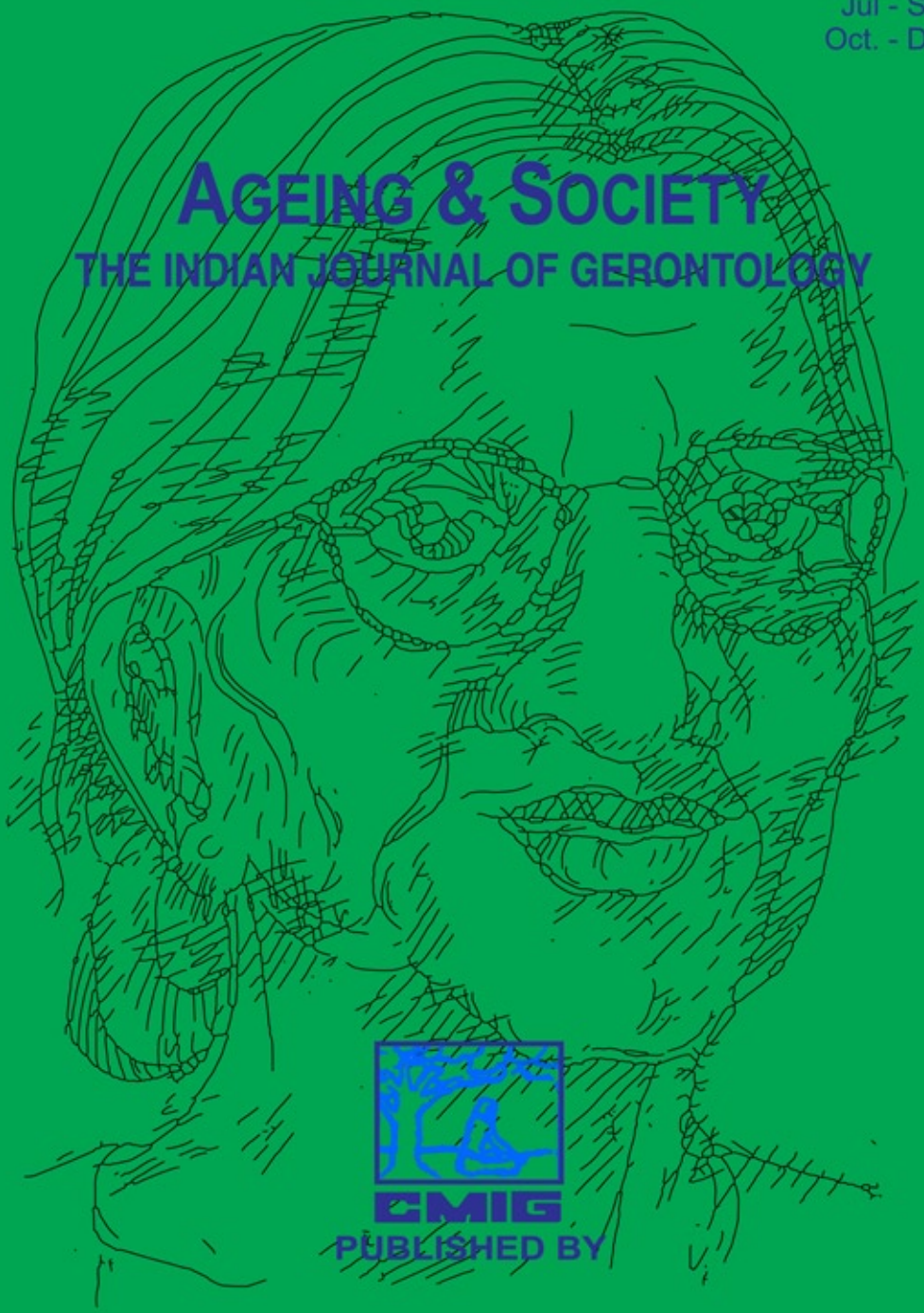
Vol. XXII No. III & IV

ISSN - 0971-8060

Jul - Sep, 2012
Oct. - Dec, 2012

AGEING & SOCIETY

THE INDIAN JOURNAL OF GERONTOLOGY



PUBLISHED BY

CALCUTTA METROPOLITAN INSTITUTE OF GERONTOLOGY

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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

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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.

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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.

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CARING OF THE ELDERLY: AN EMPIRICAL STUDY FROM RURAL ODISHA

Tanuja Mohapatra*

ABSTRACT

Issues of older people's care are in the spotlight of policy debate at the present time especially when the speed of social change is rapid and countries around the globe face financial hardship. Solutions are often explored around making families more responsible for the task of caring.

At any age, the family provides the individual the emotional, social, and economic support (Soldo and Agree, 1988). The ability of the aged persons to cope with the changes in health, income, social activities, etc. at the older ages depends to a great extent on the support the person gets from his/ her family members.

Demographics in India suggest that majority of seniors live with immediate family members and family continues to be the main provider of elder care. Indian society had traditional informal support systems such as joint family, kin and community. Due to modernization, urbanization and globalization, the capacity of the traditional informal support system is slowly weakening and is not in a position to fulfil the basic needs of the elderly.

The traditional joint family system in India is on the decline and more families are becoming nuclear. Given this background, it is important to explore the current nature of care and support for the elderly in families.

An attempt is made in this study to analyse the family support for the

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aged and the changes that are occurring. Attention is also focused on the factors affecting the care and the support for the aged in the families and the perceptions of the aged regarding the care and support they are getting from their family members. For this purpose the data was gathered from a study of the aged persons in Balasore District of Odisha. The survey was personally conducted as a source of basic material for a minor research project approved by UGC, New Delhi.

Key words: Family, care and support, elderly, living arrangements, health problems.

INTRODUCTION

At present, the world's elderly population is nearly 600 million and by the year 2025, it is expected to rise to 1,100 million (United Nations, 1999). Most developing countries of Asia, Africa and Latin America are fast heading towards a 'grey world'. With a large population, second only to China, India has to give serious attention to the issues relating to the aged population.

Older persons occupy an important place in society. Earlier, they were invariably heading the family and occupying a place of prominence in the community. Agricultural economy, patriarchal social structure and joint family system would sustain and reinforce their importance. However, the social situation has undergone a radical change. The process of industrialization, coupled with other social changes, has over shadowed agricultural economy. Also, joint family households have given way or are fast giving way to nuclear family system. It has profoundly affected the situation of older persons. Often times, they appear to have been socially marginalized.

At any age, the family provides the individual, the emotional, social and economic support (Soldo and Agree, 1988). The ability of the aged persons to cope with the changes in health, income and social activities etc. at the older ages depends to a great extent on the support of the person gets from his /her family members. In India the cultural values emphasize that the elderly members of the family be treated with honour and respect.

Indian Government, both central and state have taken up the responsibility to take care of the aged and have started certain schemes to provide care and support for the aged. There are also some non- Governmental organizations (NGOs) which have undertaken the work of taking care of the aged. However, it is still the family that plays the most important role in India in this respect.

Review of related studies

The most difficult problem both families and governments will be how to care for the elderly. Several changes occurring within the domain of the family consequent upon the demographic and socio-economic changes taking place in society have further aggravated the problem. Changes are also taking place within the family structures as a result of socio-economic development. This, in turn, will tend to reduce the opportunities for providing support in traditional ways. Taking care of the aged has become pressing due to the rapidly increasing elderly population all over the world. Further, increased longevity has also resulted in the need for care over a considerable long period of time. Elder care is a many sided task that has to be shared by the family, community, society and the State.

Contradictions and ambivalence dot much of the literature on informal support systems. On the one hand, studies conducted by scholars such as Nayar 1992; highlight the fact that in most countries family is the major source of care giver for the elderly. On the other hand, scholars like Brody (1985), Nayar (1992); Gangrade (1989); underscore the fact that a number of forces are at work which have greatly undermined the capacity of the family to provide support to the elderly and also led to weakening of the norms underlying such support. These forces are rapid mortality and fertility declines, massive migration from rural to urban areas in search of employment, housing shortages, and changes in cultural values and increasing numbers of women entering into labour force. The family has generally been considered the traditional primary source of social, economic, psychological and physical support for the elderly people. It is still crucial even today. Current studies confirm the continuing importance of the family in elderly care. Even in developed countries, where the state has assumed responsibility for the welfare of the aged, there is growing evidence of family being called to assume responsibility. Johnson (1993) observes, “Even in a country, with such extensive provisions for care of the elderly as Sweden, the bulk of their support is provided by the family.”

