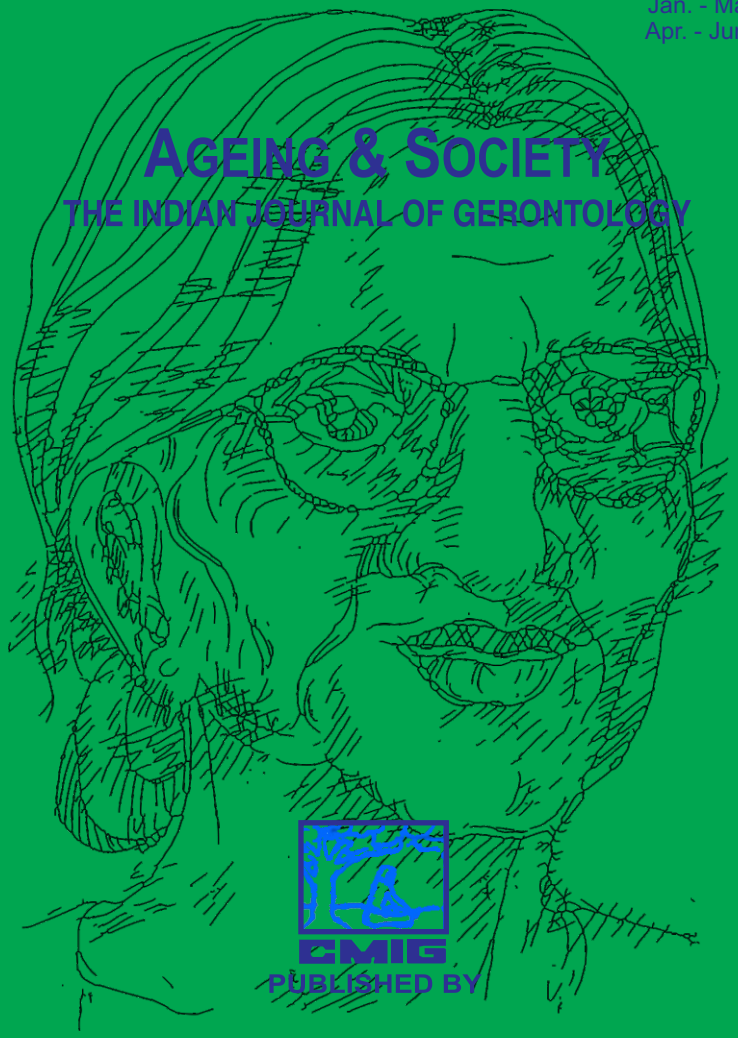
Vol. XXIV No. I & II

ISSN - 0971-8060

Jan. - Mar., 2014
Apr. - June, 2014

AGEING & SOCIETY

THE INDIAN JOURNAL OF GERONTOLOGY



PUBLISHED BY

CALCUTTA METROPOLITAN INSTITUTE
OF GERONTOLOGY

Vol. XXIV No. I & II ISSN - 0971-8060

Jan. - Mar., 2014
Apr. - June., 2014

AGEING & SOCIETY

THE INDIAN JOURNAL OF GERONTOLOGY

PUBLISHED BY

CALCUTTA METROPOLITAN INSTITUTE OF GERONTOLOGY

AGEING & SOCIETY
THE INDIAN JOURNAL OF GERONTOLOGY

ISSN - 0971-8060

SUBSCRIPTION RATES

Indian (₹):

Institutional- Rs.100.00
Individual- Rs. 80.00

Foreign ($):

Institutional- $ 35.00
Individual- $ 35.00

Subscription should be sent to :

The Secretary
Calcutta Metropolitan Institute of Gerontology
E/1, Sopan Kutir, 53B, Dr. S. C. Banerjee Road, Kolkata - 700 010
Phone : 2370-1437, 23711437
e-mail : cmig@rediffmail.com
Web : www.cmig.in

Printed by	:	Dr. Indrani Chakravarty
Published by	:	Dr. Indrani Chakravarty
Name of Owner	:	Calcutta Metropolitan Institute of Gerontology
Name of Printing Press	:	Classic Prints, Singur, Hooghly. PIN 712409
Published at	:	E-1, SOPAN KUTIR, 53B, DR. S. C. Banerjee Road, Kolkata-700 010

ISSN - 0971-8060

AGEING & SOCIETY

THE INDIAN JOURNAL OF GERONTOLOGY

Vol. XXIV No. I & III

Jan - Mar., 2014
Apr. - June., 2014

CONTENTS

THIS JOURNAL PUBLISHED REFERRED ARTICLES ONLY

AGEING & SOCIETY : THE INDIAN JOURNAL OF GERONTOLOGY

Editorial Board

This Journal will be devoted to papers on the following aspect of human ageing

- ★ Social Gerontology
- ★ Biology
- ★ Medicine
- ★ Behavioural Science

In addition we welcome Abstracts, Book reviews & Interviews with senior citizens

NOTES FOR CONTRIBUTORS

All Contributions and correspondence should be sent to Dr. Indrani Chakravarty, Calcutta Metropolitan Institute of Gerontology, E-1, Sopan Kutir, 53B, Dr. S. C. Banerjee Road, Kolkata-700 010. Contributors are requested to conform to the following norms and those articles that do not conform may not be considered.

Journal articles that deal with the biological, medical, psychosocial, service or other aspects of ageing are welcome.

Articles should be original contributions. Redundancy is discouraged. The articles should be written in English are free of grammatical, spelling errors, repetitions etc.

Articles shall contain: A brief introduction (reflecting the context, the review of relevant work and why the present study was planned) : relevant details of plan methodology, sample, (including standardization properties of tools) etc., the results or findings and their discussion and conclusions arrived at. At the beginning of the article the title and names of authors shall be mentioned. (Their affiliation may be given at the bottom of the page). This shall be followed by a brief abstract of the article (not exceeding 100 words) in single space, bold and set off the margins (inset by two spaces). Two or three key words of the article should also be provided at the end of the abstract separately.

Articles may be computer generated. Two hard copies, double spaced in A4 size (one side only) with wide margin may be sent. The articles would be adjudicated by referees and the result would be communicated. When the article is accepted contributors are requested to send 2 corrected versions of the article (hard copies) and the same in an electronic version in CD, press ready.

(a) References as below in international style (e.g. journal of Gerontology) arranged in alphabetical order in the Text : (Altekar, 1973,

Birren, 1959, Tyson 1983 ....). End list of references:

Baltes, P. B. (1987). Theoretical propositions of life-span developmental psychology: On the dynamics between growth and decline. *Developmental Psychology,* 23,611-626.

Baltes, P. B. Reese, H. W., & Nesseiroade, J. R. (1988). *Life-span Developmental Psychology: Introduction to Research Methods.* Hillsdale, NJ : Eribaum.

(b) Footnotes should be avoided unless absolutely essential.

(c) Tables and figures should be clearly laid out, typed in standard format, numbered consecutively, and designed to fit on the page of the Journal “AGEING & SOCIETY” of CMIG.

CAUSAL PATHWAYS FROM DEMOGRAPHIC VARIABLES TO COGNITIVE EFFICIENCY OF LATE ADULTS VIA ADJUSTMENT

Paromita Ghosh*
Sudeshna Roy**
Anindita Dey***

ABSTRACT

The study attempted to trace causal pathways linking select demographic variables to cognitive efficiency of late adults as mediated by adjustment. A stratified random sample of 200 late adults of middle socio-economic status families in Kolkata was selected. All were married and had children. 50 each were living alone; living with spouse; living with adult offspring; and living with spouse and adult offspring. Each stratum comprised 25 females and 25 males. Tools used for data collection included a General Information Schedule for eliciting demographics of respondents, P.G.I. Battery for Assessment of Mental Efficiency in the Elderly (Kohli et al., 1996) and Shamshad-Jasbir Old Age Adjustment Inventory (Hussain and Kaur, 1995). Path analyses were conducted. Certain demographic variables rather than adjustment were found stronger in influencing cognitive efficiency of sampled late adults. Adjustment emerged as weak mediator. Older late adults and those sans spouse were found especially prone to cognitive deterioration.

---

* *Associate Professor, Department of Home Science, University of Calcutta.*

** *Research Scholar, Department of Home Science, University of Calcutta.*

*** *Lecturer, A. P.C. College, New Barrackpore*

INTRODUCTION

Recently it has been contended that 65 years of age ushers in late adulthood. Yet the notion that old age starts at 60 years of age lingers. Cognitive decline is a risk at that period. Extent of cognitive efficiency of late adults has many interacting determinants viz. demographic, biological, psychological, social and economic (Evans et al., 1993; Goswami et al., 2006; Glisky, 2007; Gilmour, 2011; Lim and Kua, 2011). Biological and economic variables are frequently researched. Demographic and psychosocial variables call for more probes for fresh insights into geriatric cognitive decline. Investigations in various contexts revealed that demographics like age, gender, marital status, living arrangement and education of late adults either influenced or were related with their cognitive efficiency (e.g. Evans et al., 1993; Silberman et al., 1995; Bassuk et al., 1999;Yeh and Liu, 2003;Goswami et al., 2006; Glisky, 2007; Swarnalatha, 2007; Gilmour, 2011; Lim and Kua, 2011; Lee et al., 2011;Tripathi and Tiwari, 2011; Tucker and Stern, 2011; Tiwari, 2013). Researches generally show that cognitive efficiency of late adults weaken with age. Goswami et al. (2006) studied a sample of aged persons in India. Among men cognitive defect increased from 4.8% in the 60-64 years age group to 21.8% in the over 75 years age group. Among women the rise was from 20.1% in 60-64 years to 36.6% in the over 75 years age group. Swarnalatha (2007) reported relation between cognitive impairment and age for elderly women in India. Lim and Kua (2011) found older community-dwellers presented more cognitive disability. Glisky (2007) held declining sensory capabilities and aging brain responsible for cognitive detriment across old age. Researches have often reported that elderly women trail elderly men in cognitive efficiency. Goswami et al. (2006) studied a sample of aged persons in India. 12.2% males and 23.7% females had cognitive defect. Gender difference was significant. Swarnalatha (2007) investigated 400 elderly women in India. 32% had cognitive impairments. Lee et al. (2011) explained the lack of cognitive efficiency of elderly women in India. Data from 1683 persons aged 45 years or older were utilized. Women performed worse than men on episodic memory and global cognitive function; gender discrimination in education, health and social participation were found responsible. But some findings assert female supremacy in aspects of cognitive performance. Tripathi and Tiwari (2011) studied 89 normally aging elderly in India. More males than females suffered dysfunction in orientation and self-care plausibly because aged women in India are more active in housework (Shah, 1993). Some researches indicate greater cognitive deterioration among singles. Lim and Kua (2011) studied community-dwellers; elders who were single, divorced or widowed suffered more cognitive disability. Yeh and Liu (2003) reported that support from spouse promoted cognitive efficiency among community-dwelling elderly. However, Goswami et al. (2006) concluded that variables including being married were associated with cognitive failing for a sample of aged persons in India. Inconsistent findings possibly arise from differences in samples and contexts. Living arrangement appears to count in cognitive efficiency of late adults. Bassuk et al. (1999) opined that social disengagement results in cognitive decline among elderly. Gilmour (2011) studied privately residing aged individuals sans Alzheimer's disease / Dementia. Seniors scoring low on cognitive tasks tended to stay alone or with persons other than spouse or partner. Silberman et al. (1995) found cognitive impairment among community-dwelling elderly without confident. Lim and Kua (2011) studied community-dwellers; older residents without partners manifested more cognitive disability. Tiwari (2013) reported that living alone resulted in loneliness causing cognitive detriment among elderly in India. Yeh and Liu (2003) found cognitive efficiency in community-dwelling elderly who enjoyed greater social support. Results did not support significant difference in cognitive impairment between those living alone and those co-residing. Like roles of marital status and living arrangement, role of education in cognitive efficiency of late adults is contentious. Evans et al. (1993) revealed that less educated elderly experienced greater deterioration in cognitive functioning. Goswami et al.

(2006) found variables including being illiterate to be related with cognitive decline among elderly in India. Tucker and Stern (2011) reported that persons with higher IQ and education suffer less cognitive detriment in old age as their cognitive reserve proves helpful. But some researches (e.g. Glymour et al., 2012) challenge such claims. Glymour et al. (2012) found small domain-specific advantages of education on cognitive ability of elderly.

Psychosocial variable of adjustment appears to affect extent of cognitive efficiency of late adults (e.g. Colcombe and Kramer, 2003; Daselaar and Cabeza, 2005; Glisky, 2007; Krueger et al., 2009) but conclusive investigations are needed. Adjustment is holistic but has components – physical, domestic, social, marital, emotional and financial (Hussain and Kaur, 1995). So research in this area promises intricate findings. Interestingly similar demographic variables (e.g. age, gender, marital status, living arrangement and education) apparently influence both cognitive efficiency and adjustment of late adults. The investigations mentioned below reveal impacts of these demographics on adjustment. Adjustment changes with age (Shock, 1952). Elderly women in India exhibit poorer health adjustment than men due to neglect of women's nutrition and health mainly in poorer Indian families (e.g. Dandekar, 1996; Gurumurthy, 1998; Sen and Noon, 2007). Shah (1993) found that in India elderly widows enjoyed more agreeable family relations than widowers because widows were tolerant and more active. Kaur and Saini (2011) sampled persons aged over 65 years in India; males and females experienced analogous extents of social isolation. Carr (2004) elucidated marital adjustment of elderly in the US. Elderly women emotionally dependent on husbands had low self-esteem which enhanced on being widowed. Aged men dependent on wives for home and financial management became skilled following bereavement. Rajan et al. (1999) identified loneliness as principal emotional problem of widowed elderly living with offspring and their families. They lamented their ostensible loss of status due to old age. Some blamed retirement. However aged women were unperturbed by retirement as most were homemakers.

Even women-retirees remained active in domesticity (Shah, 1993). Elderly men in India enjoyed superior financial adjustment than women because of patrifocality (Gurumurthy, 1998). Sen and Noon (2007) preliminarily reported that living arrangement of elderly had little effect on probability of their receiving medical treatment and quantum of medical expenses when concomitants were controlled; sans controls, being single reduced probability of seeking treatment and amount of medical expenditure. Iliffe et al. (1992) investigated elderly (aged 75 years and over) in the UK. They reported non-significant difference between those living alone and those co-residing in diagnoses, mobility, and uses of medical services. This reflected the coverage of National Health Service of UK which India lacks. Researches in India demonstrated that aged persons preferred to reside with spouse and adult offspring (Nandal et al., 1987; Ghosh and Dey, 2008). But the tendency of aged persons staying apart from families of adult offspring is rising because of financial problems, space shortage, hostility and preference for nuclear families among urban middle class in India (Nandal et al., 1987; Pati and Jena, 1989; Dandekar, 1996). Well educated elderly were reportedly better adjusted (Hurlock, 1988).

As similar demographics appeared to influence both cognitive efficiency as well as adjustment of late adults; and adjustment seemed to impact cognitive efficiency in late adulthood, a path analytic study with totality of adjustment mediating between demographic variables and cognitive efficiency of late adults was planned. Such studies are seldom attempted in the Indian milieu.

The following research hypothesis was formulated based on the above survey of researches -

Hypothesis

Cognitive efficiency of late adults can be predicted on the basis of their age, gender, marital status, living arrangement, education and total adjustment.

METHOD

PARTICIPANTS

A stratified random sample of 200 late adults of middle socio-economic status families in Kolkata was selected. All the sampled elderly were married and had children. Among them, 50 each were living alone; living with spouse; living with adult offspring; and living with spouse and adult offspring. Each stratum comprised 25 female and 25 male elderly. Criteria for inclusion in the sample were: - a) Age: 60 to 90 years; b) Socio-Economic Status: Middle; c) Health Status: Not seriously ill at the time of data collection; d) Marital Status: Ever married; e) Filial Status: Having adult offspring; f) Residential Status: Living in private residences (non-institutionalized) g) Habitat: Urban (resident of Kolkata city).

OPERATIONAL DEFINITIONS OF VARIABLES

i) Age: Chronological age of a person.

ii) Gender: Socially constructed roles, behaviours, activities and attributes that a given society considers appropriate for men and women (World Health Organization, 2012).

iii) Marital status: Whether one is unmarried; married with spouse alive (and not divorced); divorcee; widow; or widower.

iv) Living arrangement: Here it refers to who the elderly reside with - whether they live alone; with spouse; with adult offspring; or with spouse and adult offspring.

v) Education: Qualifications (degrees, diplomas etc.) that an individual has attained.

vi) Mental (cognitive) efficiency: It encompasses memory capacity, alertness, ability of concentration, general orientation to time and place, general awareness, perceptual-motor functions (including depth perception and muscular co-ordination), motivation and extent of depressive symptomatology (Kohli et al., 1996).

vii) Total (aggregate) adjustment: Extent of elderly persons' overall adjustment comprising of health, home, social, marital, emotional and financial adjustments (Hussain and Kaur, 1995).

INSTRUMENTS

i) General Information Schedule: Prepared by the lead author helped by the second author for gathering background information from respondents. It comprises 11 items. Most items are closed-ended. Items pertain to name, address, age, gender, marital status, education, occupation, income, living arrangement and family background of respondents.

ii) **P.G.I. Battery for Assessment of Mental Efficiency in the Elderly by A. Kohli, S.K. Verma and D. Pershad or PGI-AMEE (1996)**: It consists of 4 subtests. These are:- **I. Set Test** - a verbal test in which the subject is required to recall up to 10 items each in 4 different common categories viz. colours, animals, fruits and cities. Scores to be obtained are between 0 and 40. Higher score indicates rapidity of mental functions thus greater mental efficiency. This subtest is negatively correlated with Measures of Percept and Motion Equity (-.21; $p<.05$; N=100) and Geriatric Depression Scale (-.24; $p<.05$; N=100). Set test is correlated with education of elderly subjects (.36; $p<.01$; N=100). **II. Standard (Special) Ten Test** – comprises 10 simple statements to be responded to. These relate to orientation of the elderly person with respect to time, place and person. General information and those pertaining to recent and remote events are assessed. Correct answers receive scores which range from 0 to 10. Higher score indicates greater mental (cognitive) efficiency. This subtest is positively correlated with Set Test (.35; $p<.01$; N=100) and negatively correlated with Measures of Percept and Motion Equity

(-.33; p<.01; N=100) and Geriatric Depression Scale (-.37; p<.01; N=100). Special (Standard) Ten Test is highly correlated with education of elderly subjects (.72; p<.01; N=100). **III. Measures of Percept and Motion Equity** – 5 drawings are given which have to be copied and 3 more have to be drawn in accordance with specified instructions. Range of error scores is 0 to 8. Higher the error scores, the poorer the perceptual-motor capacity. This subtest is negatively correlated with the Set Test (-.21; p<.05; N=100) and Special (Standard) Ten Test (-.33; p<.01; N=100) and positively correlated with Geriatric Depression Scale (.26;p<.01; N=100). Scores on this subtest are negatively correlated with education of the elderly subjects (-.41; p<.01; N=100). **IV. (Geriatric) Depression Scale** – 20 questions with "Yes" and "No" answer-options are used to assess depression in the elderly. Item numbers 1, 7, 11 and 20 are reversed items; the rest are direct ones. Scores range between 0 and 20. It has split-half reliability coefficient of .82. It is negatively correlated with the Set Test (-.24; p<.05; N=100) and Special (Standard) Ten Test (-.37; p<.01; N=100). It is positively correlated with scores on Measures of Percept and Motion Equity (.26; p< .01; N=100). (Geriatric) Depression Scale is correlated negatively with education of elderly subjects (-.44; p<.01; N=100). This subtest has been included as depressive tendencies reduce subjects' motivation to do well on tests of mental (cognitive) efficiency. The battery is suitable for use with persons over 55 years of age. Norms are in means and standard deviations (Kohli et al., 1996).

iii) **Shamshad-Jasbir Old Age Adjustment Inventory by S. Hussain and J. Kaur or SJOAI (1995):** It comprises 125 items covering 6 areas of adjustment – health, home, social, marital, emotional and financial adjustment. The tool has multiple-choice format with answer-options being "Yes", "No" and "?". Separate scores for each area of adjustment and a score for total (aggregate) adjustment may be obtained. Test-retest reliability coefficients for the areas of adjustment ranged from 0.91 to 0.96 (P<.01; N=100). Test-retest reliability coefficient for total adjustment was found to be 0.93 (P<.01; N=100). Convergent validity coefficients were computed by correlating adjustment scores with self-concept (Mohsin's Self-Concept Scale), ego-strength (Hasan's Ego-Strength Scale) and anxiety (Sinha Anxiety Scale) scores. Validity coefficients ranged from 0.32 to 0.85 (P<.01; N=100). The tool is appropriate for persons who are at least 50 years of age. Norms are in percentiles (Hussain and Kaur, 1995). In the present context, only the total adjustment scores of participants will be analysed.

