

Technology-integration in Old Age Homes in India A Status Paper

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1.1 The elderly (aged 60 years and above) in India account for more than 9 percent of the total population. The **National Population Commission** estimated that the population of the elderly is expected to grow from 71 million in 2001 to 173 million in 2026. This demographic scenario appears to indicate a very precarious condition for the older persons in terms of their capability to enjoy the right to life with dignity. While those in the age group 60-69 years could be expected to lead a fairly healthy life and offer their services as volunteers for informal care giving to others in the two higher age groups, both the 70-79 years age group and the 80 + years age group would require critical social and medical healthcare support – both informal care giving and formal care giving.

1.2 The growing incidence of elder abuse and severe fissures in the multi-generational family or household has forced many older persons to abandon their family home; some of them have also been “pushed out” and have thus been left shelter-less. Most urban areas appear to have a growing incidence of cases of abandoned elderly. A new culture of “peer group participation” being attempted by the old persons appears to be taking roots in many parts of urban India; Old Age Homes of various types are rapidly becoming a choice for many “abandoned”, “left out” or “neglected” old persons with or without survival resources.

1.3 The vision of “alternate shelter” for older persons, as enunciated in both national and global policy frameworks, includes Group housing for older persons, No physical barriers to mobility, Health care and nutritional support, Development of age-integrated communities, Recreation services, Age-friendly, easy and safe accessibility to shopping complexes, community centers, parks and other services, and Provision of ramps and/or Lifts in vertical housing complexes.

2.1 Most developed countries have formulated public policy in regard to the Minimum Standards of Services and Care in various institutions for older persons including the Old Age Homes. These standards spell out requirement in terms of Physical facilities, Services, Activities, and Organization and Management.

2.2 Old Age Homes have largely been located in India largely at two locations: Metropolitan Cities and, Tier-two Cities that have been known for their cool climate or that have religious/spiritual interest for the elderly. Old persons have preferred to live in Metropolitan Cities largely on account of the fact that these were their original work places, or that the younger members of their families reside in such places, or, for the better physical and social infrastructural status in such places. The Tier-two cities have usually been known as “retirement cities” either on account of their relatively cooler and pollution-free climate or on account of their religious significance. The older persons are also a “class of consumers” in the “Age Care Industry” that is registering significant growth in India. Such institutions are rapidly moving towards catering to what can be called a “total package of needs” of the older persons including quality shelter, services (including medical and non-medical), and activities. These institutions no longer remain confined to networking with healthcare institutions or with service providers on a contractual basis; many institutions have built dispensaries, physio-therapy clinics and even long-term care units within their campuses. One institution in Chennai has even gone to the extent of constructing a mortuary within their Residency, as they prefer to call it.

2.2.1 There are three types of Old Age Homes based on the paying capacity of their potential and existing users. These include Homes that provide shelter/services and activities free of cost or with very low charges not exceeding Rs. 500/- per month; that provide shelter, services and activities against payment of modest/medium monthly charges not exceeding Rs. 5,000/- per month; and that provide shelter, services and activities on an ownership/lease basis with recurring maintenance costs usually exceeding Rs. 5,000/- per month with both refundable and non-refundable deposits.

2.3 Technology has been utilized in the Old Age Homes as one of the innovating and quality-enhancing elements in providing improved standards of services and care to the residents of Old Age Homes as also to the potential customers of the Age Care Industry. It has been integrated in the Old Age Homes with the specific aim of enhancing their autonomy in daily living and participation in the activities and management of services.

3.1 The study design is based on the perspective of users of the Old Age Homes in India. Older persons face a number of challenges as a result of increased likelihood of having **Physical, Sensory, and Cognitive Deficits** in their lives. Technologies are being used to supplement human care-giving (involving both the care-provider and the care-receiver) since these help increase the autonomy of elders and enable them to “age in place”. Such technologies are gradually beginning to find a place in the Indian society as well, both at the level of home

modifications and personal use, and, in institutions created for the Senior Citizens. However, such use is often restricted to people with education, resources and awareness; institutions have relied on many such technologies as part of the process to make their retirement-, assisted-living and long-term care housing products.

3.2 The study intends to generate a status paper on **Technology-integration in Old Age Homes in some Metropolitan and Tier-Two Cities in India**. The Status Paper was expected to document the extent of incorporation of Elder-friendly technologies, and formulate a **package of Elder-friendly technologies** (based on Users' perceptions) that could be incorporated in the existing Old Age Homes in India.

3.2.2 The study instruments included review of research on use of Elder-friendly technologies, formulation and administration of a Survey Instrument to be canvassed with Managers/Trustees of Old Age Homes and analysis of data collected through Survey Instrument and Field Observations.