The care of the elderly by their spouse and/or adult children is a universal phenomenon (Kendig, et al., 1992) seen across cultures and has been in practice since time immemorial. Both good and bad experiences of family-based care have been reported in different cultures and parts of the world. It is noteworthy that every outcome of family-based care depends on, or is at least influenced by, several background factors such as the influence of culture, the economic status of the society, family and individual and the wider environment in which they live. Family, especially spouses and adult children, are often counted as potential support providers in providing both emotional and physical support to older family members in need, in almost all cultures (Hao, 1997; Phillipson, et al., 2001; Kabir, et al., 2002). The range of literature has amply documented the importance of family networks for material, practical and emotional assistance in old age. Family care is recognised as a source of stable support in case when family members are paid for their care work and the service recipients, i.e. older people, are found to have rated family care above than the care received from friends or strangers (Matthias and Benjamin, 2008). Research studies have identified relational dynamics which outweigh perceptions of burden in family care and the way the family carers feel motivated to provide services to the older members of the family (Liu, 2000; Hsu and Shyu, 2003).

The living arrangement for the aged persons is often considered as the basic indicator of the care and support provided by the family (Martin, 1989). However, it must be noted that this practice is more culturally based rather than development dependent. For example, in USA only about 15% of the aged persons lived with their children, whereas in India about 75% lived with their children (Martin, 1988 & 1989; Bose, 1982). In Singapore a survey conducted in 1982 found that 80% of the aged persons (60 years and over) were living with

their children, while in Korea and in Jilin Province of China, this percentage was found to be 79%. Similarly, the WHO surveys have indicated that among the aged persons, 72% in Malaysia and 79% in the Philippines were living with their children (Martin, 1988). Van Der Geest (2002), in his study of the Kwahu community of rural Ghana, found that children's respect towards their parents depended upon the care provided by the elderly to their children in their early years. If the children had been looked after well by their parents, the children took care of their ageing parents. Geest noted, “Respect is earned. It is given to those who deserve it because of what they have done in their lives. To respect an older person is no longer a 'natural' thing to do.”

Pressure of economic burden often affects human behaviour. This appears true also in taking care of the aged parents. The aged persons from households with larger land holdings tend to live with their children, while those from land-less households tend to live separately from their children.(Petri, 1982; Raj and Prasad, 1971). This seems to suggest that economic resources and not the fact that the aged persons have sons which is important for the family support in the old age (Vlassoff and Vlassoff, 1980) However, this finding is at variance with the findings of many fertility studies in agrarian societies which indicate that security in old age rather than child labour is the most important motive behind high fertility (Mueller, 1976; Caldwell, 1977; Mandelbaum, 1974; Kanabaragi, 1987).

Indian culture emphasizes the reverential treatment of the aged persons. The social system puts pressure on the children, especially the male children to take care of the aged parents, apart from the legal requirements. The cultural practices also assign certain duties for the aged in the household chores. Taking care of the young children, looking after the societal responsibilities, settling inter-personal or inter-household or even inter-group conflicts, helping in the matrimonial match-making, are among the duties that the society expects the aged persons to take interest in and attend to.

Thus, the aged are made to play useful roles in the household and in the society so as to make them feel reassured that they are an important part of the society. They also become the essential media for the transmission of the cultural values from generation to generation through the process of storytelling for entertaining the children.

Vatuk (1981) has examined the cultural norms of social services for the aged in India. She analysed the social security available to the elderly and sought to find how far the prevailing social services for the elderly met the requirements of the elderly. She found that it is culturally accepted that the children would take care of the elderly parents. Her study of living arrangement of the elderly Indians corroborated the fact that a majority of the elderly were, infact, living with their children, particularly, sons.

Bhat and Dhruvarajan (2001), while discussing the living arrangements of the elderly Indians also mentioned that parents prefer to reside with their children. In particular, they prefer to stay with their eldest sons and they go to live with their daughters only when they do not have any male issue. Further, the decision to come to Homes is the least preferred option for them. But the study by Pati *et al.* (1989) who investigated the socio-economic status of 76 elderly persons of the low-income families and slum dwellers in Bhubaneswar came up with a significant finding that the elderly people of low-income group preferred to stay with their daughters and sons-in-law rather than with their sons as the former take better care of them. Similarly, Rajan *et al.* (1999) who have studied five groups of the elderly, each group consisting of six to 10 elderly persons in the states of Kerala and Tamil Nadu, found that while the female residents showed keenness to reside with their children, the males felt they would not be respected in the family.

Vatuk's (1990) study conducted in an “urbanised former village” near New Delhi from 1974 to 1976 explored the long-term intergenerational reciprocity and the elderly parents' expectation of

care and respect from children. Vatuk found that the elderly parents do not attach any negative meaning to physical and economic dependence on the children in old age since it is culturally accepted that the children will take care of their elderly parents in old age. To be cared for by sons and daughters is a matter of pride and satisfaction for the elderly. But the parents, who were on the threshold of old age were concerned and anxious as to whether they would receive such care and respect from their children to which they were rightfully entitled to by cultural values once they grew older.

Contrary to positive experiences of family care, there is also substantial literature presenting dismal pictures related to it. Despite the fact that a large number of older people, mainly in Asia and Africa, still live in multi-generational households (Bongaarts and Zimmer, 2002), this was often found to be a compulsion rather than choice on older people's parts (Hu and Chou, 2000). The literature has suggested that a tension may sometimes exist between siblings for the care of their parents (Brody, 1985; Lashewicz and Keating, 2009) and that the family can also regard older members' care as an unwanted burden (Liu, 2000). In case, when there is choice, older people in South Asian countries themselves opt to go for institutionalised care rather than preferring to live with their family. Older people in South Asian cultures were found to be increasingly dissatisfied with their lives in multigenerational households, whereas Asian societies were until recently celebrated for the better roles and respect given to older people (Goldstein, et al., 1983). Similarly, a high suicide rate among such older co-residents – especially the women in Taiwan – indicates a general tension underlying multi-generational households (Hu, 1995). Reports of conflicts between generations (Teo, et al., 2003) and older people's abuse (Soeda and Arak, 1999) at home have become almost commonplace in recent times. However, it is true that the glimpses presented here do not, of course, represent the entire incidences or experiences in numeric terms.

The objectives of the study

This study was conducted with the following objectives:

i) To study the background and socio-economic profile of the sample elderly.

ii) To study the living arrangements of the elderly.

iii) To study the main problems of the old age.

iv) To study the perceptions of the elderly regarding care and support of the family.

Material and Method

A community based study was conducted during April 2010 to July 2010 in Khaira Block of Balasore District (rural Odisha) in Odisha with a sample size of 185 (male: 104 and female: 84) drawn from 10 villages(Sananda, Dighi and Chunanati of Haripur G.P, Bagadia, Tumbhapadi and Balisasan of Ratina G.P., Paduna, Gambharia, Kusuma and Ghee Garia of Barttana G.P.) in three Gram Panchayats (Haripur, Ratina and Barttana) about 120 - 140 KMs away from Cuttack city having a total population of 4735.

A structured interview schedule was used to collect the information on their socio-economic back ground, factors affecting the care and the support for the aged in the families, and the perceptions of the aged regarding the care and support they are getting from their family members, their views regarding main problems in old age. The data was analysed using the statistical package (SPSS).

Results and Discussion

Table-I : Socio-economic background of the sample elderly

Characteristic	Male		Female		Total	
	n1 =104	%	n2 =81	%	N = 185	%
Age (in years)						
60-64	35	33.7	31	38.3	66	35.7
65-69	23	22.1	14	17.3	37	20.0
70-74	19	18.3	16	19.8	35	18.9
75-79	13	12.5	11	13.6	24	13.0
80 and above	14	13.5	9	11.1	23	12.4
Marital status						
Married	74	71.2	43	53.1	117	63.2
Widow/Widower	27	26	33	40.7	60	32.4
Separated or divorced	3	2.88	5	6.17	8	4.3
Education						
Illiterate	43	41.3	68	84.0	111	60.0
Primary	29	27.9	8	9.9	37	20.0
Secondary	23	22.1	5	6.2	28	15.1
Intermediate	7	6.73	0	0.0	7	3.8
Graduate & above	2	1.92	0	0.0	2	1.1
Family Income (Rs per month)						
Below 10,000/-	78	75	61	75.3	139	75.1
10,001/- to 15,000/-	15	14.4	14	17.3	29	15.7
15,001/- to 20,000/-	11	10.6	6	7.41	17	9.2
Respondents' Income (Rs. per month)						
No Income	11	10.6	66	81.5	77	41.6
Below 5,000/-	57	54.8	12	14.8	69	37.3
5001/- to 10,000/-	33	31.7	3	3.7	36	19.5
10,001/- to 20,000/-	3	2.88	0	0	3	1.6
20,001/- and above	0	0	0	0	0	0.0

