International Spotlight

Gerontology in India

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Abstract

India, with a population of 1.22 billion, has a predominantly agriculture-based economy. Its 90 million elderly population heavily depend on their children for financial support and caregiving. Research on aging in India today is focused on the medical, biological, behavioral, and social sciences. Aging as an independent subject is only taught at a few institutions. Several national and state agencies and many nongovernmental organizations offer housing, day care, and health care services. The 1999 National Policy on Older Persons is being revised, 2 National Institutes on Aging have been designated, and a pilot health program targeting seniors has been implemented. India’s greatest concern is how to provide adequate health care and income security for its huge elderly population, especially the uneducated rural poor.

Key Words: Aging in India, Status of Indian elders, Research and education on aging

India derives its name from the Indus River that flows from the Himalayan Mountains. A country of myriad subcultures that constitute a unity in diversity, its ancient past reaches back to 2000 B.C. As the world’s largest democracy, India based its parliamentary system of government on that of the United Kingdom, from which gained its independence in 1947. As a federal union, it includes 29 states and 7 Union Territories (UTs).

India's constitution officially recognizes 23 of the many languages spoken by its citizens. Hindi and English are the primary languages used in academia and in conducting business. Eighty percent are Hindus, 13% are Muslims, and 3% are Christians. Sikhs, Jains, and Buddhists comprise the rest. Although India’s industrial sector and technical prowess have grown rapidly, agriculture continues to be the mainstay of the Indian economy (Registrar General of India [hereafter, Registrar], 2011).

Average per capita income is 54,000 Indian rupees or about US$1,000 annually; nearly one third of its population lives below the poverty line, on less than $1.50 a day. The Gross Domestic Product in 2011 was $1.85 trillion. The overall literacy rate is 74%: 82% for men and 66% for women (Registrar, 2011). This brief background sets the stage for examining issues concerning India’s growing elderly population.

Demographics of Aging

Two national data sets, the Registrar’s Census of India and reports from the National Sample Survey Organization.
(NSSO), provide most of the information about India’s senior citizens. Statistics about the elderly population are drawn from the most recent NSSO survey of 2005 and published in 2006; the next review will be conducted in 2015. The 2011 national census projects that the current total Indian population of 1.22 billion—second only to China—will exceed 1.4 billion by 2030. The elderly population of 90 million may reach 130 million by 2030 (Registrar, 1996, 2011). India’s fertility rate of 2.5 live births may drop further, increasing the current dependency ratio: 125 aged per 1,000 of the general population ages 14–59. Average life expectancy at birth is 69.8 years: 68 years for men and 72 years for women. Life expectancy at age 60 is 18 years for women and 16 for men. About 3.5% of the total population is more than 80 years of age, with women in the majority (Registrar, 2011).

India’s rural population constitutes two thirds of its total population; three fourths of Indian elders live in rural areas (NSSO, 2006). Rural/urban differences are important for examining elders’ income, support, and health issues.

Table 1 shows that most Indian elders reside with their adult children, a traditional practice. A majority of rural (66%) and urban (63%) dwellers are dependent on their children, who are expected to provide financial and social support and personal care (NSSO, 2006). In 2007, the Maintenance and Welfare Act of Parents and Senior Citizens was enacted to enforce family elder care and prevent elder abuse.

In terms of education and health status, 74% of rural and 40% of urban elders lacked formal schooling in their younger years, with implications for accessing and addressing their health care needs. Reported ailments are somewhat higher in rural areas where health services are often in short supply. However, urban older women are more likely to be immobile, with implications for greater familial care responsibility. The absence of universal social security and health programs contribute to the dependency of India’s elderly population (NSSO, 2006).

Morbidity data are not available in the NSSO 2006 report. However, in the 1996 report, arthritis was reported by 34% of the elderly population; vision problems by 26%; high blood pressure by 10%; diabetes by 9%; heart disease by 3%; and other conditions by 2% (NSSO, 1996). A recent comparison of elder health status in 91 nations ranked Indian seniors near the bottom, at 85 (Global Age Watch Index, 2013).