3.2.3 The study area comprised of Metropolitan areas: Delhi (National Capital Region), Chennai, Mumbai and Bengaluru; and Tier-two cities: Chandigarh, Bhopal, Ahmedabad, and Nagpur.

4.1 The 24 Old Age Homes identified for the study have been described in terms of parameters that include Physical environment, Living conditions for the residents including the unit of residence – single, shared, or dormitory type, Common facilities, Services provided, Fees and deposits charged, Administration and management, and Use of Assisstive Technologies and barrier-free features.

4.2 The 24 identified institutions were visited to identify the elements and extent of technology-integration at the level of four constituents - Living environment, Facilities, Services, and Organization and management. Technology integration was assessed in terms of their location, infrastructure available in the form of facilities constructed or acquired, services provided to the residents and administration and management. The survey questionnaire helped generate the following data:

- **Legal Status and cost of facilities & services in the identified institutions**
- **Infrastructure facilities in the identified institutions**
- **Technology-integration in Infrastructure Facilities in the identified institutions**
- **Services available in the identified institutions**

- **Technology integration in the Services available in the identified institutions**
- **Technology integration for the Healthcare of residents in the identified institutions**
- **Technology integration for the Security of residents in the identified institutions**
- **Technology integration for the Management and Administration in the identified institutions.**

4.3 The extent of technology-integration varied at the levels of infrastructure for living environment, provision of services, organization of activities, and practices for organization and management; details in this regard for each parameters have been stated below:

(a) The **architectural principles** followed in the creation of infrastructure - structurally sound, even surfaces, passages and doorways to accommodate wheelchairs ramp or an elevator if it is multi-level accommodation, large enough and appropriate bathroom and kitchen facilities enough to accommodate a wheelchair, home layouts that do not impede mobility, bathrooms and toilets not serving older persons' frailty and ailing condition, and, roof designs that leave the buildings hotter inside - **have been followed only in recent constructions**, and, that too **in Homes built by the Government or by the Private Sector Real Estate Industry**. The parameter - recently constructed Old Age Homes irrespective of the charges these levy - has enabled the managements to adhere to the architectural principles suited to group housing structures for the older persons subject to the constraints imposed on them by the degree of access to resources.

(b) The recently constructed Old Age Homes have also demonstrated sensitivity to the need for having a Medical Centre, a Physio-Therapy Centre, a Pathological Laboratory, a Gymnasium, etc. with all the required equipment.

© Assistive Technologies that enhance the autonomy of older persons through their use in the infrastructure including the overall building, the living room, the bath/toilet area, the kitchen, etc. are markedly present in such structures. Older structures are beginning to respond to such requirements through a process of home modification that is often confined to products like grab bars, handrails, gas for cooking, audio-visual equipment, etc.

(d) In the living environment, assistive technologies have found increasing, though not widespread, use in **Bath/toilet** in terms of accessibility, lighted area, use of slatted bath range/boards/seats, well-mounted shower seats or stools, bath grab bars/rails, back brush, back scrubber to relieve those hard to reach

itchy areas on a person's back, western type toilet commodes, water closets, portable commodes, bedpans, emergency alarm button, etc.

(e) Next to the bath/toilet, **Kitchen and dining facilities** have received the attention of AT designers and manufacturers in view of the waning strength in arms and legs, inability to lift weights and other constraints experienced by the elderly at levels; the ATs include ankle, knee, elbow and wrist joints and spinal cord in the form of improved handles of the cutlery, two handled cups and mugs with options of lids and spouts, **bottle/tin/jar openers, plate/dish surrounds**, the *thali* with built-in compartments for different items of food, jugs/kettles with fulcrum arrangement for pouring liquid, bibs, kitchen finger protector, slice-nice adjustable knife, ergonomic and safe box opener, comfort grip gift boxed kitchen utensils for hand impairments, oven rack push-pull stick, combination cutting board with chef knife attached, pot and pan holder, trolleys, perching stools, etc. The SSM Residency in Chennai had separated the kitchen from the serving room and dining hall with a view to saving the residents from the fumes or smell of burning spices that emanate through the atmosphere in the process of cooking.

(f) Next to the bath/toilet and the kitchen, assistive technologies are also beginning to be used in the **bed room** in the form of bedside rails, bed bolsters, mattress elevator, dawn/dusk lights to help people get up at night to use the toilet, smoke alarms to react to visible or invisible fire aerosols, fire alarms, cane holder or cane butler, adjustable backrest, and bed table. However, products like pressure mats as an electro-mechanical device which detects a person mobilizing from a bed or chair, door alerts in the form of electro-mechanical sensors attached to doors for patients who wander at night, movement detectors to prevent the elderly entering part of the residence where they might be at risk, slip-on dressing aid, shoehorn with T handle, long shoehorn & dressing aid, flexible sock and stocking aid, etc. are yet to be noticed in the Old Age Homes.

