO) has recognized the importance of this demographic trend and has expressed in its 1996 Brasilia Declaration on ageing that 'healthy older people are a resource for their families, their communities and the economy'.

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Concurrent with this achievement, there are problems that arise and overshadow the joys of longevity and this demographic shift has immensely affected the social fabric, cultural values, health conditions and economic structure of the society to a great extent. As such, the ageing population is a source both of joy and worries- joy because people are living longer and healthier lives; worries about how to best respond to a future with a larger, older population, with their rightful demands and needs (WHO, 2008). The active ageing approach was adopted by WHO in 1999 which is based on optimization of opportunities for health, participation and security in order to enhance quality of life as people age.

The proportion of the world's population aged 60 years and over increased from 8 percent in 1950 to 12 percent in 2013. It will increase more rapidly in the next four decades to reach 21 percent in 2050. The stages and speed of ageing are quite different between the more and less developed regions. Ageing in the more developed regions started many decades ago, but it is just taking off in less developed regions, while it has yet to unfold in the least developed countries (UN, 2013). The proportion of the aged population in the more developed regions was 12 percent in 1950, rose to 23 percent in 2013 and is expected to reach 32 percent in 2050. In the less developed regions, the proportion of older persons increased slowly between 1950 and 2013, from 6 percent to 9 percent; however, the increase in the proportion of older persons is expected to accelerate in the coming decades, reaching 19 percent in 2050.

In the least developed countries, the proportion of older persons has remained fairly stable at about 5 percent for many decades, but this proportion is expected to double by 2050. Because the older population in less developed regions is growing faster than in the more developed countries, the projections show that older persons will be increasingly concentrated in the less developed regions of the world. By 2050, nearly 8 in 10 of the world's older population will live in the less developed regions. Older persons are projected to exceed the number of children for the first time in 2047 (UN, 2013).

Population ageing was once mostly a concern of developed countries, today it is gaining momentum and the pace is faster in the developing countries (UN, 2009). The proportion of elderly persons in India has risen from 5.6 percent in 1961 to 7.4 in 2001 and is expected to be 12.4 in 2026 (MSPI, 2011). Among states, the proportions of elderly persons vary from around 4 percent in small states like Dadra & Nagar Haveli, Nagaland, Arunachal Pradesh and Meghalaya and to more than 10.5 percent in Kerala (ibid). In 2004, the 60th round of National Sample Survey Organisation (NSSO) studied condition and health care of the aged. The survey estimated that in the rural areas, every 1000 persons in the working age have to provide support, physically or otherwise, to 125 aged persons (old age dependency ratio). Furthermore, MSPI (2011) found that 66 percent of elderly men and above 23 percent of aged women in rural areas were still participating in economic activities, while in urban areas, only 39 percent of elderly men and about 7 percent of elderly women were economically active.

Ageing, Health and Rurality

Increasing age is associated with higher morbidity and higher use of health services (Karim, 1997). It is among the greatest known risk factors for most human diseases, of the roughly 150,000 people who die each day across the globe, about two thirds die from age-related causes (Bowen, *et al.,* 2004; Dillin *et al.,* 2014). As such, the elderly are on the whole less healthy than the non-elderly and is a matter of great concern for the health sector. Mental health and emotional wellbeing are as important in older age as at any other time of life.

Neuropsychiatric disorders among the older adults account for 6.6% of the total disability for this age group. Approximately 15% of adults aged 60 and over suffer from a mental disorder (WHO, 2014). With the increase in elderly population, a country's health spending also increases. The escalation in health care cost may be contained by improving preventive care, and utilizing family and community support as an alternative to hospitalization whenever suitable (Woo *et al.,* 1994).

