Changing living arrangements among elderly in India and it socioeconomic correlates: A temporal analysis

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ABSTRACT

Elderly people in India constitute a sizeable proportion and it is consistently rising. Percentage of elderly is likely to increase about twenty percent of the total population by the year 2050. The living arrangements i.e. constitution of the household structure or/else the place of living of the elderly in India and elsewhere are changing. Societies are in a phase of transformation, and temporal changes in living arrangements and their correlates will provide insight into the directions and magnitude of problems related to population aging India. This article delineates the changes in living arrangements of the elderly population of India and its determinants during decades after economic liberalization and globalization.

The study is carried out using data from National Sample Surveys (NSS) and a microstudy carried on elderly of Prayagraj using regression analysis and the difference in distribution of the living arrangements is tested using minimum deviation information statistics (MDIS). A content analysis has also been carried for primary data collected from field. Based on present social arrangements, six living arrangements and four broad groups were identified which are feasible of the elderly in India. Analysis of data and interpretation of findings are carried out under this framework.

Factors such as marital status, place of living, perceived health status, having son and other family members influence the elderly in deciding their living arrangements. It is well reflected in our findings that living arrangements of elderly are changing fast owing to migration, economic liberalization and changed occupational and living structures. Old age homes and living only with spouse is increasing day by day in a social environment where social security schemes are virtually non-existent.

The impacts of changed social structure, livelihood patterns and modern value systems are more realized in the traditional societies as compared to the western world.

Key words: Elderly population; living arrangements; socioeconomic factors; India

INTRODUCTION

Filial obligations along with prevailing cultural norms primarily determines the living arrangements of older adults in traditional societies such as several Asian countries (Rajan and Kumar, 2003; Paul and Verma, 2016; Dhiman et al., 2018). Living arrangement can be defined as type of dwelling or living setup of an individual such as family, household, living alone or in old age home (Agrawal, 2012). The people aged sixty years and above are broadly categorized as the elderly (United Nations, 2002). Intergenerational co-residence is widely regarded as a cradle of the support system for the elderly (Bongaarts and Zimmer, 2002; Bainame, 2014). Unlike developed countries, social safety nets, including pension schemes, food security and universal health coverage, are poorly designed or virtually non-existent in the middle- and low-income countries (Wise, 2012; Bolina et al., 2021). The proportion of the elderly in the total population is increasing with time. Declining fertility and rising life expectancy will further increase the problem of ageing in India, and the fruits of the demographic dividend will be limited (Rajan and Kumar, 2003; Arokiasamy et al., 2012). The proportion of the elderly is projected to increase by about 20% of the total population by the year 2050 (Agrawal, 2012; Siriwardhana, 2018). It raises critical questions about evolving an effective caregiving system for the elderly and its mechanism in the near future.

India is undergoing rapid economic development, and the forces of globalization are operating fast to change the livelihood pattern (Samanta et al., 2015). Agriculture is being replaced by industry as a primary mode of livelihood. In response, the social structure is also changing fast, and the nuclear family setting is now dominating the traditional joint family system (Mishra, 2022). Agriculture as a livelihood demanded organized, gendered and coordinated labour where a joint family system was effective and successful (Mishra, 2022). Industrial development is largely responsible for urban as well as interstate migration, the predomination of nuclear families, and the spread of Western culture and individualism that has deeply impacted the traditional family structure during the last few decades. Consequently, the elderly have become a liability rather than a responsibility for earning members in the urban social life (Yamada et al., 2015; Schatz et al., 2018; Pei et al., 2022).

Two contrary views prevail behind the evolution, existence and continuity of traditional living arrangements in developing countries. Several scholars, particularly from the Western world, believe that older adults co-reside with their joint or extended families to minimize the expenses of caregiving facilities by the government in countries that have poor social safety nets for them (Lau and Kirby, 2009; Meng et al., 2017). Establishments in such countries have never acknowledged them as a section of the population with special needs and care. Therefore, government policies and programs have customarily abstained to address their needs, considering it as an unproductive use of resources. On the other hand, the findings of numerous studies support the view that taking care of older adults has remained an obligatory duty of their children and family members in Asian societies (Yu et al., 2016; Ladusingh and Ngangbam, 2016). Besides financial and physical support, the family provides them with much-needed emotional and psychological support during this vulnerable period of life. Consequently, older adults co-residing with their families tend to have better mental health compared to those living alone (Bolina et al., 2021).

