

SOCIO-ECONOMIC, HEALTH AND PSYCHOLOGICAL ASPECTS OF ELDERLY: ROLE OF ECOLOGICAL DYNAMICS

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The ecology of ageing basically draws upon the idea that old age is a period of adult development profoundly influenced by the environment and gene. In particular, the ecology of ageing paradigm emphasizes the role of the physical and spatial environment on behavior. Also, health, psychology and socio-economic status are likely to be influenced by age as well as environment. The socio-economic position of older people is measured along three dimensions: economic resources, social status and prestige, and cultural status. Several ageing outcomes are considered, including functional physical health, cognitive functioning and mental health, overall subjective well-being, social autonomy and dependency. The elderly people as a group neither socially nor economically homogeneous are as there are differences in education attainment and low economic resources and health (in terms of physical and psychological). In the present study, an attempt has been made to study socio- economic, health and psychological aspects with reference to various ecological setting among the elderly populations viz. Mina- a scheduled tribe of Rajasthan, Tadavi –a scheduled tribe of Gujarat, Raji- a scheduled tribe of Uttarakhand and Nolia-an ethnic group of Orissa. The results were compared between the control group (comprises of subject aged, 20-25 years) and a test group (comprises of subject aged, 50-80 years).

Keywords: Ecology, environment, socio-economic status, health-status and psychological status.

Introduction

Environment has a direct impact on the physical, mental and social well being of those living in it. The environmental factors range from housing, water supply, psycho-social stress and family structure through social and economic support system to the organization of health and social welfare services in the community. In its modern concept, environment includes not only the water, air and soil but also the social and economic conditions under which people live (Misra & Kapoor, 2002).

Ecological dynamics are characterized by an instance of change in abiotic components of ecosystem and their interactions within an ecosystem framework (e.g. weather variation, seasonal change, and disturbance). Human beings have a keen sense to adapt to their surroundings. Thus ecological fluctuations have an impact on human population staying in different environmental conditions to organize and adapt to the environment biologically as well as in terms of social interaction and psychological aspects.

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The traditional norms and values of Indian society laid stress on showing respect and providing care for the elderly. The advent of modernization, industrialization, urbanization, occupational differentiation, education, and growth of individual philosophy has eroded the traditional values that vested authority with elderly (Mayer *et al.*, 2005).

Given the trend of population aging in the country, the older population faces a number of problems and adjusts to them in varying degrees. These problems range from absence of ensured and sufficient income to support themselves and their dependents to ill health, absence of social security, loss of social role and recognition and to the non-availability of opportunities for creative use of free time (Kumar, 2003). The needs and problems of the elderly vary significantly according to their age, socio-economic status, health, living status and other such background characteristics. Hence, we can say that socio-economic position of older people is measured along three dimensions: economic resources, social status and prestige, and cultural status (Grundy, 2003 & 2005). Several ageing outcomes are considered, including functional physical health, cognitive functioning and mental health, overall subjective well-being, social autonomy and dependency (Groenou *et al.* 2006). The elderly populations living in different environmental zones show various socio-cultural, economic, biological and health status but not related with the ecological set up.

In the present paper an attempt has been made to study socio-economic, health and psychological aspects with reference to ecological setting among the elderly populations.

Area and People: Ecological Background

Mina of Rajasthan: The studied area is a desert area and falls in subtropics, so the flora type is essentially deciduous in nature. It has been observed that there is a degree of stratification in various forest types. In this area, Scrub of less than 5mm height grew at the lowest level, followed by deciduous type and semi evergreen variety at upper most reaches of mountains. Like in many other areas, the environment has direct affect on its economy, as winters are very cold while summers are extremely hot.

Agriculture is the predominant activity but very few go out of their village to work as labourers in mines, factories and transport companies to earn their livelihood.

Tadavi of Gujarat: Desert condition- situated in the eastern Gujarat. Climate of the area is hot and dry summers. The southwest monsoon from June, to September and November experiences post monsoon season. This is a very dry region. The most common xerophytes seen growing all over the place is the banal tree. Beside this, the other common xerophytes are Thor, Aram, borde, khaikhodi. Two important cash crops grown in this region are groundnut and cotton. The fauna includes all types of domestic animals like cows, buffaloes, ox, dogs, goats, hens, etc.

The word “Tadavi” comes from the word “tad” meaning “sole”. They believed that they have originated from the sole of god and thus belong to the lowest strata of the society. Agriculture is their main occupation.

