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Status of living arrangements of elderly people in Eastern Uttar Pradesh

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Introduction: The increase in life expectancy over the years has resulted in an increase in the population of the elderly. While the overall population of India will grow by 40% between 2006 and 2050, the population of those aged 60 and above will increase by 270%. This situation could be attributed to a combination of factors, such as increase in age, longevity, and decreased death rates due to advancement in the field of medicine, improvement of life expectancy at birth, and enhancement in the average span of life. India ranks fourth in terms of the absolute size of elderly population. **Material and Methods:** The data were collected using a specially designed interview schedule technique through a house-to-house survey for those residing in the families. We find that the main factor that has contributed to the change in the living arrangements has been the increase in migration. **Results and Discussion:** Population aging is an unavoidable and irreversible change that comes through demographic transition in all societies. India is in the third stage of its demographic transition. The age structure of the country reveals that it has been aging rapidly.

KEY WORDS: Elderly, living arrangement, old-age support, social and economic status

INTRODUCTION

The United Nations defines a country as "Aging" where the proportion of people aged 60 years or overreaches 7% of the total population. By 2011, India exceeded that proportion (8.0%) and is expected to reach 12.6% in 2025. In India, as a result of the change in the age composition of the population over time, there has been a progressive increase in both the number and proportion of aged people. The Indian population increased from 361 million in 1951 to 1.027 billion in 2001 and further to 1.21 billion in 2011. Simultaneously, the number of older people has increased from 19 million (i.e., 4% of the total population) to 77 million and further to roughly 93 million (i.e., 7.5% of the total) during the same time span.[1]

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Living Arrangements in India

In India, elderly parents coresiding with their children can serve a dual purpose: Children can take care of their parents' health and daily needs, while parents can provide childcare for young grandchildren. These are nonfinancial aspects of coresidence that typify a joint living arrangement. Other benefits include those to elder health, particularly in terms of the relationship between coresidence and self-rated health and chronic and short-term morbidity.[2] In a move to alleviate the financial cost to coresidence, the Indian Government introduced the National Policy on Older Persons in 1999. This policy has provisions for tax relief or children who coreside with their parents, allowing rebates for medical expenses and giving preference in the allotment of houses.[3] This policy, however, is yet to be adopted and enforced by a majority of states, the locus of such policy execution in India.

Living Arrangements among the Elderly

The overall reduction in general and infant mortality rates and the steady increase in average age at death have resulted in the

growth of the elderly population around the world. According to the National Family Health Survey (NFHS)-2, 8% of the population reported that they were in the age group of 60 or above.[4] The conventional living patterns among the elderly have changed drastically following the reduction in fertility and the increase in life expectancy at older ages. In India, the traditional practice has been for people to live with children in old age; this is not necessarily with the intention of receiving support; and often the rest of the family also benefits from the arrangement. For example, when the younger women of the household go to work, the grandparents take care of their children. On the International Day for the older persons (2003), the United Nations (2003) addressed healthy older people as a resource for their families, societies, and the economy of their respective countries.

The term "living arrangement" is used to refer to one's household structure.[5] Rajan *et al.*[6] explain living arrangements in terms of the type of family in which the elderly live the headship they enjoy, the place they stay in and the people they stay with, the kind of relationship they maintain with their kith and kin, and the extent to which they adjust to the changing environment. While dealing with the welfare of any specific group, it is important to study their pattern of living arrangements. Here elderly, being less independent, need the care and support of others in several respects. Taking care of the elderly refers mainly to emotional support; on the contrary, support given to the elderly refers mainly to members or persons who are close to them, whereas the latter is supposed to be a joint effort of the immediate family and society.