Like other developing countries, the living arrangement of the elderly in India is changing with time and about 20% are found to live alone or only with their spouse (Bihari and Kumar, 2018). In certain areas, the proportion of such arrangements is as high as 45%. Several socio-demographic factors are responsible for this change during the last few decades. A study among the elderly in India reports that living arrangements are influenced by gender, age, marital status, social status (caste), education, and family type. The functional capacity and number of morbidities among them are not associated with living arrangements (Bihari and Kumar, 2018; Dhiman et al., 2018). Preference for a living arrangement for the elderly primarily depends on socio-cultural environment and family structure, which is well reflected in the findings of studies from both the developed and developing world (Kooshiar et al., 2012; Biritwum et al., 2013; Wang et al., 2013; Meng, 2017).

Existing literature indicates that the health and wellness of the elderly across the globe are determined by their living arrangements (Llorens-Ortega et al., 2024). Findings of the studies from the global south deepen the belief that the mental health and psychological well-being of elderly people have a positive association with co-residential living, even after controlling for the socio-demographic factors (Yamada and Teerawichitchainan, 2015). Migration of children owing to economic development is correlated with the physical and mental well-being of the elderly (Samanta et al., 2015; Bailey et al., 2018). A study based on the elderly of peninsular Malaysia finds that life satisfaction is directly and indirectly related to living arrangements

through social support function (Kooshiar et al., 2012). Agrawal (2012) reported that the living arrangements of the elderly in India are associated with the prevalence of chronic and acute illnesses among them. On the contrary, Giridhar et al. (2014) emphasize that the myth of the traditional familial support mechanisms supporting the elderly population is not only breaking down, but they would be insufficient for providing adequate support to an increasingly physically and mentally frail segment of the elderly people.

Studies on the living arrangements of the elderly in India and elsewhere have focused on evaluating the role of socioeconomic correlates and their morbidity profile that affect their lives. The proportion of the elderly is increasing over time, while joint family living among the elderly is consistently decreasing, and many of them are destined to live alone or in old age homes. However, societies are in a continuous state of transition and temporal changes in living arrangements *i.e.* from joint living to living alone, and their socioeconomic and demographic correlates will provide insight into the directions and magnitude of problems related to ageing and its concomitants. Based on the availability of countywide data of three rounds of the National Sample Surveys, we have analyzed the changes in living arrangements of the elderly population of India and its socioeconomic and demographic determinants during two decades *i.e*. from 1995 to 2014.

MATERIALS & METHODS

Data on living arrangements

The living arrangements of the elderly are broadly classified into the alone and the co-residence. The living arrangement (LA) of an elderly person living alone with his spouse or living as an inmate of an Old Age Home is classified as alone. A living arrangement is classified as co-residence if an elderly is residing with his nuclear family or extended family or with others. The present study is based on data collected during three rounds of the National Sample Surveys conducted by the National Sample Survey Organization (NSSO) of India. These rounds were conducted during 1995-96, 2004 and 2014, to record information on six different types of LAs of elderly in India. These are Living Alone: as an inmate of an old age home (LA_1), Living alone: not as an inmate of an old age home (LA_2), Living with a spouse and other members (LA_3), Living with a spouse only (LA_4), Living without a spouse but with children (LA_5) and Living with other relations /non-relations (LA_6). LA_1, LA_2 and LA_4 fall into the category name alone and the rest into co-residence (Table 1).