(g) The least-affected portion of the Home premises, in terms of use of assistive technologies, is the **Living room**; products like neck-support, back support, lumber belts, leg and foot rests, etc. are becoming visible in Old Age Homes built by the Private Sector Real Estate Industry with high charges along with refundable and non-refundable deposits; however, one has yet to see products like pressure-relieving chairs, power lift cushions, and, elbow and heel protectors. Similarly, products like contrasting colours in the decoration of walls and floors, as well as electronic gadgets and sophisticated devices associated with a smart home (e.g. video-monitoring of the ailing elderly, electronic calendars and speaking clocks, etc. are still to find use in the Old Age Homes.

(h) In terms of **services that are provided through common facilities**, assistive technologies have found a very meaningful place, especially the ones located in

the area including **kitchen-cum-store, dining hall, lounge-cum-recreation room, prayer hall or temple, medical services area with area for a doctor and a nurse, space for Physio-therapy and occupational therapy equipment, a sick bay, networking arrangement with a nearby hospital with an ambulance, geriatric emergency medical system, social and psychological assistance, protocols to be observed in the event of a death of a resident, etc.**

(i) Attendant-support is being provided in some Old Age Homes at the level of feeding, conduct of Activities of Daily Living, medical care, non-medical care in the form of social and psychological assistance, and protocols to be observed in the event of death of a resident. Most Old Age Homes inform the registered next-of-kin in the event of a resident's death; non-response or consent for cremation by the management is acted upon keeping in view the religion of the resident or the last wishes of the deceased. This is one of the best practices that is observed across the socio-economic divide among the Old Age Home residents.

(j) The **internal communication systems** have yet to emerge as a meaningful activity in Old Age Homes that levy low or medium charges; however, Homes that levy high charges with refundable and non-refundable deposits do recognize that their residents want them to come up to the market standards along with the residents' expectations. Such two-way communication systems are in vogue through suggestion/requisition slips to be placed in the boxes placed at several points in the Campus, intercom system by which residents can readily communicate with the management, and meetings of Residents' Councils.

(k) Most Old Age Homes have well-formulated and duly notified procedures relating to admission of residents, registration of the beneficiaries with their participation, interaction with the local community for social integration/re-integration, and vocational skills training, recreational activities for body, mind and soul through audio-visual infotainment technologies, indoor games, library, mobility vehicles for contact with the community and the market, gymnasium, swimming pool, etc.. However, practices relating to contract of services with the residents, residents' participation in the management of all services, and, protection against abuse and neglect have yet to be developed.

(l) **Services** provided in the Old Age Homes have also shown remarkable sensitivity to the utilization of modern communication technologies, healthcare technologies, safety and security technologies. The range of services provided demonstrate the following sequence of progression with the passage of time and with access to resources for creation of infrastructural facilities, activities and services, as also modern management capabilities.:

- Food/Bed/Temple/TV/Doctor/Indoor games/Spiritual and Social Discourses/Excursions/Gated security/Guest identification,
- + Physio-Therapy Centre/Yoga hall/Recorded music/Phone/Meeting Hall, and
- +Cable TV/Swings/Attendants or Ayahs for Assisted Living needs/Health database/Pathological laboratory/Shopping convenience/Bank service/Fire Fighting/Swimming/Clubbing, Mortuary or Cremation ceremonies, etc.

(m) Safety and security technologies have also moved rapidly from the days of single gated entry guarded by a security guard with or without a visitor identification register to computerized database on visitors. Issuance of visitor identity cards at the gate and to be deposited back while leaving, guard accompanying the visitor to the resident or alerting the resident through the telecom prior to his/her walking into the campus, CCTV cameras in the various open areas of the Campus and its buildings, and fire safety systems. Old Age Homes developed by the Private Sector Real Estate Industry or by Trusts that levy high charges with both refundable and non-refundable deposits have invested considerable resources in safety and security technologies including fire extinguishers, generator for power back up, CCTV cameras, golf cart for easing hardships of residents experienced during walking within the campus, room alarms linked to a central station, etc. Such Homes have laid walking tracks and jogging tracks within the green areas for the safety of the residents. Coaches have been appointed for the Swimming Pool and the Gymnasium and the Yoga Hall. Diagnostic Testing Kits have been stored in such places to help residents' determine their level of stamina, tolerance and pressure levels.

