

# Health and socioeconomic resource provision for older people in South Asian countries: Bangladesh, India, Nepal, Pakistan and Sri Lanka

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## Research

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# Abstract

## Background

The global population is ageing rapidly, with low- and middle-income countries (LMICs) undergoing a fast demographic transition. This necessitates effective services to address the increasing physical and mental health needs of multimorbid and frail older people in LMICs. We review the current provision of health and socioeconomic resources for older people in South Asian countries: Bangladesh, India, Nepal, Pakistan and Sri Lanka, to identify gaps in available resources and assess areas for improvement.

## Methods

We conducted a search of grey and published literature via Google Search and Compendex, EBSCO, JSTOR, Medline, Ovid, ProQuest databases, Scopus and Web of Science to extract data on population demographics, human resources, health funding and social security provision for older people. Local informants were consulted to supplement and verify the data.

## Results

In most study countries, care of the elderly is provided by general physicians or primary care doctors, nurses and community health workers, though in very low numbers per capita. The number of geriatricians and specialist allied health professionals were largely unknown, with minimal postgraduate programmes available for specific training in geriatric medicine or psychiatry. Total average healthcare expenditure as a percentage of GDP was between 2.5-5.5%, markedly below the global average of 10.0%, with between 48.1-72.0% of healthcare costs covered by out-of-pocket payments. All countries, except Pakistan, had a social pension offering a minimum level of protection against financial constraints, but with varying coverage of those eligible. Financial provision for people with dementia was only available in India and Nepal. A modest number of state and charity-run care homes were established in all countries, though numbers were disproportionate to the growing number of older adults requiring long term care.

## Conclusions

Inadequate health funding, a lack of specific healthcare and training and insufficient government pension and social security schemes are a current threat to achieving universal health coverage in LMICs. Governing bodies must establish geriatrics and geriatric psychiatry as specialities and scale up training programmes for specific healthcare providers for the elderly. This needs to occur alongside increased social protection provision to improve access to those in need and prevent catastrophic health expenditure.

## Background

The global population is ageing rapidly, with the number of those aged 60 years or over predicted to rise from 962 million in 2017 to 2.1 billion in 2050 and to 3.1 billion in 2100 (1). Worldwide, most older people live in low- and middle-income countries (LMICs), with the greatest number in Asia. This older population is growing fast due to the continuing demographic transition (2). At the same time, these older populations have experienced a massive increase in the prevalence of non-communicable diseases (NCDs) (3), and the syndrome of frailty has been increasingly recognised (4). Currently, services are not well adapted for the provision of care for older people with long term conditions, in whom there is significant comorbidity (5).

Multimorbidity increases significantly with age and is common in LMICs (mean standard prevalence of 7.8%) (6). A population-based cross-sectional survey of LMICs highlighted that multimorbidity is strongly associated with negative effects on older adult quality of life, physical functioning, and mental health (7). Similarly, a large population-based cohort study of frailty indicators in LMICs identified an association between frailty (including cognitive impairment) and dependence and mortality in older people (8). Hence, it is necessary to provide services to address the interdependent physical and mental health needs of chronically multimorbid and frail older people in LMICs. Approaches focused on a single disease process or psychiatric disorder, to the exclusion of socioeconomic factors, comorbidities and disabilities in older people, are unlikely to be successful or sustainable.

With the United Nations Sustainable Development Goal (SDG) 3, there is a growing trend for the provision of universal healthcare coverage (UHC) within LMICs, in particular, care for vulnerable groups such as the elderly. Moreover, the World Health Organisation (WHO) has recognised that “without considering the health and social care needs of the ever-increasing numbers of older people, SDG 3 will be impossible to achieve” (9). The associated healthcare costs may be covered by insurance schemes or from taxation, out-of-pocket payments, or a combination of two or more of these. Countries have decided to tackle these issues in different ways, both in terms of recommendations and legislation. Lessons can be learnt from understanding the systems in different countries, and how well different ideas work in practice.