Table-I depicts the socio-economic background of the sample elderly. The age of the study population ranged from 60 years to 84 years. 63.2% of them are married, 32.4% are widows/widower, 4.3% are separated/divorced. About 60 % are illiterate, 20 % educated up to Primary level, 15.1 % up to secondary level, 3.8 % up to intermediate and 1.1 % are graduates and above. From the total 185 respondents, the family income of 139 respondents (75.1%) are below Rs.10,000/- per month. 29 (15.7%) of the respondents' family income is within Rs. 10,000.00 to Rs, 15,000.00 per month, the family income of the rest 9.2 % ranges from Rs.15,000.00 to Rs, 20,000.00

Living Arrangements of the study population

Table II : Living Arrangements of the study population

Living Arrangements	Male		Female		Total	
	No	%	No	%	N= 185	%
Living alone	3	2.9	1	1.2	4	2.2
With spouse only	9	8.7	8	9.9	17	9.2
With unmarried children	17	16.3	7	8.6	24	13.0
With married sons	67	64.4	46	56.8	113	61.1
With married daughters	3	2.9	11	13.6	14	7.6
With other relatives	5	4.8	7	8.6	12	6.5
With other's family	0	0.0	1	1.2	1	0.5

Culturally man in the Indian society is more dependent on the woman for the maintenance of the household. Thus, it is observed that the proportion of the aged living with families is higher among males than among females. (Male:70.7% and Female:65.4%). Further, in the Indian society a man, even when becomes a widower, would not prefer to live with his married daughter's family, while a woman would not mind living with the daughter's family in such a circumstance. In the present study, only three aged male (2.9 %) were living with their married daughters whereas 11 aged females (13.6 %) were living with their married daughters. It was observed that in the case of all the three instances where aged males were living with their married daughters, in fact the married daughters had

come to live with the father which may be due to several reasons whereas in case of aged females those were living with their married daughters, in fact the mothers had come to live with the married daughters because of widowhood. It is also worth noting that out of the 14 aged respondents who were living with their married daughters, only two had living sons.

The proportion of the aged respondents living with other relatives is also higher among females than among males (male: 4.8% , females :8.6 %). This brings out the fact that while the males would not prefer living with other relatives, females would accept such an arrangement due to social and practical problems involved in living alone.

Marital status plays an important role in living conditions of the aged persons. Especially for a woman in India, the married state symbolizes the social status, honour, respect, and authority in the family as well as in the society. The data from the above table reveal that the elderly persons resorted to living with married daughters or with other relatives mainly in the event of widowhood. Most of such persons were females rather than males.

It is observed that 3 aged persons out of 4 living alone were widowed persons. Among the 12 aged persons living with other relatives, 7 were females and five were males. All these seven aged females were widowed persons. In the case of the five male respondents, three were widower, and the other two were married. The widowed respondents did not have children and lived with his brother's family. The married respondents, although had daughters, were living with their grandchildren.

In the past, the highly prevalent joint family comprising of two or more generations provided the needed care and support to the aged members of the family. Under the influence of modernization, the size and structure of families have undergone dramatic changes in India. Stem and nuclear families are replacing the joint families and also the size of the family is becoming reduced. This seems to have affected the family care and support available to the aged persons to a certain extent.

The analysis of the data reveal that a large proportion of the aged persons (74.1 %, Male: 80.7% , Female: 70.4%)) lived in either stem or in joint families. (With either married sons or with unmarried children). Interestingly the proportion of male aged persons living in joint families was higher than that of female aged persons. This pattern seems to have resulted from the social behaviour of family members in the Indian society. As long as the elderly father who is considered as the head of the household, is alive, all the children whether married or unmarried, live with the aged parents, and when the father dies the family gets disintegrated and children often start living separately by distributing among themselves the family property. The widowed mother is usually forced to live with one of the children.

As a direct consequence of this tendency, it is observed that a higher proportion of aged male respondents (47%) were living in large size families (with 11 or more members) than that of aged female respondents (32%).

It may be observed from Table II that majority of the respondents were living with their married sons (61.1 %, 64.4 % Male and 56.8 % female), followed by with their unmarried children (13.00%, 16.3% Male and 8.6 % Female).

Old parents staying separately were also noticed. There were a few cases found in the study where the aged father and mother were living separately with two separated sons living in the same village. Even in few cases where living sons were more than two, father and mother used to stay on monthly basis. There were also cases of “rotation” wherein the parents stayed with one child for a particular period of time and then moved over to the other child to stay with him for the same period of time. This adjustment was made as one child could not take the burden of both the parents.

Perceptions of the aged regarding the care and support from the family

Table-III

	Male		Female		Total	
ATTITUDE OF FAMILY MEMBERS TOWARDS THE ELDERLY PERSONS	No	%	No	%	N=164	%
i. RESPECTFUL	56	60.9	39	54.2	95	57.9
ii. NORMAL	25	27.2	27	37.5	52	31.7
Iii. NOT CORDIAL	11	12	6	8.3	17	10.4
DO YOU FEEL THAT ELDERLY WERE BETTER TAKEN CARE OF BEFORE						
i. YES	80	87	65	90.3	145	88.4
ii. NO	12	13	7	9.7	19	11.6
HOW DO YOU SAY THAT ELDERLY WERE BETTER CARED FOR EARLIER						
i. LESS RESPECTFUL NOW	32	34.8	13	18.1	45	27.4
ii. LESS OBEDIENT NOW	54	58.7	46	63.9	100	61.0
iii. INDIFFERENT TO ELDERLY AT PRESENT	6	6.5	13	18.1	19	11.6

In India, since the family is the most important social unit which is the major source of care and support to the aged persons, it would be of interest to examine what the elderly persons feel about the way they are treated by their family members. In this study the aged respondents were asked: “How do you feel about the attitudes of your family members towards you now?" and the responses were categorized as: "Respectful”, “Normal”, and “Not Cordial". For this analysis, the respondents who were living alone and those living with spouse were excluded. The results presented in Panel 1 of Table III indicate that only about 10.4 % of the respondents reported that the treatment accorded to them was “Not cordial". This indicates that cordial relationship with the family members still exists and the elderly are treated cordially.

It is interesting and important to note that among the male aged respondents, 60.9% of Male and 54.2%Female respondents have expressed that the treatment that they got was "respectful". In contrast, 12 % of the male aged respondents and 8.3 % of the female aged respondents felt that the relationship with the other family members was "not cordial. These differentials again reflect the differentials in the role and status of males and females in the family as per the Indian culture. The senior most male member of the family is considered as the head of the household and will have the power of decision making in almost all family matters. The women, on the other hand, are generally restricted to the domestic sphere. Therefore, the younger members of the household often treat the male aged persons with more honour and respect and the female aged persons with more affection. Further, widowhood results in the loss of social status in the case of females, while in the case of males the transition will not make such marked difference in the status, power and authority they hold.

To investigate what the aged persons felt about the care they are getting as compared to the care they had provided to the elderly members of the household in the past (when these aged respondents were young), the aged respondents were asked: "Do you feel that the elderly persons were better taken care of when you were young than now?". The responses summarized in Panel 2 of Table III, reveal that nearly 88.4% of the respondents were of the opinion that they are receiving less care at present than what they were giving to the elderly members of the household. It is observed that the male and the female respondents expressed similar views on this issue.

In order to probe this issue further, the aged respondents were asked: “How could you say that earlier the elderly persons were better cared?". Panel 3 in Table III presents the summary of the responses to this question. It may be observed that more than half (61%) of the respondents held the view that the present generation is less obedient to the older people and they are also less respectful (27.4%).

From the above analysis it may be concluded that the elderly are not getting similar respect from the family members in comparison

to what they were providing to their elders. Also, the present generation is less obedient to elderly in comparison to the past. This change in the attitude of younger generation is caused due to cultural change and influence of west.

MAIN PROBLEMS IN OLD AGE

Table IV : MAIN PROBLEMS IN OLD AGE

	Male		Female		Total	
MAIN PROBLEMS IN OLD AGE	No	%	No	%	N= 185	%
HEALTH	46	44.2	37	45.7	83	44.9
FINANCIAL	29	27.9	15	18.5	44	23.8
SOCIAL ADJUSTMENT	11	10.6	9	11.1	20	10.8
ABUSE AND NEGLECT BY FAMILY MEMBERS	11	10.6	13	16.0	24	13.0
LONELINESS	7	6.7	7	8.6	14	7.6

The elderly respondents were asked to know the main problems in old age. 44.9% of the respondents expressed that health problem is the main problem followed by financial problems (23.8%). Abuse and neglect by family members is another old age problem to be reckoned with. About 13.8% of the respondents (Male:10.6% , Female:16%) are found to be experiencing the problem of abuse and neglect by their family members. Another old age problem found to be social adjustment (10.8%), arising due to cultural change and elderly not able to adjust with the time.