There exist several living patterns for the elderly, such as living with the spouse, living with children, and living with others. Living alone or with the spouse is the most stable living arrangement for people who are not too old yet. Living alone or with the child or grandchild is the most stable arrangement.[7] Researchers have

Table 1: Distribution of the elderly based on room availability and its condition with different variables

Variables	Separate room and its condition for elderly				
	Availability	Chi-square	Comfortable	Chi-square	Total
Gender					
Male	126 (45.00)	5.9	212 (75.71)	9.63	280
Female	42 (32.31)	(0.015)	79 (60.77)	(0.002)	130
Age (years)					
60–69	111 (43.19)	1.48	180 (70.04)	0.298	257
70–79	44 (37.93)	(0.475)	84 (72.41)	(0.862)	116
80+	13 (35.14)		27 (72.97)		37
Marital status					
Married	101 (42.44)	5.01	168 (70.59)	1.86	238
Widow	33 (32.35)	(0.081)	69 (67.64)	(0.395)	102
Other (UM+WM)	34 (48.57)		54 (77.14)		70
Social status					
SC/ST	42 (41.58)	2.28	72 (70.59)	19.48	102
OBC	45 (35.71)	(0.321)	72 (57.14)	(0.000)	126
Other	81 (44.26)		147 (80.33)		183
Type of family					
Nuclear	63 (52.5)	9.32	81 (67.50)	0.995	120
Joint	105 (36.21)	(0.002)	210 (72.41)	(0.319)	290
Education					
Illiterate	78 (34.82)	7.73	136 (80.95)	15.43	168
Literate	90 (48.39)	(0.005)	155 (60.05)	(0.000)	242
Social status					
Extremely low	52 (35.86)		84 (57.93)	35.16	145
Low	46 (33.82)	19.92	92 (67.65)	(0.00)	136
Middle	51 (49.04)	0.000	90 (86.54)		104
High	19 (76.00)		25 (100.00)		25
Economic status					
Low	54 (39.71)	2.93	92 (67.65)	10.76	136
Middle	44 (36.07)	0.231	77 (63.11)	(0.005)	122
High	70 (46.05)		122 (80.26)		152

SC: Scheduled caste; ST: Scheduled tribe; OBC: Other backward caste; UN: Unmarried; WM: Widower

Table 2: Distribution opinion about living arrangement by the different background characteristics

Background characteristics	Alone	Spouse	Son	Others	Total	Chi-square value
Demographic						
Gender						
Male	23 (8.21)	42 (15.00)	139 (49.64)	76 (27.14)	280 (100.00)	24.92 (0.000)
Female	15 (11.54)	8 (6.15)	43 (33.08)	64 (49.23)	130 (100.00)	
Age (years)						
60–69	24 (9.34)	36 (14.01)	123 (47.86)	74 (28.79)	257 (100.00)	9.77 (0.139)
70–79	11 (9.48)	11 (9.48)	45 (38.79)	49 (42.24)	116 (100.00)	
80+	3 (8.11)	3 (8.11)	14 (37.84)	17 (45.95)	37 (100.00)	
Marital status						
Married	10 (4.20)	44 (18.49)	129 (54.20)	55 (23.11)	238 (100.00)	81.003 (0.000)
Widow	13 (12.75)	4 (3.92)	24 (23.53)	61 (59.80)	102 (100.00)	
Other	15 (21.43)	2 (2.86)	29 (41.43)	24 (34.29)	70 (100.00)	
Social caste						
SC/ST	10 (9.90)	9 (8.91)	44 (43.56)	38 (37.62)	101 (100.00)	7.54 (0.273)
OBC	17 (13.49)	16 (12.70)	57 (45.24)	36 (28.57)	126 (100.00)	
Other	11 (6.01)	25 (13.66)	81 (44.26)	66 (36.07)	183 (100.00)	
Socioeconomic						
Type of family						
Nuclear	21 (17.5)	22 (18.33)	33 (27.5)	44 (36.67)	120 (100.00)	28.86 (0.000)
Joint	17 (5.86)	28 (9.66)	149 (51.38)	96 (33.10)	290 (100.00)	
Education						
Illiterate	28 (12.5)	21 (9.38)	83 (37.05)	92 (41.07)	224 (100.00)	21.71 (0.000)
Literate	10 (5.38)	29 (15.59)	99 (53.23)	48 (25.81)	186 (100.00)	
Agriculture field (Bigha)						
Nil	14 (19.18)	13 (17.81)	24 (32.88)	22 (30.14)	73 (100.00)	23.71 (0.005)
0.01–2.00	20 (10.00)	24 (12.00)	94 (47.00)	62 (31.00)	200 (100.00)	
2.01–4.00	3 (4.48)	8 (11.94)	29 (43.28)	30 (44.78)	70 (100.00)	
4.00+	1 (1.49)	5 (7.46)	35 (52.24)	26 (38.81)	67 (100.00)	
Card holders						
BPL	15 (9.80)	18 (11.76)	68 (44.44)	52 (39.99)	153 (100.00)	
Others	23 (8.95)	32 (12.45)	114 (44.36)	88 (34.24)	257 (100.00)	