Mental and substance use disorders account for 7.4% of disease burden worldwide and their contribution to the global burden of disease is rising (10). Stressors such as bereavement, inadequate social support and isolation are prevalent in the elderly and contribute to worsening mental health. A systematic review of the prevalence of common mental disorders found 29% of adults experience mental and substance use disorders in their lifetime, with a disproportionate number in LMIC settings (11). Worldwide, an estimated 322 million people (of all age groups) are living with depression and 264 million with anxiety (12). Specific prevalence figures for older adults are not available, reflecting the suboptimal screening and identification of these disorders in the elderly.

Despite the substantial burden of mental health disorders worldwide, the gap between mental health service need and provision in LMICs persists (13–15). The WHO states resources available are “insufficient, inequitably distributed, and inefficiently used, which leads to a treatment gap of more than 75% in many countries with low and middle incomes” (9). The WHO increasingly recommends the scaling up of mental health care, through integration into primary health care and general medical services (9). Specifically, this could be achieved by training non-specialist primary care workers in diagnosing and treating mental disorders (13, 16, 17). Similarly, there is a need for an accessible primary health service, adapted with trained workers equipped to diagnose and treat the needs of older people, likely to have multiple comorbidities (18, 19), but the gap in provision for older people is not so well characterised.

There is an increasing awareness of the contribution of poverty, and social and environmental factors to mental disorders and disability in older people worldwide, but particularly in LMICs (20). Inequities in healthcare access for older people are well recognised in LMICs: a recent population-based cross-sectional survey of 17,994 individuals aged 65 years and over noted a positive correlation between higher education, more household assets, receiving a pension, health insurance and the proportion using healthcare services (21).

The North East England South Asia Mental Health Alliance (NEESAMA) inaugural meeting took place on the third and fourth of November 2018 in Kathmandu, Nepal. Clinician representatives from each country (psychiatrists, psychologists and other health professionals), were identified to establish a clinical academic network focussing on the mental health of older people. It was agreed amongst delegates that the biggest concern, regarding the care of the elderly, related to the provision and cost of medical and social care for older people. Thus, the need for data from

South Asian countries, Bangladesh, India, Nepal, Pakistan and Sri Lanka, concerning socioeconomic resource provision for older people, was established, and a plan of action formalised.

The authors seek to gather and review data from Bangladesh, India, Nepal, Pakistan and Sri Lanka, about provision for older people, to identify gaps in health and socioeconomic provision, as well as examples of good practice, that may impact on the physical, mental and social wellbeing of older people in South Asia.

## Methods

Data were collated from a search of English-language grey and published literature through the search engine Google Search and Newcastle University Library Search (including major databases Compendex, EBSCO, JSTOR, Medline, Ovid, ProQuest databases, Scopus and Web of Science), using relevant keywords. Where certain data were not available online, the search was supplemented by contacting specific country governing bodies and informants to ensure identification of all the relevant data from the study countries, concerning provision for older people.

Information on health and social care provision for older adults in all six countries focused on the following categories.

- Population demographics
  - Population size
  - Population aged 60 and over
  - Life expectancy
  - Gross Domestic Product (GDP)
- Human resources
  - Doctors: geriatricians, psychiatrists and old age psychiatrists
  - Nurses or midwives
  - Specialist nurses
  - Physiotherapists
  - Occupational therapists
  - Speech and language therapists
- Health funding
  - Taxation/Government
  - Insurance scheme/Pre-paid
  - Out-of-pocket
  - Development assistance
  - Total
- Social security
  - Retirement age
  - Old age social pension
  - Special dementia social security
  - State care home provision

A subsequent round of data collection was carried out by NM to check for accuracy and expand the initial data set. Summarised data were finally checked for accuracy by the NEESAMA team delegates, who provided additional data sources, to address relevant gaps.

Descriptive statistics were calculated for quantitative analysis of numeric data. Non-numeric data were analysed by identifying and summarising key themes.

