

Assistive Technologies - Towards Home-based Elder Care is a volume of papers edited by Dr. Sugan Bhatia (President, Indian Universities Association for Continuing Education) and Dr. Vikas C. Goyal (Director, Science & Society Division, Department of Science & Technology, Ministry of Science & Technology, Government of India). The volume of papers has been published by the Associated Book Service, Ambala. The present volume of papers is second in the series on Assistive Technologies by the two scholars.

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1. Systemic support to Awareness and Use of Assistive Technologies
- Sugan Bhatia
2. The Technological Response to Accessibility in Israel: Challenges, Accomplishments, and Opportunities
- Lawrence R. Normie & Yitzhak Brick
3. Impairment, Disability and Handicap: Community-based Rehabilitation (CBR) for the disabled elderly
- Dr. Alakananda Banerjee
4. Long-Term Care for the Senior Citizens in India
- Anupama Datta
5. Assistive/Enabling Technology Needs of Elderly People in India: Issues and Initial Results
- Prakash Kumar, Usha Dixit and V C Goyal
6. Sensing Mood to Counteract Dementia
- Christian Peter, John & Eva Waterworth, & Jörg Voskamp
7. Bio-medical technology for Elders
- T.S. Kanaka and Mohan Sampathkumar

Assistive Technology is “an umbrella term for any device or system that allows an individual to perform a task they would otherwise be unable to do or increases the ease and safety with which the task can be performed”. The demand for Assistive Technology is directly a function of the information, advice and awareness that is available to the end-users regarding the product, and the kind of patronage that it receives from official funding. The market entrepreneur finds both these factors as incentives to investment of capital and human skills.

In India, medical professionals and social activists are still engaged in a debate about the critical need of old age care. It appears that any talk of relying on Assistive Technology both as a complement to the hospital-based or professional-consultancy-led old age care or even as an alternative to such care is much ahead of time. The professional community appears to be somewhat stuck after having achieved near elimination of Polio, insofar its concern with disability is concerned. There also appears to be a cultural dis-inclination to utilizing Assistive Technology even in regard to mobility impairment. It is only for the 80+ age group that Assistive Technology tends to evoke some recognition or validity. The concern about Activities of Daily Living (ADLs) is prominent when it comes to dealing with the challenges faced by the 80+ age group. The concern for Instrumental Activities of Daily Living (IADLs) and the relevance of Assistive Technology is recognized for the 70+ age group.

However, the elderly in India are becoming fairly articulate about the need to reduce “dependence” in their functional capabilities. However, their children, both within the country and outside, prefer for them “personal caregivers”, rather than Assistive Technology. Awareness levels concerning Assistive Technology as a means to enhancing degree of functional independence in the life of the elderly is at a very low level. The Disability Law in India does not appear to respond to the diverse manifestations of dependence as seen in “impairment” caused by “frailty” and

"ailment". The community of Occupational Therapists and Physio-therapists is yet to launch any major national initiative in popularizing, among its own members, the WHO-devised Assessment procedures for Impairment, Disability and Handicap.

The legislative responses to the special needs of frail and ailing older persons have been conceptually addressed in The Disabilities Act; however, the conditions of "frailty" and "ailment" suffered by the Older Persons have not been addressed in the definition of "Disability"; these two conditions have not been included in the process of clinical assessment that is relied upon for administrative decisions concerning certification of disability. It is widely recognized that the two conditions create impairment in the discharge of both ADLs and IADLs; however, these two conditions have not been seen as those that contribute to making the affected persons look "different" than other persons.

Unmet needs of older people with respect to AT usually are studied within the context of access to commercially available products. Typical issues which are addressed include product awareness, ease of use, and affordability. However, relatively little attention is paid to the 'technology gaps', i.e., where no adequate commercially available assistive devices exist for particular problems in activities of daily living (ADL). During 2003-2004, GeronTech, the Israeli Center for Assistive Technology and Aging, performed a two-phase national survey of unmet needs in technological aids. The first phase identified areas where technological solutions may help improve the quality of life of senior and disabled people living in Israel but have not yet been found, or adequately developed. The study constituted a survey of user needs, mainly from the perspective of their caregivers, across all disability types and age groups. The second phase focused upon AT needs of older users themselves.

Areas in the GeronTech unmet needs study that were most widely mentioned by survey respondents mainly are associated with ADL activities in the house, wheelchair mobility and communicating with the outside world. By order of popularity these were:

- Home automation
- Telephones
- Wheelchairs (all types)
- Use of computers
- Non-wheeled mobility
- Accessibility
- Reading, writing, page-turning
- Eating, drinking, food preparation
- Stairs, steps
- Bed

Community-based rehabilitation (CBR) is a strategy for enhancing the quality of life by improving service delivery, by providing more equitable opportunities and by promoting and protecting human rights. It calls for the full and co-ordinated involvement of all levels of society: community, intermediate and national. It seeks the integration of the interventions of all relevant sectors - educational, health, legislative, social and vocational - and aims at the full representation and empowerment of disabled people. It also aims at promoting such interventions in the general systems of society, as well as adaptations of the physical and psychological environment that will facilitate the social integration and the self-actualization of

disabled people. CBR should be sustained in each country by using a level of resources that is realistic and maintainable.

In order to improve the life quality for elderly persons with dementia it is important to provide both a safe and stimulating environment, one that also reduces their loneliness and sense of vulnerability. As far as possible, the sensing technology should be hidden and be designed to create as natural an interaction as possible. It is also important that the technology is wireless in order to allow the person to move around freely. This supports a more active life, including physical exercises, socializing and daily mental tasks or entertainments, in addition to a safer life.

Since the old person's openness to these activities varies over the day and between days, it is highly desirable to detect those times in the day when the patient will benefit from stimulation, and those times when she will not. Such knowledge can be used to the benefit of not only the older person, but also care staff and supporting relatives. Detection of emotional and cognitive states, from a variety of different kinds of sensor, is now a realistic possibility and could provide significant benefit in cases of dementia, such as that arising from Alzheimer's disease (AD).