BEST HELP IN OLD OLD AGE

Table V : BEST HELP IN OLD OLD AGE

	Male(104)		Female(81)		Total	
BEST HELP IN VERY OLD AGE		%		%	N=185	%
Sons and their family	63	60.6	53	65.4	116	62.7
Daughters and their family	9	8.7	14	17.3	23	12.4
Spouse	23	22.1	11	13.6	34	18.4
Neighbours and community	7	6.7	3	3.7	10	5.4
Government	0	0	0	0	0	0
GOD	2	1.9	0	0.0	2	1.1

Regarding the question: “when a person becomes very old (old old) and needs physical help, who do you think can be of best help to the old aged?". About 62.7 % of the elderly respondents were of the opinion that sons and their family members should provide the necessary help to the aged. This reflects the continuation of the traditional practice in India that the ”son and his family” will take care of their old parents in their old age and inherit the family properties.

About 18.4% of the respondents opined that in very old age, their spouses will provide the necessary help, where as about 12.4% of them were of the opinion that the daughters and their family members will provide the necessary help in very old age. In case the old age persons do not have such help, the elderly respondents felt that neighbours or the community should provide the needed care and support to the aged. It is important to note that no one opined for the Government to take care of the elderly. This may be due to the fact that elderly need care of their families and not of the Government.

AVAILABILITY & UTILIZATION OF GERIATRIC WELFARE SERVICES (GWS)

TABLE-VI : AVAILABILITY & UTILIZATION OF GERIATRIC WELFARE SERVICES (GWS)

	N=185	%
Aware of GWS		
Aware of	145	78.4
Not aware of	33	17.8
Know a little:	7	3.8
Utilisation of GWS:		
Ever used	141	76.2
Never used	44	23.8
Aware of reverse mortgage scheme:		
Aware of:	0	0.0
Not aware of:	185	100.0
Distance of Govt. health facility:		
< 1 KM	0	0.0
1-2 Km	0	0.0
2-5 KM	23	12.4
> 5KM	162	87.6

From Table-VI provides the information about the availability and utilisation of geriatric welfare services (GWS) by the elderly. About 17.8% of the elderly are not aware of geriatric welfare services/ schemes meant for them. 23.8% of the elderly have never benefited of the geriatric welfare services/schemes. 76.2 % of elderly are enjoying some form of geriatric welfare schemes meant for them. Some of them are the beneficiaries of Old Age Pension Scheme, Arnnapurna Schemes, Indira Awas Yojana. No one among the respondents is found to be aware of the reverse mortgage loan scheme.

It is also observed that the availability of Govt. Hospital/ Primary Health Centre in rural areas is very disappointing. About 87.6 percent elderly have opined that the Govt. Hospital/ Primary Health Centre is more than 5 KMs away from their residence/ village. Govt. should establish Hospitals/ Primary Health Centres in rural areas in more numbers in 12th Five Year Plan so as to enable the rural poor and elderly living in rural areas for better health services at low cost/ of free of cost which is almost absent at present.

Conclusion

Only in the last few years attention has been paid to the increasingly alarming problems of the elderly population. It was assumed that the elderly were well taken care of, safe in the custody of the well-integrated family system in India. But recent ethnographic case studies have indicated that the so-called “joint family system” is a myth. Many elderly, though living with their sons and their families, are often neglected and uncared for.

The concerns of the Government of India for the welfare of its elderly citizens began with India's participation in the World Assembly Conference in Vienna in 1982, when it adopted the United Nations (UN) International Plan of Action on Ageing. The UN plan focused on the governmental role in adopting programmes for the care and protection of the elderly, synchronizing these with the changing socioeconomic conditions of each society. From the mid 1980s, the Government began to recognize the aged as a social category of persons who need specialized attention. Under several Five-Year Plans, various policy-oriented programmes were introduced, but these often ignored rural-urban differences as well as the local disjunctions of class and power. Old-age pension scheme also was introduced, along with other welfare measures. More recently, under the Eighth Five-Year Plan, the Government sought to encourage nongovernmental organizations (NGOs) to provide old-age homes and non-institutional services via a limited Grants-in-Aid program.

While the Government has continued its efforts to introduce programs for the welfare of the elderly, NGOs have played a key role in bringing to the forefront the problems of India's older people

in the society at large; they have also provided some solutions. Through various activities and services, NGOs have established a forum whereby the voices and concerns of the elderly can be addressed.

Presently, there are many national and international NGOs working for the cause of elderly. Most have concentrated their work among lower-income groups and the disadvantaged and underprivileged section of the society. This is mainly because one-third of these sections are identified as “capability poor”, which means they do not have access to minimum levels of health care or education for earning a decent living. Because the Government is unable to deal with such a huge dependent population, it is the non-profit, non-governmental sector- also known as the Third Sector, that has, in the last few decades, begun to work actively for the welfare of the lower-income and dependent strata of Indian society, including the elderly. However, this sector in India is playing only a minor role catering only to a rather small segment of the old age population. NGOs like Rotary International, Age Care India, Help Age India etc. run Old Age Homes and Day Care Centres where old age persons are admitted for a specified charge per month or of free of cost. Government of India should promote the NGO sector. It should have continuous dialogues with the NGOs on issues of the ageing and on the services to be provided to the elderly in order to ensure better services to them. The activities of NGOs, at present, is confined in urban areas only. Government should see that the activities of NGOs should not be confined in urban areas but should be more concentrated in rural areas.

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CONCEPT OF AGEING IN AYURVEDA

Saumitra Basu*

ABSTRACT

Ageing is a natural and inevitable process in every human's life. It starts from birth and continues until death. In modern parlance the concept of ageing is a normal physiological process of decaying or degeneration of different systems in human body. However, despite several efforts of modern science to unravel the mystery of ageing, our ancient Indian medical heritage, i.e. Ayurveda clearly mentioned various details of ageing in its different classics. As age advances, several changes take place in the body, in the external appearance, in the condition of Dosha, Dhatu, Mala, Agni, Srotas, Ojas and so on, as well as in the mental and cognitive functions. The problems of the elderly are becoming a matter of great concern as increased life expectancy due to better medical services, improved hygiene, healthier life style, eating habits and improved technology is resulting in an increasing population of the aged. By the year 2020, the World will have more than one billion people aged 60 and over, and more than two-thirds of them will be living in the developing countries. The present paper aims to understand the concept of ageing in different Ayurvedic texts and how it is related with modern biological concept of ageing. Finally it reveals that the whole biology of ageing has been dealt with, within the broader framework of Ayurveda.

Key words: Ageing, Ayurveda, Vata,Pitta, Kapha, Srotas, Medical texts

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INTRODUCTION

'Ageing' as the term implies is a process. It begins from embryo and continues until death (Burgess 1960). Ageing does not mean a life that is sick and spent rather specific phases within the life cycle of a human being. Thus the process of ageing may be divided into five distinct stages. These are childhood, adolescence, youth, middle age and old age. All these stages are biologically normal, contin - uing and inevitable. But as one enters the fifth stage that is old age, one suffers the plight of deterioration in terms of physical and mental health. Needless to say, it is a warning about the approaching end, a signal for extinguishing of the flame, but this must not deter us to despair; rather we should take it into our stride and endeavour to make the most of it. In other words, old age can be a rewarding experience, a prosperous and a successful second age, full of meaning and purposes. However, to get such benefits of the old age one needs to have a positive attitude towards it.

Thus looking at the development of scientific thinking through the centuries, we see an accumulating body of knowledge, to which India has made its own contributions by her own methods of investigation (Kumar,2004). Centuries ago Said-al-Andalusi (1029 – 70 A.D.) in his *Tabaqat-al-Uman* referred to India as the first nation that cultivated the science (Kumar,2001). The richness and diversity of India's scientific traditions has long been recognized over the centuries. It is well documented that India had a long heritage of scientific knowledge as propounded by Bhaskaracharya, Aryabhatta, Barahamihira, Brahamgupta, Jamini, Kapil, Nagarjuna, Caraka, Susruta, Patanjali and Dhanantari etc. in different fields of knowledge ranging from mathematics, physics, alchemy, astronomy, geometry to medicine (Dutta and Sen,2006). Along with several other traditions, India had its own ancient medical tradition, i.e. *Ayurveda*, which clearly defines various details of ageing in its different classics. Dating from the Vedic era, ancient yogic teaching makes substantial contribution to understand the structure and

functions of different human systems which closely interlinked with modern physiology. The famous ancient Indian medical text *Ayurveda* also contains deep and accurate descriptions covering wide areas of human body systems as we know it today.