Nolia of Orissa: The area is close proximity to sea; the villages are surrounded with sand mounds, casuarinas trees and shrew pine bushes, which thrive well in sand, are found on small patches in and around the village limit. Consequently, no crops including even vegetables are grown in villages. The only benefit that the people derive from the natural resources available to them is by way of catching fish from the sea. In fact almost the entire population of the villages depends on sea for carrying on their traditional profession of fishing, which is their main occupation. The only vegetation commonly seen here are the coconut trees, date palms and screw pine which in their blooming season by flowers of rich scent required for extraction of essence.

The Nolia are Telgu fishermen who have migrated to Ganjam district of Odisha perhaps in the fag end of nineteenth century. Fishing is their primary occupation.

Raji of Uttarakhand: The studied population’s villages are located deep inside the isolated forest, cut across by hill streams and rivulets, and are approachable in foot only. Raji are dependent on animal husbandry and daily wages in various developmental activities. Common vegetation seen in these areas is sal, chir, oak & coniferous forests along with haldu, sain and kharik plant species.

The Raji are socially and economically most underdeveloped tribal community of the central Himalayan region of the Uttarakhand. The traditional economy of food gathering and hunting has replaced with agriculture, carpentry and wage labour and making contact with the outer world.

Materials and Methods

The present study was conducted in Rajasthan, Gujarat, Uttaranchal and Odisha from 1999 to 2001 & 2008 to 2013 in different phases. Eight Mina villages were covered from Girva tehsil of district Udaipur and parts of district Dungarpur of Rajasthan. Data for the Tadavi were collected from six villages under the Vadodara district, Gujarat. For the Raji, five villages were taken from Pithoragarh, Champawat and Udham Singh Nagar districts of Kumaon region of Uttarakhand. The nine Nolia villages were covered for the present study from district Ganjam, Odisha. The following types of data were collected by interview schedule:

- (A) socio-economic status- Education, occupation, Secondary source of income and Satisfied with present financial conditions (as per Table 2).
- (B) Health aspects- Daily routine activity, Health status, classification of health and Involved with any type of physical activity in past (as per Table 3).
- (C) Psychological aspects- Change in behavior with age, any depression problem, social interaction and problem related to habits & mood of your partner (as per Table 4).

Age group was taken 20-25years (controls) and 50-80 years (test groups) in males & females of each population groups (As per Table-1). Chi-square was calculated with the help of spss-17.

Results and Discussion

Table 1 shows the age&sex-wise distribution of Mina, Tadavi, Nolia and Raji taken for the study. Among Control group i.e. 20-25years with 31 males & 32 females in Mina, 28 males & 30 females in Tadavi, 28 males & 28 females in Nolia and 20 males subjects was considered. While test group i.e. 50-80 years with 130 males & 107 females in Mina, 48 males & 47 females in Tadavi, 128 males & 13 females in Nolia and 43 male subjects was considered.

Table 2 shows the various socio-economic parameters among the control (20-25years) and the test groups (50-80years) of Mina, Tadavi, Nolia (males and females) and Raji (males).

When education status was observed, in Mina (test group), 72.3% & 82.2%, in Tadavi, 81.3% & 82.9 %, among Nolia, 95.1% & 94.6% males and females respectively was found illiterate while among Raji all the studied test group males were illiterate. In Mina (test group), 16.9% & 7.5%, in Tadavi, 14.6% & 14.9% and in Nolia, 3.9% & 5.4% males and females correspondingly were found having primary education. Among Mina, 10.8% males and 10.3% females were found having higher secondary education while, in Tadavi 4.1% males & 2.2 % females was found having higher secondary education. Coming to their occupation, agriculture has been found the main occupation among all the males (test group) with 82.3%, 90.3%, 67.2% and 79.1% in Mina, Tadavi, Nolia and Raji respectively. Whereas, all the females (test group), was found busy in other activities than agriculture like household cores. Satisfaction level with the present financial conditions in male (test group), among Mina-76.2%, Tadavi-50% Nolia-10.9% and all the studied Raji was found positive while among females test group, 36.4% in Mina, 42.5% in Tadavi & 5.3% in Nolia was found satisfied with present financial condition.