In a developing country like India, healthcare of the elderly has not received adequate attention from policy makers as they were pre-occupied with maternal and child health, communicable diseases, malnutrition and increasing population. For many older people with no savings, low wages, a lack of job security, poor health, no economic support from their children, just enough earnings to make ends meet, and little help from their friends and communities, old age is not a phase of life worth looking forward to (UNFPA, 2002). The Government of India formulated the National Policy on Older Persons (NPOP) in 1999 in response to the increasing number and proportion of older persons and their disadvantaged status (Rajan and Mishra, 2011). The policy defined 'senior citizen' or 'elderly' as a person who is of age 60 years and above and further classified the old as 'young old' (between 60-69 years), 'middle old' (70-79 years) and the 'older old' (80 years and above). Well-being of older persons is the kernel of this policy. It accords high priority to health care needs of older persons and health services for them. It strives to improve quality of their lives through providing specific facilities, concessions, relief, services, etc. and helping them cope with problems associated with old age. It also proposes affirmative action on the part of government departments for ensuring that the existing public services for senior citizens are user friendly and sensitive to their needs. It provides a comprehensive picture of various facilities and covers many areas like financial security, healthcare, shelter, education, welfare, protection of life and property (MSPI, 2011).

Rural communities incorporate many elements of diversity that influence the lives of older adults: climate, landscape, distance from family networks, availability and access to services, migration patterns, community economic viability, age, gender roles and relationships (Keating and Phillips, 2008). In many developing countries and countries with economies in transition, the ageing population is marked in rural areas, owing to the exodus of young adults (UN, 2002). As such, the ageing process is faster in rural areas due to rural-urban migration of rural youth in search

of education and employment leaving behind the elders in villages and factors such as the return of people after retirement from urban workforce (Bhaskaraiah and Murugaiah, 2013). Rural people are typified as having a slower, less pressured way of life, strong community feeling, close connections to the land and conservative, traditional values (Atkin, 2003). They perform multiple roles in rural community as land owners, subsistence farmers, farm laborers and household members (Bhaskaraiah and Murugaiah, 2013).

While older adults may be an important resource, they do not always live in settings in which they are able to flourish and those in rural communities may be doubly disadvantaged (Kalache, 2008). Undoubtedly, there are regional variations in the condition of villages but in general, most villages have poor sanitary conditions and less access to education and health facilities (Prakash, 1999). Moreover, most people in rural areas have little or no accumulated savings to fall back upon in their old age during the period of economic crisis (Bhaskaraiah and Murugaiah 2013) and lower retirement pensions in agriculture leading to rudimentary life conditions (Pérès *et al.,* 2012). Despite the growing numbers, the older rural people by almost all economic, health and social indicators are poorer (Coward and Lee, 1985; Montgomery *et al.,* 2003; UN, 2009; Australian Institute of Health and Welfare, 2010; Bhaskaraiah and Murugaiah, 2013) and less healthy, and tend to have more health problems than their urban counterparts (Coward and Lee, 1985; Bhaskaraiah and Murugaiah, 2013).

They often have significantly more limited access to health professionals with a growing desertification of medical and paramedical professionals (nurses, physical therapists, occupational therapists) (Therrien and Desrosiers, 2010), and access to community-based programs and services (Coward and Lee, 1985; Montgomery *et al.,* 2003; UN, 2009; Australian Institute of Health and Welfare, 2010; Pérès *et al.,* 2012).

Prevalence of heart disease are lower in rural areas (Singh, 2013) while, memory loss is higher amongst the elderly from rural areas and the widowed, elderly staying in the rural areas exhibit higher proportion of vision, hearing, walking, chewing, and memory problems, probably because of lack of availability of modern medical facilities (Singh, 2013). Kamble *et al.* (2012) reported lower prevalence of respiratory diseases and attributed it to low air pollution. It was also found that elderly associated with agricultural activities suffer relatively less than their counterparts associated with non-agricultural activities (Thomas and Diengdoh, 2007).

This paper will contain a descriptive discourse on the health status of the rural Chakhesang elders along with other studies carried out in rural areas of India and make a comparison of elderly health in the rural, urban and other areas where researches have been carried out. It may be noted that all the findings of the present study has been discussed in comparison to other geriatric studies done among Indian populations which are from multidisciplinary backgrounds. While selecting the diverse national representation of previous studies for a cross-cultural, cross-

community comparative analysis, care was taken to include the socio-cultural, behavioral, biological and bio-medical application of population studies discussed from the light of an anthropological perspective in the study of the old, aged, infirmed, and elderly members of the rural Chakhesang tribal population.