The philosophy of Ayurveda teaches a series of conceptual systems characterized by balance and disorder, health and disease. Disease/health results from the interconnectedness between the self, personality, and everything that occurs in the mental, emotional, and spiritual being. To be healthy, harmony must exist between the purpose for healing, thoughts, feelings and physical action. Ayurveda is sub divided into eight major clinical disciplines (Astanga Ayurveda). These are – *Kayachikitsa* (internal medicine), *Salyatantra* (surgery), *Salakya tantra* (head and neck diseases), *Balantantra* (pediatrics), *Agadatantra* (toxicology), *Bhutavidya* (literal translation- demonic disease deals with mental illness), *Rasayanatantra* (geriatrics including improving memory and restoring youth) and *Vajikaranatantra* (the science of increasing virility by toning the weakened organs of reproduction) (Jee,1927). In *Ayurveda*, geriatrics falls into the category *Rasayanatantra,* its central theme is to protect the life from disease and ageing. This division takes care of the health of the aged and encompasses a comprehensive approach aimed at promoting longevity, immunity against disease and mental competence. *Caraka Samhita* defined *Rasayana* as a promotive treatment to attain longevity, intelligence, freedom from age related disorders. Improvement of memory, maintain language ability and many others. "*Labhopayo hi sastanam rasadinam rasayanam*" – the method of treatment which purifies, prunes and strengthens all the *dhatus* (tissues) of the body such as Rasa (lymph and plasma), Rakta (haemoglobin), Mamsa (muscular tissue), Medas

(adipose tissue), Asthi (bones), Majja (bone marrow) and Shukra (reproductive tissue) (Caraka, Chikitsasthan,I). *Susruta Samhita* defines *Rasayana* as a measure, which prolongs and provides

positive health, improves mental faculties and provides resistance and immunity against diseases. Cognitive function is also well recognized in *Ayurveda*. The mind (manus) is thought to be the inner instrument for perception. Mind, ego and intellect together from an "internal organ" the chief function of which is to receive impulses from the external environment and respond suitably. According to Caraka, main functions of mind are Cintana (thinking), Vicara (reasoning), Uha (analysis), Dheya (attention) and Sankalpa (determination). The system includes sensory and motor organs as accessories. The whole apparatus consisting of the internal organ and its several accessories corresponds to the brain and the nervous mechanisms associated with its function, similar to the concepts in modern psychology (Hiriyanna, 1960). The *Caraka Samhita* outlines seven factors that help the emergence of memory, perception of cause; perception of form; similarity; contrast; predominance of practice; constant thinking and repeated hearing. Thus memory, is defined as the recollection of what is seen, heard and experienced (Sharma, 1983).However, the equivalent term for ageing in *Ayurveda* is '*Jara'*.

Definition of Jwara in Ayurveda

Ayurveda has considered ageing as *Jwara* or *Vardhyaka*. Etymologically, the term *Jwara* has been derived from Panini's Sanskrit roots *Jrs Vayohanou.* This term is indicative of loss in period of life span. The last phase of life has been referred as *Jwara*. Other terms may be correlated with old age are – *Jarjrita, Jarjar, Jarjarika*, *Jirna, Jiran, Jaran, Vrddhata*. In this stage *Dhatu, Virya, Indriya bala, Utsaha* decrease day by day. Caraka has used very special word for old age, i.e. *Jeerna Vayam* means a person who is old. The term '*Jwara'* has been defined in *Ayurveda* as a natural and inevitable process as well as a *Swabhavaja vyadhi* (natural disease) (Susruta, Sutrasthan, 24/8). It is depicted as an unwanted, distressful phase of life, full of miseries. Etymologically the term *Jwara* comprises of *Jr+Ana+Tap*. The term *Jara* has been derived

from the Sanskrit ' *Jrish vayohanow'* which can be explained as *' Vayah krta slata mamsadya vastha visesa'* means the muscles and other tissues become loosened due to ageing. So, the term itself indicates the process of degeneration or decaying in the physical, physiological and psychological well being. In different treaties of *Ayurveda*, sequential loss of biological factors due to ageing has been discussed. The following are the examples of sequential loss in two different treaties of *Ayurveda,* by two authors namely, *Vagbhata and Sarangadhara*.

Decades	Year	Vagbhata	Sarangadhara
First	1-10	Balya	Balya(Corpulence)
Second	11-20	Vrddhi	Vrddhi(Growth)
Third	21-30	Prabha	Cabi(Lusture)
Fourth	31-40	Medha	Medha(Intellect)
Fifth	41-50	Tvaca	Tvaca(Skin glow)
Sixth	51-60	Sukra	Drsti(Vision)
Seventh	61-70	Drstri	Sukra(Reproductive power)
Eighth	71-80	Srotrendriya	VIkran(Virility)
Ninth	81-90	Mana	Buddhi(Cognitive power)
Tenth	91-100	Sparsendriya	Karmendriya(Locomotive activities)

So, it is evident from the above chart that ageing is a lifelong process. It is inevitable in every person's life. The process itself is continuous, starting from birth and ends in death. But in colloquial usage the term is very much associated with the senior citizens. Therefore, the fundamental difference between the term 'ageing' and 'old age' is very significant. Being a process the term 'ageing' covers the whole life span, whereas 'old age' denotes merely the last stage of life. So, without the knowledge and understanding of the entire life span, it is difficult to understand the process of change in life. Moreover, the steady and unprecedented growth of sixty

years and above population throws a new challenge to the social thinkers and policy makers across the globe. According to 2012 Census of India, India currently has about 90 million aged over sixty years of age, coming to around 8.7 percent of the total population. Therefore, the entire gamut of the concept of 'ageing' is intrinsically exciting and interesting which instil the present researcher to understand the issues of 'ageing' from a different perspective.

This present article is based on Ayurvedic texts. Materials related to Ageing, Vaya, and other relevant topics have been collected. The main Ayurvedic major and minor texts used in this study are *Caraka Samhita, Sushruta Samhita, Ashtang Samgraha, Ashtang Hridaya, Bhava Prakash*, and *Sharangdhar Samhita*, and available commentaries on these. Besides, the present researcher has referred some modern texts and used various websites to collect information on the relevant topics.

Classification of Vaya (age)

In modern parlance we generally estimate the age (Vaya) in terms of chronology. But in our ancient tradition it was estimated in a different way. According to *Candogyopanisad* , the total life span was 116 years and it was divided in the following manner –

Childhood	Balya	- 24 years
Youth	Yavana	- 44 years
Old	Vrddha	- 48 years

According to Caraka

Balya	Birth to 30 years
Madhya	30-60 years
Vrddha	60-100 years

According to Susruta

Balya	Birth to 16 years	
Madhya	17-70 years	
	i) Vrdhi	16-20 years
	ii) Yavana	20-30 years
	iii) Sampurna	40 years
	iv) Pari Hani	40-70 years

Another integral component of age (Vriddha) above 70 years (*Vaya*) is life expectancy (*Ayu*). *Caraka* and *Vagbhatta* respectively named the first chapters of their treatise, '*Deergham ,Jivitiyam and Ayuskamiyam*, indicating the measures adopted for a healthy longevity. This also reveals that the concept of age or life was embedded in *Ayurveda* since time immemorial. In *Ayurveda*, *'Ayu'* is the combination of *Atma* (soul),*Sarira* (body),*Sattwa* (psyche) and *Indriyas* (senses). *Atma*, which is immune to the cycle of birth, death and disease. It is omnipotent, imperceptible, unmanifested and also the conscious element in the body. *Sarira*, is the one of the major component of *Ayu*, which is made up of *Pancha Mahabhutas* (*Kshiti,Op, Tej, Marut and Bom*) and is the abode of mind and consciousness. *Purusa* comprises of *Sattva, Atma* and *Sarira*, which constitute the tripod of life. *Indriyas* include the sensorial, motor and the psyche. *Indriyas* connect the external world with the inner world. It is of three types – (a) *Jnanendriya* (organs of perception) helps in receiving the knowledge, (b) *Karmendriya* (organs of action) which comes through motor functions, (c) and *Ubhayendriya* (both), here *manas* (mind) is responsible for the action of both *Jnana and Karma Indriyas.*

Pathophysiology of Ageing

> *"Sarira: Dosa dhatumala moolam sada dehasya"*
> *(Bagbhat,Astangahriday,Sutrasthan,Chp.11,Sl.1)*

It is central to Ayurveda that the functioning of all creation, the mineral, plant and animal kingdoms, can be understood as the interactions of three fundamental energy complexes (erroneously called tridoshas). The three energies are *Vata, Pitta and Kapha* – signifying the dynamic or mobile, energetic, nonmaterial aspect of nature; the transformative, intelligence aspect; and the structural, physical aspect respectively. *Vata* governs respiration, circulation, elimination, locomotion, movement, speech, creativity, enthusiasm, and the *entire nervous system*. *Pitta* governs transformations such as digestion and metabolism, vision, complexion, body temperature, courage, cheerfulness, intellection and discrimination. *Kapha* governs growth (anabolic processes), lubrication, fluid secretions, binding, potency, patience, heaviness, fluid balance, compassion, and understanding in the organism. In the human physiology these three energies tend to interact in a harmonious and compensatory way to govern and sustain life. Their relative expression in an individual implies a unique ratio of functioning of these governing principles according to each person's unique DNA (vata-pitta-kapha ratio) determined at conception. These three governing principles are nothing but energy themselves, they can be influenced –increased or decreased – by like or opposite energies. Heat increases pitta, dryness increases vata, and liquid increases kapha, etc. Thus imbalance is the continued experience of some stimulus – mental, emotional, or physical, real or imagined - that overwhelms the body's ability to maintain its identity, its vata-pitta-kahpa ratio or *prakruti*. Amongst these *Trodosas*, *Kapha* governs *Balya*, *Pitta* governs *Madhya* and *Vata* governs *Vardhyaka*. However, the degree of imbalances between these three depends on age, habits, life style etc. These variations are observed in the psychosomatic constitution of a person (Susruta, Sutra.41:62).