The level of education attainment includes primary and higher secondary. Education level was found highest in Mina males and females (test group) than the Tadavi, Nolia & Raji. Illiteracy was seen higher among Nolia and than Raji in age groups 50-80years. The education status in the population groups were found to be statistically significant ($P < 0.001$). It indicates that there is impact of education on

TABLE 1: AGE AND SEX WISE DISTRIBUTION OF MINA, TADAVI, NOLIA AND RAJI

Age Group (Years)	Mina		Tadavi		Nolia		Raji
	Male	Female	Male	Female	Male	Female	Male
20-25 (controls)	31	32	28	30	28	28	20
50-80(Test group)	130	107	48	47	128	131	43
Total	161	139	76	77	156	159	63

TABLE 3: HEALTH TRAITS AMONG POPULATION GROUPS OF VARIOUS ECOLOGICAL ZONES

Health	Mina			Tadavi			Nolia			Raji											
	Con- trol	Chi Test square	Chi Con- trol	Con- trol	Chi Con- trol	Chi Con- trol	Con- trol	Chi Con- trol	Chi Con- trol	Con- trol	Chi Con- trol	Chi Con- trol									
	M	F	M	F	M	F	M	F	M	F	M	F									
Daily routine activity	87.1	70	31.738* (df=2)	100	50.5	31.366* (df=1)	60.7	58.3	0.067 ns	87.7	19.1	218.206* (df=1)	-	-	31.714* (df=2)	-	83.7	3.895* (df=1)			
Household chores	11.4	1	-	-	-	-	-	100	84.4	35.7	63.3	100	16.3	-	-	-	-	-			
Business/work	1.5	29	-	49.5	39.3	41.7	12.3	90.9	-	15.6	-	15.3	-	-	-	-	-	-			
Any other	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-			
Health status	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100			
Health	67.7	36.2	21.852* (df=2)	68.7	23.4	40.398* (df=2)	53.6	22.9	21.565* (df=2)	50	29.8	10.475* (df=2)	100	9.4	269.872* (df=2)	100	15.3	155.007* (df=2)	50	30.2	8.489* (df=2)
Classification of your health	32.3	23.8	31.3	40.1	46.4	41.7	50	48.9	-	37.5	-	51.9	50	41.9	-	32.8	100	100	100	100	
Good	-	40	-	36.4	-	35.4	-	21.2	-	53.1	-	32.8	-	27.9	-	100	100	100	100		
Poor	100	100	-	100	-	100	-	100	-	100	-	100	-	100	-	100	100	100	100		
Yes	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
No	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		

*P=0.001

TABLE 4: PSYCHOLOGICAL TRAITS AMONG POPULATION GROUPS OF VARIOUS ECOLOGICAL ZONES

Psychological traits	Mina			Tadavi			Nolia			Rajji								
	Con- trol	Chi- square	Con- trol	Con- trol	Chi- square	Con- trol	Con- trol	Chi- square	Con- trol	Con- trol	Chi- square	Con- trol						
	M	F	M	M	F	M	M	F	M	M	F	M						
Change in behavior with age	Yes	84.6	5.643* (df=1)	84.4	95.015* (df=1)	39.3	58.3	4.164* (df=1)	30	57.5	9.284* (df=1)	83.5	141.697* (df=1)	82.4	131.091* (df=1)	83.7	102.699* (df=1)	
	No	15.4		15.6		60.7	41.7		70	42.5		100	16.5		17.6	100	16.3	
Any depression problem	Yes	23.8	99.252* (df=1)	9.4	14.9	0.770	16.7	5.613* (df=1)	10	34	0.006	ns	ns	ns	ns	ns	ns	
	No	76.2		90.6		100	83.3		90	66		100	100		100	100	100	
Do you go for social interaction	Yes	93.5	86.2	1.407	90.1	89.7	0.168	82.2	83.4	0.032	90	85.1	0.568	89.3	93.7	0.924	92.8	95.4
	No	6.5	13.8		9.9	10.3	17.8	16.6	10	14.9	10.7	6.3	ns	ns	ns	ns	ns	ns
Do you face problem related to habits & mood of your partner	Yes	84.6	91.189* (df=1)	14.8	84.1112.207* (df=1)	76.6	83.3	1.38766.7	78.7	2.591	71.4	67.9	0.160	71.4	60.3	1.449	25	48.8
	No	15.4		15.9		23.4	16.7	33.3	21.3	ns	28.6	32.1	ns	28.6	39.7	ns	75	51.2

* P = 0.001

all the tribal groups as many developmental programmes are being run by state and central Government, for the tribal groups. Tadavi are an agriculturist, so, majority of them are engaged in their traditional occupation while Nolia was occupied with the same occupation i.e. fishing. Among the Raji, agriculture has replaced by carpentry and wage-labor.