Table 1: List of living arrangements of elderly and their broad categorization

Sl. no.	Living arrangements of older adults in India	Abbreviation	Broad categorization
1	Living Alone: as an inmate of old age home	LA_1	Alone
2	Living Alone: not as an inmate of old age home	LA_2	Alone
3	Living with spouse and other members	LA_3	Co-residence
4	Living with spouse only	LA_4	Alone
5	Living without spouse but with children	LA_5	Co-residence
6	Living with other relations / non-relations	LA_6	Co-residence

The homogenous groups

An elderly may fall into any one of these living arrangements based on his/her marital status and the number of children. For instance, living with a spouse is not feasible for elderly widows. Similarly, living with children is not feasible for older couples without children. Taking the aspect of feasibility into account, the present study defines eight homogenous groups of elderly based on their marital status (married/widowed/unmarried/divorced or separated) and availability of children (having / not having) (Table 2). These homogenous groups include - having children and married (HG_1), having children and widowed (HG_2), having children and unmarried (HG_3), having children and divorced/separated (HG_4), not having children and married (HG_5), not having children and widowed (HG_6), not having children and unmarried (HG_7) and not having children and divorced/separated (HG_8).

Table 2: Homogenous groups of the elderly based on marital status and availability of children

Sl. no.	Homogenous group	Abbreviation
1	Having children and married	HG_1
2	Having children and widowed	HG_2
3	Having children and unmarried	HG_3
4	Having children and divorced / separated	HG_4
5	Not having children and married	HG_5
6	Not having children and widowed	HG_6
7	Not having children and unmarried	HG_7
8	Not having children and divorced / separated	HG_8

The broad groups and feasible living arrangements

The homogenous groups having a common set of feasible LAs are clubbed into a broad group (Table 3). There are four broad groups, namely, U_1, U_2, U_3 and U_4. The broad group U_1 consists of the elderly belonging to HG_1 and this group has all of the LAs feasible. The broad group U_2 consists of the elderly associated with HG_2, HG_3 or HG_4. It has LA_1, LA_2, LA_5 and LA_6 as feasible LAs. The broad group U_3, consisting of the elderly belonging to HG_5, has all the LAs

feasible except LA_5. The homogenous group U_4 consists of elderly associated with HG_6, HG_7 or HG_8. The feasible LAs for U_4 are LA_1, LA_2 and LA_6.

Table 3: Feasible living arrangements for different homogenous groups

Homogenous groups	Feasible living arrangements						Broad group
HG_1	LA_1	LA_2	LA_3	LA_4	LA_5	LA_6	U_1
HG_2	LA_1	LA_2	-	-	LA_5	LA_6	U_2
HG_3	LA_1	LA_2	-	-	LA_5	LA_6	U_2
HG_4	LA_1	LA_2	-	-	LA_5	LA_6	U_2
HG_5	LA_1	LA_2	LA_3	LA_4	-	LA_6	U_3
HG_6	LA_1	LA_2	-	-	-	LA_6	U_4
HG_7	LA_1	LA_2	-	-	-	LA_6	U_4
HG_8	LA_1	LA_2	-	-	-	LA_6	U_4

The gender differences while opting among feasible living arrangements

A common set of feasible LAs is the distinguishing factor among the broad groups. Hence, each of the broad groups needs a separate analysis. The data on LAs for each of these subgroups is available for three rounds of the National Sample Surveys conducted during 1995-96, 2004 and 2014. For a given broad group and for a given reference period the elderly population is distributed over the feasible set of LAs. The elderly males and females may differently opt for the feasible LAs available to them *i.e.* there may be a gender perspective in choosing the LAs. It is, therefore, imperative that elderly males and females should be separately analyzed. The present study compares the differences in the LAs of elderly males and females in a broad group for each of the reference periods. The significance of the difference in the distribution of the LAs is tested using minimum deviation information statistic (MDIS) (Kullback, 1959).

Changes in the distribution of living arrangements over time

As mentioned earlier the elderly population is distributed over LAs at a given time. This distribution may change with time. The present study utilizes the information available for the three reference periods to investigate the change between two pairs of consecutive periods. The first pair of consecutive periods is 1995-96 and 2004 while the second pair of consecutive periods is 2004 and 2014. These analyses are performed utilizing the MDIS for older males and older females in each of the broad groups. The differences, if found significant, are explained in terms of shifts in proportions over time among the feasible set of LAs within a broad group. Each of the feasible LAs was then compared by testing the significance of the difference in their respective proportions.