SC: Scheduled caste; ST: Scheduled tribe; OBC: Other backward caste; BPL: Below poverty line; Other: Daughter-in-law, grandson, daughter; All: Husband, wife, child, and grandchild.

put in a lot of effort to investigate the determinants leading to a specific living arrangement. Living arrangements are influenced by a variety of factors, including the number and availability of children and other relatives, kinship pattern of society, location of household, marital status, financial status, availability of services, and physical and mental well-being of the elderly.[8] Attitude toward and perception about the living places are another important components that decide where they should live.[9]

The effects of living arrangements on the physical and psychological well-being of the elderly have also been examined by researchers. According to them, changes in living arrangements, family structure, and mode of retirement affect the old adversely.[10] Leaving the parental home for education and employment results in elderly parents having to live alone at home until the children come back.[11] The overall well-being of the elderly consists of their physical, mental, and social well-being. It is widely known that the erosion of the traditional norm whereby the elderly generally live with children or relatives reduces the well-being of the older population.[5] However, it is not necessarily so is shown by the experience of industrialized nations where the government has fostered system to meet the economic and social needs of the elderly.

MATERIALS AND METHODS

Specific Objectives of the Study

- To study about the demographic variables of elderly people in study area and
- To study about the pattern of living arrangements of elderly in Eastern Uttar Pradesh and the differences in living arrangements according to important socioeconomic and demographic characteristics.

Operational Definitions

The following terms were used in the study as per the definitions are given:

Older person

One who has attained the age of 60 years or above at least 6 months before the date of the study.

Living arrangements

Living arrangement is the type of household/family setting in which the elderly live, the headship they enjoy, the place they stay in and the people they stay with, the kind of relationship they maintain with their kith and kin, and, on the whole, the extent to which they adjust to the changing environment.

- Coresidence with children: The household is comprised the elderly person or couple who are living along with son (s) or daughter (s) (married or unmarried) Living with spouse only: The household is comprised
- the elderly married couple. Living alone: The household is comprised the
- elderly person who is staying alone.
- Living with relatives: The household is comprised the elderly person living along with siblings/grandchild (ren) or other relatives of the family (paternal/maternal).

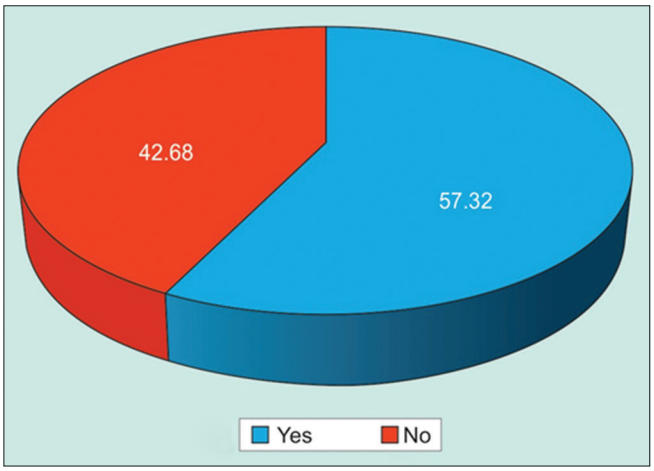
Sampling Procedure and Sample Size Formula

A multistage sampling method was used to select the sample for the study. A caveat needs to be mentioned here. Although care was taken to avoid investigator bias in selecting the sample for the study using a random sample, 60 years and above 60 years, each respondent on selected villages was approached during data collection. In this manner, a list with a total of 410 elderly was enumerated from all the four districts in Eastern Uttar Pradesh.