Dosa	**Balyavastha**	**Madhyavastha**	**Vrdhavastha**
Kapha	High	Medium	Low
Pitta	Medium	High	Medium
Vata	Low	Low	High

Basic Concepts of Ayurveda

Dosha

The three vital principles of *doshas* are *vata, pitta and kapha*, which together regulate and control the catabolic and anabolic metabolism. The main function of the three doshas is to carry the byproduct of digested foods throughout the body, which helps in building up the body tissues. Any malfunction in these *doshas* causes disease. So, Vata dosha is movement principle or related to transmission, Pitta dosha is associated with transformation and Kapha dosha is similar to activity of lipo-protein.

Dhatu

Dhatu can be defined, as one, which supports the body. There are seven tissues in the body. They are - Rasa, Rakta, Mamsa, Meda, Asthi, Majja and Shukra which represent the plama, blood, muscle, fat tissue, bone, bone marrow and semen respectively.

Upadhatu (Sub tissue)

During the process of formation of the Dhatu, seven important substances are formed, which are designated as Upadhatu or sub tissue. Basic difference between Dhatu and Upadhatu is that Dhatu related to nourishing and supporting the body but Upadhatu is concerned with support the body. Upadhatus are – Artava (menstruation blood), Stanya,Kandana (tendon),Taka (skin), Snayu (nerve) etc.

Mala

Mala means waste products or dirty. It is third in the trinity of the body i.e. doshas and dhatu. There are three main types of *malas*, e.g. stool, urine and sweat. *Malas* are mainly the waste products of

the body so their proper excretion from the body is essential to maintain the proper health of the individual. There are mainly two aspect of mala i.e. mala and kitta. *Mala* is about waste products of the body whereas kitta is all about the waste products of *dhatus.* Stool and Urine are called Ahara Mala (food waste) but there is also metabolic waste or Dhatu Mala. They are Kapha, Pitta, Cereumen, Sweat, Body hair , nails and Eye discharge.

Agni

All kinds of metabolic and digestive activity of the body takes place with the help of the biological fire of the body called *Agni. Agni* can be termed as the various enzymes present in the elementary canal, liver and the tissue cells. In fact there is no fundamental difference is physical fire and biological agni. The later is associated with living organism. There are thirteen types of Agni in Ayurveda (Jatharagni – 1, Bhutagni-5, Dhatwagni – 7).

Srotas

The channels, which are widely spread in all the spaces (Intra, Inter and Extra- cellular spaces) of the body, where circulation (Transportation) of the fluid occurs irresistibly and continuously, are known as Srotas (Susruta). From this definition it is clear that *Srotas* are different from veins and arteries and are widely spread all over the body. Types of *Srotas* are *Pranavaha, Annavaha, Udakavaha, Rasaraktavaha, Mamsavaha, Medovaha, Asthivaha, Majjavaha, Sukravaha, Mootravaha, Pureesavaha, Swedavaha* which act as a network in connecting the whole body. Now, we will discuss the role of *Dosa, Dhatu, Agni, Mala, and Srotas* with respect to ageing process. So, proper functioning of Srotas is essential for healthy state of the body and production of particular disease. We can sub classified into three categories, viz- nutritive, supportive and excretory.

Type	Functional part affected	Result
Vayu		
Prana Vayu	*Aharana* *Udgara* (Gastrointestinal tract)	Difficult in deglutition increases *Udgara pravriti* due to Fermentation of food because of Delayed digestion in old age
	Niswasa / Ucwasa (RS)	Swasa on slight excretion Manokarmas (psyche) etc. deranged Buddhi, weakness of Hrdaya, diminished sensory functions
Apana Vayu	*Utsarga of Sukra* *Mootra,Purisa* *Artava,Garbha etc*	constipation urinary incontinence scanty micturition. Scanty Menstruation less or delayed Seminal discharge etc.
Samana	*Annagrahana parinama* *Rasa malady vivecana* *Muncana etc.*	Decreased appetite, less ingestion capacity, weakened digestion reduced separation and elimination may lead to Gulma,Mandagni,Atisara, Kampana(tremor)
	Nimesa *Unmesa* *Apaksepana* *Utksepana*	palpitation, unsteady gait vertigo etc impaired circulation to the various tissues
Udana	*Vak pravriti*	Indistinct or blurred pronunciation (may be due to loss of teeth)
	Bala,Varna,Smriti etc.	Sritinasa,Balakshya, Varnaviparyaya
Vayan	*Hridisthita,Dehocharita,Gatya* *Prakhep Utkhepan Unmesa*	*slow walking, problems in body movement, opening and Closing the eye lids*

Different functions of *Vikrta Vayu* mentioned in *Caraka Chikitsa* 28 as, *Sramsa, Bramsa, Vyasa, Bheda, Sada, Toda, Vyatha, Parusya, Sosa, Supti, Vislesa, Samkoca* are observed in old age.

Pitta (Thermal activity)

Type of Pitta	Function affected in old age	Results in
Pacaka	*Annapacana*	loss of appetite, indigestion
	Ksut	*Ama* formation leading to
	Ojas	*Amajanya roga,* improper
		Formation of *Rasadi dhatu*
Ranjaka	*formation of*	*anemia, skin disorders*
	Rakta dhatu	*Diseases in haemopoietic system*
Alocaka	*Rupa grahana*	*Myopia, Glucoma, Cataract*
Brajaka	*Prabha*	*Loss of luster of skin, atrophy*
	Caya (Prakasana)	*Wrinkles, loss of elasticity*

Kapha (Strength and Stability)

Type of Kapha	Function affected in old age	Results in
Tarpaka	*Indriya tarpana*	*improper functioning of Jnanendriyas and Mastiska*
Bodhaka	*Rasa bodhana*	*atrophied taste buds Increased oral cavity malignancies*
Avalambaka	*Trikavalambane, Bala, Dhruti Utsaha,Buddhi etc*	*Cardiovascular diseases*
Kledaka	*Anna kledana*	*Loss of appetite, gastritis Peptic ulcer diseases*
Slesaka	*Asthisandhi slesanam Sandhisthainjum sthiratwa*	*Rheumatoid arthritis Oesteoarthritis, Oesteoporesis and Locomotor disorders*

After *Dosas,* the next component is *Dhatus*, which are responsible for maintaining a state of equilibrium. They basically perform two functions. These are – (a) Dharana (to support) and (b) Posana (to nurish). Due to ageing, the first *Dhaturasa* becomes unable to function properly. As a result, sequential weakening occurs to all the *Dhatus, i.e Dhatuksya*. Due to *Dhatuksya* various *Laksanas* and *Vikaras* are observed in old age which are as follows –

Dhatu	Laksana	Vikara
Rasaksaya	*Rouksya,Bhrama, Sabda sahisuta*	*Aruci,tandra,arasgnata Angamarda,Pandutwa, Agninasa,Valipalita, Krsangata*
Raktaksaya	*Sirasaithilya,Ruksata*	*skin disease etc Hypertension,vertigo, Decreased luster*
Mamsaksaya	*Suskata of sphik etc.*	*Loss of weight, improper sensory Function etc.*
Medoksaya	*Sandhivedana, Glani Suskata*	*Splenomegaly,Prameha Purvaroopa etc*
Asthiksaya	*Astitoda,Danta kesa Nakha sadanam*	*diseses of hair, nail and Diseases of bone*
Majjaksaya	*Asthisousriya, Bhrama Sukralpata*	*Pain in joints, vertigo, decreased dehabala*
Sukraksaya	*Harsa, Dainya, Cirapracyuti*	*Anemia, decreased libido*

Agni

Next to *Dhatus*, is *Agni*. There are thirteen types of *Agni* described in *Ayurveda*. Basically *Agni* is the agent which transfers the heterogeneous substances into homogenous one. It consists of digestive juices, enzymes, hormones etc. participating in metabolism. *Caraka Cikitsa* Chap.15/ Sl 3 described that *Agni* is responsible for *Ayu, Varna, Bala, Svasthya,Utsaha, Upacaya, Prabha, Ojas, Prana* etc. *Agnis* are found in three levels, such as

Kosthagni (GI Tract), *Dhatwagni* (Tissue level) and *Bhutagni* (Liver level). The optimum activity of *Agni* is responsible for growth and development of the body and maintains vitality and vigor of an individual. In old age, due to *Visamgni (malfunction)*, defective metabolism occurs within the body that leads to involuntary changes such as *Sosa* and *Ksaya*.