Modelling the association of living arrangements with selected socioeconomic variables

The choices of LA as exercised by the elderly generally depend on various socioeconomic factors that affect their lives. The associations of these factors with the choices of LAs exercised by the elderly are modeled utilizing the multinomial logistic regression models. The present study assumes that these factors have remained effective and relevant over the period under consideration. Pooled data from the three reference periods has been utilized to estimate the effects in these regression models. The selected independent variables *i.e.* socioeconomic factors include age of the elderly, rural/urban place of residence, financial dependence and availability of son (relevant in case of U_1 and U_2 only). The reference periods have also been incorporated as one of the factors. This is done to assess the effect of time that other factors may miss to address. The effect of time, if found significant, may be indicative of certain factors that have become relevant over time and are not included in the set of independent variables. Separate models are analyzed for elderly males and females for each of the broad groups U_1 and U_3 as these are groups of married elderly. Separate analysis ensures the independence of observations. The analyses for U_2 and U_4 incorporate gender among the independent variables as these are groups of unmarried / widow / divorced/separated elderly population.

The independent variable in the model discussed above is the living arrangements (LAs). In the case of U_1 this is a categorical variable with three categories LA_3, LA_4 and LA_5 as almost all the frequencies are spread over into these three categories only. For similar reasons, the categories of LAs in the case of U_2 include LA_2, LA_5 and LA_6. The categories of LAs in the case of U_3 are LA_3 and LA_4 and in the case of U_4 are LA_2 and LA_6. The findings are interpreted in terms of co-residence *vs.* alone. For U_1 it is LA_5 *vs.* LA_4 and LA_3 *vs.* LA_4. Similarly, for U_2 it is LA_5 *vs.* LA_2 and LA_6 *vs.* LA_2. For U_3 it is LA_3 *vs.* LA_4 and for U_4 it is LA_6 *vs.* LA_2.

FINDINGS & DISCUSSION

The findings of our study underscore that the decision about the living arrangements among the elderly is related to several factors, such as marital status, health status, having a son, and other relatives. The possibility to realize familial obligations for the elderly is limited owing to the prevailing demographic changes in India, which include declining fertility, increasing dependency and migrations of various types (Joshi, 2011; Bakshi and Pathak, 2016). Nevertheless, co-residence indicates a direct exchange between the elderly and the younger

ones. If these exchanges are positive, they may result in smooth and quality aging of the elderly (Bakshi and Pathak, 2016).

In a traditional social setup, the married elderly having children are believed to live in a family with their spouse and children (U_1 broad group). Though, such a living arrangement is feasible only when the elderly are in wedlock and have children. Most of the elderly in wedlock are found to do so. However, a small fraction among both the genders is found staying with children but without a spouse. The trends indicate that the reasons for the separation of older couples are unknown and need further investigation. MDIS statistics confirm a significant temporal change in the living arrangements of both genders from 1996 to 2014. Advancing age does not favour co-residence, but financial dependence is positively associated with co-residence among the elderly. Despite claiming for a trend, we can safely argue that co-residence is progressively decreasing with time, indicating an underlying process of change mostly associated with the changing social milieu under the influence of globalization and economic liberalization (Bongaarts and Zimmer, 2022; Bakshi and Mishra, 2023). Further, research is needed to ascertain whether co-residence is willfully chosen by the elderly or they have opted for it due to compulsions.

Table 3: Distribution of the elderly for the socio-demographic characteristics selected as independent variables and living arrangements included in the multinomial logistic regression models