MATERIALS AND METHODS

Attempt was made to study health of the elders from diverse aspects. Accordingly, primary data was collected by complying with a pro forma with a set of questions, containing both structured interviews (involving the use of a set of predetermined questions and of highly standardized techniques of recording) and unstructured interviews (characterized by a flexibility of approach to questioning). The interview schedule contained socio-demographic details,Self-reported Morbidity (SRM) and physiological measurements. Standardizedprotocols which have been developed and already tested on Indian and Global populations such as the screening tests for assessment of depression (GDS) and assessment of nutritional status (MNA) were used in the present study.

The sample was drawn from the Chakhesang population, one of the major Naga tribes of Nagaland, India inhabiting the rural areas who are free-dwelling (not confined to old age homes or hospitals), comprising both men and women who were between 60-101 years. Almost none of the aged individuals had an official record of their birth date; hence their age was estimated by matching recall of particular historical events. The total sample size was 912 and comprised of 425 males (46.6%) and 487 females (53.4%). Data was collected from 20 Chakhesang villages viz., Enhulumi, Chizami, Kami, Khezhakeno, K. Basa, K. Bawe, Lekromi, Lasumi, Leshemi, Losami, Mesulumi, Pfutseromi, Phusachodu, Phuyoba, Rihuba, Sakraba, Thenyizu, Thetsumi, Thipuzu, and Zapami. No statistical sampling technique was applied for the selection villages because the criterion for inclusion was dependent upon the presence or absence of elderly participants in these respective locations. Purposive sampling was used to include those elders who were 60 years of age and above, who were mentally receptive and who were willing to participate in the study.

Data on Physical Ailments

- Self-reported Morbidity: Data on physical ailments were collected through Self-reported Morbidity, lifestyle patterns and physiological measurements. The subjects were asked if they have experienced any kind of ailments that might have bothered them during the past three months prior to the day of investigation. Accordingly, Self-Reported Morbidity was recorded. The International Classification of Diseases (WHO, 2010) was followed for the categorisation of diseases such as infectious and parasitic diseases (cholera, diarrhoea, dysentery, fever, leprosy, tuberculosis, typhoid), endocrine and metabolic disorders (diabetes, goitre), circulatory and cardiovascular diseases (cardiac arrest, dizziness, hypertension, stroke), respiratory (asthma, cough,

sinus, tonsil), digestive system (abdominal pain, appendix, constipation, gastric, indigestion, piles, tooth problem), musculo-skeletal (arthritis, backache, body pain, joint pain, rheumatism) and miscellaneous disorders (allergies, headache, insomnia, jaundice, nausea, scabies, watery eyes, weakness). The nature of treatment and the levels of satisfaction with the treatments were also taken into account.

- Lifestyle Patterns:Certain aspects of the lifestyle pattern of the elderly such as smoking, drinking, chewing tobacco and chewing *paan* or betel quid, the various types and the reasons behind the habits were noted. Food habit was also recorded.

- Physiological Assessment:SystolicBlood Pressure was monitored using a mercury sphygmomanometer and stethoscope according to prescribed norms.

Data on Nutritional Status

Assessment of nutritional status was done by the following assessment:

- Mini Nutritional Assessment (MNA): A comprehensive tool specifically developed for use with elderly people is the Mini Nutritional Assessment (MNA). It is a practical and reliable method and has been validated in successive studies (Vellas *et al.*, 1999; Wason and Jain, 2011; Pai, 2011).