Malas

Next to *Agni, Malas* are also important as that of *Dosa* and *Dhatus*. *Malas* are of two types – *Ahar* and *Dhatu*. *Ahar* may be of three types, liquid (urine), solid (purish),gaseous (malbayu). *Dhatus* are seven types (same as before). Malas play a vital role in the body dynamics as elimination of Mala. In old age, *Agni* becomes hampered that leads to *Malaksaya*. The common manifestations are – chest pain, excessive thirst, dysuria etc.

Srotas

Caraka discussed four types of pathophysiological conditions of *Srotas*, namely, *Atipravriti, Sanga, Vimarga gamana and Siragranthi (C, vi,5 / 24).* However, the manifestations of different *Srotadusti* are as follows –

Types of Srotas	Diseases
Pranavaha/Rasavaha	*Chest pain, Vertigo, Diabetes*
Annavaha	*Agnimandya,Aruci,Avipaka*
Udakavaha	*Jihwa,Talu,Sosa*
Rasaraktavaha	*Panduta, Dourbalya, Daha*
Mamsavaha	*Emaciation, Looseening of muscle, Wrinkled skin, loss of elasticity*
Medovaha	*Deranged cholesterol and lipid Metabolism, Arterioscleroses*
Asthivaha	*Osteoporesis, Gout, Rheumatoid Arthritis*
Majja	*Joint pain*

Types of Srotas	Diseases
Sukra	*Klibata, Sukra praseka*
Mootra	*Polyuria, Dysuria, Scanty urination*
Pureesa	*Constipation, Distension*
Sweda	*Swedadikyata, Parusata,Paridaha*
Artava	*Vandhyatva*

So, it is evident from the above discussion that the whole biology of agering has been dealt with, within the broader framework of *Ayurveda*. *Ayurvedic* texts have also considered the ageing process with respect to *Tridosas, Saptadhatus, Agni, Malas and Srotas.* Because, according to Ayurvedic view, body (*Sarira*) consist of *Dosa, Dhatu and Malas* which are the structural and functional and excretory products of the body. All these collectively maintain the structural and functional integrity of the body. As old age sets in, homeostasis (*Dhatusamya)* between the *Tridosas* are disturbed and sufferings occur in the body i.e. disease. Thus, the ageing (Jawra) which is an inevitable process involves structural and functional change in the body .The role of Dosha, Dhatu, Mala, Satva, Agni, Arotas, Ojas have been considered with respect to the ageing process. This unique concept which is hidden in Ayurveda shows that the methods to minimize or delay the inevitable process were known by the ancient acharyas, which was the secret behind a healthy longevity.

In modern parlance, unfortunately there is no single theory about the cause or causes of ageing. Rather, there are a number of theories which deal with different aspects of the issues of ageing. Some of the widely accepted biological theories of ageing are – Cellular Theories of Ageing (Wear and Tear, Free radicals, Cross-linking, Age pigment), Genetic Molecular Theories (Gene regulation, Somatic mutation, Error theories), System and Level Theories (Neuro-endocrinal control, Immune control) and even the Free Radicals Theory of Ageing.

But in spite of modern biological theories and approaches to management of ageing, the traditional knowledge remains important both in understanding the process and effective management. Several interventions have been tried for treatments of various conditions primarily arising as a result of ageing. Since ageing process has been experienced by human beings for several generations, the traditional knowledge from various parts of the world provide easy, natural and holistic ways for healthy ageing. Ayurveda, the great Indian tradition also offers conceptual framework on various theories and concepts of ageing process. Ayurveda also offers time tested therapies for healthy ageing. With the vast information available in Ayurvedic literature on ageing and health care, one can explore the possibilities of developing new anti Ageing treatments with the natural ingredients for topical applications.

Discussion and Conclusion

Ageing is a natural phenomenon, but nobody wants to grow old - a dilemma that everyone faces. In *Ayurveda*, every condition (whether transient or persistent) that leads to a disturbance of homeostasis is termed as a disease. Thus, *Vriddhavastha* has also been considered as a disease: It is categorized under the head of natural diseases. These natural diseases are due to *Swabhava* (nature) and depend *on kala* (time). The examples of natural diseases are hunger, thirst, *Jaravastha* (old age), death, and the like. Although, nobody can escape these diseases, they can be modified. If a person can cross the limitations of time successfully with the practice of *yoga* and *samadhi*, he can escape ageing and death. However, such a person will need to have a very superior level of consciousness, which is quite impossible in this current era. Ayurveda is a medical science and we are talking about ordinary people. Thus, we have to consider only those measures that can be

followed by an average person and physician, and besides, they must be measures that are practicable also. With such measures it is possible to prevent premature ageing, to slow down the process of ageing, to manage this period by palliative treatment, and treatment of *Vriddhavastha* is also possible as per the classical methods from *Ayurvedic* texts. Thus, it is clear that a comprehensive description of ageing and its prevention and treatment have been given in the classical Ayurvedic texts. *Aptopadesha* (textual knowledge) is the first step to the path of acquisition of knowledge. Therefore, let us step forward in the light of *Aptopadesha* and offer our services to mankind.

Ageing is a natural process. The body is decaying continuously, as shown by its etymology, that is, *Shiryate Iti Shariram*. Untimely ageing is wholly preventable if the principles of Ayurveda are strictly followed. The pathophysiology of ageing is mostly dependent on diet, and therefore, this process of ageing can be slowed down by correct diet planning, temperature regulation and meditation. In our *Vedas* and *Puranas,* we find examples of Rishi-Munis living for over a hundred years through restricted calories and yogic practice. *Vriddhavastha* can be managed by palliative treatment. It is even possible to treat *Vriddhavastha* according to the principles of *Rasayana*, especially according to *Swabhavavyadhipratishedhiya* chapter of *Sushruta Chikitsasthan*. Though this is only a conceptual study, but the information provided can be utilized in various experimental and clinical studies combining Rasayana, Geriatric Panchakarma Therapy, Dietetics, Swastha Vritta, Sadavritta, Yoga and Spirituality, which will help to delay the ageing process.

Acknowledgement

The present author is greatly indebted to Prof. B .Jana, Professor, Institute of Post Graduate Ayurvedic Education and Research, Govt. of West Bengal, for his kind academic support and valuable suggestions, without whose help this effort would not have been possible.

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ROLE OF DANCE MOVEMENT THERAPY IN SOLVING OLD AGE PROBLEMS

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ABSTRACT

Old ages have several impacts on socio-cultural and psychological dimensions of social life. It can be managed by providing quality life to them. The aim of present study was to analyze the influence of dancing program on the physical and mental health of elderly individuals. Result showed a good deal of self-confidence, proper body control, body balance and help in management of body weight, hypertension and blood sugar level. The participants with mild asthma and arthritis showed very good response in movement therapy. Present study was an effort to solve the old-age problems in positive direction by dance movement therapy.

Key words: Body control, body weight, hypertension, asthma, arthritis.

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INTRODUCTION

In the last two decades life expectancy has increased consistently. During independence of India from British rule in 1947 the life expectancy was around 32 years. But now-a-days the Indian aged population is the second largest in the world. The absolute number of population living over the age 60 will increase 137 million by 2021 (Prakash, 1999). The elderly population (aged 60 years or above) account for 7.4% of total population in 2001. For males it was marginally lower at 7.1%, while for females it was 7.8%. The share and size of elderly population will increase from 5.6% in 1961 to 12.4% of population by the year 2026 (Anonymous, 2011). This segment of population faces multiple medical and psychological problems. In rural areas 55% of the aged with sickness and 77% of those without sickness felt that they were in a good or fair condition of health. In urban areas the respective proportions were 63% and 78% (Anonymous, 2011). Thus the phenomenon of population ageing is becoming a major concern for the policy makers in all over the world, for both developed and developing countries. For a developing country like India, this may pose mounting pressures on various socio economic fronts including health care expenditures.

The main focus of medical science is not to mend the health when it is broken but to initiate health condition much earlier so that diseases can be prevented and overall sense of well-being prevails. With advancing age, most people suffer from increasing social loss or social disengagement (Chen 1998). The basic intentions of gerontologist is to open the vistas of different dimensions of aged life with the intention of bringing out alterations in its several aspects, and also to make them more happy and adjusted in advanced years of life so that we also enjoy the presence of them in our life situations (Chatterjee, 2010). But the scenario is totally reverse with the increase of suicidal tendencies among the aged in India. A study revealed that the level of suicidal tendency is higher in aged persons who lived in urban area as compared to rural area, and the level is

also higher in female than male aged persons (Zalodiya, 2013). This may due to psychological pressure, neglect, depression, frustration or failure of having quality life.