The differences in occupation was seen significant ($p < 0.001$) in Nolia and Tadavi (males and females). It signifies that elderly tribes are engaged in employment for their living because control group (20-25 years) may have narrowed to only their families or may be nuclear families have replaced the joint families like the non-tribal population.

Secondary source of income has also been seen among the elderly population group with significant differences ($p < 0.001$) among Mina (males) & Tadavi (males and females). It reflects their shifting occupation. While among Nolia and Raji, differences in occupation was found insignificant. With an increase in education level, all the population groups found engaged in other activities like business, government services and women oriented small business along with their traditional occupation as a basis of secondary source of income.

Significant differences ($p < 0.001$) in satisfaction with present condition was found among the Mina, Tadavi, Raji (males) & Nolia (males & females) as they grew older in their ecological settings.

Health and Psychological Dynamics among Population Groups of Various Ecological Zones

Table 3 depicts the health status among Indian population of different ecological zones.

70% male & 50.5 % females in Mina, 58.3% male & 19.1% females in Tadavi 21.4% females among Nolia and 83.7% males among Raji (Test group) was found indulged in household cores as a part of daily routine activity. While 29% male & 49.5 % females in Mina, 41.7% male & 90.9% females in Tadavi and 15.6% male & 15.3% females was seen engaged in other activity like agriculture, business, government services, household cores etc. Significant differences ($p < 0.001$) in daily routine activity was seen among all the elderly people except Tadavi (males).

All the elderly people of different ecological zones agreed suffering from the health problems like body pain, headache, fever, constipation, indigestion, and the problem of urinary tract infections (UTI).

Classification of health gives the idea about what the elderly people think about their health. Among Mina, 36.2% males & 23.4% females, in Tadavi, 22.9% males & 29.8% females, in Nolia, 9.4% males & 15.3 females% & 30.2% male Raji think that their health is normal while, in Mina 23.8% males & 40.1% females, in Tadavi 41.7% males & 48.9% females, in Nolia, 37.5% males & 51.9% females

& 41.9% male Raji think that their health is good. In Mina 40% males & 36.4% females, in Tadavi 35.4% males & 21.2% females, in Nolia, 53.1% males & 32.8% females & 27.9% male Raji think that their health is poor. Classification of health was found statistically significant ($p < 0.001$).

All the studied elderly subject of each population group agreed to involve with any type of physical activity in past.

Psychological dynamics show the changing psychology of elderly people.

Table 4 shows the psychological status among Indian population of different ecological zones.

Among Mina, 84.6% males & 84.4% females, in Tadavi, 58.3% males & 57.5% females, in Nolia, 83.5% males & 82.4 females% & 83.7% male Raji agreed in change in behaviour with age while among Mina, 15.4% males & 15.6% females, in Tadavi, 41.7% males & 42.5% females, in Nolia, 16.5% males & 17.6 females% & 16.3% male Raji did not agree any kind of change in behaviour with age. It was seen than that all the population groups were agreed with behavioral change with age and the differences were found statically significant ($P < 0.001$). Behavioral change with advancement of age may be due to the depression as the entire respondent agreed of having depression problem even though they keep themselves busy in social interaction in spare time.

Among Mina, 23.8% males & 14.9% females, in Tadavi, 16.7% males & 34% females, agreed that they had depression problem while among Mina, 76.2% males & 85.1% females, in Tadavi, 83.3% males & 66% females, all the studied Nolia&Raji, agreed that they don't have any kind of depression problem.

When asked about the social interaction within the group then, among Mina, 84.2% males & 89.7% females, in Tadavi, 83.4% males & 85.1% females, in Nolia, 93.7% males & 95.4 females% & all the male Raji agreed to engaged in social interaction while among Mina, 13.8% males & 10.3% females, in Tadavi, 16.6% males & 14.9% females, in Nolia, 6.3% males & 4.6 % females disagreed to have their role in social interaction.