- The MNA is an 18 item schedule comprising of (i) Anthropometric measurements (weight, height, mid-arm circumference, calf circumference and weight loss) combined with a schedule regarding; (ii) Dietary assessment (number of meals consumed, food and fluid intake and feeding autonomy); (iii) General assessment (life style, mobility, medication, psychological); and a (iv) Subjective assessment (self-perception of health and nutrition). Results were trichotomised into the following three categories: < 17 = Malnourished; 17-23.5 = at risk of Malnutrition and 24-30 = Normal Nutritional Status. This test is well validated in International studies in a variety of settings and the MNA correlates with morbidity and mortality. Based on the scores, following are the different classifications: < 17 = Malnourished; 17-23.5 = at risk of Malnutrition; 24-30 = Normal Nutritional Status.

Data on Mental Health

For the present study, one variable was considered to provide a measure of mental health, i.e., depression.

- Geriatric Depression Scale (GDS): A Geriatric Depression Scale (GDS) was also used to assess the degree of depression among the elderly. The GDS is a self-report scale developed to measure depression particularly in the older population (Yesavage *et al.* 1983). The scale consists of 15 questions each of which has a yes/no answer, with the scoring dependent upon the answer given. Out of the total 15 points, the following categorisations were made to assess

the various levels of depression among the elderly: ≤ 5 = No Depression; < 5 and ≤ 10 = Suggestive of Depression; < 10 = Depression.

Data on Functional Health

• Sensory Tests- Vision and Hearing: Vision was tested by a finger counting method that has a cut-off point at finger counting less than one metre while hearing was evaluated by whispering test (Clausen *et al.*, 2000).

RESULTS AND DISCUSSION

The socio-demographic details of the Chakhesang elders are presented in Table 1.

The mean age of the subjects was 72.6. Nuclear family (36.2%) was found to be the predominant type of living arrangement. Regarding marital status, it was observed that majority of the elders (64.1%) were still in wedlock. Majority of the elders are illiterate (78.1%) and cultivators (89.1%). The primary level of activity (which includes daily agricultural chores) was the most common type of activity (65.1%). Only 9.1% of the elders are salaried while the rest derive their income from farming, husbandry, weaving, basketry, etc.

Multiplicity of diseases or co-morbidities (two or more diseases) among the elders has also been reported by several studies such as those carried out by Batra, 2004; Goswami *et al.*, 2005; Joshi *et al.*, 2006; Shankar *et al.*, 2007, etc. From table 2, it is observed that the average number of illness per person is higher among the rural elders as compared to the urban elders. While, a study by Singh *et al.* (2013) revealed that the average number of illness per person is 3.17, making urban slum to house more diseased elders than their rural and urban counterparts.

The present study shows a very high percentage of hypertension Table 3 in comparison to studies from other research areas. Further researches need to ascertain the possible causal factors that might be influencing hypertension among these elders. Overall, hypertension shows higher prevalence in elderly persons living in urban area in comparison to rural areas.

For hypertension in general, elders need to check dietary factors, reduced salt intake, increased potassium intake, moderation of alcohol intake, increase in fibers, fruits and vegetables, comprehensive diet management, the Indian vegetarian diet, weight management, smoking and tobacco intake, physical activity, stress management, etc. (Gupta and Gupta, 2010).

In this study among the free-living rural Chakhesang elders, 1.6% of the elderly were found to be malnourished according to the MNA scale Table 4 while 66.7% were found to be at the risk of malnutrition. The percentage of malnourished individuals seem to be the least among the other studies conducted in a rural setting as well as urban and institutionalized areas. However, the percentage for the 'at risk of malnutrition' category shows a very high percentage in comparison to the other studies. Overall, the percentages of malnourished elders vary across cultures

but the percentages of the 'at risk of malnutrition' reveals that more rural elders are at the risk of malnutrition than their urban counterparts. Institutionalized elders share a commonality with that of the rural elders with regard to the risk of being malnourished.