PROCEDURE

Data were collected individually from each elderly at their residences. Standardized tests were administered according to the procedures described in test manuals. In most cases the elderly responded by putting marks / writing on the answer sheets themselves. If they were unable then their responses were recorded by the investigator. However, the elderly respondents were requested to copy the designs in the third subtest (Measures of Percept and Motion Equity) of P.G.I. Battery for Assessment of Mental Efficiency in the Elderly on their own. For inferring socio-economic status of respondents, manual of Socio-Economic Status Scale (Urban) by Kuppuswamy (1984) was referred to. If the previous / current occupations of respondents (mentioned in the General Information Schedule) corresponded to any of the occupations listed as semi-professional or professional by Kuppuswamy (1984), it was considered corroboration that the respondent belonged to middle socio-economic status. Participants' responses to important items in General Information Schedule were coded. Scoring of standardized tests (viz. P.G.I. Battery for Assessment of Mental Efficiency in the Elderly and Shamshad-Jasbir Old Age Adjustment Inventory) was done using procedures mentioned in test manuals.

RESULTS AND DISCUSSION

Table 1: Descriptive Statistics of the Sample (N=200)

Variable	Assessing Tool	Mean	Standard Deviation
Rapidity of mental functions	Set Test (PGI - AMEE)	34.06	9.34
General orientation & information	Standard Ten Test (PGI-AMEE)	9.09	1.97
Percept & motion equity (Error)	Measures of Percept & Motion Equity (PGI - AMEE)	.80	1.19
Depression	Depression Scale (PGI-AMEE)	7.14	4.00
Health Adjustment	SJOAI	16.32	5.00
Home Adjustment	SJOAI	17.34	4.75
Social Adjustment	SJOAI	14.22	3.94
Marital Adjustment	SJOAI	8.06	4.61
Emotional Adjustment	SJOAI	13.20	4.21
Financial Adjustment	SJOAI	7.38	2.73
Total Adjustment	SJOAI	76.51	18.73

Prior to conduct of path analyses, descriptive statistics were calculated. Standard deviation values (Table 1) reveal modest homogeneity of variance in scores on standardized tests of cognitive efficiency and adjustment.

Table 2: Summarized Results of Regression –Total Adjustment Score (Dependent Variable) of Late Adults (N=200)

Dependent Variable	Age	Gender	Marital Status	Living Arrangement	Education	Intercept	R	R^2	df	F
	Beta	Beta	Beta	Beta	Beta					
Total Adjustment	-.03	-.21	-.38	-.01	.05	100.48	.41**	.17	5,194	7.76**

*p<.05;**p<.01

Table 2 summarizes paths traced by select demographic variables towards adjustment of participant late adults. Since adjustment is ultimately considered the mediator. Table 2 presents the primary step of four path analyses – one each for aspects of cognitive efficiency viz. rapidity of mental functions; general orientation and information; percept and motion equity; and depression. Signs on standardized regression coefficient (Beta) and coded categories of demographics helped in interpretation of results. F value (7.76) indicates that total adjustment of late adults can be significantly predicted by select demographics; marital status (Beta =-.38) is the leading predictor; elderly with living and co-residing spouse appear more adjusted compared with widows, widowers, separated persons and divorcees. This is possibly because of more care, companionship, social acceptance and connectedness enjoyed by late adults with co-resident spouse (Nandal et al., 1987; Silberman et al., 1995; Rajan et al., 1999 Sen and Noon, 2007; Ghosh and Dey, 2008; Lim and Kua, 2011; Tiwari, 2013). Gender of the elderly (Beta=-.21) also has a role to play in the prediction of their overall adjustment; male late adults appear better adjusted than their female peers. Reasons may be patrifocality with women suffering gender discrimination (Dandekar, 1996; Gurumurthy, 1998; Sen and Noon, 2007; Lee et al., 2011).

Table 3: Summarized Results of Regressions for Cognitive Efficiency of Late Adults (N=200) based on Select Demographic Variables and Total Adjustment

Dependent Variable	Age	Gender	Marital Status	Living Arrangement	Education	Total Adjustment	Intercept	R	R^2	df	F
	Beta	Beta	Beta	Beta	Beta	Beta					
Rapidity of Mental Functions	-.32	.07	.07	-.003	.08	.17	30.15	.35**	.12	6,193	4.38**
General Orientation and Information	-.17	-.06	.01	.07	-.07	.03	9.84	.22**	.05	6,193	1.68
Percept and Motion Equity(Error)	.004	.15	.12	-.03	.05	.09	-.38	.19**	.04	6,193	1.19
Depression	.04	.08	.20	-.09	.02	-.09	6.55	.31**	.09	6,193	3.32**

**p<.01

Table 3 presents secondary steps of path analyses for rapidity of mental functions; general orientation and information; percept and motion equity; and depression. F value of 4.38 (Table 3) shows that rapidity of mental functions of late adults can be significantly predicted by select demographics and aggregate adjustment; age (Beta=-.32) is the chief predictor; younger individuals (aged 60-70 years) are cognitively quicker than older ones (in line with findings of Goswami, 2006; Swarnalatha, 2007; Lim and Kua, 2011). Reasons for cognitive decline with age may be sensory impairment and aging brain beset with wear and tear (Glisky, 2007). Aggregate adjustment (Beta=.17) also has some role to play in determining the rapidity of mental functions of participant late adults with more adjusted persons tending to be cognitively somewhat swifter. This is congruent with findings of Colcombe and Kramer (2003), Daselaar and Cabeza (2005), Glisky (2007) and Krueger et al. (2009). Reasons could be that better adjustment is proving conducive for cognitive performance; and / or cognitive alertness is promoting adjustment. But the latter explanation is outside the purview of the present research. Investigations (e.g. Colcombe and Kramer, 2003; Daselaar and Cabeza, 2005; Glisky, 2007; and Krueger et al., 2009) indicate that good physical and social adjustments facilitate cognitive agility in old age. However, chosen demographics and totality of adjustment of late adults were unable to significantly predict either their general orientation and information or their percept and motion equity. Though F value (3.32) reveals that depression (which dampens cognitive efficiency) of late adults can be significantly predicted by select demographics and aggregate adjustment; marital status (Beta=.20) emerges the most powerful predictor; divorcees seem to experience depression the most (in conformity with outcomes of Yeh and Liu, 2003; Lim and Kua, 2011). Reasons could be social disengagement and loneliness (Silberman et al., 1995; Bassuk et al., 1999; Rajan et al., 1999; Gilmour, 2011; Tiwari, 2013). Thus the research hypothesis is partially supported (i.e. only for rapidity of mental functions; and depression).

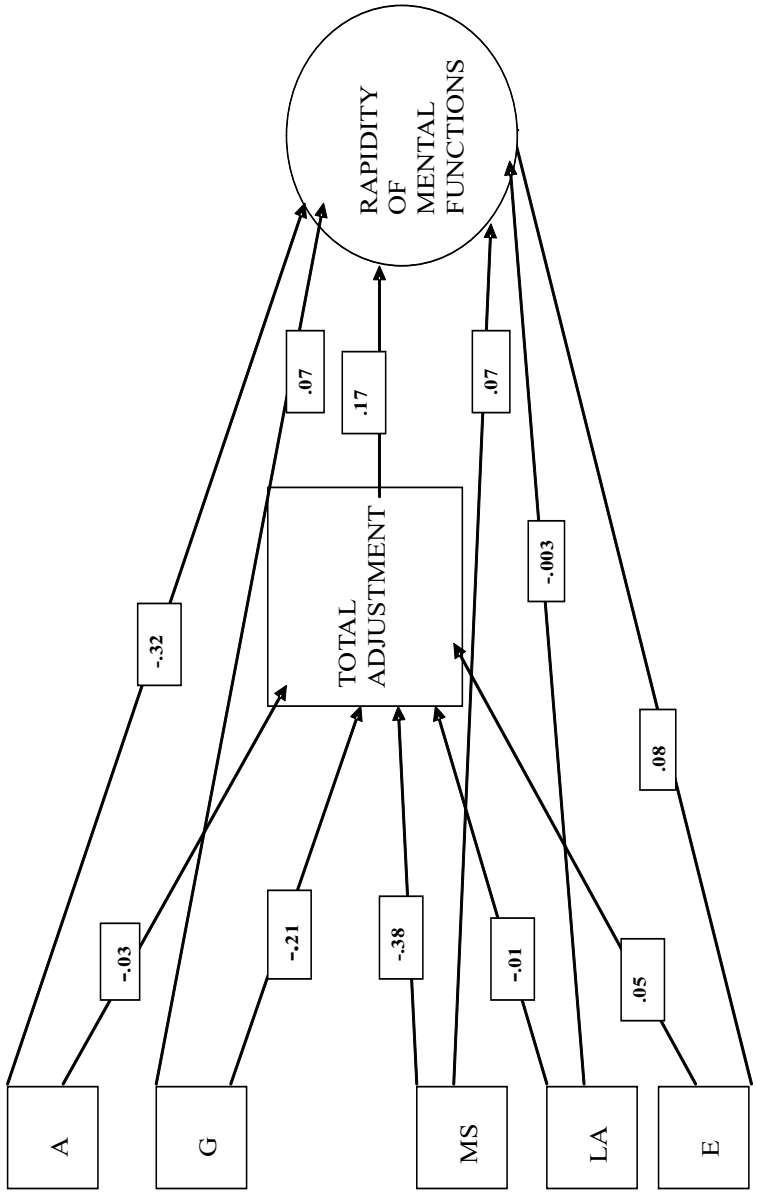


Figure 1: Causal Pathways (Bearing Beta Values) to Rapidity of Mental Functions via Totality of Adjustment of Late Adults [A – Age; G – Gender; MS – Marital Status; LA – Living Arrangement; E – Education]

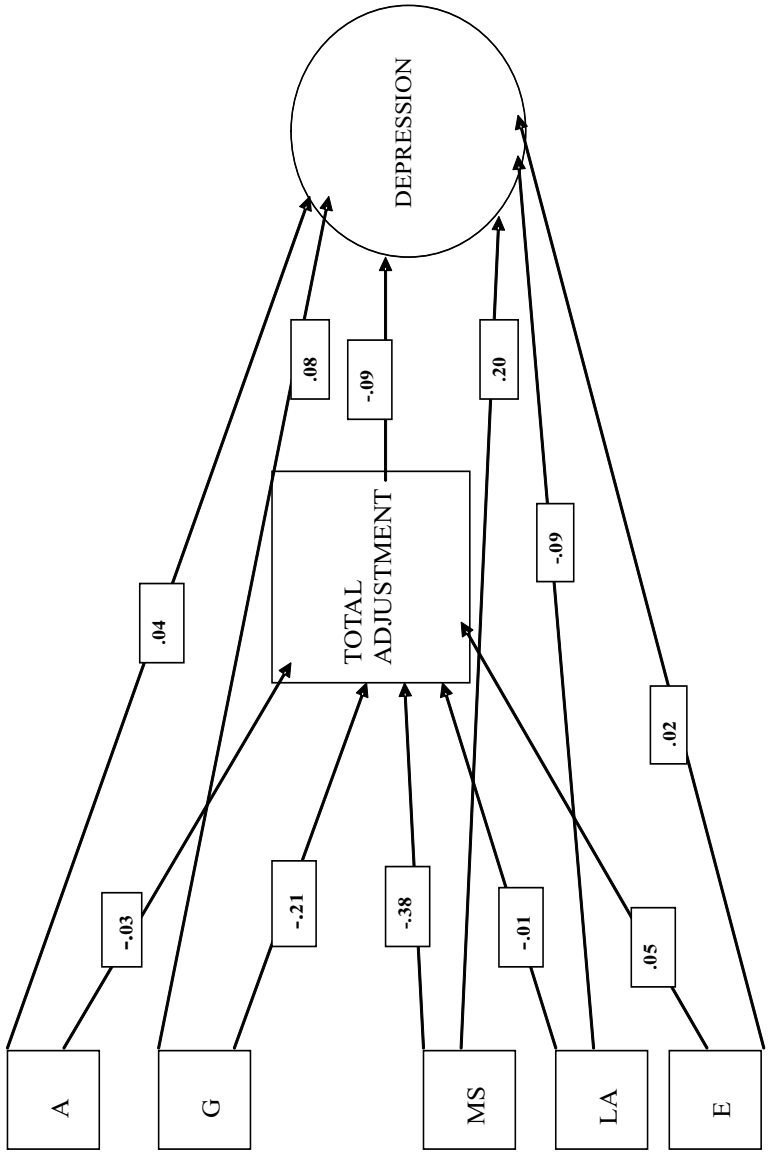


Figure 2: Causal Pathways (Bearing Beta Values) to Depression via Totality of Adjustment of Late Adults [A – Age; G – Gender; MS – Marital Status; LA – Living Arrangement; E – Education]

Direct effects of predictors (Table 3) show that specific demographics rather than adjustment principally influence cognitive efficiency of sampled late adults. Figures 1 and 2 depict adjustment mediating between demographics and cognitive efficiency. Causal pathways of only rapidity of mental functions and depression have been traced because these could be significantly predicted (Table 3). Relatively prominent role of total adjustment (Beta =.17) in influencing rapidity of mental functions is evident (Figure 1). This resonates with findings of Colcombe and Kramer (2003), Daselaar and Cabeza (2005), Glisky (2007) and Krueger et al. (2009). However, influence of adjustment on depression is weaker (lower Beta of -.09 in Figure 2). Beta values (Figures 1 and 2) and codes suggest that the older old display slower cognitive functions mediated by overall maladjustment plausibly due to neurological detriment (Glisky, 2007); elderly bereft of partners are vulnerable to cognitive decline brought on by depression probably because of social alienation and loneliness (Bassuk et al., 1999; Rajan et al., 1999; Tiwari, 2013).

CONCLUSION

Role of adjustment as mediator between demographic variables of participant late adults and their cognitive efficiency is weak. The direct effect model is more justifiable. Government and NGOs must not only ensure medical intervention for late adults but also social participation of solitary elderly. Clubs for late adults should be set up in every locality where they can chat, read, watch television, surf internet, figure out puzzles, connect with relatives and friends over email and phone to remain cognitively agile.

Acknowledgement

The research was funded by University Grants Commission, New Delhi under Potential for Excellence Scheme.

REFERENCES

Bassuk, S.S., Glass, T.A. and Berkman, L.F. (1999). **Social disengagement and incident cognitive decline in community-dwelling elderly persons.** *Annals of Internal Medicine*, 131, 165-173.

Carr, D. (2004). **Gender, preloss marital dependence and older adults' adjustment to widowhood.** *Journal of Marriage and Family*, 66,220-235.

Colcombe, S. and Kramer, A. F. (2003). **Fitness effects on the cognitive function of older adults: A meta-analytic study.** *Psychological Science*, 14, 125.

Dandekar, K. (1996). *The elderly in India*. New Delhi: Sage.

Daselaar, S. and Cabeza, R. (2005). **Age-related changes in hemispheric organization.** In R. Cabeza, L.Nyberg and D. Park (Eds.) *Cognitive neuroscience of aging*. Oxford: Oxford University Press.

Evans, D.A., Beckett, L.A., Albert, M.S., Hebert, L.E., Scherr, P.A., Funkenstein, H.H. and Taylor, J.O. (1993). **Levels of education and change in cognitive function in a community population of older persons.** *Annals of Epidemiology*, 3(1), 71-77.

Ghosh, P. and Dey, A. (2008). **Views on aging and dying among the middle class Bengali Hindu elderly residents of Kolkata.** In S. Chopra Chatterjee, P. Patnaik and V.M. Chariar (Eds.) *Discourses on aging and dying*. New Delhi: Sage.

Gilmour, H. (2011). **Cognitive performance of Canadian seniors.** Retrieved on 02.9.13 from http://www.statcan.gc.ca/pub/82-003-x/2011002.

Glisky, E.L. (2007). **Changes in cognitive function in human aging.** In D.R. Riddle (Ed.) *Brain aging: Models, methods and mechanisms*. Boca Raton, Fl: CRC Press.

Glymour, M.M., Tzourio, C. and Dufouil, C. (2012). **Is cognitive aging predicted by one's own or one's parents' educational level? Results from the three-city study.** *American Journal of Epidemiology*. Retrieved on 3.11.13 from aje.oxfordjournals.org /content/early/2012/04/01/aje.kwr509.full.

Goswami, A., Reddaiah, V.P., Kapoor, S.K., Singh, B., Dey, A.B., Dwivedi, S.N. and Kumar, G. (2006). **Prevalence and determinants of cognitive impairment in rural elderly population in India.** *Helpage India – Research and Development Journal*, 12(2), 8-15.

Gurumurthy, K.G. (1998). *The aged in India: Publications in gerontology in honour of Dr. M.D. Zamora*, Vol.I. New Delhi: Reliance.

Hurlock, E.B. (1988). *Personality development.* New Delhi: Tata McGraw-Hill.

Hussain, S. and Kaur, J. (1995). *Manual for Shamshad-Jasbir Old-Age Adjustment Inventory (SJOAI).* Agra: National Psychological Corporation.

Iliffe, S., Tai, S.S., Haines, A., Gallivan, S., Goldenberg, E., Booroff, A. and Morgan, P. (1992). **Are elderly people living alone an at risk group?** *British Medical Journal*, 305, 1001-1004.

Kaur, H. and Saini, S. (2011). **Assessment of the extent of social isolation amongst the aged for various dimensions of social isolation**. *Anthropologist*, 13(2), 137-146.