(n) Most Old Age Homes that levy no or low charges maintain manual records of both residents and finances; however, the ones established by the Government have been working towards computerization of these records. The ones that levy medium charges and high charges with both refundable and non-refundable deposits are far more transparent insofar they have printed documents that provide a great deal of information about organization and management. Even here, the organization and management personnel are authoritarian, not prone to encouraging active resident participation. In fact, participation of residents in the supervision and management of some services is far more visible and encouraged in Old Age Homes that levy no or low charges, probably on account of lack of resources to hire the required manpower. The Anand Dham managed by the Sewa Bharati in Bhopal is one such instance where every resident is given some fixed responsibility in the provision of services.

The following findings were noted from the data:

(i). Economic status of the residents and use of technology were correlated; lower economic status is often accompanied by lower use of assistive technologies. This correlation is being changed by two elements: government and philanthropic support, and, user charges to creation of better infrastructure for living environment, services, activities and organization and management.

(ii). Governance institutions are beginning to grow out of the welfare-mode in responding to the shelterlessness and loneliness of the poor; subject to access to larger tax resources and increasing human rights consciousness among the poor; more resources are now being allocated to the subject of Old Age Homes, Day Care Centres, Elder Helplines, etc. towards efforts that enhance the dignity, autonomy of and participation by the older persons in their assertion of the right to life.

(iii). Philanthropy and community support in kind have probably been the largest national resources that have traditionally been available for the welfare of the older persons. There is an absence of communication support to influence such philanthropy and community support to the need for revival of such Old Age Homes through technology-led modifications at the levels of physical infrastructure, services, activities, and organization and management.

(iv). Assistive technologies, particularly those that are expensive and not-easy-to-find in the local hardware markets, have often been avoided by the managements; however, residents' articulated unhappiness at the avoidable pain and suffering in the bath/toilet, kitchen, corridors, staircases, etc. has often motivated the managements to devise local contraptions that are manufactured at lower costs and better results.

(v). The extent of pain and suffering experienced by the older persons, largely in regard to their mobility, vision, hearing, safety and security, and recreation (in that order), has led to the slowly increasing demand for assistive technologies both at the level of institutions and individual homes. .

(vi). The market forces have gradually taken note of the older persons as consumers in their own right. Assistive Technologies in the Old Age Homes are a unique selling point for such shelter products in the market.

(vii). Public policy in India is markedly absent in articulating the vision of autonomous and independent living by the older persons both within their families and in the Old Age Homes. In India, Assistive Technologies for the frail and ailing elderly do not find any such support from Policies, Laws, and

Insurance Systems. Community Charity does still support Assistive Technologies for functional improvements in mobility and vision. The Disability Law in India does not recognize the phenomenon of “evolving disability” among the frail and ailing older persons. It is probably waiting for the older persons to become disabled before entitlements under the law can be accessed by the older persons.

(ix). There is a paucity of technologies that support assisted living, long-term care and palliative care. The traditional attendant or the ayah, and in some cases, the trained nurse, supported by a team of doctors that dominate the field of assisted living facilities.

(x). Assistive technologies for a more independent discharge of Activities of Daily Living are markedly absent in India. However, Assistive technologies for Instrumental Activities of Daily Living, e.g., shopping, banking, payment of utility bills, visits to places of entertainment, community spaces, etc. have helped older persons either through transportation systems or through human assistance systems or through online transactional facilities.

(xi). Safety and security technologies are available in terms of fire safety devices, alarm systems, smoke detectors, etc. However, the lower economic group residents are likely to gain from better, participatory, and community-supported best practices in these concerns.

5.1 The study noted the following findings:

(i) There is need for greater governmental support and support from community philanthropy to offset the poverty disadvantage of the older persons in finding access to Old Age Homes that support autonomous and independent living through use of assisted technologies.

(ii). Apart from governmental assistance, fiscal policy instruments must encourage community philanthropy that wider access to Assistive Technologies for the bathroom/toilet area, kitchen, living room, corridors, balcony, staircases, and other open spaces (both within individual homes and in group homes) as a minimum. Recreational technologies, Healthcare technologies, labour-saving, time-saving and energy-saving technologies, and, Safety and security technologies must also be given the same fiscal policy support.

(iii) Governance institutions must adopt a human rights perspective stance to the shelter and other needs of the older persons. There is need for a law that supports the right of the older persons to access, as part of entitlements, assistive technologies for autonomous and independent living, and, for palliative care.

(iv). Design and mass product development research studies should be encouraged in academic institutions that devote their resources to such studies.

(v). Public policy in India is gradually taking note of the need to evolve barrier-free and elder-friendly architectural engineering systems in the form of both "home modifications" and institutional modifications that enhance the autonomy of older persons within the family and in the Old Age Homes. Recognition of such need for "home and institutional modifications" is gaining ground largely in the context of scarcity of carers within the family. Such needs should be brought within the purview of items meant for tax exemption.