It was found that majority of the elders (82.8%) in the present study were not under depression according to the GDS scale Table 5. From the selected studies, variation in the prevalence of depression is not marked among the various localities. Studies have shown that each area, be it rural, urban or urban slum, have their own risk factors for depression. For instance, Pracheth *et al.* (2013) assessed the role of risk factors leading to depression and it was found that 53.25% elderly who were involved in physical activity were not under depression compared to 76.56% physically inactive elders suffering from depression. Depression was seen to associate with poor physical health and chronic diseases (Blazer 2003; Rajkumar 2009: Pracheth et al 2013). Further, geriatric depression was found to significantly associate with female sex, living without spouse, illiteracy, time spent with children and grand children and dietary habits in both rural and urban slum communities but money dependence and health problems were strongly associated with depression in urban community (Arumugam *et al.* 2013).

From Table 6, it is evident that the prevalence of vision impairment is more than hearing impairment and the percentages are inconsistent regardless of research areas. However, hearing impairment is seen to be more prevalent among the rural elders as compared to the urban counterparts. Singh (2013) reported that elderly staying in the rural areas exhibit higher proportion of vision, hearing, walking, chewing, and memory problems, probably because of lack of availability of modern medical facilities. In the present study, it was observed that most of the elders did not bother to use spectacles or hearing aids. They considered these incompetences as natural processes of growing old. Likewise, in 2005, Dzüvichü reported that impaired vision and hearing were common complaints among the rural Angami elders but it didn't seem to bother them much since they could continue with their daily chores without using hearing aids or spectacles.

CONCLUSIONS

This paper attempted to make a comparison on the health of the rural elders with those of elders from diverse communities by considering some health indicators. The comparisons were drawn from studies among Indian populations and from multidisciplinary backgrounds. After surveying the literature, it was observed that the average number of illness per person, elders at the risk of malnutrition and hearing impairment are more prevalent among the rural elders while lifestyle disease such as hypertension showed a higher prevalence among elderly persons living in urban area than in rural areas.

A lot of schemes have been introduced by the central Government for the welfare of the elderly but the bulk of it is urban-oriented. Travel concessions make no

impressions on the rural elders as they hardly travel. And since 75% of the elders in India live in rural areas, policy makers should plan in such a way that benefits will reach majority of the elders and to those who genuinely require help. Policies should be designed to develop appropriate healthcare services especially that of mobile geriatric healthcare services in hard-reach areas; these services can be delivered through social care services also. These mobile healthcare services for the aged will be of immense help to those elders from rural areas because most of the elders do not seek medical help due to poverty and difficulties in travelling long distances. Geriatric healthcare units are being introduced in district headquarters across the country but considering the bulk of the elders in rural areas, geriatric care units are particularly crucial in all the health centers to cater to the needs of the elders. These units should be highly accessible and affordable, and should constitute the general healthcare services available in the rural areas. The elderly need to be covered by health insurance scheme(s) in order to access healthcare. Strict measures need to be adopted to provide high-quality healthcare services.

The universe under study is a typical rural set-up and the society is predominately agrarian. The quality of life as such, portrays a different picture from the urban setting. Though the rural areas can boast of rustic tranquility such as idyllic settings, salubrious surroundings, and liberation from urban pollutions, stress and social problems, it is not free from those instances like poor service infrastructure, inadequate facilities for healthcare, isolation, poverty, illiteracy and unfriendly climate. With the increasing pace of population ageing, the health of elderly persons has become the focus of recent attention and it is hoped that the policies of the Government for the welfare of the elders will also benefit the elders of this community and the rural elders at large. It is the need of the hour to design special packages for the rural elders in congruence to population ageing, which is fast gaining momentum. It is hoped that this work will provide some insights into the health status of rural elders, and that it would serve as groundwork for future researches in the same light in order to facilitate an active and successful ageing.