Kohli, A., Verma, S.K. and Pershad, D. (1996). *Manual for PGI Battery for Mental Efficiency in the Elderly (PGI-AMEE).* Agra: National Psychological Corporation.

Krueger, K.R., Wilson, R.S., Kamenetsky, J.M., Barnes, L.L., Bienias, J.L. and Bennett, D.A. (2009). **Social engagement and cognitive function in old age.** *Experimental Aging Research*, 35(1), 45-60.

Kuppuswamy, B. (1984). *Manual of Socio-Economic Status Scale (Urban)*. Delhi: Manasayan.

Lee, J., Shih, R.A., Feeney, K. and Langa, K.M. (2011). *Cognitive health of older Indians: Individual and geographic determinants of female disadvantage*. Santa Monica, CA: Rand Corporation.

Lim, L.L. and Kua, E. (2011). **Living alone, loneliness and psychological well-being of older persons in Singapore.** *Current Gerontology and Geriatrics Research*. Retrieved on 02.9.13 from http://dx.doi.org/10.1155/2011/673181.

Nandal, D.S., Khatri, R.S. and Kadian, R.S. (1987). **Aging problems in the structural context.** In M.L. Sharma and T.M. Dak (Eds.) *Aging in India*. New Delhi: Ajanta.

Pati, R.N. and Jena, B. (1989). *Aged in India.* New Delhi: Ashish.

Rajan, S.I., Mishra, U.S. and Sarma, P.S. (1999). *India's elderly: Burden or challenge*. New Delhi: Sage.

Sen, M. and Noon, J. (2007). **Living arrangement: How does it relate to the health of the elderly in India?** Prepared for submission to the Annual Meeting of the Population Association of America, New York, March 29-31, 2007.

Shah, V.P. (1993). *The elderly in Gujarat*. Ahmedabad: Gujarat University.

Shock, N.W. (1952). **Aging and psychological adjustment.** *Review of Educational Research,* 22(5), 439-458.

Silberman, C., Souza, C., Wilhems, F., Kipper,L., Wu, V., Diogo, C., Schmitz, M., Stein, A. and Chaves, M. (1995). **Cognitive deficit and depressive symptoms in a community group of elderly people: A preliminary study.** *Rev Saúde Pública*, 29(6), 444-450.

Swarnalatha, N. (2007). **Cognitive status among rural elderly women.** *Journal of the Indian Academy of Geriatrics*, 3, 15-19.

Tiwari, S.C. (2013). **Loneliness: A disease?** *Indian Journal of Psychiatry*, 55(4), 320-322.

Tripathi, R.K. and Tiwari, S.C. (2011). **Cognitive dysfunction in normally aging urban older adults: A community-based study.** *Indian Journal of Psychological Medicine*, 33(2), 177-181.

Tucker, A.M. and Stern, Y. (2011). **Cognitive reserve in aging.** *Current Alzheimer Research,* 8(4), 354-360.

World Health Organization (2012). Retrieved on 24.6.12 from www.who.int/gender/whatisgender/en/.

Yeh, S.C.J. and Liu, Y.Y. (2003). **Influence of social support on cognitive function in the elderly.** *BMC Health Services Research*. Retrieved on 3.11.13 from http://www.biomedcentral.com/1472-6963/3/9.

AVAILABILITY AND USE OF TECHNOLOGY IN CARE OF ELDERLY IN INDIA: A SOCIAL PSYCHOLOGICAL ANALYSIS

Habibullah Ansari*

ABSTRACT

Use of technology depends on availability and familiarity of technology. There is a digital divide between the youth and the elderly, between the rural poor and urban middle class in terms of use of technology. Technology in our country has not been developed as per the needs of the elderly and disabled rather it is market driven. There is separate discipline 'Gerontechnology' stands for the designing technology and environment for independent living and social participation of older persons in good health, comfort and safety. In some countries it has been focussed on such technologies from the walking stick to the humanoid robots for the care of the elderly. In India there is a little focus on such issues. The planners and developers are hardly sensitised to create such technologies for the poor, rural, disabled and elderly. Elderly feel self-pity while they are exposed to technology. This paper analyses the issues regarding availability, use, design and need of technology for the care of elderly.

Key Words : Gerontechnology, availability and use of technology, comfort and safety, care of elderly

* *Associate Professor, Division of Social Psychology, A N Sinha Institute of Social Studies, Patna- 800001, Bihar, India*

INTRODUCTION

There is a Techno-Taboo not only among the elderly but among the general masses. The simplest example is the use Electronic Voting Machine (EVM) in last parliamentary general election (April–May 2014). That Machine could be used just by pressing a button in front of the desired candidate's name and symbol. For handling that machine the Election Commission of India was providing mass-training to the educated government staff those who are employed to conduct the election, and a mass-level awareness campaign among voters was going so that they could use the EVM properly. This is one of the smallest examples of facing difficulties in use of the simplest electronic machine by the general masses what to say about the elderly.

At the advent of the new technology spreading in the market such as electronic gadgets- mobile phones, computers, laptops, television sets etc. the elderly of India somehow facing difficulties and feeling inferior in coping with the modern technology. Somehow they consider themselves outdated in the context of familiarity with latest technology. They require assistance from the younger people in use of the present era technology. There is a greater digital divide between the older persons and the youth in India today in use of technology. But they have a feeling of happiness that younger persons of their family are able to handle mobile phones, laptops, and other electronic gadgets. Availability and use of technology is a matter of social prestige in Indian society.

As the technology is advances the elderly somehow feel themselves as backward, uncomfortable and incapable in use of technology. There is a variety of technological use for everybody so for the older citizens. As it has contributed lots of ease and comforts to the lives of everybody and so the elderly. Without technology no one can think a simple and normal day to day life. However there is sociology and psychology of technology. In Indian society only few people those who belong to the urban middle class have an access to the technology and they are comfortable with its use. Availability of technology facilitates the use of technology because one can get time handle and rehearse with the use of technology. In the contrary the rural poor are hardly comfortable with the technology because it is not available to them. Similarly the younger generation is more comfortable than the older generation in use of technology but again the poor and rural youth, due to unavailability of technology, are not comfortable with technology. Another dimension is the learning and knowledge. Those who are learned and have knowledge, the professionals, the experts, the intelligentsia are comfortable with the technology because it available to them and they have acquired knowledge.

Technology and development go hand in hand. Advancement of technology is one of the indicators of the development. Technology is used in terms of creating social infrastructures which is commonly used by the society such as roads, railways, buses, telecommunication, hospitals, public parks, schools, colleges, universities, market places, public buildings, subways, flyovers, metro-rail etc. where the government collectively invests the resources. Technology is also used to ease our personal and private lives by creating comfortable houses, toilet facilities, staircases, lifts, ramps, etc. While public or private goods are created either for public use for private use, how far the planners and developers are sensitised and take care the needs of the special populations such elderly, disables, blinds, pregnant women, children etc. For example when we construct a foot over bridge over a busy road or over a railway track or at railway station can we consider how the elderly, physically challenged, children and pregnant women will cross the bridge? While we design a public bus or train, how far we keep in mind the needs of these special groups? While at the introducing the internet for all public works by government offices such as paying telephone bills, water bills, online applications for getting any certificates etc. do we keep in mind how many people in our country are computer literate and how many people having a computer with internet facility particularly in the rural areas? There are numerous such questions

to be addressed by the policy makers and planners. So when we formulate any plan and policy where technology is involved we should keep in mind the special needs of the elderly and disabled. This paper is explaining the issues such as availability and use of technology to the elderly and their inability to use such technology like smart phones, laptops, vending machines, ATMs etc. as well as the role of policy makers and planners in developing the technology for elderly and make their life comfortable and independent. How the technology could be used to help the elderly particularly when they become weak and infirm and have to depend on others for their day to day care? How to develop special toilets, beds, walking supports, vehicles, housing, parks, transportation, public buildings, and other public spaces where the older people can have an easy access? It will also touch on the issues that the technologically advanced countries are trying to provide a machine-supported care to their elderly people through the advancement of technology such as developing electric wheelchairs, automatic sleeping beds, remote operated kitchen, humanoid robots etc. for this purpose a separate discipline called 'Gerontechnology' has emerged which is focussing the research and design of the machines and caring adds for the elderly. However in the third worlds countries which are poorly developed and have a limited scope for the such technologies, have a social option that is to strengthen their traditional social institutions such as families, kinship bonding, neighbourhoods, community responsibilities etc. which are inherent in Indian society, though these institutions are changing due to the forces of social change. So the western technologically advanced countries have technology but the third worlds have human hands which can take care of their elderly with affection, love and respect.

Needs of Elderly for Technology: Disability and Mobility

In India 8.6% of the total population is over the age of 60 years as per the census 2011 (Census of India, 2011) and many of them suffer from different types of disabilities such as visual and hearing impairment, arthritis, dementia, Alzheimer's disease etc. According

to the NSSO (58th Round, 2002) data, locomotors disability is among 11% and 9% older persons in rural and urban areas respectively, 27% older persons suffer from visual impairment in the rural areas; and the corresponding figure for urban areas is 24%. 15% and 12% older persons suffer from hearing disability in rural and urban areas respectively. As the age advances the weakness and disability also increase. It was found in one study that 33% among the 80 and above years of elderly and 6% among the young older persons had significantly restricted or no mobility (Agewell Foundation, 2011). In a micro study in north Indian rural village, it was found that nearly 5% older persons were in the extreme form of disability and 13 % a little moderate disabled (Ansari H, 2013). A much larger proportion will be mobile but will be living with various infirmities and at risk of injury or will decrease activities and external interactions involving mobility. We have to keep in mind the types of technology which is of much useful for these elderly. These proportions of the older people with disability require special attention in general day to day care but while building any public infrastructure their special needs should be taken care.If we think that all these people despite their handicaps lead an independent life we should design both public and private areas so that their impairments do not reduce their quality of life. The town planners, municipal authorities, public transport managers, architect, builders should be sensitised to these facts and efforts should be made while designing any public or private infrastructure such as hospitals, banks, public dealing departments, public toilets, roads, pavements, places of public recreation so that older persons can feel safe to use these facilities. The environment we built at home or outside to deal with their disabilities should ensure confidence among them to deal with life independently. The role of technology will really be very important for the designing and building such elder-friendly environment.

With modern developments and construction, a greater homogenisation is occurring in habitation patterns and housing, with brick and concrete taking over everywhere, less suited to warm

and cold climates. Further, as families get closeted within the closed structure of these homes, there is decrease in space for collective activities and community interactions for the elderly. This is especially critical in the present context where infrastructural changes are occurring in the country on a large scale and at heavy cost. Old models of housing, water and toilets, transport and communication are undergoing a sea change and the new should be built with due consideration to the needs of the elderly (Ansari and Priya, 2014).

The Madrid International Plan of Action on Ageing (MIPAA, 2002) and the National Policy for the Older Persons (NPOP) 1999 and revised policy in 2011 (draft) ensure to fulfill their special needs such as shelter, welfare, and protection of life and property. NPOP has recommended that use of science and technology such as web based services and devices for the wellbeing and safety of senior citizens will be encouraged and expanded to under-serviced areas (Government of India, 2011). This policy recommends the promotion of age-friendly facilities and standards of universal design by Bureau of Indian Standards. Age friendly, barrier-free access will be created in buses and bus stations, railways and railway stations, and within the airports, banks, hospitals, parks, places of worship, cinema halls, shopping malls and other public places that senior citizens and the disabled could have easy excess. The passage of laws with Disabilities Act 1995 decisions have advanced the possibilities for us to live in the community and do what our non-disabled counterparts do. Yet, these freedoms bring unique challenges to women with disabilities have not benefited because of their ignorance about it.If older persons are provided with opportunities for lifelong learning and earning, contribute to family and society in a meaningful way, make medical care accessible and affordable to enhance their quality oflife, reduce physical and mental infirmities and allow better integration in the mainstream of society (HelpAge India, 2007).

Gerontechnology: Design and use of technology for Elderly in the Industrialised countries

In Industrialised western countries for the research and design special technology for the older persons has been developed. This discipline is little known to Indian or Asian regions. The term 'Gerontechnology' (*Ger-on-tech-nol-o-gy*) stands for the designing technology and environment for independent living and social participation of older persons in good health, comfort and safety. The International Society for Gerontechnology (ISG) (http://gerontechnology.info/index) has been founded by a group of engineers, medical persons and social scientists in Netherlands to develop such technology which could ease the life of elderly as well as help to the care givers. ISG encourages and promotes technological innovations in products and services that address older peoples' ambitions and needs on the basis of scientific knowledge about ageing processes including cultural and individual differences. It works toward the realization of a society fully served by technology that is as accessible to ageing people as it is to people in younger generations. It values innovative technology that serves an enabling role for ageing people by maintaining their independence and equality including considerations of residence, mobility, safety, security, communication, activities, and quality of life; supporting their well-being and health as defined by the WHO; realising their individual and collective/social ambitions and needs; keeping them embedded in their changing socio-cultural environment; enhancing their dignity; and supporting their caregivers. The ISG published a journal called 'Gerontechnology' (ISSN/EISSN 1569-1101 1569-111X) which is its official journal (http://gerontechnology.info/index.php/journal).

The ISG has organized its 9th World Conference of Gerontechnology in Taiwan on June18-21, 2014 at its Taipei City on the theme *Cultural and Social Diversity in Gerontechnology*.That was the world's largest gathering of

scholars, researchers, experts and practitioners in the field of Gerontechnology. It was organized into 9 Keynote Addresses by eminent academicians- the grand Masters of the ISG, 19 Symposia on different issues containing 99 papers, 6 sessions on Leading-Edge Technologies- an interactive demonstrations of the well-tested prototypes of products or servicescontaining 63 papers/poster presentations, 20 Chaired Oral Sessions containing 80 papers, and 02 Gerontechnology Platform- exhibition-cum interactive sessions of newly-developed products. This author has also presented a paper under one of the symposia (Ansari H and Priya R, 2014). A total of 261 papers/posters were presented in the conference out more than 400 papers accepted.

The purpose of the ISG 2014 world conference also reflects the marketisation of the technology for the care of the elderly. Along with the above sessions, there were also the trade exhibitions of products by thousands of companies for the elderly care called 'SenCARE' (Taiwan International Senior Lifestyle and Health Care Show) and 'MEDICARE' (Taiwan International Medical & Health Care Exhibition).There were thousands of exhibition stalls of all products starting from simple walking sticks to the robots and from simple medicine to reduce the process of biological ageing to look young.

It was learnt from the conference and the exhibitions of the products at Taiwan that the western industrially advanced countries have developed everything for their elderly starting from the simplest tool-walking stick to the complex ones- the family robots. They think that the machine can replace the human hands for the care elderly and disabled, but it was realised and discussed that technology has to be combined with people. It can't do anything alone. We need people to help elderly and technology can help them to make their work easy. The poor and third world countries can't afford to purchase those products. Thus they have to depend on the social institutions such as family and neighbourhood and similar other organisations. Thus, we need social innovation for the care of

elderly and disables.

Availability and Use of Technology for the Elderly in India

There are limited technology options for the elderly in India. To ease their day to day life with help of innovative technology is still in the formative stage. Least importance has been given for this purpose. Ministry of Science and Technology, Government of India has proposed to develop elderly friendly technology. The Science for Equity, Empowerment & Development Division (SEED) under the Department of Science and Technology (DST) has instigated a focused initiative on Science and Technology interventions for the benefit of elderly population and disabled persons in the country under the restructured Technology Intervention for Elderly (TIE) programme now called as Technology Interventions for Disabled and Elderly (TIDE), in addition to providing technological solutions with multidisciplinary approach to resolve the problems and improve quality of life of the elderly population with focused initiative on S&T interventions. It also aims in providing individual autonomy and independence to persons with disability through holistic development by creating enabling environment for their empowerment through application of Science and Technology. Proposals on Research and Development for technological solutions with multidisciplinary approach to improve the quality of life of elderly population and disabled persons and in making them self-sufficient will be considered for financial assistance under this programme. The DST has asked the proposals from the private companies for financial assistance which may take longer time in materialising the things (DST, 2008).

However the real state of using technology by the older people in India is not known properly. We have no empirical data that how many elderly use technology and which types of technology they use but it is assumed that a small section of the elderly living in urban areas have some access to buy the supporting aids available in the market such as walking sticks, wheel chairs,

spectacles, hearing aids etc. Few of the houses in the urban centres might have been using with age-friendly technology such as non-slippery tiles, hand railings in the bath rooms, special beds, monkey chains to support them getting up from the bed etc. The majority of the elderly in the poor sections of the society and in rural areas have no such access. Some charitable organisations and NGOs supply such aids to the elderly free of cost but the exact figure is not available. They are depending on the traditional system of support by the helping hand of their kins. There is a very poor awareness among the society regarding age-friendly technology and moreover it depends on the availability in the market and purchasing power.

Two studies conducted by the Help Age India in Delhi and Udaipur in 2007 reveal that most of the people had mixed feelings about the experiences of older persons in the city and responsiveness of the city and the community to the special requirement of older persons. Most of the groups were critical of the problems posed to older persons due to increasing traffic, expanding infrastructure and overcrowding and consequent inability of the existing infrastructure to cater to the needs of older persons. The study finds that there was a general underlying consensus in all the groups including older persons, care givers and service providers that the built environment in the city was unmindful and at times unfriendly to the older persons especially those with disability. The gradual weakening of human element in the entire setup was also acknowledged by all except the middle SES old-old group(Help Age India, 2007).

The household-assets census by the government of India (Census, 2011) reveals the availability of the common technology in the forms of household assets not specifically for the elderly but general items were even not available to everybody in the country. That census reports that only 63% of Indian households have a telephone/mobile phones out of which 82% of households live in urban and 54% in rural area. The penetration of mobile phone alone is 59% and landline is 10% (Table 1). Uneducated elderly of any class either in rural or in urban are not able to use even the simple mobile phones

not to say about the smart phones. Many of them keep a paper note book to inter the phone numbers as they are not able to save the numbers with names in mobile phones. Only a few those who are educated and in profession such as professors, doctors, engineers are able to handle the smart phones and computers/laptops in Indian society (Ansari H and Priya Ritu, 2014).

Table 1: Percentage of households in India having assets (2011)

SL	Items used in households	% of house holds
1.	Radio/Transistor	19.9
2.	Television	47.2
3.	Computer/Laptop Total	9.5
4.	Computer/Laptop with internet	3.1
5.	Computer/Laptop without internet	6.4
6.	Telephone/Mobile Phone total	63.2
7.	Telephone landline alone	4.0
8.	Mobile Phone alone	53.2
9.	Both landline +Mobile Phone	6.0
10.	Bicycle	44.8
11.	Scooter/Motorcycle/Moped	21.0
12.	Car/Jeep/Van	4.7
13.	None of the specifies assets possessed	17.8

Source: Census of India 2011. Houses, House hold amenities, and assets- 2011 (in Ansari H and Priya R, 2014)

Use of technology depends on the availability and familiarity of the technology. What to talk about the elderly of India regarding using computers, laptops, tablets, internets etc. this is still a dream of the majority of the Indian people. Only 9.5 percent of the total households of India have a computer or laptop, only 3.1% households have computers with internet facility. The penetration of internet is 8% in urban as compared to less than 1% in rural area (Table 1). Out of these figures only a fraction of elderly could be using computers, laptops, tablets, internet etc. It was found that

only 47.2 % Indian households have a television set and 19.9 percent have a radio/transistor set, 44.8 % had a bicycle, 21% have scooters/ motorcycles/mopeds, only 4.7% have cars/jeeps/vans and 18% of the household do not have any of the specified assets (Table 1).