**Table 1. Selected Social and Economic Indicators and Health Status of the Aged (60+) Population in India (2001–2005)**

<table>
<thead>
<tr>
<th>Indicators</th>
<th>Percent</th>
<th>Rural</th>
<th>Urban</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Living arrangements</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Living alone</td>
<td>5.3</td>
<td>4.3</td>
<td></td>
</tr>
<tr>
<td>Living with spouse only</td>
<td>12.5</td>
<td>10.4</td>
<td></td>
</tr>
<tr>
<td>Living with spouse and family</td>
<td>44.2</td>
<td>44.0</td>
<td></td>
</tr>
<tr>
<td>Living with adult children</td>
<td>32.0</td>
<td>32.0</td>
<td></td>
</tr>
<tr>
<td>Living with others</td>
<td>4.2</td>
<td>4.9</td>
<td></td>
</tr>
<tr>
<td><strong>Economic dependency on children</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not dependent</td>
<td>32.8</td>
<td>35.9</td>
<td></td>
</tr>
<tr>
<td>Partly dependent (supplemented by personal sources)</td>
<td>13.9</td>
<td>11.4</td>
<td></td>
</tr>
<tr>
<td>Fully dependent (no self-income)</td>
<td>51.9</td>
<td>51.6</td>
<td></td>
</tr>
<tr>
<td><strong>Education status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>74</td>
<td>40</td>
<td></td>
</tr>
<tr>
<td><strong>Health status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Reporting ailments</td>
<td>29</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>Immobile/confined to home/bed</td>
<td>6.7</td>
<td>8.8</td>
<td>6.8</td>
</tr>
</tbody>
</table>


**Developments in Research, Education, and Training**

**Research**

Since the earliest studies in the late 1950s and early 1960s that concentrated on the behavioral and social sciences (see Amesur, 1959; Ramamurti, 1956; Ramamurti & Parameswaran, 1963, 1964), the pace and breadth of research on aging in India increased during the 1980s and continues today. Approximately 3,000 articles on various aspects of aging in India have appeared in a variety of Indian and international journals (see Karkal, 1999, 2000; Ramamurti & Jamuna, 2010a, 2010b; Ruprail, 2002). Research output now falls into several major categories:
medical, biological, behavioral, and the social investigations (Ramamurti & Jamuna, 2010b), as shown in Figure 1.

Medical/Geriatric Research
Initially, medical research on morbidity in the elderly population was hospital-based, beginning with the work of Pathak (1978) at Bombay Hospitals. Followed by the sustained work of Venkoba Rao (Rao, 1979, 1987, 1991; Rao & Madhavan, 1983) of Rajaji Hospital in Madurai, research focused on physical and psychological morbidity, especially mental health, depression, and suicide in the aged. During this pioneering period, Rao also directed the first Task Force on Aging of the Indian Council of Medical Research (ICMR; Rao, 1987). In 1988, a separate inpatient ward for elders was created by Natarajan at the Government General Hospital in Madras. An outpatient clinic for the aged was established in 1996 by Vinod Kumar at the All India Institute of Medical Sciences, New Delhi, to conduct a series of morbidity studies (Kumar, 1996, 2003).

A 1997 landmark issue of the *Indian Journal of Medical Research* focused on the prevalence of chronic conditions and their management, including diabetes, hypertension, and arthritis, as well as disabilities. These issues have continued to be addressed by Sharma (1999), Rosenblatt and Natarajan (2002), Dey (2003), and Rao (2004). Since 2009–2010, increased ICMR funding for individual research projects in geriatrics and geropsychology has expanded these areas of inquiry. Nutrition also has become another significant area of research. Recommended Daily Allowances of nutrients for Indian elders have been compiled by the National Institute of Nutrition at Hyderabad. Research programs conducted by Bagchi (2000), Natarajan (1995), Puri and Khanna (1999), Shah (2004), and Sujatha (2004) have identified the nutritional status of different groups of the elderly population and the effect of specific supplements on their health status.