Characteristics	U_1 Male	U_1 Female	U_2 Male	U_2 Female	U_3 Male	U_3 Female	U_4 Male	U_4 Female
Median age	65	65	70	68	65	63	67	68
Place of residence								
Urban	39.26	38.95	66.23	41.46	43.16	40.23	38.63	46.90
Rural	60.74	61.05	33.77	58.54	56.84	59.77	61.37	53.10
Dependence								
Not dependent	51.83	11.50	30.14	10.22	78.25	32.76	38.63	32.08
On children	41.87	51.90	62.08	80.99	0.00	0.00	0.00	0.00
Others	3.07	5.04	5.84	6.53	14.39	22.41	61.37	67.92
On spouse	3.22	31.56	1.94	2.26	7.37	44.83	0.00	0.00
Having son								
Yes	96.84	97.11	96.72	95.41	*	*	*	*
No	3.16	2.89	3.28	4.40	*	*	*	*
Living arrangements								
LA_2-Living Alone: not as an inmate of old age home	-	-	5.36	6.20	-	-	27.04	36.50
LA_3-Living with spouse and other members	83.73	80.12	*	*	21.40	27.59	*	*
LA_4-Living with spouse only	13.42	15.34	*	*	78.60	72.41	*	*
LA_5-Living without spouse but with children	2.85	4.54	91.27	90.58	*	*	*	*
LA_6 & LA_7-Living without spouse but with children /	-	-	3.37	3.22	-	-	72.96	63.50

with other relations / non-relations								
Sample size	33180	16889	6795	21315	285	174	233	452

- Not included for inferential statistics
* Non feasible states of the variable

Findings of our study indicate that living only with spouse has become more frequent than living with spouse and other family members, particularly during 1995 to 2004. This trend might reflect the changes in society during the last few decades, such as increased national/ international migration (Bailey, 2018). Further, aged parents seem to reside alone to avoid family disputes, tensions, physical abuses and violence against them (Abud et al., 2022; Bakshi and Mishra, 2023), and to cherish social capital that they had gained during the active period of their life (Samanta et al., 2015). Interestingly, financial dependence does not favour co-residence in this section of the elderly however usually the extended families appear to take care of the elderly. A higher number of older males opt for co-residence compared to their female counterparts, though the childless elderly couples are more likely to live alone.

After globalization and economic liberalization the proportion of elderly females living alone has increased (Joshi, 2011). Similar demographic trends are noticed for certain living arrangements, which have direct policy implications for the aged population in India, particularly in the changing socioeconomic milieu of Indian society in which elderly parents are living alone, social security schemes such as pension, health covers are being discontinued, and erosion of family bonding is conspicuous (Sudha et al., 2006). An evident transformation from welfare to a capitalist state is noticed in government policies in India. Its social manifestation is quite glaring in the living conditions of the elderly (Joshi, 2011).

A case of old age homes in Prayagraj:

Inmates of old age homes expressed a mixed experience about their living arrangement. They were filled with the sense of broken family, a strange sense of insecurity, mental turmoil, unending loneliness and a persistent threat of cultural erosion. However, many of them felt satisfied with services being provided at old age homes and also, they feel that could minimize their family conflicts and social intricacies by opting this stay away from their family and relatives. These feelings are well reflected in following excerpts:

A retired female teacher (75 years old) who has no child, expressed her view:

'*Ye hamari khoob sewa karte han; poori jatan karte hain ki hame koi takleef na ho. Yahi ab hamara sanyukt pariwar hai par ghar to ghar hi hota hai. Yad to aayegi hi*'

A female (80 years old, mother of three children) from a very traditional family says that:

'*Hamne swapn men bhi nahi socha tha ki hame apne bachchon se door is tarah rahna padega. Hamne na apni ankho se kabhi dekha tha aur na hi socha tha ki hamare samay men vridhasram banege, aur hame usme rahna hoga*'

Another view of a male inmate of 78 years:

'*Hamare yaha vaanprasth ki vyawastha thi- pati patni bachchon aur pariwar ko chhod kar van ki or gaman karte the, aur unka antim samay wahi beetata tha. Hamare liye yahi hamara vanwas hai. Ab to bas shamsan kee yatra ka intejaar hai*'

Old age homes are typically designed for 10 to 50 residents with single and double occupancies along with dormitory style rooms. Some of them accept elderly who are physically able to perform their basic daily activities whereas a few accept those who need assistance even for their daily routine. For that, they charge for personal nurse and medical care. Inmates come from different background including those who are childless, those having only daughters, and/or those whose children are settled in abroad. Some of them told their son and daughter-in law are staying in nearby areas.