Even the basic home appliances are not available to the majority of the households. There are only 28.6 percent of the households who have a cooking gas LPG/PNG, 0.1 percent use electricity for cooking, 49 % use firewood, 8.9 % crop residue, 8 % cow dung cake and 3% households use Kerosene (Table 2). 61% households have Kitchen facility with 55% within premises and 6% outside premises. 67% households had electricity connection, 47% of the households have latrine facility within premises with 36% households have water closet and 9% households have pit latrine, 58% of the households have bathing facility within the premises. Around half of the households have drainage connectivity with two third have the open drainage and one-third have the closed drainage. 87% of households are using Tap; Tube well, Hand pump and Covered well as the main source of drinking water while 43.5 percent use tap water. Only 47% of households have source of water within the premises while 36% of households have to fetch water from a source located within 500 m in rural areas/100 m in urban areas and 17% still fetch drinking water from a source located more than 500 m away in rural areas or 100 m in urban area (Press Note, 2012, Table 2)

Table 2: Households in India used types of fuels for cooking (2011)

SL	Items used in Cooking	% of house holds
1.	Firewood	49.0
2.	Crop Residue	8.9
3.	Cow Dung Cake	8.0
4.	Coal/Lignite/Charcoal	1.5
5.	Kerosene	2.9
6.	LPG/PNG	28.6
7.	Electricity	0.1
8.	Biogas	0.4
9.	Any other	0.5
10.	No Cooking	0.3

Source: Census of India 2011. Houses, House hold amenities, and assets- 2011 (in Ansari H and Priya R, 2014).

Water sources and toilet facilities were traditionally outside the home but are now becoming a part of the house, a great asset especially for the elderly. However, the Agewell study found that only 47% households of the elderly had source of water within the premises and similarly only 47% households had domestic toilet facilities. Clearly, improving access to amenities is essential, and there is much infrastructure construction activity on in the country (Agewell Foundation, 2011).

In India context specific assistive aids as required by the elderly as per their geographical inhabitants have also hardly been thought about or developed in the country. Mobility aids need careful thought not only about individual appropriateness, but about local infrastructural context as well. Walking sticks are traditionally the most omnipresent, made from a range of local traditional materials to the modern ones. Wheelchairs and walkers are also becoming available, but quality and cost remain issues. Besides the cost factor, specificities of the rural and hilly regions have been found to act as barriers to their use (Ansari H and PriyaRitu, 2014).

A systems approach to developing context-specific solutions for

the various health needs of the elderly will provide holistic and affordable measures. The 'Jaipur Foot' (BMVSS), innovatively devised to produce artificial limbs that allowed the users to squat, can be used without shoes for running and climbing trees, using local materials that local artisans could mould to the needs of individual patients and was easy to maintain, is an illustration of the possibilities of such a conception to development of modern technologies suited to the Indian context. It has been recognised worldwide and universities such as Stanford have collaborated to develop other prosthetics along similar lines. Yet it lacks formal mainstream acceptance (Diabetesindia.com, Thomas P M, 2013).

A few technological innovations for the elderly that have been documented by the Honeybee Network of the National Innovations Foundation, an autonomous organisation under the Department of Science and Technology, reflect the same approach (Gupta A. 2009). A battery operated tricycle and another battery operated wheel chair, innovated by the son of the paralysed elder, are tailor made for the local terrain and the convenience of use by his father who is paralysed on one side (Techpedia.in).

Sporadic voluntary and professional efforts are ongoing, such as the one at the Indian Institute of Technology, Mumbai where Residential Interior Design for The Elderly and Physically Challenged have been developed using ergonomics and the anthropometry of Indians (Mid Day, 2012). The Ministry of Science and Technology has attempted to promote technology development under a programme titled in 2012 as Technology Interventions for Disabled and Elderly (TIDE), with a comprehensive list of potential areas for research and development. One looks forward to some meaningful outcomes(Ansari H and PriyaRitu, 2014).

Technology and Health Care of Elderly

There is a great role of technology of the health care of everybody and so for the elderly but yet specific health services required for the elderly has not been created in our country such as geriatric wards,

mobile medical units, specially designed support units for extremely disabled and infirm elderly. Though such services have been promised in the national Health programme for the elderly but yet have not been provided. The elderly require all levels of health care - preventive, promotional, curative, rehabilitative, and palliative. This requires a major expansion of the public health service system, along with a sensitisation to the special needs of the elderly. The Department of AYUSH is running the geriatric campaign, in parallel with the modern services with little effort to develop integrated approaches for using the strengths of all systems together. This is where trans-disciplinary research is needed to develop cost-effective modes of rational care, with a continuum from home, to community, to hospital.

India has officially recognised 7 systems of medicine other than modern medicine - 6 systems of traditional medicine and Homeopathy - that are codified knowledge systems with their own texts, colleges producing graduates and specialists, dispensaries and hospitals, both in the public and private sectors. The Department of AYUSH (an acronym for Ayurveda, Yoga and Naturopathy, Unani, Siddha, Sowa Rigpa, Homeopathy) in the Ministry of Health and Family Welfare promotes and supports the growth and development of these systems. It has initiated a National AYUSH Geriatrics Campaign. This is to make widely available the benefits that the traditional systems have for improved health and wellbeing of the elderly. The strength of these systems lies in their focus on the internal processes of the body rather than targeting the external disease-producing factors. For instance, "Ayurveda has a focused branch of medicine called *Rasayana* (Rejuvenation) which exclusively deals with the problems related to aging and methods to counter the same. Geriatrics or *JaraChikitsa* or *Rasayana* in Ayurveda is a method to control/slow down/arrest the aging process in the human being during the degenerative phase of one's life (Priya R and Shweta AS, 2010).

Besides the hospitals and dispensaries of AYUSH, several major conventional government hospitals have Yoga and Naturopathy Centres linked to their cardiology and/or psychiatry departments since there is evidence that they are supportive in the treatment of these chronic diseases and prevent further exacerbations and complications.

Technology and Disaster Management: Special needs of elderly

The elderly are one of the most vulnerable groups during any disaster. The types of technology and social familial response are the important factors for the care of the elderly on priority basis.The government and the civil society along with the help of family and friends have the responsibility to plan for emergencies and disasters.Emergency managers, health-care providers, emergency responders, and local public and privateagencies dedicated to the health and well-being of the elderly should share in this responsibility. Special technology is required for them. The research and development wing of the government should design and develop such technologies. The literature addresses the range of impacts on the elderly population from disasters, including hurricanes, floods, tornados, earthquakes, and heat and cold waves. The bulk of reviewed literature concentrates on mental health, thesocial-psychological impacts, and the definition and evaluationof loss. Studies also focus on the utilization and role of external aid sources, physical impacts, and financial response and recovery. Studies identified an increased vulnerability of the elderly to disasters primarily attributed it to impaired physical mobility, diminished sensory awareness, pre-existing health conditions, and social and economic constraints. These categories are described separately (Lauren S. Fernandez, MS; Deana Byard, BA et al, 2002).

Conclusions

Technology should be developed as per the need of the elderly and disabled. At the same technology should be viable and user friendly as well as cost effective and based on the indigenous system so that

it could be easily available to everybody. Technology should not be so costly and complex that it could require special training to use. At the same time the older persons and disabled are exposed to adequate learning and training so that they could use the technology. In India during the disability of the elderly when they become unable to do their day-to-day activities even not able to go toilets in such case technology should designed so that they could easily be used toilets and other needs. The spaces such markets, public offices, parks, roads, over bridges, trains and buses should be designed accordingly. The planners and developers should be sensitised to take care of the needs of elderly. Moreover, emphasis should put on to protection of traditional social institutions such as family, kinship networks, neighbourhoods, and strengthening the intergenerational bonds through inculcating values amongst the youngsters so that without any incentives they could be caring their elderly with love and respects. Also there should focus on social innovations so that the community itself evolve a system for the care of their senior citizens which would sustainable for generation after generation (Ansari H and Priya R, 2014).

REFERENCES

Agewell Foundation (2011). Study on Human Rights of Older Persons in India. Agewell Foundation, New Delhi.

Ansari H and Priya R (2014).*Policies and Politics of Ageing in India: Social and technological issues.* Gerontechnology, Vol 12, No. 4, 2014 (ISSN/EISSN 1569-1101 1569-111X) http://gerontechnology.info/index

Ansari H. 2013.*Aging and Care-giving Practices in India*. In Social Work and Social Development: Perspectives from India and the United States, Shweta Singh (ed.); Lyceum Books Inc., Chicago. pp. 229-248.

BMVSS, undated. Jaipur Foot, BhagwanMahavirViklang SahayataSamiti available at http://jaipurfoot.org/

Census of India 2011. Houses, House hold amenities, and assets-2011. (www.censusindia.gov.in/2011census)

Department of AYUSH.Undated.Ayurveda and Siddha (Rasayana Therapies) for Geriatric Care. http//indianmedicine.nic.in /writereaddata/linkimages/3421702979-Background.pdf

Diabetesindia.com, http://www.diabetesindia.com/diabetes/the_jaipur_foot_3.htm

DST, 2008.Technology Interventions for Elderly (TIE).Department of Science & Technology Ministry of Science & Technology Government of India.http://www.scienceandsociety-dst.org/TIE.htm

Gupta A. 2009. India's Hidden Hotbeds of Invention. TED Talk transcript.

HelpAge India (2007). Age-Friendly City Report: Advantages and Barriers in Udaipur.

Lauren S. Fernandez, MS;1,2 Deana Byard, BA;1 Chien-Chih Lin, BA;1 Samuel Benson, AEMT-P;3 Joseph A. Barbera,MD4, Frail

Elderly as Disaster Victims: Emergency Management Strategies, Prehospital and Disaster Medicine, April – June 2002, http://pdm.medicine.wisc.edu

Mid Day, June 03, 2012. Mumbai, http://www.mid-day.com/lifestyle/2012/jun/030612-Is-this-the-silver-lining-we-were-waiting-for.htm

MIPAA, 2002. The Madrid International Plan of Action on Ageing and the Political Declaration adopted at the United Nations Second World Assembly on Ageing in April 2002.

NSSO 58th Round, 2002.Survey of disabled persons, NSS 58th Round: July 2002 - Dec 2002. Ministry of Statistics and Programme Implementation, Govt of India.

Planning Commission.Working Group on Social Welfare for Formulation of the Twelfth Five Year Plan 2012-17. New Delhi: Social Justice and Social Welfare Division, Planning Commission, Government of India; 2012; http://planningcommission.gov.in/aboutus/committee/strgrp12/st_pwd.pdf; retrieved May 31, 2014

Press Note, 2012. Press Note on Release of Data on Houses, Household Amenities and Assets, Census 2011. Government of India Ministry of Home Affairs Office of the Registrar General and Census Commissioner, India, 13th March, 2012).

Priya R. and Shweta A.S. 2010. Status and Role of AYUSH Services and Use of Local Health Traditions under the NRHM: A Health Systems Study Across 18 States. National Health Systems Resource Centre, Government of India, New Delhi.

Techpedia.in, 2014. Retrieved on May 13, 2014 from http://www.techpedia.in/innovations-grassroot

Thomas P.M. February 28, 2013. The Jaipur Foot's Standing Dilemma, Forbes India. Accessed at http://forbesindia.com/article/beyond-business/the-jaipur-foots-standing-dilemma/34783/1 on 24/02/14

SOCIAL CONSTRUCTION AND AGEING: DISCOURSE OF HEALTH STATUS AND CARE OF THE SANTAL AGED

Saumitra Basu*

ABSTRACT

The perception about health, disease and health seeking behavior varies from culture to culture. It has been found that even in tribal communities, perception of health, disease, treatment of disease, medical care and etiology of disease are defined according to their social vis-à-vis cultural construct. Thus to understand the health seeking behavior of tribal people, it is important to identify the process by which tribal people recognize sickness and the ways to counteract it. The present research paper attempts to understand the present health condition and nature of ailments, indigenous views of health and disease, treatment and belief system regarding health, perception about common disease, treatment of disease, process of diagnosis, care giving, and dissatisfaction about care giving from social constructionist point of view. Santal culture has been selected for this purpose because this culture is neither modern nor vey much traditional but positioned somewhere in between. The present study has been conducted in the six districts namely, Kolkata, Burdwan, Nadia, Birbhum, Bankura and Paschim Medinipur. Following SRSWR (Stratified Random Sampling without Replacement) a total number of 600 samples (male-282, female-318) have been selected for the present study. The study reveals that Santal societies have been changing at a certain pace in terms of their health seeking behavior. In spite of modern health care system, they still have strong faith on their indigenous system of diagnosis, treatment and medicine. It is nothing but the reflection of their social construction.

Key Words : Social construct, Ageing, Health, Care, Santal

* Post Doctoral Research Associate of Indian National Science Academy, New Delhi.
Full Time Research Associate of Calcutta Metropolitan Institute of Gerontology (CMIG), Kolkata.

INTRODUCTION

'Social constructionism' and 'Social constructivism' are Sociological theories of knowledge that consider how social phenomena or objects of consciousness develop in social contexts. A social construction is a concept that is the mental construct of a particular group. When we say that something is socially constructed, we are focusing on its dependence on contingent variables of our social selves rather than any inherent quality that it possesses in itself. The underlying assumptions on which social constructivism is typically seen to be based are reality, knowledge, and learning (Gergen, 1994; Gergen & Davis, 1997). A major focus of social constructionism is to uncover the ways in which individuals and groups participate in the construction of their perceived social reality. It involves looking at the ways social phenomena are created, institutionalized, known, and made into tradition by humans. The social construction of reality is an ongoing, dynamic process that is reproduced by people acting on their interpretations and their knowledge of it. Social constructs as facets of reality and objects of knowledge are not "given" by nature. They must be constantly maintained and re-affirmed in order to persist. This process also introduces the possibility of change and what it means, shifts from one generation to the next (Burr, 1995).

People construct all kind of knowledge about the social world both through getting involved in it and being the other for it. In construction of an object of knowledge, otherness is more powerful, based more on perception. In the context of ageing process, people construct old age not by experiencing it. But as an other within this phenomenon. They produce this knowledge through their perceptions. The present research aims to understand health status,disease perception, diagnosis and care from social constructionist point of view in such a culture which is neither modern nor very much traditional but positioned somewhere in between. Santal culture is a good example for it. Here the elderly are respected and the status of old people are conceived in a wide variety of ways. In the present day context they

are seen as unproductive .

According to 2011 Census of India, Schedule tribes comprise about 8.6 percent of the total population of India. The Santals are numerically largest homogenous tribal groups in India and its major concentration is in Jharkhand State. Santal society is an overwhelmingly agrarian one. In this kind of society wisdom and experience which are gained through living for long years are precious. Due to urban influence and modernization, gradually the Santal elderly lost their power. Old people in Santal society interestingly turned out to be symbolic objects who are respected and mostly cared by their children, if needed. In the present day context, they are not recognized as social agents.

The most important point in this regard is the understanding and meaning of health in an agriculture based society like the Santals. The changing values arising from the post moderrnity also affected both in the positive and negative manner. Therefore the concept of health per se is no longer uniform and it has affected from the bottom to the top with the emerging values of so called modernity. Social construction in this regard being an important part and it has been reflected in all aspects of their society. In such a social

Perception of Health

The perception about health, disease and health seeking behaviour varies from culture to culture. Studies show that in most tribal communities, medical care, treatment and etiology of disease are defined according to their cultural construct. Thus, to understand the health seeking behaviour of tribal people it is important to identify the processes by which tribal recognises sickness and the ways to counteract it. Illnesses are culture constructs of belief and knowledge, which vary from one tribal society to another. Studies on medical systems have revealed two salient features. These are (i) the belief about the nature of health, the cause of illness, the remedies and the other curing techniques

used by doctors, and (ii) the ways employed by the society to deal with sickness and maintenance of health.

However, health is an important aspect in every stage of human life. For several reasons, health needs of older adults are different from others. The physical and mental conditions of the aged do not remain what these used to be in their earlier life. As a result they are more susceptible to ailments and diseases (House & Others 1990). It is necessary to understand the phenomenon of health in its fullest meaning. Mishra (1987) pointed out that a sick person cannot lead a normal life even if he/she has plenty of money. Experts also consider health to be a yardstick of subjective assessment with regard to mental and physical functioning, which are supposed to be measured in terms of personal satisfaction. In fact, with the progress of age this satisfaction becomes more complex due to the hypersensitive nature of the aged with regard to personal health and wellbeing (Wan 1982).

Keeping this background in mind the present researcher has taken a special care while studying the health aspect of the Santal aged. Besides health status, health care is also a major area of concern for the elderly people. In a welfare state like India, there are no separate health care services for the aged and they are treated along with the general population (Gurumurthy 1998). However, the absolute number of the elderly persons (60 years and above) in the country is increasing day by day. Such being the fact it is now high time that the elderly in India should also be provided with necessary social security benefits, which also must include geriatric health care benefits. A special emphasis should also be undertaken with regard to the above observation particularly in the field of geriatric health care and management.

The present paper attempts to understand the present health condition and nature of ailments, indigenous views of health and disease, treatment and belief system regarding health, perception about common disease, treatment of disease, process of diagnosis,

care giving, and dissatisfaction about care giving. This will definitely throw enough light in assessing the health status and care of the Santal aged under study.

However, some of the tribal health studies in India have been mentioned for a comprehensive understanding of the following discussion.The issues of tribal health has been portrayed by different scholars in different ways, such as, health as a functional concept (Mahapatra, 1994),health as a cultural concept (Sachchidananda,1994),tribal specific notion of disease, health, food and interaction with contemporary world (Choudhury 1994,Lewis 1958), different factors affecting health condition (Singh,1994), ecological impact on health (Barth,1956), availability and acceptability of particular health care system (Guite and Acharya,2006), power of prayers and rituals for healing diseases (Pramukh and Palkumar's,2006), worshiping of spirits and deities for health cure (Jain and Agarwal 2005, Sunita Devi 2003), health care system of the tribals (Bhasin 2004, Nagda 2004),cultural attributes to the concept of health and diseases (Bhasin, 2004) , impact of cultural values on acceptance of health care system (Sonowal and Praharaj,2007) etc.

Method of Study

The present research paper is an outcome of a bigger project conducted in six districts of West Bengal under the aegis of the Asiatic Society of Kolkata. Studies on Kolkata pioneer in many respects. But one finds also the studies on tribal ageing, both biological and socio-cultural, here are rather scant. Also, (a) the socio-cultural varieties of the city, (b) the heterogeneous nature of the city and (c) inadequate number of age related studies, (d) administrative capital of the State, were the main considerations for selecting Kolkata as urban venue.

Besides Kolkata other four districts have been selected on the basis of numerical strength of the referral tribe in the respective district of West Bengal. But personal rapport and operational

convenience are the two markers which has enabled the present researcher to select Nadia district for the present study. Thus five districts namely – Burdwan, Nadia, Birbhum, Bankura and Paschim Medinipur respectively have been selected as rural venue for the present study.