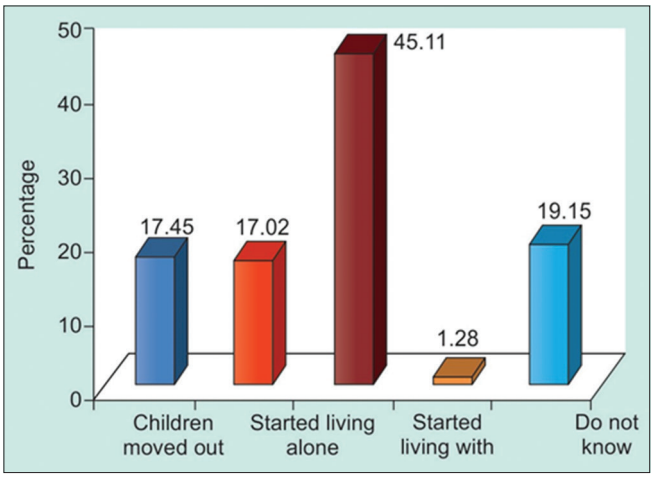
Table 3: Distribution of current living arrangement by different background characteristics

Background characteristics	Current living arrangement of elderly					
	Alone	Spouse	Son	Others	Total	Chi-square value
Demographic						
Gender						
Male	15 (5.36)	138 (49.29)	56 (20.00)	71 (25.36)	280 (100.00)	13.85 (0.003)
Female	6 (4.62)	47 (36.15)	48 (36.92)	29 (22.31)	130 (100.00)	
Age (years)						
60–69	10 (3.89)	126 (49.03)	67 (26.07)	54 (21.01)	257 (100.00)	13.60 (0.034)
70–79	10 (8.62)	49 (42.24)	25 (21.55)	32 (27.59)	116 (100.00)	
80+	01 (2.70)	10 (27.03)	12 (32.43)	14 (37.84)	37 (100.00)	
Marital status						
Married	8 (11.43)	20 (28.57)	20 (28.57)	22 (31.43)	70 (100.00)	41.58 (0.000)
Widow	7 (2.94)	132 (55.46)	41 (17.23)	58 (24.37)	238 (100.00)	
Other	6 (5.88)	33 (32.35)	43 (42.16)	20 (19.61)	102 (100.00)	
Social caste						
SC/ST	7 (6.93)	36 (35.64)	26 (25.74)	32 (31.68)	101 (100.00)	7.57 (0.272)
OBC	5 (3.97)	65 (51.59)	29 (23.02)	27 (21.43)	126 (100.00)	
Other	9 (4.92)	84 (45.90)	49 (26.78)	41 (22.40)	183 (100.00)	
Socioeconomic						
Type of family						
Nuclear	7 (5.83)	69 (57.50)	23 (19.17)	21 (17.50)	120 (100.00)	11.80 (0.008)
Joint	14 (4.83)	116 (40.00)	81 (27.93)	79 (27.24)	290 (100.00)	
Education						
Illiterate	12 (5.36)	90 (40.18)	64 (28.57)	58 (25.89)	224 (100.00)	5.19 (0.159)
Literate	9 (4.84)	95 (51.08)	40 (21.51)	42 (22.58)	186 (100.00)	
Land holding						
Nil	10 (13.70)	28 (38.36)	24 (32.88)	11 (15.07)	73 (100.00)	23.16 (0.006)
0.00–2.00	7 (3.70)	98 (49.00)	45 (22.50)	50 (25.00)	200 (100.00)	
2.01–4.00	1 (1.43)	28 (40.00)	22 (31.43)	19 (27.14)	70 (100.000)	
4.00+	3 (4.48)	31 (46.27)	13 (19.40)	20 (29.85)	67 (100.00)	
Card holders						
BPL	10 (6.54)	67 (43.79)	43 (28.10)	33 (21.57)	153 (100.00)	
Others	11 (4.28)	118 (45.91)	61 (23.74)	67 (26.07)	257 (100.00)	