Strength and limitations:

The societies are always in a dynamic state therefore temporal changes are inevitable. The issues addressed and trends evaluated in the present study thus deserve merit in portraying changes in living arrangements of the elderly overtime. Investigating the role of socioeconomic concomitants having a direct relationship with the choice of opting a living arrangement among the elderly is imperative and have direct policy implications. Use of cross-sectional data though limits us to inferring individual-level transition over time. Apart from quantification and estimation, an investigation into the causes of such trends is needed for the elderly in India. It requires a comprehensive countrywide qualitative data.

Conclusion:

Living arrangements of the elderly is a cardinal issue of the looming crisis of aging in developing countries like India. The impacts of changed social structure, livelihood patterns and modern value systems are more realized in the low- and middle-income societies as compared to the high-income societies of the world (Giridhar et al., 2014). It is well reflected in our findings where living arrangements of the elderly are changing fast owing to migration, economic liberalization and changed occupational and living structures. Apart from strong cultural compulsion, we have several legal provisions for the elderly such as Article 21 of the Constitution of India, provisioning assistance to elderly by the states, and section 20(3) of the Hindu Adoption and Maintenance Act 1956, Maintenance and Welfare of Parents and Senior Citizen Act 2007, aiming to ensure care and maintenance for the elderly parents by their young

children, National Policy for Senior Citizens, 2011 which envisages to encourage intergenerational integration (Bakshi and Mishra, 2023). Despite legal and policy provisions, we find that elderly people prefer to live with their spouse rather than co-residing with children and other family members.

Our results emphasize that familial support or filial obligation alone is not enough to support the burgeoning demographic pressure posed by the increased dependency ratio. Alternative and innovative arrangements with greater involvement of the state are warranted to ensure productive and healthy aging. Old age home which has been a stigmatic alternative for living arrangements of the elderly are now becoming a new normal. The elderly with improved and intense health care facilities can remain active and financially productive even after retirement. They should realize that old age is not a phase of disempowerment and they have the rights to lead a dignified life and to decide about the appropriate living arrangement of their own choice. A countrywide qualitative data, along with regular surveys can provide more comprehensive and holistic insight into the problem of aging in India.

REFERENCES:

1. Rajan SI, Kumar S. 2003. Living arrangements among Indian elderly: New evidence from National Family Health Survey. Economic & Political Weekly. 38 (1): 75-80.
2. Dhiman A, Goel NK, Singh N, Kaur AP. 2018. Living arrangement pattern of elderly in Chandigarh tricity, India: A glimpse through geriatric clinic at tertiary hospital. International Journal of Medical Science and Public Health. 7 (11): 889-894.
3. Bolina AF, Tavares DMDS. 2016. Living arrangements of the elderly and the socio-demographic and health determinants: a longitudinal study. 24:e2737. Doi:10.1590/1518-8345.0668.2737.
4. Paul A, Verma RK. 2016. Does living arrangement affect work status, morbidity, and treatment seeking of the elderly population? A study of south Indian states. Sage Open. 1-12. DOI:10.1177/215824401665928.
5. Bainame K, Burnette D, Shaibu S. 2014. Socio-demographic correlates of older adult's living arrangements in Botswana. 46: 166-120.
6. Siriwardhana DD, Hardoon S, Rait G, Weerasinghe MC, Walter KR. 2018. Prevalence of frailty and prefrality among community-dwelling older adults in low-income and middle-income countries: a systematic review and meta-analysis. BMJ Open. 8:e018195. DIO: 10.1136/bgjopen-2017-018195.