Kolkata being our urban venue the present researcher has located a prime Santal family in the vicinity of Keorapukur (near Tollygunge area). Anchoring this family and using 'Snow Ball Technique' the present researcher has collected a sample of 100 aged Santals (m-50, f-50) from different localities of Kolkata. This has been done because due to absence of purely Santal locality in Kolkata proper. This is purely a purposive selection keeping in mind the three age groups and an equal gender representation.

For the rural venues five districts have been selected. In each districts certain villages have been purposively selected covering all subdivisions and blocks. Each district has 100 samples that have been determined considering time and man power. Such selection process has been conducted in adjacent villages after total enumeration of each village under study. To fulfill the required number, numbers of villages were surveyed till the fulfillment of the total number of the aged. Thus the total number of samples under study is 600 (male – 282, female-318 respectively).

Present Health Condition and Nature of Ailments

Good health is an indicator of happy and satisfied life irrespective of age. But for the old persons, to remain in good health is all the more necessary for their survival in life. Data reveal that in the six districts under study, about seventy percent of the Santal aged male population are suffering from either minor or major health problems. In fact, proportionally aged males are suffering more from major ailments in comparison to minor ones. Very few of the respondents (Kolkata -1, Nadia – 1, Bankura – 1, Paschim Medinipur – 1 respectively) are incapacited. The rest of the Santal aged males under study are on the whole having better health condition. In

comparison to this, in the same districts, seventy seven percent of the Santal aged females are suffering from minor and major ailments. The rest of the aged females appear to be in good health. Only seven aged females are incapacited.

It has also been observed that in comparison to Kolkata, in the other districts, forty five to fifty percent of the Santal aged males are suffering from health problems. In case of aged females, about forty five to fifty five percent are suffering from minor and major health problems as in the case of their male counterpart. Thus thirty to thirty five percent males and thirty percent aged females have comparatively better health condition. In spite of proportional differences within and between age groups, and gender, it is evident that the females are suffering more from various ailments than the aged males. It is obvious that the reason behind this is the male domination in the Santal society where the females are supposed to eat less, work more, and to suffer more from income disparity and dependence. In fact, the extreme situation of this observation is reflected in the perennially infirm elderlies who are nine in numbers (Kolkata- Male 1, Female 2;Nadia – Female 1;Bankura – Female 1; Paschim Medinipur – Male 1, Female 4 rrespectively). Thus the factors behind having good health may have some significant relationship with marital status and income stability. After cross-tabulation it has been found that marital status has little significance in maintaining good health condition of a geron. But income status as a factor is quite valid for keeping one in good health particularly the elderly who is still earning his own maintenance. Santal elderly under study are not exception to this phenomenon (Table 1).

With the advancement of age, it is generally found that the physical and mental health of a person gradually declines. On the physical side, both ailments and diseases co-exist with the elderlies. Age and ailments therefore sometimes are described as concomitant (House et.al 1990). In the present section an effort has also been made to understand the nature of ailment. For the understanding

and clarity of situation the field data have been amalgamated in a suitable manner. Data reflect that among the respondents irrespective of gender the numbers of major ailments are more than the minor ones. It can also be mentioned that the multiplicity of ailments (both minor and major) increase with the advancement of age irrespective of gender as a natural process. In terms of minor diseases both the genders who are suffering from various minor ailments are arthritis, digestive disorder, cough and cold, insomnia, weakness, constipation, vertigo with swelling of limbs, hypertension. In passing it may be mentioned that the frequency of the minor diseases and the period of sufferings have been taken as not more than three months (Tables 2.1 & 2.2).

Arthritis, asthma, cardiac problems, digestive disorder, diabetes, genitourinary problems, dementia etc. are the main types of major ailments found in all the districts under study irrespective of gender. Here also the term major diseases mean the duration of sufferance is more than three months in a year (Table 2.3 & 2.4 concurrently).

Apart from this, there are also a number of chronic ailments such as, cough and cold, piles, problems of joints/limbs, blood pressure etc. which are found amongst the Santal aged respondents in the six districts irrespective of gender and age group (Table 2.5 & 2.6).

Among the respondents, the ailments of joints/limbs, and blood pressure are two of the several chronic problems that often afflict the Santal aged males. The undifferentiated cough is another frequent chronic ailment of the Santal aged males. The female of all ages tend to suffer more than the male from those two problems. Occurrence of Piles is comparatively lower among the Santal respondents. Both diabetes and urinary problems as chronic diseases are more frequent among the aged persons of both genders. Thus, it may be seen from the data that the proportions of sufferance amongst the elderlies of all districts under study increase with the advancement of age. In this regard, it may also be mentioned that these chronic diseases are found concomitantly in an elderly individual irrespective of gender, age group and districts. The concerned table

has been prepared with this factor in focus. The other notable point in this regard is the multiplicity of these diseases (minor, major and chronic) wherein a Santal elderly male or female has been found to be suffering from more than one of the above mentioned diseases as his /her age progresses.

Indigenous views of health and diseases among Santals

In spite of modernization, Santals still believe in their own indigenous medicine. During field work it was observed that in each of the village under study they have their traditional healers (*Janguru*). Regarding perception of health and disease Santals have attributed a lot of diseases to the wrath of god, mischief of evil spirits and magic. Treatment is based upon worshipping god; controlling evil spirits through counter magic, use of sorcery along with herbal treatment. Thus religious practices of the Santals are closely related to their health care system also. Apart from a host of spirits, the following bongas are worshiped for different purposes namely -

1. Sing bonga- the sun god, the supreme deity, and worshipped after harvesting and before sowing seeds.

2. Marang buru- the mountain god is a community as well as a family deity and a guardian god.

3. Jahera bonga- the village deity widely celebrated goddess for protection from diseases.

4. Gossain era: the associate of Jahera bonga.

5. Moreiko and Turuiko: the deity of fire.

6. Majhi haram and Majhi burhi - protective deities that stop bongas and sprits from doing harm to their people.

Besides these deities listed above there are many other different bongas, which the Santals propitiate by magico religious performances.

Treatment and Belief System of the Aged Santal Respondents Regarding Health

Ailments in old age, as have been seen, are an inevitable part in the lives of the aged people. But in all civilized countries all over the world these ailments are now combated with according to the infrastructural facilities available in a particular country. The following section is an effort to understand the kind of treatment that is available to the Santal aged people in the six districts under study.

Modern health care systems have been introduced in the studied Santal villages through Government Primary Health Care Centres and hospitals . Except Kolkata, Santal aged people were found deeply associated with traditional practices of health care. Thus, for the purpose of the study, the nature and extent of their faith in traditional and modern health care system was observed.

The analysis reveals that as many as hundred percent respondents' positive opinion towards modern medicines in the district of Kolkata. Whereas, majority of the respondents of other districts have indicated a clear inclination towards traditional system of medicines. Very meagre percentages of them have reported that frequent urban contacts have reduced their faith level on traditional practices. Besides Kolkata, seventy to seventy five percent of the aged respondents of both gender showed their faith towards traditional healing system as compared to twenty to twenty five percent of the respondents in the other five districts under study. The most interesting part of the finding was that a small percentage of respondents showed their inclination towards both the system (Table 3). This made it clear that the Santals were still having faith in traditional medical systems. But by now they had also started accepting the modern health care facilities. The qualitative data also supported this finding. Effort was also made to collect information on the reasons for change in health seeking behaviour of the Santals. One of the traditional healers aged about 65 years reported that in earlier day it was easy to collect medicinal plants from the jungles. But now a day it is impossible due to deforestation. Besides this, the

analysis of qualitative data collected from the village head man indicates that, lack of willingness to practice traditional health care system among the new generation.

During field work it was observed that the aged respondents have a strong belief on traditional methods of treatment whereas the young generation prefer modern system of medicine. Data highlight that irrespective of age and educational level percentage of respondents having exclusive faith on traditional health care practices are gradually declining. A good mixture of faith in both the system with a more inclination towards modern health care system thus observed among the respondents. It was reported by the aged respondents that traditional medicines were not available everywhere.

The reason behind the acceptability of different health care system has been enumerated (Table 4). The findings reveal that effectiveness is a major factor for acceptance of modern medicine. The other two factors are easy access of medicines and availability of health care providers respectively. On the other hand, a good percentage of the aged respondents have faith in traditional system because they believed that the traditional healers have supernatural power. Focus Group Discussion (FGD) also support this finding. During visit in a Health Care Centre one Auxiliary Nurse Midwife reported that Santals have tremendous faith on their traditional healers. She reported from her personal experience that the traditional healers can appease the deities for health and he also controls the evil spirit.

On the other hand, the respondents who believe on traditional health care system mainly for their easy access to the traditional healers and for some it was their cultural custom that binds them to the system. Though some of them were unable to give any proper reason. Aged respondents who have strong faith on their indigenous system still believe that there were some diseases, which the modern medicine practitioners could not cure. They still believe that the traditional healers can cure those diseases

because they have some supernatural powers. This finding corroborates with similar other studies on tribal health.

During field study, an aged traditional healer from his own experience reported that, if any Santal patient thinks that his/her disease caused by some deity he or she never accepts any modern medicine. In spite of exposure to modern medicine, still a good percentage of the aged respondents are afraid from their deities and evil spirits for their health and illness.

To understand the respondents' perception about the causes of some specific diseases, the present researcher has taken into consideration some common diseases like, fever, diarrhoea, malaria, jaundice and epilepsy. The data reveal that except the aged Santal respondents of Kolkata, very high percentage of the respondents of both gender in the other districts under study still believe that the cause of disease is bad spirit (Table 5). Therefore, it may not be an overstatement that in spite of modern contact still the aged Santal respondents have strong faith on spirit and supernatural power of their deities.

Perception about Common Diseases

To understand the respondents' perception about service providers, some common diseases were taken into consideration. These were fever, cold and cough, diarrhoea, malaria, skin diseases and jaundice. Generally for these diseases respondents' used to avail different types of services available in their locality, such as traditional healer or priest or sorcerer, village health workers, hospital, primary health care centres, private clinics and Christian missionary. Focus group discussion (FGD) was arranged in the Panchayat Office of the respective villages in different locales.

From focus group discussion (FGD), it comes out that majority (about eighty five percent) of the aged respondents have a strong opinion towards traditional healers as the first preference of treatment. Besides Kolkata, this is a common trend among the aged

respondents in all the other districts under study. Very small percentage (ten to fifteen percent) of the affected people accepted modern medicine as their first preference of treatment. This clearly indicates the fact that the traditional healing system had a respectable place among the Santal aged people under study.

So it is evident from the qualitative data that for common diseases, most of the respondents preferred services provided by the traditional healers. During FGD it was asked 'Why they have a strong belief on traditional healers'? The answer was very simple. They believe that the traditional healers have supernatural powers and the poor financial condition compel them do this. On the other hand, the traditional healers are very much dedicated towards their ancestral profession. In the words of an aged traditional healer, *"Like modern practioners we are not demanding anything from the patient in return. If we demand anything from the patient, then the goddess will withdraw all the supernatural powers, which she has given to us"*

Treatment of Diseases

During field work an intensive discussion was conducted with the doctors of the Ward Health Unit (in Kolkata) and Primary Health Centres (PHCs) (in rest of the districts under study). The discussion reveals that the occurrence of fever, cold and cough was reported to be very high among all the respondents irrespective of gender in comparison to the respondents of Kolkata. The occurrence of diarrhoea in all the villages was found to be about seventy percent. But malaria was found to be twice among the respondents living in Kolkata in comparison to the other respondents in the other districts under study. In case of jaundice and skin disease, the occurrence was found more among the aged Santals living in villages. Almost all the other diseases showed a high occurrence in the Santal villages.

Except Kolkata, it was found that for different type of diseases different types of service providers had been consulted by the aged

Santal respondents. During discussion with the PHC doctors of other five districts, reported that nearly fifteen percent of the aged respondents suffering from fever had been treated by traditional healer. Face-to-face interview of the PHC doctors also reveal that approximately thirteen percent of the aged respondents suffering from fever were treated with home-based medicines. But in reality, the situation was just reverse. During face-to-face interview of the aged respondents, they strongly expressed their views and faith about traditional healing.

Thus it has been revealed from the discussion that in case of common cold, cough and fever aged Santal people were found reluctant to go for treatment. They used to perceive it as seasonal problem and believed in natural cure. Thus it was reported that almost one third of the people in all the villages stayed at home while suffering from this disease. In case of children suffering from prolong cough, nearly fifty percent of them in distant villages were treated with medicine provided from PHC etc.

On the other hand, villages having facilities for private treatment, nearly ten percent of the aged patients went for it. Nearly two third of the aged respondents affected by diarrhoea (specifically in summer) in different villages under study. Initially all of them prefer treatment from traditional healer. Only in case of serious diseases, respondents compel to go for modern health care facilities. But lack of facilities, absence of doctors and inadequacy of medicines drew people's attention more towards traditional healing system. From the analysed data it has been revealed that in case of 'chronic diseases' the traditional healers perform a major role. But in case of 'infectious diseases' they are unable to show their super natural power. During fieldwork it was reported that five aged respondents were suffering from tuberculosis. For this reason they went to PHC doctor and advised to go to the government hospitals.

Process of Diagnosis among Santals

Aged respondents address their 'traditional healer' as '*Jan Guru'*. For identification of any disease, with the help of two *Sal* (local name) leaves the '*Jan Guru'*. diagnoses the ailment. He rubs oil on the patient and then prinkles vermilion on his body. Along with it he chants mantras. Finally he looks and reads into the leaves. It is believed that the '*Jan Guru'* can see and read the procedure to cure the disease by reading into the leaves. Accordingly he proceeds with his treatment. If the disease is caused by an evil spirit, then the treatment is very different. If the patient is not suffering from spirit then '*Jan Guru'*. gives herbal medicines.

'*Jan Guru'* generally gives two types of medicines, (i) for external use such as pastes, oil, medicated water for bath or washing and (ii) for internal use, mixtures and pills.

Data reveal that between sixty to seventy percent aged people do not have specific idea about the causes of all the five diseases under study. Data also reflect that aged respondents of Kolkata perceived change of weather and other medical reasons as a major cause of fever, cold and cough. In case of diarrhoea lack of nutrition was one of the major causes known to them. But in case of other respondents, living in other districts under study, jaundice was caused by the effect of bad spirit. This also established the reason why most of the affected people sought treatment of traditional healers instead of modern medicine. The ill effect of bad work done in the past was also perceived as one of the major causes of this disease.

Qualitative data reveal that deities and spirits play a significant role in controlling the health system among Santals. Analysis of qualitative data also supports this finding. One of the village head man said, *"In order to make modern medicine effective, patient or his family need to offer Puja to 'Sitala Maa' (Village deity) with the help of 'Jan Guru' (traditional healer). After this, if he /she takes the medicine, it will work".*

The respondents of Kolkata strongly believe that malaria occurs

due to mosquito bite. During field work it was observed that the aged Santal respondents need spiritual security during their illness. Because most of them believe that most of these diseases are caused due to the influence of supernatural deities. As a consequence of this belief, Santal aged people finds rationality in the treatment of traditional healers. They still believe that modern doctors / healthcare providers do not have the same power.

As a cultural norm, the Santal people invariably used to drink country liquor (*handia*). Drinking of *Handia* is very common at the time of rituals. Santals generally use handia as an offering to their gods during rituals and at that time every member of the village used to take handia as god's gift. The traditional healers reported that *Handia* acts like a medicine for the patients. Because it would help keeping the stomach in a good condition. At the time of fever, handia is the best medicine for quick recovery. Modern health care practitioners believe that occurrence of most of the diseases among the Santals are due to their drinking habit. Interestingly, the converted tribal families to Christianity did not indulge in handia. The ideology behind it was that if anybody had taken handia, then he / she would have faced with many bad consequences.

Care giving

Old age is associated with degeneration in health and vigour. But to keep the body fit and maintain optimal performance of body organs exercise is important. Daily activities provide this fitness. Thus daily activities of an aged include – bathing, washing and spreading clothes, standing and sitting, easing. To perform these activities they also need help from others. In this regard, the present researcher has divided this family care into two parts. One is daily care and the other is occasional, means care during illness.

It is observed that the Santal aged have performed different types of daily activities. But with the progression of age, they need help from other family members. This is common in both genders. It is also observed that the daily care providers are spouse, son, and son's

wife, unmarried daughter. In absence of these relations, a kind-hearted neighbour provides this. But here the gender difference is very clear. Except few, the Santal elderly females never get the opportunity to take help from their spouse. In brief it is observed that daily family care giving is mostly a female function (Tables 6.1 & 6.2).

Concept of care giving during illness is a tradition of the Indian society, which even today is found in many of the families, particularly in the families, which still follow the norms of extended families (Brody 1985; Doty 1986).Aged Santals' families are not exception to this phenomenon. But due to the pressure of modernization, urbanization and even globalization, such extended families are gradually phasing out. As a result of which care giving, particularly for the elderlies, have also undergone too many changes. In the present section an attempt has been made to understand the concept of care giving in this context.

The Santal aged males irrespective of cultural locales are nursed during illness at home either by their spouse individually or by spouse along with other family members or by other able bodied family members. But in case of aged Santal females, it has been found that such care giving are not undertaken by their spouses and in general when these females fall ill, some of the able bodied members of the family and in most cases the female members offer such care, respite and help. The enclosed table also shows the nature and relationship of the caregiver other than the spouse within the periphery of the family. In fact, care giving to the old appears to be a female function, which is quite commensurate with the Indian concept of extended family tradition.

The two other components of care giving are time and money. In all the districts under study, irrespective of age group a sizeable section of the Santal elderly males are able to bear their own medical expenditure during illness. But with the progression of age, in spite of their economic ability, they have to depend on other

family members. Whereas, among the Santal elderly females, due to their ever dependency most of their expenditures are borne by other family members. Herein comes the importance and roles of other able bodied members and relations who step forward and extend their helping hand for the management, expenditure and care of the old. During field work this factor was revealed impressively in the case study, where apart from the sons, the other relations, such as, grandchildren, son-in-law, brother, brother's sons, unmarried daughters, even the next door neighbours extend their helping hand both in terms of money and time. This is empirically true for all the respondents notwithstanding the gender difference.

This section has been focused on the problems of the Santal old people who have become crippled due to their various ailments. For these people the central question of family care is sharper and requires a close analysis of the family care they would have expected to get. All our case studies vividly show that a crippled old expects the family to understand his / her social disability in a sympathetic and careful manner. In this connection, it may be mentioned that according to the Gerontologists family care can be divided into three basic categories. For example, such care of the elderly is considered a moral obligation. According to the Hindu tradition the young members of a family is supposed to take care of the elderlies or otherwise the young generation are supposed to be charged with ridicule and social disgrace. The assumption is today's caregivers are potential care sickers of tomorrow (Bali. ibid). In this context, family care for the elderly is empirically believed to be culturally determined and socially reinforced (Kalache, 1990). Ideally speaking when physical frailty occurs older persons expect their family to serve them food, shelter, personal care and companionship. This proposition is all the more important for a disabled crippled who may be either mentally or physically incapable of getting all the components mentioned earlier.