Biological Gerontology
Biological research in aging was initiated in the late 1960s by Kanungo and associates at Banaras Hindu University (BHU) in Varanasi. This work centered on enzymes as modulators of the aging process and on the role of chromosomal histones and genetic interventions in modulating gene expressions and their impact on aging (Kanungo, 2004a, 2004b). Dr. Kanungo also founded the nationwide Association of Gerontology (India) in 1981.

This research emphasis has been continued by Thakur and associates, at BHU, by developing an amnesic mouse model and examining the effects of Aswagandha plant leaf extract and the role of estrogen coregulator molecules on brain function, including memory (Thakur, 2003, 2004). Other researchers across India, notably Subbarao (1997), conduct studies in several areas, such as telomere repair in brain cells.

Social and Behavioral Gerontology
Gerontological research in this area has expanded since its beginning to include welfare, economics, and demography. An extended description of these developments, especially in the behavioral sciences, was conducted by Ramamurti and Jamuna (2010b). A major development was the founding, in 1983, of the first research center on aging in India. The Centre for Research on Ageing (CEFRA) was established in the Department of Psychology of Sri Venkateswara University (S.V. University) and has been supported by the University Grants Commission’s Departmental Special Assistance Program (UGC/SAP) since 1990 (CEFRA, 2014).

More than 20 major research projects conducted by Ramamurti, Jamuna, and associates have covered a variety of topics including: markers of successful aging; disability assessment and coping; characteristics of centenarians; and development of a conceptual model of aging (Ramamurti & Jamuna, 2010a, 2010b). The current focus is on a prospective cross-sequential study of health and aging. Besides its teaching, training, and research, outreach activities include distributing useful handouts for seniors and their families, for example, fall prevention, improving memory, and nutritional tips for healthy aging.

A major surge of social and behavioral research has occurred since 1990, including major contributions on gender aging, mental health, and empowerment of women (Prakash, 2003, 2004); on health and aging of urban elders (Sivaraju, 2002a, 2002b); advocacy and rights of the elderly population (Nayar, 2003); and sociological perspectives on and awareness of elder abuse (Shankardas, 2003).

Other major areas of inquiry have included rural aging, loneliness (Prafulla, 2009); anthropometry of the elderly population, female aging, and health (Bagga, 1994, 2013); pensions, old age homes, and coping with disasters (Anupama & Sonali, 2012); and the demographics of aging and social security (Rajan & Matthew, 2008).

Much of this research has been published in major Indian journals dedicated to aging. They include the *Indian Journal of Gerontology* (Indian Gerontological Society); *Research and Development Journal* (HelpAge India); *Aging and Society: The Journal of Gerontology* (Calcutta Metropolitan Institute of Gerontology); and the *Indian Journal of Geriatrics* (Indian Association of Geriatrics). Research findings also appear in periodical reviews.
and annotated bibliographies (see Karkal, 1999, 2000; Ramamurti & Jamuna, 2010a, 2010b; Ruprail, 2002).

Education and Training

Higher Education Roles
In contrast to the development of research, the trajectory of gerontological education has been less robust. The first graduate course in gerontology was introduced in 1976 by the Department of Psychology, S.V. University, as an applied branch of psychology at the master’s and doctoral levels. It was followed by a master’s specialization and a multiyear diploma course in 1990, supported by the UGC/SAP.

The Centre for Molecular Biology of Aging at BHU has offered doctoral programs in molecular biology of aging since 1980. A postgraduate course in geriatrics was initiated by the Madras Medical College in 1996.

Despite these initial developments, gerontology as a special course of study in higher education has grown slowly. In 2000, the Government of India (GOI) recommended that universities and other educational institutions introduce courses in aging as part of implementing the National Policy on Older Persons (NPOP). Several institutions now offer courses as part of master’s and doctoral-level programs in psychology, social work, anthropology, and home science.

Other Organizations Engaged in Research and Professional Training

The National Institute of Social Defence, as part of the GOI’s aging initiatives, collaborates with nongovernmental organizations (NGOs) and educational institutions to train individuals in geriatric and other elder care services and to raise public awareness about aging. The gradual expansion of biomedical research has led to development of training modules in geriatric clinical care for a variety of health professionals. At the National Institute of Health and Family Welfare of the Ministry of Health, Khan has initiated programs on training health care professionals in aging and promoting doctoral research (Khan, 2011).