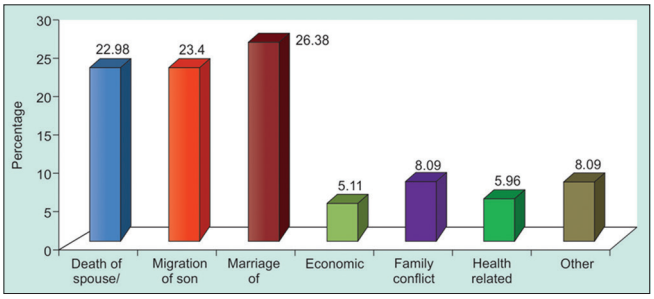
SC: Scheduled caste; ST: Scheduled tribe; OBC: Other backward caste; BPL: Below poverty line



Graph 1: Distribution of the elderly based on living arrangement after 60 years



Graph 2: Distribution of the elderly based on major change in life



Graph 3: Distribution of the elderly based on main reasons for change in living arrangement

The required number of sample households would be

$$nh = m \times n = m \times \{p\,(1-p)\,(z^2/e^2) \times f\}$$

Where n is the required sample size for elderly having solitary living; m is the required number of households to get at least one such elderly; p is the proportion of elderly living alone; z is 1.96 (z value at 5% level of significance); e is 0.05 (amount of admissible error); f is 1.5 (assumed design effect).

Thus, as an approximation, suppose that about 6% of the elderly live alone in rural areas (Central Region, NFHS-3), then

$$n = p\,(1-p)\,(z^2/e^2) \times f = 86.68 \times 1.5 = 130 \text{ (approx.)}$$

To ensure separate estimates based on location (districts with low, medium, and high composite index), at least three estimates will be needed.

Thus, the required minimum sample size will be $130 \times 3 = 390$.

The sample has to increase by 5% to account for contingencies, such as nonresponse or recording error.

$$n + 5\% = 390 \times 1.05 = 409.5 \sim 410$$

As per government reports (census, NFHS), from three households in a village of Eastern Uttar Pradesh, one can get at least one elderly person.

Thus,

$$nh = 410 \times 3 = 1230 \text{ households}$$

Therefore, 1230 households will be chosen from the rural areas to get the required number of elderly in the sample.

Data Collection

Data collection took approximately 4 months, i.e., from May 15, 2014, to September 20, 2014. On average, it took 1 h to 1½ h to administer the interview schedule (median: 1 h).

Ethical Considerations

The researcher carried a formal letter signed by the research guide and the head, Department of Community Medicine, stating that the researcher is pursuing the PhD degree at the Faculty of Medicine and that the findings of the study would be used for educational purposes only. The letter assured full confidentiality and that the researcher would make one visit to spend an hour for the interview. The respondents were informed that participation in the study was voluntary and that they could ask the researcher to stop the interview at any point in time and express their unwillingness to continue the interview without giving any explanation. This ensured that the elderly were informed of the purpose of the visit and their verbal consent was taken before proceeding to administer the interview schedule.

DATA PROCESSING AND STATISTICAL ANALYSIS

For the purpose of quantitative data analysis, first, a suitable data entry module in the coded form was created for its rapid computerization. An electronic structured datasheet in Cs-Pro-10 version considering suitable width for each field was made. The validity of the whole data was checked by running the validation program prepared by the investigator himself for this dataset as well as manual cross-checking as needed. The Cs-Pro-10 version datasheet was then exported to Statistical Package for the Social Sciences trial version 16.0, and the grouping of values was made into meaningful, dichotomous, nominal, or ordinal

categories following the scientific logic and accordingly these were numerically coded.

RESULTS AND DISCUSSION

It is assumed that deviation in the living arrangement of the elderly may vary with different characteristics. In the following analysis, gender, age, marital status, social status, economics status, types of family, and education are considered as effecting variables of living arrangement. Table 1 presents the distribution of variable and deviation in living arrangement conditions among the elderly in Eastern Uttar Pradesh. Coming to space they slept in during the night [Table 1], more than half of the elderly reported no separate room for sleeping. Here, difference between male and female, age group-wise, married, widow, widower, caste-based, nuclear and joint family, illiterate and literate, social status based, and economic status based could be seen.

Less than half of the elderly reported that they have separate rooms for sleeping; more than half of the elderly reported that sleeping place is comfortable. Table 1 shows 29.23% of females compared with 24.29% males reported their living arrangement as uncomfortable. Age factor and marital status do not affect the living arrangement condition. The table indicates that social and economic status and educational status of elderly affected the living arrangement condition. The Chi-square test statistics also satisfied the association of variables (gender, social and economic status, education, and caste) with living arrangement conditions.