Secondly, according to customs prevailing in most of the societies of the world, elderlies generally spend their income and bestow their

property to their off springs even sacrificing their personal comfort and subsistence. This is also empirically true for the Santal old.

In fact, the above postulations have clarified the role of family as the basic caregiver to the elderlies. However, even such care giving by the family cannot fulfill the expectations of an old for the simple fact that an old always requires an extra bit of support be it of logistical nature or of mental assurance. The following couple of case studies will substantiate our contention in a fruitful manner. Moreover, family care as we understood is a combination of mental state and perhaps even abstract in nature. The case study method that the present researcher has adopted is a true reflection of this.

Case Study I: *In Case study I it has been found that the old man, aged about 78 years is currently suffering from partial paralysis due to severe heart attack. Economically he is more or less self-sufficient since he draws a monthly pension. However due to physical disability he doesn't have a control or access on his monthly income. He has a family consisting of two sons, daughter-in-laws, and grandchildren. The sons are quite conscious about our respondent. However, the person concerned is suffering from isolation, depression and loneliness. He expects his family members to give him some solace and sympathy for his miserable plight. The gentle man also suffers due to the sad demise of his spouse and is waiting for death night after night.*

This is an extreme case of negligence and indifference for which the person concerned is not at all responsible. Had he been physically able perhaps he would have spent his twilight years in a better mental frame.

Case Study II: *Case study II deals with an elderly disabled lady aged about 87 years. She lost her husband some 10 years back .She has three sons of which two are married and dwell separately. She lives with her youngest son who is a day labour with an insignificant income. Our lady is practically blind due to glaucoma and is also suffering from severe arthritis. She is therefore neither able to move freely or see things in proper perspective. But even with these severe infirmities she tries to do household chores along with cooking her own food. The youngest son being a day labour has to leave house early in the morning and when he comes back, being physically exhaustively tired cannot help his mother in any way. The only support that the old lady gets from her son is a little bit of money, which for her is an inadequate sum. For any external help this woman has to fall back on neighbours who though sympathetic but are not always available neither they are able to help her with medicine or other necessities of*

life. She is leading a miserable and deplorable life and all day long she prays to the God for an immediate relief i.e. death.

The second study shows how even within a family ambience an aged elderly female feels herself helpless and neglected.

Both case studies show the role of family in an inverse manner. While in the first instance there is a family but the behavioural pattern of the members are not at all conducive to the relief of the protagonist expected. On the other hand, in the second instance, there is a semblance of family but it is circumstantially in effective and the care-giving role is by and large absent. Both instances prove that disability has rendered the protagonists effectively immobile; they require somewhat a different attention and the nature of care giving should be such that it can inspire the affected to live their life in a more hopeful manner.

Both studies cited above somewhat reflect a process of reductionism in family care. In other words, we get a negative picture and thwarted aspirations of the disabled old. To understand the needs of the disabled tribal aged we conducted further studies.

Dissatisfaction

Whatever may be the nature of health condition, with the advancement of age, Santal elderly persons also expect attention from the other family members. In a tradition based tribal society like Santal, where family is that institution which provides support (both physical and mental) and care to their senior members in their daily life as well as in the situation when they fell ill. In recent times, rapid socio-economic changes have altered this time-honoured tradition. As a result of it, aged are very often placed in a vulnerable condition where they helplessly watch and mutely tolerate their sufferings.

The indisposed Santal elderly expect attention of several kinds namely proper treatment, medicine administered, home nursing, sick diet from other family members. They would also in many occasions desire outside visitors, namely kin, friends and

neighbours to share their pains during indisposition. An enquiry about the arrangements (food, clothing, medicine and visitor) made of these cares for the elderly by other family members brings out several areas of dissatisfaction of high to very high proportions.

Between the two genders elderly Santal female respondents are relatively more dissatisfied than their male counterpart. All the care arrangements fall short of their desired expectations mainly due to ever dependence. But whatever may be proportional differences, dissatisfaction about cares during illness gradually come into surface with their advancement of age (Tables 7.1 & 7.2).

Conclusion

From an anthropologist's point of view, it can be said that culture and social systems are dynamic and subject to change. In this study it has been observed that the Santal societies have been changing at a certain pace in terms of their health seeking behaviour. In spite of modern health care system, they still have strong faith on their indigenous system. It is nothing but the reflection of their social construction. The traditional healer, who acts as the medium between man, nature and supernatural entity, provides spiritual security to the Santal aged people. The aged people feel secured with the protection given by their traditional healers against bad spirit. But in reality, the health administrators or the policy makers hardly consider this component in their macro health strategies. It is expected that a rational synthesis of traditional perception with modern facilities would certainly give better results to the aged Santals in near future.

It may not be an overstatement that the Santal older people will be faced with the challenge of traditional health care system within the context of the uncertainty and risks characteristic of late modernity. Globalisation certainly adds a further dimension to the nature of such risks. Undoubtedly, this new global environment will be a major challenge for the Santal elderly in the coming decades of the new millennium.

Acknowledgement

The present author conveys his gratitude to the Asiatic Society of Kolkata for financial assistance to this Post Doctoral project. The author also expresses his deep regards to Prof.Ranjana Ray, Professor Emeritus, Anthropological Secretary of the Asiatic Society for her necessary guidance as a mentor of this project. Last but not the least, the author is grateful to Dr.Purujit Praharaj, Research Scholar Tata Institute of Social Sciences (TISS), Mumbai for his necessary academic assistance.

Tables

Table 1. Present Health Condition of the Respondents – All Districts Combined

District and Nature of	Present Health Condition, Age Group and Gender							Total	
		60 - 70		71- 80		81-			
		Male	Female	Male	Female	Male	Female	Male	Female
Kolkata (m=50, f=50)	1	19(79.2)	20(80.0)	5(20.8)	2(8.0)	--	3(12.0)	24	25
	2	4(36.4)	3(21.4)	4(36.4)	5(35.7)	3(27.3)	6(42.8)	11	14
	3	2(14.3)	--	6(42.8)	4(40.0)	6(42.8)	6(60.0)	14	10
	4	--	--	--	--	1 (100.0)	1 (100.0)	1	1
Burdwan (m=50, f=50)	1	22(75.8)	20(90.9)	5(17.2)	2(9.0)	2(6.8)	--	29	22
	2	3(30.0)	3(21.4)	3(30.0)	6(42.8)	4(40.0)	5(35.7)	10	14
	3	2(18.2)	2(14.3)	4(36.4)	4(28.6)	5(45.4)	8(57.1)	11	14
	4	--	--	--	--	--	--	--	--
Nadia (m=50, f=50)	1	23(82.1)	24(82.7)	5(17.8)	5(17.3)	--	--	28	29
	2	3(25.0)	2(22.2)	6(50.0)	4(44.4)	3(25.0)	3(33.4)	12	9
	3	2(20.0)	--	2(20.0)	3(27.2)	6(60.0)	8(72.7)	10	11
	4	--	--	--	--	--	1 (100.0)	--	1

Note: 1 – On the whole good, 2 – Minor problem, 3 – Major problem, 4 – Incapacited

District and Nature of Present Health Condition		Age Group and Gender						Total	
		60 – 70		71 – 80		81+			
		Male	Female	Male	Female	Male	Female	Male	Female
Birbhum (m=50, f=50)	1	24 (88.8)	25 (86.2)	3 (11.2)	4 (13.7)	--	--	27	29
	2	5 (33.3)	5 (50.0)	9 (60.0)	3 (30.0)	1 (6.7)	2 (20.0)	15	10
	3	1 (12.5)	--	3 (37.5)	6 (54.5)	4 (50.0)	5(45.5)	8	11
	4	--	--	--	--	--	--	--	--
Bankura (m=46, f=54)	1	20 (74.1)	24 (82.7)	7 (25.9)	5 (17.3)	--	--	27	29
	2	4 (44.4)	2 (33.4)	5 (55.6)	3 (50.0)	--	1 (16.6)	9	6
	3	--	2(11.2)	4(40.0)	8(44.4)	6(60.0)	8(44.4)	10	18
	4	--	--	--	--	--	1 (100.0)	--	1
Paschim Medinipur (m=36, f=64)	1	19 (95.0)	25 (78.1)	1 (5.0)	7 (21.8)	--	--	20	32
	2	4 (44.4)	3 (37.5)	5 (55.5)	1 (12.5)	--	4 (50.0)	9	8
	3	1 (16.6)	--	2 (33.4)	8 (40.0)	3 (50.0)	12 (60.0)	6	20
	4	--	--	--	--	1 (100.0)	4 (100.0)	1	4

Table 2.1 Nature of Minor Health problems of the Respondents – Male

Districts	Minor Health Problems							
	1	2	3	4	5	6	7	8
Kolkata (n=11)	5 (45.4)	9 (81.8)	10 (90.9)	3 (27.3)	4 (36.4)	2 (18.2)	4 (36.4)	6 (54.5)
Burdwan (n=10)	6 (60.0)	7 (70.0)	8 (80.0)	2 (20.0)	3 (30.0)	3 (30.0)	5 (50.0)	7 (70.0)
Nadia (n=12)	7 (58.3)	10 (83.3)	7 (58.3)	3 (25.0)	3 (25.0)	2 (16.7)	7 (58.3)	9 (75.0)
Birbhum (n=15)	6 40.0)	12 80.0)	13 (86.6)	4 26.6)	5 (33.3)	1 (6.6)	6 (40.0)	11 (73.3)
Bankura (n=9)	5 (55.5)	7 (77.7)	9 (100.0)	2 (22.2)	3 (33.3)	2 (22.2)	5 (55.5)	7 (77.7)
Paschim Medinipur (n=9)	7 (77.7)	7 (77.7)	8 (88.8)	2 (22.2)	4 (44.4)	3 (33.3)	3 (33.3)	8 (88.8)

Multiple Responses Occurred

Note: 1 – Arthritis, 2 – Digestive disorders, 3 – Cough & Cold, 4 – Sleeplessness, 5 – Weakness, 6 – Constipation, 7 – Vertigo with swelling, 8 – Hypertension

Table 2.2 Nature of Minor Health problems of the Respondents – Female

Districts	Minor Health Problems							
	1	2	3	4	5	6	7	8
Kolkata (n=14)	11 (78.6)	7 (50.0)	6 (42.8)	2 (14.3)	3 (21.4)	3 (21.4)	5 (35.7)	9 (64.3)
Burdwan (n=14)	14 (100.0)	6 (42.8)	7 (50.0)	--	4 (28.6)	5 (35.7)	6 (42.8)	11 (78.6)
Nadia (n=9)	8 (88.8)	5 (55.5)	3 (33.3)	3 (33.3)	3 (33.3)	5 (55.5)	3 (33.3)	8 (88.8)
Birbhum (n=10)	7 (70.0)	5 (50.0)	7 (70.0)	3 (30.0)	5 (50.0)	4 (40.0)	6 (60.0)	8 (80.0)
Bankura (n=6)	6 (100.0)	4 (66.6)	4 (66.6)	1 (16.6)	2 (33.3)	3 (50.0)	2 (33.3)	5 (83.3)
Paschim Medinipur (n=8)	8 (100.0)	6 (75.0)	5 (62.5)	4 (50.0)	4 (50.0)	3 (37.5)	5 (62.5)	8 (100.0)

Multiple Responses Occurred

Note: 1 – Arthritis, 2 – Digestive disorders, 3 – Cough & Cold, 4 – Sleeplessness, 5 – Weakness, 6 – Constipation, 7 – Vertigo with swelling, 8 – Hypertension

Table 2.3 Nature of Major Health Problems of the Respondents – Male

Districts	Major Health Problems							
	1	2	3	4	5	6	7	8
Kolkata (n=14)	6 (42.8)	11 (78.6)	12 (85.7)	9 (64.3)	7 (50.0)	9 (64.3)	--	5 (35.7)
Burdwan (n=11)	9 (81.8)	10 (90.9)	11 (100.0)	7 (63.6)	8 (72.7)	6 (54.5)	2 (18.2)	4 (36.4)
Nadia (n=10)	8 (80.0)	7 (70.0)	9 (90.0)	8 (80.0)	5 (50.0)	4 (40.0)	--	5 (50.0)
Birbhum (n=8)	5 (62.5)	6 (75.0)	6 (75.0)	7 (87.5)	4 (50.0)	5 (62.5)	1 (12.5)	3 (37.5)
Bankura (n=10)	4 (40.0)	8 (80.0)	9 (90.0)	7 (70.0)	5 (50.0)	4 (40.0)	2 (20.0)	6 (60.0)
Paschim Medinipur (n=6)	4 (66.6)	5 (83.3)	6 (100.0)	5 (83.3)	3 (50.0)	4 (66.6)	1 (16.6)	4 (66.6)

Multiple Responses Occurred

Note : 1 – ENT related , 2 – Respiratory , 3 – Cardiovascular , 4 – Musculo-skeletal, 5 – Digestive , 6 – Urinary , 7 – Reproductive , 8 – Nervous system

Table 2.4 Nature of Major Health Problems of the Respondents – Female

Districts	Major Health Problems							
	1	2	3	4	5	6	7	8
Kolkata (n=10)	7 (70.0)	8 (80.0)	7 (70.0)	9 (90.0)	6 (60.0)	5 (50.0)	5 (50.0)	6 (60.0)
Burdwan (n=14)	9 (64.3)	11 (78.6)	13 (92.8)	13 (92.8)	9 (64.3)	9 (64.3)	7 (50.0)	11 (78.6)
Nadia (n=11)	8 (72.7)	9 (81.8)	10 (90.9)	11 (100.0)	7 (63.6)	8 (72.7)	4 (36.4)	8 (72.7)
Birbhum (n=11)	8 (72.7)	9 (81.8)	10 (90.9)	11 (100.0)	7 (63.6)	7 (63.6)	7 (63.6)	8 (72.7)
Bankura (n=18)	13 (72.2)	15 (83.3)	16 (88.8)	16 (88.8)	13 (72.2)	15 (83.3)	13 (72.2)	14 (77.7)
Paschim Medinipur (n=20)	16 (80.0)	17 (85.0)	19 (95.0)	19 (95.0)	17 (85.0)	11 (55.0)	14 (70.0)	17 (85.0)

Multiple Responses Occurred

Note: 1 – ENT related, 2 – Respiratory, 3 – Cardiovascular, 4 – Musculo-skeletal, 5 – Digestive, 6 – Urinary, 7 – Reproductive, 8 – Nervous system

Table 2.5 Nature of Chronic Health Problems of the Respondents – Male

Districts	Chronic Health Problems							
	1	2	3	4	5	6	7	8
Kolkata (m=50)	41 (82.0)	7 (14.0)	39 (78.0)	43 (86.0)	42 (84.0)	37 (74.0)	23 (46.0)	--
Burdwan (m=50)	43 (86.0)	5 (10.0)	41 (82.0)	41 (82.0)	47 (94.0)	27 (54.0)	31 (62.0)	2 (4.0)
Nadia (m=50)	46 (92.0)	3 (6.0)	37 (74.0)	42 (84.0)	41 (82.0)	23 (46.0)	28 (56.0)	--
Birbhum (m=50)	39 (78.0)	9 (18.0)	43 (86.0)	39 (78.0)	43 (86.0)	29 (58.0)	29 (58.0)	3 (6.0)
Bankura (m=46)	44 (95.6)	14 (30.4)	35 (76.0)	40 (86.9)	40 (86.9)	21 (45.6)	30 (65.2)	1 (2.2)
Paschim Medinipur (m=36)	31 (86.1)	10 (27.7)	29 (80.5)	27 (75.0)	31 (86.1)	19 (52.7)	23 (63.8)	2 (5.5)

Multiple Responses Occurred

Note : 1 – Cough & Cold , 2 – Piles , 3 – Problems of joints / limbs, 4 – Hypertension, 5 – Blood pressure, 6 – Diabetes , 7 – Urinary problems , 8 - Cancer

Table 2.6 Nature of Chronic Health Problems of the Respondents – Female

Districts	Chronic Health Problems							
	1	2	3	4	5	6	7	8
Kolkata (f=50)	23 (46.0)	3 (6.0)	46 (92.0)	47 (94.0)	50 (100.0)	23 (46.0)	29 (58.0)	--
Burdwan (f=50)	28 (56.0)	7 (14.0)	47 (94.0)	48 (96.0)	47 (94.0)	37 (74.0)	31 (62.0)	2 (4.0)
Nadia (f=50)	31 (62.0)	11 (22.0)	43 (86.0)	46 (92.0)	33 (66.0)	27 (54.0)	37 (74.0)	--
Birbhum (f=50)	35 (70.0)	13 (26.0)	48 (96.0)	45 (90.0)	47 (94.0)	36 (72.0)	40 (80.0)	1 (2.0)
Bankura (f=54)	43 (79.6)	18 (33.3)	51 (94.4)	50 (92.5)	52 (96.3)	46 (85.2)	47 (87.0)	2 (3.7)
Paschim Medinipur (f=64)	49 (76.5)	21 (32.8)	59 (92.2)	55 (85.9)	59 (92.2)	49 (76.5)	54 (84.3)	1 (1.5)

Multiple Responses Occurred

Note : 1 – Cough & Cold , 2 – Piles , 3 – Problems of joints / limbs, 4 – Hypertension, 5 – Blood pressure, 6 – Diabetes, 7 – Urinary problems, 8 - Cancer

Table 3 Respondents' Perception about the Causes of Some Specific Diseases

Diseases	Perception about Disease	Respondents (Responses in Percentage) 1	2	3	4	5	6
Fever	No specific idea	13	30	23	25	28	25
	Weather change	15	5	10	15	13	9
	Lack of nutrition	2	3	4	5	9	3
	Bad spirit	4	60	59	52	45	60
	Other Medical causes	66	2	4	3	5	3
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Diarrhoea	No specific idea	6	3	5	4	3	5
	Weather change	11	2	3	4	5	5
	Bad food	50	11	13	10	9	11
	Bad spirit	4	80	75	79	78	75
	Other Medical causes	29	4	4	3	5	4
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Malaria	No specific idea	--	3	5	11	13	17
	Weather change	--	2	3	3	8	7
	Bad spirit	--	64	61	58	51	43
	Mosquito bite	90	29	28	25	23	20
	Medical causes	10	2	3	3	5	3
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Jaundice	No specific idea	--	4	5	3	2	3
	Weather change	--	2	3	--	2	2
	Lack of nutrition	--	3	5	2	6	7
	Bad spirit	--	83	85	87	88	85
	Other Medical causes	100	11	7	10	8	7
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Epilepsy	No specific idea	3	5	4	4	2	3
	Bad spirit	2	69	67	73	75	78
	Past life work's effect	17	20	21	20	19	14
	Other Medical causes	78	6	8	3	4	5
	Total	100.0	100.0	100.0	100.0	100.0	100.0

Note: 1 – Kolkata, 2 – Burdwan , 3 – Nadia , 4 – Birbhum , 5 – Bankura , 6 – Paschim Medinipur