When asked about the problem related to habits and mood of your partner then, among Mina, 84.6% males & 84.1% females, in Tadavi, 83.3% males & 78.7% females, in Nolia, 67.9% males & 60.3 females% & 48.8% male Raji agreed that they face the problem of habits and mood of their partner while among Mina, 15.4% males & 15.9% females, in Tadavi, 16.7% males & 21.3% females, in Nolia, 32.1% males & 39.7 % females do not have the problem of habits and mood of their partner

According to Steward (1938), study of human ecology requires consideration of following three factors:

- (i) Environment
- (ii) Culture device by which it was explored
- (iii) The resulting adaptations of human behavior and institution

Steward (1941, 1955) described the vivid contemporary description of the desert culture life way. So on the basis of steward's theory, we concluded that Geographic conditions (as it is one of the environmental factor) affect the economic and social development of a people by the wealth, scarcity, general character of the innate assets, or difficulty of securing the necessities of life, and by the possibility of trade afforded by the environment. From the perspective of production and exchange in a geographical condition, on one hand these factors are primarily the subject matter of economy; while alternatively, have the power to influence the social structure of a group or population. Thus, these factors are vital materials for Anthro-geography.

Adaptation is a dynamic social process: the ability of societies to adapt is determined, in part, by the ability to act collectively. Adaptation processes involve the interdependence of agents through their relationships with each other, with the institutions in which they reside, and with the resource base on which they depend. The nature of these relationships has been central to human ecology and geography, micro-economics, and the anthropological and political sciences. Each discipline has theorized relations of interdependence, the nature of exchange relations, and the cultural significance of and institutional constraints on the use of the natural environment. According to Menocal (2001), individuals and societies have adapted to climate change over the course of human history and will continue to do so. Climate is part of the wider environmental landscapes of human habitation. So, on the basis of forgoing discussion and given the level of urbanization and industrialization of India, economic factors and diminishing value system are likely to make welfare of the elderly as the most critical area for intervention. The study concluded that elder people staying in different environmental conditions (e.g. Mina-Rajasthan: dessert conditions; Tadavi- Gujarat: dessert conditions; Raji-Uttarakhand: cold conditions; and Nolia-Orissa: coastal area) have the same problems like health related, low socioeconomic and change in behavior with age.

Health and psychology vary according to educational level and the social influence a person can command. Ecological differences in the relation of variations in the availability of socio-economic, health and psychological aspects imply differences not only in material resources and purchasing power, but also in life styles associated with health risks in earlier and later life.

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References

- Groenou, V. B. M., Glaser, K., Tomassini, C. and Jacobs (2006). The 'Re' Se. Socio-economic Status Differences in Older People's use of Informal and Formal Help: A Comparison of four European Countries. *Ageing & Society* 26: 745-766.

- Grundy, E. Sloggett (2003). Health Inequalities in the Older Population: The Role of Personal Capital, Social Resources and Socio-economic Circumstances. *Social Science & Medicine*. 56: 935–947.
- Grundy, E. (2005). Reciprocity in Relationships: Socio-economic and Health Influences on Intergenerational Exchanges between Third Age Parents and their Adult Children in Great Britain. *The British Journal of Sociology* (56) 2: 233–255.
- Julian, Steward H. (1938). *Basin-Plateau Aboriginal Socio-Political Groups*. Bureau of American Ethnology. Washington, D.C., Bulletin 120, xii + 346 pp.
- Julian, Steward H. (1941). Cultural Element Distributions: XIII. Nevada Shoshone. *University of California Anthropological Records* 4:209-359.
- Julian, Steward H. (1955). *Cultural Change* : Urbana: University of Illinois Press,
- Leys, J. A. and Vanclay, J. K. (2011). Social Learning: A Knowledge and Capacity Building Approach for Adaptive Co-management of Contested Landscapes. *Land Use Policy* 28(3): 574-584.
- May, A. Beydoun, and Popkin, Barry M. (2005). The Impact of Socio-economic Factors on Functional Status Decline among Community-dwelling Older Adults in China. *Social Science & Medicine*. 60: 2045–2057.
- Mayer, K. U., and Wagner, M. (1993). Socio-Economic Resources and Differential Ageing. *Ageing and Society*. 13: 517-550.
- Menocal, P. B. (2001). Cultural Responses to Climate Change during the Late Holocene. *Science*. 292: 667-673.
- Misra, P. and Kapoor, A. K. (2002). Ecology, Economy & Cultural: An Anthropological Profile of Mina, a Scheduled Tribe of Rajasthan, *Social Change*. 3: 1-2.
- Nina, R., Heikkinen E., and Heikkinen R-L. (2001). The Association of Socio-economic Factors with Physical and Mental Capacity in Elderly Men and Women. *Archives of Gerontology and Geriatrics* 33: 163–178.
- Kumar, S. Vijay. (2003). “*Economic Security for the Elderly in India: An Overview*”, *an Aging India: Perspectives, Prospects and Policies*. New York: The Haworth Press.