Dance movement therapy is now-a-days used as a successful media to increase the health status of any age group by eliciting positive changes in certain aspects of physical fitness and healthy wellbeing (Chatterjee, 2013a). It has a great potential to improve antioxidant status and prevent free radical injury (Chatterjee, 2013b). Western ballroom dance forms had been used in gerontology research to enhance balance and functional autonomy (Borges *et al.*, 2012). Salsa dance had also been used to increase balance and strength among older adults (Granacher *et. al.*, 2012). But such attempts with Indian dance forms are in a very nascent stage. Though the Indian classical, folk and innovative dance forms has a great treasure in therapeutic aspects (Chatterjee 2013c), but the subject still necessitates in-depth practical application. Further the folk and tribal dance forms of West Bengal have a great influence on physical health, mental health and social health (Chatterjee 2013d).

OBJECTIVE

Considering all the positive effect of Indian dance on health, the aim of the present study was to analyze the influence of a dancing program on the physical as well as mental condition of elderly individuals.

METHODOLOGY

The study was carried out with the persons living in Dinantey, an old age home situated at Madhyamgram, West Bengal. For this investigation a total of 11 elderly persons (8 females and 3 males) were enrolled belonging to age group 62-71 years. Written informed consent was obtained from all. Before starting the therapeutic sessions the physical and mental health parameters

were judged with consultation with respective doctors and subject specialists. No additional medicines and drugs were given to them. Here dance is taken as an alternative therapy for the participants.

An eight-week progressive dance programme was conducted as therapeutic events. They were suggested to practice simple dance movements on regular basis for nearly one hour. As all the elderly persons were Bengali and love Rabindrik culture, the well-known basics of Rabindra nritya and traditional folk music were included in the therapeutic sessions. Besides simple dance movements with instrumental music and Rabindra Sangeet were practiced. The main objectives were to build self-confidence in them with the fulfillment of experience of quality life. The therapeutic session were also highlighted to have proper body balance and body control. Body weight management sessions were given to eight participants having special therapeutic movements. Beside the general therapeutic sessions special care was given to participants in solving case-sensitive issues regarding different diseases. The participants were grouped into five special units having the problem of hypertension (in 3 participants), mild asthma (in 2 participants), arthritis (in 2 participants) and diabetes (in 2 participants). Rhythmic movements of hand, neck, head, finger, wrist, eye, hip, leg, feat, heel, torso, shoulder, knee and waist were practiced. In the body control session static postural control was practiced during one-legged stance on a balance platform and dynamic postural control was obtained while walking on an instrumented walkway. The extension of leg was practiced with folk dance forms. The movements of wave, flying bird, sea weed, branches of tree were kept as natural movements and improvisation. Blood samples were collected from the participants having diabetes in a regular interval to estimate blood sugar. Feed-back from the participants was taken after every week and a final conclusive statement were taken after eight week.

RESULT AND DIACUSSION

There is an emerging need to pay greater attention to ageing-related issues and to promote holistic policies and programmes for dealing with the ageing society (Anonymous, 2011). The problem has its deep root in our society leading to many unwanted situations. It can only be managed by providing a quality life to the elderly peoples. The present study revealed that regular practice of particular dance form is significantly good for health in old ages. As dance has an aesthetic value, it is more beneficial in mental health and physical heath. The proper choice of music and dance form is important in this regard. The likings and disliking of the participants should be considered during the therapeutic session. Dance provides an active, non-competitive form of exercise that has potential positive effects for physical health as well as mental and emotional wellbeing. It has the potential to motivate and excite people and it can be a way of engaging people in physical activity (Chatterjee, 2013a). The willingness of the participants towards the therapeutic events leads the success.

In the present study the dance programme compliance was excellent with participants. A tendency towards an improvement in the selected measures was observed. Moreover it was a variation to them from their monotonous isolated life in old age home. The participants showed a good deal of self-confidence judged after the completion of the programme. Regular practice of dance gave them proper body control and body balance, and simultaneously it helped in their daily life. The body weight management sessions proved to be very effective in the eight participants (Fig. 1). The result proved the fact that as a physical activity and a creative art form, dance can make a significant contribution to the healthy-living agenda. Now-a-days in many hospitals and medical settings it has been used as a form of therapy not only for mental health, but also for physical health as well (Chatterjee, 2013d). Dance therapy as exercise is known to increase the neurotransmitters called endorphins which increase a state of well-being. Dance increases

total body movement, which helps improve circulatory, respiratory, skeletal and muscular systems (Quin *et al.*, 2007).

Participants had overall greater motivation and controlled blood sugar value within months of regular practice of dance. Monthly test of blood sugar level proved that due to physical activity in controlled manner among participants the problem of higher blood sugar level minimises among them. Thus dance movements helped in managing the problem in the specific cases having diabetes in present investigation. It can be explained by the relation among the diabetes with the free radical injury. Free radical in form of oxidative damage causes fatal diseases and oxyradical-induced cytotoxicity arises from both chronic and acute increases in reactive oxygen species (Keller and Mattson, 1998). Antioxidants act as free radical scavengers and hence prevent and repair damage done by the free radicals. Further the antioxidant factor plays a major role for the prevention of many diseases and also has an anti-ageing role. Oxidative stress injury is also very much related with muscular tenacity and ageing directly. Antioxidants significantly protect the DNA damage caused by reactive oxygen species, either by preventing the formation of them or by removing them before they can damage vital component of the cell. As dance movements have the potential to prevent this oxidative damage, it finally leads to controlled blood sugar level among dancers (Chatterjee, 2013).

The study also revealed that dance practice is also beneficial for the management of hypertension. The overall feel good experience make the participants more concentrated towards the therapeutic sessions, and thus help to reach the goal easily. Thus the present investigation suggests that dance is particularly beneficial for physical wellbeing (Chatterjee, 2013b). The participants with mild asthma and arthritis showed a very good response in movement therapy. But in these two cases prolonged practice of dance movements should be employed to have a definite result. The programme was ended with a new beginning into the heart of the participants for the future programme. Thus dance movements proved to be a safe and feasible exercise programme for older adults accompanied with a high adherence rate. Age-related deficits in measures of static and particularly dynamic postural control can be mitigated by rhythmic folk dance in older adults.

CONCLUSION

The demographic changes during last 50 years have led to the increased importance to the geriatric care all over the world. Demographic changes influence health, economic activity and social condition of people. The control of the infectious diseases because of discovery of newer antibiotics, the improved emergency care has led to the increased mean life span leading to the growth in the elderly population. Such a population is spreading its impact on several socio-cultural as well as psychological dimensions of our social life (Chatterjee, 2010). This problem can be solved by treating them in a right direction but not to treat them as burden of society. The life in old age home sometimes make them feel weed of society and it finally leads to many psychological and physical ill-ness. The present study was an effort to solve these old-age problems in a positive direction and make our seniors happy in life through the use of dance movement therapy. It has been proved to be an effective measure in controlling various diseases related to elderly peoples. This effort will be only successful if it is practiced in all corners in regular basis.

ACKNOWLEDGEMENT

The author is grateful to the administration of Dinantey for providing necessary permission to do the study. The author is thankful to Prof Amita Dutt, Dr. S. Thakur and Dr. G. Mukherjee for their kind advice during the study. The author is also thankful to the technicians of Department of Biochemistry, Barasat Cancer Research and Welfare Centre for their cordial help during blood sugar estimation.

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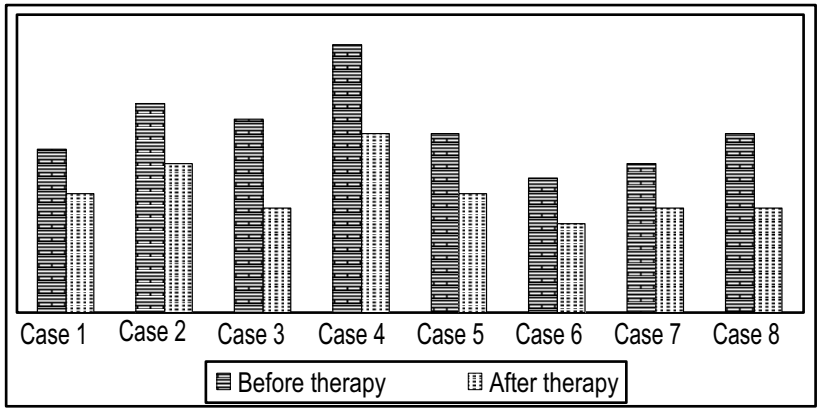

Figure 1: Comparison of body weights of eight participants before and after therapy.