7. Agrawal S. 2012. Effect of living arrangement on the health status of elderly in India. Asian Population Studies. 8 (1): 87-101.
8. Pei Z, Hu F, Qin W, Zhao Y, Zhang X, Cong X, Liu C, Xu L. 2022. The relationship between living arrangements and depression among older adults in Shandong, China: The mediating role of social support. Frontiers in Psychiatry. 13:896938. DIO: 10.3389/fpsyt.20228969938.
9. Samanta T, Chen F, Vannemau R. 2015. Living arrangements and health of older adults in India. Journal of Gerontology: Social Sciences. 70(6): 937-947.
10. Yamada K, Teerawichitchainan B. 2015. Living arragemtns and psychological well-being of the olders after the economic transition in Vietnam. Journal of Gerontology: Social Sciences. 70 (6): 957-968.
11. Schatz E, Ralston M, Madhavan S, Collinson MA, Gomez-Olive FX. 2018. Living arrangements, disability and gender of older adults among rural South Africa. Journal of Gerontology: Social Sciences. 73 (6): 1112-1122.
12. Paul A, Verma Rk. 2016. Does living arrangement affect work status, morbidity, and treatment seeking of the elderly population? A study of south Indian states. Sage Open. 1-12. DOI: 10.1177/21582441016659528.
13. Abud T, Kounidas G, Martin KR, Werth M, Cooper K, Myint PK. 2022. Determinants of healthy ageing: a systematic review of contemporary literature. Aging Clinical and Experimental Research. 34:1215-1223. https://doi.rog/10.1007/s40520.021.02049.w.
14. Bongaarts J, Zimmer Z. 2002. Living arrangements of older adults in developing world: an analysis of Demographic and Health Survey & Household Surveys. Journal of Gerontology: Social Sciences. 57B (3): S145-S157.
15. Biritwum RB, Mensah G, Minicuci N, Yawson AE, Naidoo N, Chatterji S, Kowal P. 2013. Household characteristics for older adults and study background from SAGE Ghana Wave1. Global Health Action. 6:1.20096. DOI: 10.3402/hga.v6io.20096.
16. Kooshiar H, Yahaya N, Hamid TA, Samah AA, Jou VS. 2012. Living arrangement and life satisfaction in older Malaysians: The mediating role of social support function. PLoS ONE. 7(8): e43125.doi:10.1371/journal.pone.0043125.
17. Wang H, Chen K, Pan Y, Jing F, Liu H. 2013. Associations and impact factors between living arrangements and functional disability among older Chinese adults. PLoS ONE. 8(1): e53879.doi.10.137/journal.pone.0053879.

18. Meng D, Xu G, He L, Zhang M, Lin D. 2017. What determines the preference for future living arrangements of middle-aged and older people in urban China? PLoS ONE 12 (7): e0180764. https://doi.org/10.1371/journal.pone.0180764.
19. Ladusingh L, Ngangbam S. 2016. Domains and determinants of well-being of older adults in India. Journal of Cross Cultural Gerontology. 31:89-111.
20. Lau DT, Kirby JB. 2009. The relationship between living arrangement and preventive cae use aming community- dwelling elderly persons. American Journal of Public Health. 99 (7): 1315-1321. DOI: 10.2105/AJPH.2008.151142.
21. Yu J, Yan Z, Li J. 2016. Living arrangement and its association with residential needs of community-dwelling older adults in China. Journal of Psychology & Psychotherapy. 6:1. DOI: 10.4172/2161/2161-0487.10000235.
22. Hu Y, Leinonen T, Hedel KV, Myrskyla M, Martikainen P. 2019. The relationship between living arrangements and higher use of hospital care at middle and older ages: to what extent to observed and unobserved individual characteristics explain this association? BMC Public Health. 19:1011. https://doi.org/10.1186/s12889-019-7296-x.
23. Bailey A, Hallad J, James KS. 2018. 'They had to go': Indian older adult's experience of rationalizing and compensating the absence of migrant children. Sustainability. 10, 1946. DOI:10.3390/su10061946.
24. Sudha S, Suchindran C, Mutran EJ, Rajan SI, Sarma PS. 2006. Marital status, family ties, and self-rated health among elders in South India. Journal of Cross Cultural Gerontology. 21: 103-120. DOI.101007/s10823-006-9027-x.
25. Bakshi S, Mishra SK. 2023. On measures of elder abuses: investigating the intensity and extent in seven states of India. Journal of Social and Economic Development. 26: 396-408.
26. Bakshi S, Mishra SK. 2023. Financial autonomy and gender equality in generalized world: a study on older adult population in India. The Oriental Anthropologist. 23 (2): 261-282.