The traditional coresidential family living arrangement is the most common practice across the survey. Table 2 shows the distribution of different variables with an opinion about living arrangement of elderly. Opinion about living arrangement of elderly people was affected by the different variables (gender, marital status, types of family, education, and landholding). The Chi-square test statistics also satisfy significant association with the different variables and opinions about living arrangement of elderly.

As shown in Table 2, the predominantly preferred living arrangement across all the elderly is living with sons, higher percentage of elderly men (49.30%) compared with women (33.08%) living with others comes next across all respondents. The preference of living with spouse is in the third position [Table 2]. Predominantly preferred living arrangement across all the elderly is living with son, higher percent were married (54.20%) compared with widow 23.53% and widower 41.43%, respectively. Maximum widows preferred to living with others than son and spouse. The preference of living is not affected by caste. All categories of caste show a similar pattern of living arrangement.

When the present living arrangement is compared with the preferred living arrangements, it can be seen that overall most elderly are already in their preferred living arrangement.

The majority of the elderly are coresiding, but a fifth of all elderly are living alone. A higher proportion of elderly women (5.36) than elderly men (4.62) live alone. The elderly who coreside with their child were asked whether they always stay with the child they were living with at the time of interview.

When living arrangements of the elderly are further disaggregated by their background characteristics [Table 3], the dominant type of living arrangement across all categories remains living with one's spouse, children, and grandchildren. It is seen that elderly widows who have no education and have never worked live mostly with all the members (son, daughter-in-law, and grandson) presumably due to helplessness and less of a choice of a living arrangement that is associated with increased vulnerability of such elderly. Elderly living alone [Table 3] shows that fewer oldest old (aged 80 and above) live alone. Consistent with the above finding, 3.84% of widowed elderly live alone while 9.90 in scheduled caste/scheduled tribe category, 13.49 in other backward caste category, and 6.01% in other categories also live alone.

About 5.36% elderly with no education live alone compared with 4.84% of educated elderly (literate). A similar gradient exists with the agriculture field; more landless percent of elderly live alone; 6.82% elderly with below poverty line card holders live alone compared with 4.66% elderly with other card holders.

Graph 1 shows that of the entire elderly sample, 57.32% reported changing their living arrangements after the age of 60 years. The preponderance of rural, poor widowed elderly women once again highlights the vulnerability of women as reflected in living arrangements. The biggest reason for change among both men and women was that about half of the total population started to live with their children (45%).

Graph 2 shows that the biggest reason for change was that they started to live with their children (45.11%), 17.45% reported that their children migrated to other cities, and 17.02% reported that they started living alone and only 1.28% elderly were living with other relatives. Notably, about 20% elderly in rural areas represented that they did not know what changed their life, but they only told that there was a change in the living arrangement. Graph 3 shows that the main reason for change in the living arrangements is death of spouse/children, migration of son/daughter, marriage of children, economic dependency, family conflict, and health-related issues. The graph shows that 23% of elderly reported that the change in the living arrangement was due to death of spouse/children, 23% migration of son/daughter, 26% marriage of children, and remaining 27% reported that many reasons change the living arrangement (economic dependency, family conflict, health-related, and others).

SUMMARY

Living arrangement of the elderly is an important part of quality living. The traditional coresidential family living arrangement is the most common practice across all research areas. The majority of elderly in the selected area have no separate room available for sleeping. The availability of separate rooms underlies

different factors such as gender, age, marital status, social status, economic status, caste, education, and type of family. Living arrangements of the elderly are further disaggregated by their background characteristics; the dominant type of living arrangement across all categories remains living with spouse, children, and grandchildren. Fewer oldest old (aged 80 and above) live alone. About 12.50% illiterate elderly live alone, compared with 5.38% literate elderly. Maximum 19.18% elderly with no land live alone compared with 16.15% of the elderly having agriculture land. About 57.32% elderly reported change in the living arrangement after old age (60 years and more). Major reasons for change in living arrangement of elderly were death of spouse/child, migration of son, etc.

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