Table 1: Socio-demographic Characteristics of the Chakhesang Elders

Characteristics	Men		Women		Total	
	N	%	N	%	N	%
Sample Size (N)	425	46.6	487	53.4	912	100
Age (Mean±SD)	73.6±9	71.8±8.6	72.6±8.8			
Living Arrangements						
Nuclear	164	38.6	166	34.1	330	36.2
Joint	124	29.2	134	27.5	258	28.3
Living with spouse	89	20.9	69	14.2	158	17.3
Living alone	48	11.3	118	24.2	166	18.2
Marital Status						
Married	333	78.4	252	51.7	585	64.1
Widowed	70	16.5	212	43.5	282	30.9
Unmarried	21	4.9	18	3.7	39	4.3
Divorced	1	0.2	5	1.0	6	0.7
Educational Levels						
Illiterate	259	60.9	453	93.0	712	78.1
Primary	75	17.6	18	3.7	93	10.2
Middle	50	11.8	11	2.3	61	6.7
High School	33	7.8	5	1.0	38	4.2
Higher Secondary	5	1.2	-	-	5	0.5
Graduate	3	0.7	-	-	3	0.3
Occupational Levels						
Farmers	336	79.1	477	97.9	813	89.1
In Govt. Service	14	3.3	3	0.6	17	1.9
Retired Govt. Servants	61	14.4	6	1.2	67	7.3
Religious	4	0.9	1	0.2	5	0.5
Village Officials	10	2.4	-	-	10	1.1
Levels of Activity						
Primary	252	59.3	342	70.2	594	65.1
Secondary	153	36.0	122	25.1	275	30.2
Sedentary	20	4.7	23	4.7	43	4.7
Types of Income						
Salaried	69	16.2	14	2.9	83	9.1
Old Age Pension	116	27.3	182	37.4	298	32.7

Table 2: A cross-community comparison with reference to SRM

Area of Research	Average no. of illness per person	Reference
Rural	2.2	Present Study
	2.18	Shankar *et al.* 2007
	2.61	Agrawal *et al.* 2011
	2.7	Hakmaosa *et al.* 2014
Urban	1.85	Swami *et al.* 2002
Urban slum	3.17	Singh *et al.* 2013
Clinic/Hospital	2.92	Moharana *et al.* 2008
	1.32	Narayan and Chandrashekar 2013

Table 3: Comparison of hypertension prevalence across communities

Area of Research	Prevalence (%)	Reference
Rural	66.55	Present Study
	11.25	Shankar *et al* ., 2007
	28	Agrawal *et al.*, 2011
	23.82	Gupta *et al.*, 2009
Urban	42	Bhatia *et al.*, 2007
	40	Sengupta *et al.*, 2007
	40.3	Bhatt *et al.*, 2011
	40	Choudhary *et al.*, 2013
Multi-centric	33.37	Sithara and Devi. 2010
	53.33	Ghosh & Singh, 2014

Table 4: A cross-community comparison with reference to MNA

Area of Research	Mini Nutritional Assessment (MNA)		Reference
	Malnutrition (%)	*At risk of Malnutrition (%)*	
Rural	1.6	66.7	Present Study
	15	55	Agarwalla *et al.*, 2015
	29.4	60.04	Lahiri et al, 2015
Urban	10.40	37.52	Wason & Jain 2011
	24.97	37.09	Yadav *et al.*, 2012
	19.47	24.73	Matthew *et al.*, 2016
Institutionalized	8.1	55.5	Jain *et al.*, 2010

Table 5: A cross-cultural comparison of GDS

Area of Research	No depression (%)	Depression (%)	Reference (%)
Rural	82.8	1.2	Present study
	20.4	45.8	Arumugam *et al.*, 2013
	41.2	21.0	Radhakrishnan & Nayeem 2013
Urban	57.6	14.1	Payahoo *et al.*, 2013
	47.3	21.9	Sengupta *et al.*, 2007
Urban Slum	70.64	6.88	Pracheth *et al.*, 2013

Table 6: Comparison of vision and hearing impairment among the aged across communities

Area of Study	Vision Impairment (%)	Hearing Impairment (%)	Reference
Rural	57	37.4	Present study
	29.05	19.63	Gupta *et al.*, 2009
	34.1	23.5	Balamurugan and Ramathirtham 2012
Urban	11	11	Moharana *et al.*, 2008
	42.7	...	Bhatt *et al.*, 2011
	65	22	Choudhary *et al.*, 2013
Multi-centric	23	2.25	Sithara & Devi, 2010
	73.33	63.33	Ghosh & Singh, 2014

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