Responses in percentage

Table 4 System of Treatment Preferred by the Respondents

Districts	System of Treatment Preferred by the Respondent			
	Modern Medicine		Traditional System	
	Male	Female	Male	Female
Kolkata (m=50,f=50)	50(100.0)	50(100.0)	--	--
Burdwan (m=50,f=50)	23(46.0)	19(38.0)	27(54.0)	31(62.0)
Nadia (m=50,f=50)	20(40.0)	12(24.0)	30(60.0)	38(76.0)
Birbhum (m=50,f=50)	10(20.0)	5(10.0)	40(80.0)	45(90.0)
Bankura (m=46,f=54)	18(39.1)	14(25.9)	28(60.9)	40(74.1)
Paschim Medinipur (m=36,f=64)	11(30.5)	13(20.3)	25(69.5)	51(79.7)

Table 5 Reason for Acceptance of Different Health Care System

Preference Status	Reason for Preference	Respondents					
		1	2	3	4	5	6
Prefer modern medicine	Effectiveness	95.0	75.0	90.0	95.0	96.0	98.0
	Easy to access	98.0	90.0	78.0	83.8	93.5	96.7
	Provider's good behaviour	83.5	80.0	81.5	90.2	90.5	92.9
	Total	100.0	100.0	100.0	100.0	100.0	100.0
Prefer traditional medicine	Effectiveness	--	100.0	100.0	100.0	100.0	100.0
	Easy to access	--	78.0	85.8	82.9	91.3	93.5
	Traditional healer having supernatural power	--	95.0	90.2	91.6	92.9	95.0
	Cheaper	--	65.9	68.3	71.6	81.2	82.2
	Bound by the custom	--	83.9	90.3	91.2	90.5	96.4
	Generational belief	--	99.9	95.6	97.9	98.2	99.9
	Total	--	100.0	100.0	100.0	100.0	100.0

Note: Both Gender Together and Multiple Responses Occurred

1- Kolkata, 2- Burdwan, 3-Nadia, 4 – Birbhum, 5 – Bankura, 6- Paschim Medinipur

Table 6.1 Care Providers during Illness of the Respondents – Male

Districts	Care Providers During Illness						
	1	2	3	4	5	6	7
Kolkata (m=50)	46 (92.0)	23 (46.0)	41 (82.0)	23 (46.0)	13 (26.0)	7 (14.0)	4 (8.0)
Burdwan (m=50)	47 (94.0)	33 (66.0)	43 (86.0)	43 (86.0)	5 (10.0)	9 (18.0)	7 (14.0)
Nadia (m=50)	47 (94.0)	38 (76.0)	43 (86.0)	44 (88.0)	3 (6.0)	11 (22.0)	13 (26.0)
Birbhum (m=50)	48 (96.0)	40 (80.0)	44 (88.0)	46 (92.0)	9 (18.0)	17 (34.0)	18 (36.0)
Bankura (m=46)	45 (97.8)	39 (84.7)	37 (80.4)	39 (84.7)	3 (6.5)	19 (41.3)	11 (23.9)
Paschim Medinipur (m=36)	32 (88.8)	29 (80.5)	27 (75.0)	28 (77.7)	2 (5.5)	13 (36.1)	19 (52.7)

Note: 1 – Spouse, 2 – Son, 3 – Unmarried daughter, 4 – Daughter-in-law, 5 – Married daughter, 6 – Grandchildren, 7 – Kin
Multiple Responses Occurred

Table 6.2 Care Providers during Illness of the Respondents – Female

Districts	Care Providers During Illness						
	1	2	3	4	5	6	7
Kolkata (f=50)	29 (58.0)	1 (2.0)	14 (28.0)	31 (62.0)	3 (6.0)	9 (18.0)	8 (16.0)
Burdwan (f=50)	19 (38.0)	38 (76.0)	10 (20.0)	38 (76.0)	2 (4.0)	5 (10.0)	11 (22.0)
Nadia (f=50)	21 (42.0)	42 (84.0)	9 (18.0)	39 (78.0)	3 (6.0)	8 (16.0)	10 (20.0)
Birbhum (f=50)	5 (10.0)	41 (82.0)	7 (14.0)	41 (82.0)	--	11 (22.0)	9 (18.0)
Bankura (f=54)	7 (12.9)	47 (87.0)	7 (12.9)	37 (68.5)	5 (9.2)	13 (24.0)	19 (35.2)
Paschim Medinipur (f=64)	13 (20.3)	53 (82.8)	5 (7.8)	49 (76.5)	7 (10.9)	19 (29.6)	17 (26.5)

Note: 1 – Spouse, 2 – Son, 3 – Unmarried daughter, 4 – Daughter-in-law, 5 – Married daughter, 6 – Grandchildren, 7 – Kin
Multiple Responses Occurred

Table 7.1 Nature of Dissatisfaction about Different Items of Care during Illness - Male

Different Items of Care	Dissatisfaction about Different Items of Care During Illness						
	Level of Dissatisfaction	1	2	3	4	5	6
Food	Poor quality	60.5	71.8	80.5	85.6	80.7	90.2
	Quantity less	69.3	80.2	78.6	83.8	80.6	91.7
	Bad serving	80.6	91.5	90.5	87.9	89.3	94.3
Clothing	Bad quality	60.6	70.6	65.3	66.2	67.6	69.3
	Inadequate number	50.6	80.7	85.3	82.3	83.9	87.6
	Bad quality of cleanliness	43.9	55.9	75.6	79.6	80.5	90.2
Medicine Administer	No consciousness	50.5	80.0	85.3	90.2	91.3	95.2
	Improper time maintain	67.8	78.6	82.5	91.6	92.2	94.3
	[illegible]	70.3	80.9	81.5	90.7	93.3	91.5
Visitor	Unwantedness	40.5	70.8	75.6	74.9	90.2	91.5
	Too much talkative	60.7	80.5	70.5	75.8	80.7	82.2
	Bad behaviour	70.8	90.3	83.3	80.8	90.2	91.6

Note: 1- Kolkata, 2- Burdwan, 3-Nadia, 4 – Birbhum, 5 – Bankura, 6- Paschim Medinipur

Multiple Responses Occurred

Table 7.2 Nature of Dissatisfaction about Different Items of Care during Illness - Female

Different Items of Care	Dissatisfaction about Different Items of Care During Illness						
	Level of Dissatisfaction	1	2	3	4	5	6
Food	Poor quality	63.5	72.9	81.6	86.7	82.9	91.3
	Quantity less	70.3	81.2	79.5	84.8	81.7	92.8
	Bad serving	81.7	92.9	91.5	88.4	90.3	95.4
Clothing	Bad quality	61.5	71.7	68.3	67.3	68.9	70.5
	Inadequate number	55.7	82.9	86.4	85.3	84.9	88.7
	Bad quality of cleanliness	45.9	57.2	77.8	80.5	82.4	91.5
Medicine Administer	No consciousness	53.9	81.2	87.8	93.2	92.6	96.5
	Improper time maintain	70.8	79.3	83.7	92.5	93.2	95.4
	No doctor's consultation	70.4	81.9	82.6	91.5	94.3	92.6
Visitor	Unwantedness	43.5	72.8	76.7	75.9	91.2	92.5
	Too much talkative	61.7	81.5	72.3	75.4	81.6	84.2
	Bad behaviour	73.8	91.8	84.8	81.5	91.3	92.7

Note: 1- Kolkata, 2- Burdwan, 3-Nadia, 4 – Birbhum, 5 – Bankura, 6- Paschim Medinipur

Multiple Responses Occurred

REFERENCES

Barth, F. 1956 "Ecological Relationship of Ethnic Groups in Swat, North Pakistan," *American Anthropologist*, pp.1079 – 1089.

Bhasin, Veena. 2004. "Sexual Illness and Underutilization of Biomedicine Among Tribal Women of Rajasthan", in *Anthropologist*, 6(1): 1-12, Kamla raj Enterprises, Delhi.

Bhasin, Veena. 2005, "Ecology and Health: A Study Among Tribes of Ladakh" Studies in Tribes and Tribals, 3(1):1-13, Kamla-Raj enterprises, Delhi.

Brody, E.M. 1985. Parent care as a normative family stress. *Gerontologist* 25:19-25.

Bryant, J. 1988. "Health for all: The dream and the reality." World Health Forum, 9(3): 291-302.

Burr,Vivien,1995. An Introduction to Social Construction. New York: Routledge Publication.

Chaudhuri, B. 1994. "Social and environmental dimensions of tribal health". In S. Basu (Ed.), Tribal health in India. pp.70-83, Delhi: Manak Publications PVT. Ltd..

Doty, P. 1986. Family care of the elderly : The role of public policy. *Milbank Quarterly* 64:34-75.

Gergen, K.J. 1994. Beyond life narratives in the therapeutic encounter. In J.E. Birren et al. (Eds.) Aging and Biography. New York: Springer. 205-223.Gergen, M. M. and Davis, S. N.(Eds.)1997. Toward a new psychology of gender.New York: Routledge.

Gurumurthy, K.G. 1998. The aged in India. New Delhi : Reliance Publishing House.Delhi.

House, J.S. and Others.1990. Age: Socio-economic status and health. *Milbank Quarterly* 68,3: 383-411.

Jagga Rajama, K., D. Vijaya and B. Raw. 1996 "Health Seeking Behaviour, Acceptability of Available Health facilities and Knowledge about Tuberculosis in a Tribal Area," *Indian Journal of Tuberculosisi,* 43: 195-199.

Jain S. and S. Agrawal, 2005, "Perception of Illness and Healthcare Among Bhills: A Study of Udaipur District in Rajasthan" Studies in Tribes and Tribals,3(1): 15-19, Kamlaraj Enterprises, Delhi.

L. Sunita Devi 2003,"Ethnomedical Practices in Manipur: A Case of Evil Eye", A*nthropologist*, 5(1): 25-40, Kamla Raj Enterprises, Delhi.

Lewis, Oscar. 1958. Village Life in Northern India. New York: Random House.

Mahapatra, L.K. 1994. "Concept of Health among the Tribal Population Groups of India and its Socio-economic and Socio-cultural Correlates", pp.1-12 in Salil Basu (ed.), Tribal Health in India. ; Manak Publication, Delhi.

Mishra, S. 1987. Social adjustment in old age. New Delhi : B.R. Publishing Corporation.

N. Guite and S. Acharya. 2006, "Indigenous Medicinal Substances and Health Care: A Study

Nagdda, B.L. 2004, "Tribal Population and Health in Rajasthan", *Studies in Tribes and Tribals,* 2(1):1-8, Kamla-Raj Enterprises, Delhi.

Raj Pramukh and P.D.S. Palkumar. 2006, "Indigenous Knowledge: Implication in Tribal Health and Disease", *Studies in Tribes and Tribals*, 4(1): 1-6, Kamla Raj Enterprises, Delhi.

Sachchidananda. 1994. Socio-cultural Dimension of Tribal Health", pp 57-69. in Salil Basu (ed.),Tribal Health in India. ; Manak Publication, Delhi.

Singh, Bhupinder . 1994 . "Factors Influencing Health of Tribal Population Groups", pp.40-56, in Salil Basu (ed.), Tribal Health in India. ; Manak Publication, Delhi.

Sonowal.C.J. and Purujit Prajharaj,2007. " Tradition Vs.Transition – Acceptance of health care systems among the Santhals of Orissa", *Journal of Ethno Medicine*,1(2),pp.135-146.

Wan, T.H. 1982. Stressful life events, social support network and gerontological health. Lexington : Lexington Books.

World Health Organization. 1980. *International classification of*

impairments, disabilities and handicaps. Geneva: World Health Organization.

World Health Organization. 1980. The Primary Health Worker. Geneva: World Health Organization.

A STUDY ON LIFE-SATISFACTION OF INSTITUTIONALIZED AND NON-INSTITUTIONALIZED ELDERLY MALES AND FEMALES OF VIJAYAWADA

Kancharla Ravi Kumar*
Prof. R.Vijay Krishna Naidu**

ABSTRACT

Population aging is a recognized international reality, both in developed and developing countries. The number of elderly in the developing world is increasing due to demographic transition, whereas their condition is deteriorating as a result of fast eroding traditional family system coupled with rapid modernization and urbanization.

The present study was conducted in Vijayawada. The researcher tries to elucidate the life-satisfaction among the institutionalized and non-institutionalized elderly males and females. Total 100 respondents are selected randomly and an interview schedule was administered to collect the data. To assess the life-satisfaction a 5 point Life-Satisfaction scale formulated by Ed. Diener was adopted.

The results reveal that there is a significant association ($p<0.10$) was found between the institutionalized and non-institutionalized respondents with regard to their levels of life-satisfaction. The gender differentials and levels of life-satisfaction shows a high significance at $p<0.01$ level and age differentials showed significance at $p<0.05$ level.

Key Words: Life-satisfaction; Age; Gender; Levels of Education; Type of Family; Economic status

* Ph.D. Scholar, Dept. of Sociology, S.K. University, Anantapur, Andhra Pradesh
** Professor, Dept. of Sociology, S.K. University, Anantapur, Andhra Pradesh

INTRODUCTION

In a traditional Indian society, older people had a sense of honour and authority. The decision making in the family and the community was mostly assigned to them. They were revered for their experience and wisdom. The transition to a modern society and the disintegration of the joint family system led to the loss of the traditional authority of older people.

Life satisfaction continues to be an important construct in the psycho-social study of aging. It is one of the commonly accepted subjective conditions of quality of life and seems to be one of the facets of successful aging, which are key concepts in aging. Research reports that life-satisfaction is strongly related to socio-demographic and psycho-social variables (Iyer, 2003).

The elderly, especially those who are weak or dependent, require physical, mental and emotional care and support. When this is not provided, they suffer from neglect, a problem that occurs when a person is left uncared for and that is often linked to isolation. Changing lifestyles and values, demanding jobs, distractions such as television, a shift to nuclear family structures and redefined priorities have led to increased neglect of the elderly by families and communities.

They have a mutual withdrawal from society and their world gets smaller and smaller. They do not tend to venture out in the neighborhoods, they stay homebound. They are alone, a lot more families are too busy to visit them, and they have less motivation for self-care and end up losing weight, dehydrated, feeling like a burden to their loved ones.

These problems influence the level of satisfaction towards their life. Life-satisfaction is the way a person perceives how his or her life has been and how they feel about where it is going in the future. It is a measure of well-being and may be assessed in terms of mood, satisfaction with relations with others and with achieved goals, self-concepts, and self-perceived ability to cope with daily life. It has a

favorable attitude of one's life as a whole rather than their current feelings.

Life-satisfaction has been measured in relation to economic standing, education achievement, experiences and the people's residence as well as many other factors.

Review of Literature

World Health Organization (1997), defines life-satisfaction as an individual's perception of their position in life in the context of the culture and value systems in which they live, and in relation to their expectations and standards. Life-satisfaction can be affected by the person's physical health, level of independence, social relationships and relationships to salient features of his environment.

According to Xavier et.al (2003), satisfaction among the elderly group is closely associated with an active social life and good interpersonal relationships, while negative quality of life is equivalent to loss of health.

Researchers at North Carolina University found that those who played video games occasionally reported higher levels of well-being, whereas those that did not play reported “negative emotions and a tendency toward higher levels of depression”.

Baltes and Smith (2003) put it, “healthy and successful aging has its age limits”; life satisfaction in old age is assumed to be inevitably affected by health. Another point to take into account, is that any analysis of life-satisfaction among the oldest old must recognize the important role of health status.

The study by Bhardwaj, Sen and Mathura (1991) indicated that positive thinking and higher level of activities leads to positive mental health. Bhatia (1983), revealed the adverse effect of reduced income, and pointed out that lower income was associated with other personal problems like loss of status and meaningful

social relationships.

Chadha (1991) emphasizes on gender differences and reports that elderly females are less satisfied with life than their male counterparts. There are several predictors of life-satisfaction: self-acceptance of aging changes, self-perception of health, self-rating of ability in activities of daily-living, belief in life after death and Karma philosophy, satisfaction with familial and social interaction and self-rated behavioral flexibility (Ramamurti, 1970).

All these experiments indicate how life-satisfaction grows as people become older because they become wiser and more knowledgeable, so they begin to see that life will be better as they grow older and understand the important things in life more.

This gives rise to several questions like, is life-satisfaction is associated with the factors like age, gender, level of education, place of living and economic status of the elderly males and females.

In the present study, we made a humble effort to assess the level of life-satisfaction and its association with various socioeconomic factors among the institutionalized and non-institutionalized males and females.

Objectives

1. To assess the levels of life-satisfaction among the respondents living in institutional and non-institutional settings; and

2. To analyze and compare the levels of life-satisfaction with social variables such as age, gender, education, place of living and economic status.

4. Methodology

The descriptive research design was adopted in the study. A sample of 100 elderly people was selected by using simple random sampling technique. The sample comprises each 50 respondents from institutional and non-institutional settings and further equally

drawn from male and female categories of Vijayawada, Andhra Pradesh.

To assess the levels of life-satisfaction among the respondents we adopted ***"a five point scale formulated by Ed. Diener (2006)"***. The scale comprises six scores of levels of life-satisfaction, but for the analysis purpose, we made it as three levels such as highly satisfied (25-35 points), satisfied (15-24 points), and dissatisfied (5-14 points).

Here is a brief description of levels of life-satisfaction-

Highly satisfied means most of the people in this range are enjoying their life and the major domains of life are going well

Satisfied means the people are generally satisfied, but have some domains where they would like some improvement; and

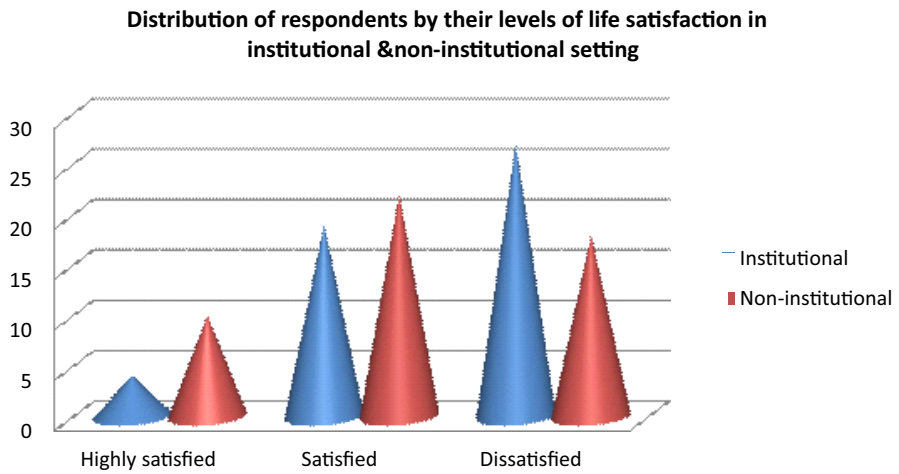
Dissatisfied means people in this range are substantially dissatisfied with their lives. They may have a number of domains that are not going well. Usually in this range people are extremely unhappy with their current life.

For the purpose of statistical analysis, tool like chi-square analysis was used to portray the levels of significance with other socio-economic variables.

5. Analysis and Interpretation

5.1. Table-I reveals the overall distribution of respondents by their levels of life-satisfaction who are living in old age homes as well as their respective families.

Erickson (1982) asserts that old people review their past life and if they feel that most goals of their life have been fulfilled, they feel satisfied (ego integration). Palmore and Luikart (1972) have examined a strong positive correlation between life-satisfaction and level of activity among the elderly.