In 2011, the National Programme for Health Care of the Elderly (NPHCE) was established to develop a multilevel, intergovernmental structure that delivers care dedicated to specific needs of seniors. It also builds the capacity of medical and paramedical providers through training programs.

Other Resources for Aging

National Data Sets
The NSSO reports and the national census data are important resources for both Indian and international researchers. Beginning in 1985–1987, the NSSO undertook a nationwide sample survey on rural and urban elders to assess their socioeconomic status. Similar surveys were conducted in 1995 and 2005, with results published in subsequent years (NSSO, 1996, 2006).

Census data of the general population are collected every 10 years, followed by reports from the Registrar. However, these surveys lack detailed information about persons aged 80+. Efforts are under way to generate separate data on this age group from the 2011 census.

A new resource, the Longitudinal Aging Study in India (LASI), was created in 2009 by the International Institute of Population Science of Mumbai, the Harvard School of Public Health; the School of Medical Sciences, University of California, Los Angeles; and the RAND Corporation. Its objective is to provide reliable information on the health, health care, and social and economic aspects of the Indian population, aged 45 and older. Its first phase (2013–2015) will cover two waves of data and be made accessible to all, including other researchers and policy makers (http://www.iipsindia.org/research_lasi.htm).

Nongovernmental Organizations

With GOI and other funding, NGOs have played major roles in implementing national policy by conducting studies and offering various services to seniors. The largest—HelpAge India—established in 1978 (www.helpageindia.org). With branches nationwide, it collects data and offers different kinds of programs (e.g., old age homes, day care centers, health clinics) and education. Information about research and its programs is published in its Research and Development Journal.

The Alzheimer’s and Related Disorders Society of India (ARDSI, 2013), founded in 1991, now include many local chapters. ARDSI has focused on various aspects of dementia awareness and care (www.alzheimerindia.org) and provides data on the prevalence of dementia in India. A recent study reported that one in every 20 Indian elders aged 60+ and one in five aged 80+ suffers from this disease (Roy, 2010).

Other NGOs providing education and care are located in several major cities. They include the Centre for Gerontological Studies in Trivandrum that organizes seminars and conferences on aging and rights of the elderly population (www.cgsindia.org). The Calcutta Metropolitan Institute of Gerontology, established in 1988, provides research, training, and care services (www.cmig.org.in). The Heritage Hospitals and Foundation, established in 1994 at Hyderabad, was India’s first private sector geriatric care service (www.heritagehealthcareindia.com). In 2004, the International Longevity Center at Pune was created to conduct research and training and advocate for the aged (www.ilcindia.org).

Several NGOs are advocacy organizations. The All India Senior Citizens Confederation (www.aisccon.org) represents seniors nationwide. It publishes a newsletter and a magazine, The Twilight Years. The SSS-Global is a leading web-based discussion group of senior citizens (sssglobal@yahooogroups.com). Some foundations in Mumbai provide services and advocate for the elderly population. They include the Dignity Foundation (1995); the Harmony...
Government Policy

The GOI, after extended deliberations and consultations with aging experts, established India’s first national aging policy—the NPOP—in 1999. The Ministry of Social Justice and Empowerment (hereafter, MOSJE), charged with implementing this policy, had no budget for this new responsibility. Instead, it was expected to coordinate implementation through budgets of other ministries identified as relevant to NPOP goals. Major goals include: provide financial security through savings plans, pensions for the needy and workers in the nonindustrial sector, special tax deductions, and discounts in travel and hospital services; promote affordable shelter and subsidize basic necessities (e.g., food); advance and improve primary health care and health insurance for elders; accentuate research and training in geriatrics and gerontology; strengthen the family as the primary eldercare provider; and value seniors as human resource partners in national economic development. The MOSJE disseminates information about senior programs.