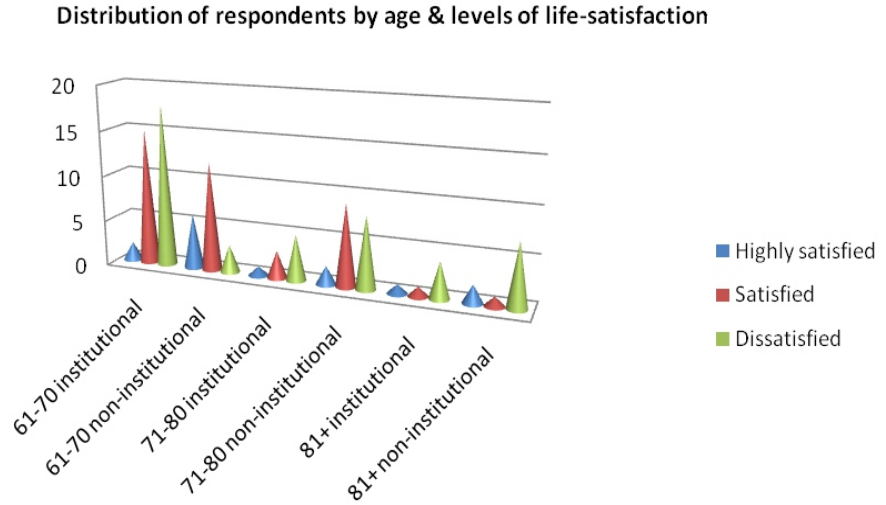


Our study reveals that out of the total 50 respondents who are living at old age home, the majority (54%) is dissatisfied about their life course, another 38 percent are satisfied and only 8 percent of the respondents are highly satisfied regarding to their achievements in their life course.

When we observe the non-institutionalized elderly male and female, a considerable percentage (20%) are highly satisfied and another 44 percent of them are satisfied, means still they have some domains to be filled. From the Chi-square analysis, we found a significant ($P<0.10$) association between the levels of life-satisfaction and the institutional and non-institutional difference. (Table-I)

5.2. Table-II depicts the age differentials and the levels of life-satisfaction among the institutionalized and non-institutionalized elders.

Abrams (1991) records that aging brings negative changes in self-concept and life-satisfaction, increase in emotionality and rise in frustration and intolerance. Ramamurti. P.V. (1970) indicated a decline of life-satisfaction first around the 55th year and again after the 61st year. The earlier decline may be attributed to effects of retirement and the latter decline may be attributed to the physical and psychological effects of aging.

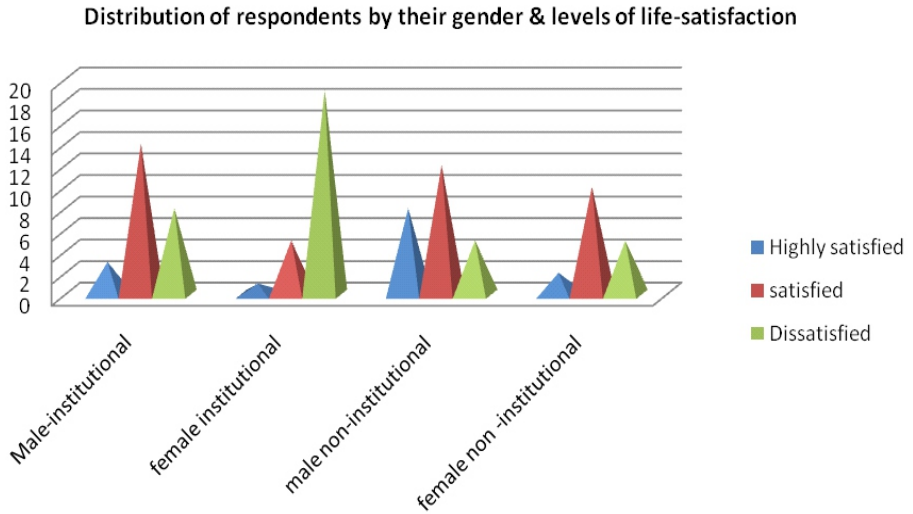


Our observation regarding to the age differentials and the levels of life-satisfaction reveals that, in the institutional set up majority (78.95%) of the respondents who are in the age group of 61-70 years are satisfied in their life course; it is 54.54 percent among the non-institutionalized. Further, in the age group of 61-70 years only we found a majority (50%&60%) of respondents are highly satisfied with their course of life in institutional and non-institutional settings.

There is a significant association between the age differentials and levels of life-satisfaction among non-institutionalized elderly at $P<0.05$ levels; and it is not significant at institutionalized respondents (Table II).

5.3. Table-III shows the gender differentiation and the levels of life-satisfaction among the respondents in institutional and non-institutional settings.

Kant and Sharma (1996) observed that females more often score low on life-satisfaction and the variable is strongly associated with relational variables, like marital happiness rather than socio-economic factors.



Our analysis reveals that in the institutional set up the majority of males are satisfied in their life course (56%), on the contrary to this 20 percent of females are satisfied. When compared with their counterparts, more (12%) number of males are highly satisfied with their course of life. When compared with the dissatisfaction levels among the male and female a majority of females (76%) are dissatisfied in their life course.

While observing the non-institutionalized there is almost all equal (48%&40%) distribution of male and female are satisfied in their life course. Among the non-institutionalized we found a majority (52%) of females are dissatisfied.

The Chi-square analysis shows a highly significant association ($P<0.01$) between the gender difference and the levels of life-satisfaction among the institutionalized male and female; and it is significant at $P<0.05$ level in non-institutionalized respondents (Table-III).

5.4. Table-IV gives a detailed description of the respondents educational levels and the levels of life-satisfaction. Educational status of the elderly in our country, gives a gloomy picture. More than two- thirds of the aged males and almost 90 percent of aged females

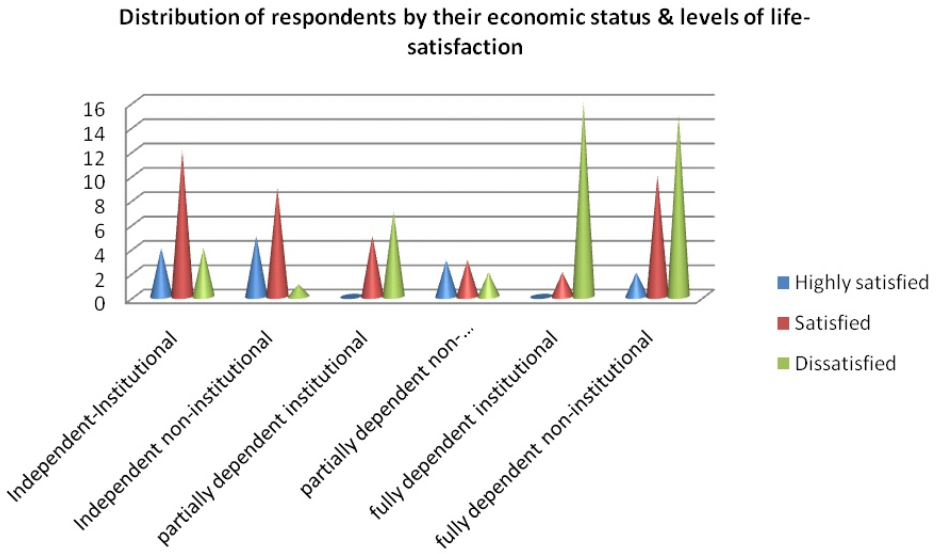
are illiterate (Bose, 1998).

Out of the total 50 respondents of institutional set up 1 (25%) graduate and 3 (75%) post-graduates are highly satisfied and another 47.37 percent of respondents are graduates who are satisfied in their life course. The respondents who are illiterates (48.15%); who had primary school education (37.04%) and who had a high school education (14.81%) are totally dissatisfied in their life course.

When comes to the non-institutional set-up, there is an equal distribution of respondents (30% each) who are illiterates and who had primary school education are highly satisfied in their life course. Out of the 22 respondents who are satisfied in their life course 54.54 percent are illiterates and out of the 18 respondents who are dissatisfied, a majority (83.33%) are literates (Table-IV).

5.5. Table-V illustrates the respondent's economic status and the levels of life-satisfaction. Due to globalization, there is an increased economic burden on the elderly, especially the women who have practically non-existent property rights and other social security measures (Bhat, 2001).

Our study also supported the above statement. Our findings reveal that out of the total 27 respondents in institutional set-up, who showed dissatisfaction regarding to their life course, the majority (59.26%) are economically fully dependent on their kith and kin.



The same thing repeats in the case of non-institutionalized respondents. Out of the total 18 respondents who are dissatisfied 83.33 percent are economically fully dependent. We found 100 percent and 50 percent of respondents who are economically independent are enjoying highly satisfied life in institutional and non-institutional settings respectively.

We found a highly significant (P<0.001) association between the economic status and the levels of life-satisfaction among the institutionalized elderly, and it is significant at 0.05 level among the non-institutionalized (Table-V).

5.6. Table VI gives a detailed description of the respondents levels of life-satisfaction and their place of living.

Our findings reveal that out of the total 11 respondents who are drawn from rural backgrounds, showed equal percentage (45.45%) of satisfaction and dissatisfaction regarding to their life course in institutional set-up. On the contrary to this the majority (61.54%) of respondents are dissatisfied about their course of life in non-institutional setting who had rural background.

Overall pictures gives an idea that all the three areas, rural, semi-urban and urban, we found a significant number of respondents showed dissatisfaction in their life course in institutional set-up on the contrary to this we found 54.55 percent of respondents in non-institutional set up came from urban background showed satisfaction regarding to their life course (Table-VI).

Conclusions:

Life-satisfaction is defined as having a favorable attitude towards one's life as a whole. Basing on this assumption we made a comparative study between the two groups of elderly respondents, one living in old age homes and another group who are living with their respective families. The following conclusions are drawn from our study-

1 There is a significant association between the levels of life-satisfaction and staying at institutional and non-institutional settings.

2 We found a significant association at 0.05 levels between the age differentials and the levels of life-satisfaction among the elderly living with families and there is no such significance found among the institutionalized elderly people.

3 In our study, we found a highly significant (P<0.01) association between the gender differentials and the levels of life-satisfaction among the institutionalized; and it is significant at 0.05 level among the non-institutionalized.

4 We found the majority of respondents who are illiterate (83.33%) are dissatisfied with their course of life. May be the number is small, but the highly educated had highly satisfied life course.

5 We found a very highly significant (P<0.001) association between the economic status and the levels of life-satisfaction among the institutionalized elderly male and female, and it is significant at 0.05 level among the non-institutionalized.

6 We observed an equal percentage of (45.45%) of respondents who are satisfied, dissatisfied with their course of life in institutional set-up, but at the non-institutional setup majority (61.54%) are dissatisfied about their life course.

From the above mentioned results we have come to the conclusion that life-satisfaction is an attitude based on the individual perception and on their living conditions. So there is a significant impact of present place of living and other socio-economic conditions on their perception regarding to the life-satisfaction.

Tables

Table-I- Distribution of respondents on the basis of their levels of life-satisfaction.

Levels of Life-satisfaction	*Institutional*	*Non-institutional*	*Total*	*X^2 value*
Highly satisfied	4 (8%)	10 (20%)	14 (14%)	4.58*
Satisfied	19 (38%)	22 (44%)	41 (41%)	
Dissatisfied	27 (54%)	18 (36%)	45 (45%)	
Total	50 (100%)	50 (100%)	100 (100%)	

*Significant at 0.10 level.
(Percentages are calculated to column totals).

Table-II- Distribution of respondents by their age differentials & levels of life- Satisfaction

Settings	*Age group*	*Levels of Life-satisfaction*			*Total*	*X^2 Value*
		Highly satisfied	*Satsfied*	*Dissatisfied*		
Institutional	61-70	2 (50%)	15(78.95%)	18(66.67%)	35(70%)	2.12**
	71-80	1 (25%)	3 (15.79%)	5 (18.52%)	9 (18%)	
	81+	1 (25%)	1 (5.26%)	4 (14.81%)	6 (12%)	
	Total	4 (8%)	19 (38%)	27 (54%)	50(100%)	
Non-insitutional	61-70	6 (60%)	12(54.54%)	3 (16.67%)	21(42%)	11.27*
	71-80	2 (20%)	9 (40.91%)	8 (44.44%)	19(38%)	
	81+	2 (20%)	1 (4.55%)	7 (38.89%)	10(20%)	
	Total	10(20%)	22(44%)	18(36%)	50(100%)	

(Percentages are calculated to the column totals & Total's percentages are calculated to row totals).
*Significant at 0.05 level.
**Not significant.

Table-III- Distribution of respondents by their gender & levels of life-satisfaction

Settings	*Levels of Life - satisfaction*	*Respondents*		*Total*	*X^2 Value*
		Male	*Female*		
Institutional	Highly satisfied	3 (12%)	1 (4%)	4 (8%)	9.74*
	Satisfied	14 (56%)	5 (20%)	19 (38%)	
	Dissatisfied	8 (32%)	19 (76%)	27 (54%)	
	Total	25(100%)	25(100%)	50(100%)	
Noninstitutional	Highly satisfied	8 (32%)	2 (8%)	10 (20%)	7.32**
	Satisfied	12 (48%)	10 (40%)	22 (44%)	
	Dissatisfied	5 (20%)	13 (52%)	18 (36%)	
	Total	25(100%)	25(100%)	50(100%)	

(Percentages are calculated to column totals).
*Significant at 0.01 level.
**Significant at 0.05 level.

Table-IV-Distribution of respondents by their level education & levels of life-satisfaction

Settings	Education levels	Levels of life satisfaction			Total
		Highly satisfied	Satisfied	Dissatisfied	
Institutional	Illiterate	-- --	-- --	13(48.15%)	13(26%)
	Primary	-- --	2(10.53%)	10(37.04%)	12(24%)
	High school	-- --	3(15.79%)	4(14.81%)	7 (14%)
	Intermediate	-- --	5(26.31%)	-- --	5 (10%)
	Graduation	1 (25%)	9(47.37%)	-- --	10 (20%)
	Postgraduation	3 (75%)	-- --	-- --	3 (6%)
	Total	4 (8%)	19(38%)	27(54%)	50(100%)
Non-institutional	Illiterate	3 (30%)	12(54.54%)	15(83.33%)	30 (60%)
	Primary	3 (30%)	8(36.36%)	2 (11.11%)	13 (26%)
	High school	2 (20%)	2 (9.09%)	1 (5.56%)	5 (10%)
	Intermediate	-- --	-- --	-- --	-- --
	Graduation	2 (20%)	-- --	-- --	2 (4%)
	Postgraduation	-- --	-- --	-- --	-- --
	Total	10 (20%)	22 (44%)	18 (36%)	50(100%)

(Percentaged are calculated to column totals&Total's percentages are calculated to row totals).

Table-V-Distribution of respondents by their economic status & levels of life-satisfaction

Settings	Economic status	Levels of life-satisfaction			Total	X^2 Value
		Highly satisfied	Satisfied	Dissatisfied		
Institutional	Independent	4 (100%)	12(63.16%)	4 (14.81%)	20(40%)	19.53*
	Partially dependent	-- --	5 (26.31)	7 (25.93%)	12(24%)	
	Fully dependent	-- --	2 (10.53%)	16(59.26%)	18(36%)	
	Total	4 (8%)	19 (38%)	27(54%)	50(100%)	
Noninstitutional	Independent	5 (50%)	9 (40.9%)	1 (5.56%)	15 (30%)	12.64**
	Partially dependent	3 (30%)	3 (13.64%)	2 (11.11%)	8 (16%)	
	Fully dependent	2 (20%)	10(45.45%)	15(83.33%)	27 (54%)	
	Total	10 (20%)	22 (44%)	18 (36%)	50(100%)	

(Percentages are calculated to column totals & Total's percentages are calculated to row totals).
*Significant at 0.001 level.
**Significant at 0.05 level.

Table-VI-Distribution of respondents by their place of living &levels of life-satisfaction

Settings	Levels of life - satisfaction	Place of living			Total
		Rural	Semi-urban	Urban	
Institutional	Highly satisfied	1 (9.1%)	1 (6.25%)	2(8.7%)	4 (8%)
	Satisfied	5(45.45%)	5(31.25%)	9 (39.13%)	19 (38%)
	Dissatisfied	5(45.45%)	10(62.5%)	12(52.17%)	27 (54%)
	Total	11 (22%)	16 (32%)	23 (46%)	50(100%)
Noninstitutional	Highly satisfied	-- --	5 (33.33%)	5 (22.73%)	10 (20%)
	Satisfied	5(38.46%)	5(33.33%)	12(54.55%)	22 (44%)
	Dissatisfied	8(61.54%)	5(33.33%)	5(22.72%)	18 (36%)
	Total	13 (26%)	15 (30%)	22 (44%)	50(100%)

(Percentages are calculated to column totals & Total's percentages are calculated to row totals).

REFERENCES

1. Abrams, Robert.C (1991): The Aging Personality, International Journal of Geriatric Psychiatry, Vol.1 (Jan), pp.1-3.

2. Baltes.M.M.& Smith.J.(2003), New Frontiers in the Future of Aging: From Successful Aging of the Fourth Age. In: Gerontology, 49,123-135.

3. Bhardwaj, A.M.Sen and D.Mathur (1991), Life Satisfaction in depressed and non-depressed elderly people. Indian Journal of Community Guidence Service. Vol.18.

4. Bhatia, H.S (1983), Ageing and Society: A Sociological study of Retired Public Servents. Aryas Book Center, Husitan Road, Udaipur, India.

5. Bose.Ashish (1998): Demographic Diversity of India, 1991 Census, State and District level Data supplement, New Delhi: Ministry of Human Resourse Development.

6. Bhat.K.2001, Ageing in India: Drifting International relations, Challenges and Option. Cambridge Journal online, 21: 621-640.

7. Chadha.N.K. (1991): Self-concept and Life-satisfaction Among Ages, Indian Journal of Gerontology, Vol.5, N0, 1-2, pp.47-54.

8. Erikson, E.H. (1982): The Life Cycle Completed: A Review, Newyork: Norton.

9. Iyer.V.2003, Old age protection in aagglomeration of a developing economy: An integration analysis, Ageing and Human Development, 1 (3): 241-250.

10. Kant, Anita and Sharma, Kavita (1996): Well-being and ageing: An Emperical Analysis, Disabilities and Impairments, 10 (2), pp.101-110.

11. Palmore, E.B. and Luikart,C (1972): Health and Social Factors Related to Life-Satisfaction, Journal of Health and Social Behaviour, Vol.13 (1), pp.68-80.

12. Ramamurti, P.V. (1970): Life-Satisfaction in the older years, Indian Journal of Gerontology, Vol.2, (3-4), pp 68-70.

13. World Healh Organiation (1997), Measuring Quality of Life. The World Health Organization Quality of Life Instruments-WHO>

14. Xavier, M.F.Marcos, P.T.Norton, M.Norma, U.E and Emilio, H.M. (2003), Elderly people's Definition of Quality of Life, ANPEG of the Institute of Geriatrics and Gerontology of the Catholic Uiversity of the Sate of PUCRS, Porto Alegre.