NPOP goals and objectives often raise implementation issues. For example, to hold adult children legally responsible for their aging parents, Parliament enacted the Maintenance and Welfare of Parents and Senior Citizens Act in 2007. Although the law required state and UT help, their involvement has been uneven. Their ability to implement national policies is often dependent on their priorities and budget capacity (Rajan & Matthew, 2008). Six years later, only 15 states and 6 UTs had initiated enforcement (http://socialjustice.nic.in/oldageact.php).

This issue and other NPOP problems led to proposals for amending the national policy. An advisory committee was convened in 2010 that subsequently issued its recommendations in 2011. Various stakeholders have continued providing input. The 2014 elections brought in a new government that immediately appointed a new MOSJE minister, who is expected to provide leadership for the new policy on aging.

Emerging Issues on Aging in India

Today, India is challenged by several major transitions (demographic, health, sociotechnological) since it achieved its independence. As a developing nation, these changes have been quite rapid, compared with experiences of more developed nations undergoing similar changes in their past (Hendricks & Yoon, 2006). These circumstances have put considerable stresses and strains on India’s economy.

A basic issue for current and future Indian elders centers on government versus family responsibility for their support. Given a trend toward nuclear families (Khan, 2004), to what extent can the traditional multigenerational family be expected to provide necessary care and support for seniors, two thirds of whom live below the poverty line? Viable public–private options are needed for management and maintenance of huge numbers of elders, particularly the oldest old.

A second issue centers on adequate health care for escalating numbers of elders, many with chronic diseases that can exacerbate dependency and lead to considerable expenditures. Current national health programs, as well as proposed expansions in health and mental health policies, cover all citizens, including seniors, but they rarely address geriatric care needs.

However, important changes are under way. Recently, states have received NPHCE funding to develop regional geriatric centers and local clinics. Implementation will probably take some time before it is widespread (K. R. Gangadharan, personal communication, April 18, 2014). Additionally, two National Institutes on Aging, to be funded by the GOI, have been designated, one in the north (Delhi), the other in the south (Chennai). NGOs also play important roles, as exemplified by a recent telemedicine/hospital-based dementia care management system in Bangalore (www.nightingaleseldercare.com).

Finally, the LASI study is expected to generate significant data on health issues of middle-aged and older adults as a basis for future health care provision. Policy makers and NGOs at all levels also must familiarize themselves with effective policies and programs within India and elsewhere.

A third issue concerns income security of the elderly population. National means-tested monthly old age pensions are paid to poor, widowed, or single elders aged 60+, lacking family support. States administer this program and can opt to provide monthly supplements, ranging from 50 to 1,000 rupees, depending on the extent of their welfare budgets and other concerns.

Currently, there are two other kinds of pensions: a lifetime monthly retirement benefit, predominantly for government workers, and lump-sum “provident funds” for some private sector retirees. Critical long-range solutions involve expanding the availability of lifetime savings and pension plans for those who work in nonindustrial and casual occupations, and developing a universal social security program, particularly for the oldest old.

Developing national programs for India’s elders will increase the demand for more research and education about aging, including effective social policies for the growing numbers of seniors (Birren, 2006). Strategies for enhancing gerontological education programs include increased research funding; faculty development and continuing education of existing faculty; widespread professional
education, training and certification; expanded graduate and undergraduate degree education; and practical education for elders and their families, especially those who live in rural areas (Liebig & Kunkel, 2014).

Conclusions

India is not alone in grappling with these issues. The most pressing global challenges to older persons’ welfare are poverty; malnutrition; unattended chronic disease; lack of access to safe drinking water and sanitation; and income security (International Association of Gerontology and Geriatrics [IAGG], 2014). In developing nations like India, the task to develop, initiate, and expand programs for the elderly population is more difficult due to growing numbers of seniors and the need for governmental support for economic development (IAGG, 2014).

Many other issues will arise, partly driven by projected changes in India’s old age dependency ratio. The government and the community, especially NGOs, must meet these and other challenges through appropriate and viable long-term and short-term strategic plans, based on research. In particular, India must utilize the sizable human resources of its elders to promote healthy and active aging. On this rests the welfare of seniors and the country as a whole.

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