## Results

### Population demographics

Table 1

### Population demographics, 2018 (22)

Table 1

summarises the population demographics of the study countries, as stated by the World Bank. Except for India, all study countries have populations growing, at or above the global average rate of 1.1% (22), with Pakistan growing at a significantly higher rate than the other countries in the study. Apart from in Sri Lanka, the percentage of the population aged 65 and above is around 4–6%, significantly below the global average of 8.9%, yet this is increasing quickly in all study countries (22). The life expectancy within the study countries is generally close to the worldwide average life expectancy at birth of 72 years, but lower than that of high-income countries. The range between the highest (Sri Lanka) and the lowest (Pakistan) is 10 years. The significant variation in the population characteristics across the study countries indicates variation in the level of resources required for older persons' health. Meanwhile, the wide range in GDP per capita means that the resources available to meet those requirements are significantly different in each country.

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
<b>Population, total</b>	161,356,039	1.353 billion	28,087,871	212,215,030	21,670,000
<b>Population growth (annual %)</b>	1.050	1.037	1.654	2.056	1.048
<b>Population aged 65 and above, total</b>	8,323,375	83,591,151	1,608,781	9,152,355	2,269,547
<b>Population aged 65 and above (% of total population)</b>	5.158	6.18	5.728	4.313	10.473
<b>Life expectancy at birth, total (years)</b>	72.052 (2017)	69.165 (2017)	70.169 (2017)	66.947 (2017)	76.648 (2017)
<b>Literacy rate, adult total (% of people ages 15 and above)</b>	73.912	74.373	67.908	59.132 (2017)	91.71
<b>GDP (current US\$)</b>	274.025 billion	2.719 trillion	29.04 billion	314.588 billion	88.901 billion
<b>GDP per capita (current US\$)</b>	1,698.263	2,009.979	1,033.912	1,482.403	4,102.481
<b>Poverty headcount ratio at \$1.90 a day (2011 PPP) (% of population)</b>	14.8 (2016)	21.2 (2011)	15.0 (2010)	3.9 (2015)	0.8 (2016)
<b>Current health expenditure (% of GDP)</b>	2.365 (2016)	3.658 (2016)	6.294 (2016)	2.753 (2016)	3.893 (2016)

### Human resources

Table 2

# Human resources for older persons' health

Table 2

shows the publicly available data on the numbers of different healthcare professionals potentially involved in older person's health, however, some will also work with other age-groups. The number of geriatricians in many of the study countries is not known. In fact, in countries such as India (43, 44) and Pakistan (45), it is well documented that geriatrics is not yet an established speciality training pathway, and care of the elderly is usually provided by general physicians or primary care doctors. In 2014–2016, the number of psychiatrists per 100,000 population in all of the study countries was significantly lower than 12—that of high-income countries (46). Limited data were available in terms of old age psychiatrists, suggesting it is unlikely this exists as a sub-speciality. India is the exception, with two institutes offering dedicated training in old-age psychiatry: King George's Medical University (KGMU) and the National Institute of Mental Health and Neuro-Sciences (NIMHANS) (47). Most of these countries have specialist mental health nurses or some form of community health worker, however in very low numbers per capita. In countries such as Bangladesh and India, speech and language therapists (SALTs) cover a broad range of services in a variety of settings that include services for the elderly (48, 49).

	<b>Bangladesh</b>	<b>India</b>	<b>Nepal</b>	<b>Pakistan</b>	<b>Sri Lanka</b>
<b>Physicians (per 1,000 people) (22)</b>	0.472 (2015)	0.758 (2016)	0.598 (2014)	0.978 (2015)	0.881 (2015)
<b>Geriatricians</b>	Not available	Not available	1 (23)	5–10 (24)	3 (25)
<b>Psychiatrists (per 100,000 people) (26)</b>	0.130 (2016) (26)	0.292 (2016) (26)	0.356 (2016) (26)	0.185 (2011) (27)	0.517 (2017) (26)
<b>Old age psychiatrists</b>	0 (2017) (28)	Indian Association of Geriatric Mental Health individual members: 482 (29)	1 (2019) (23)	5–10 (24)	Not available
<b>Nurses and midwives (per 1,000 people) (22)</b>	0.267 (2015)	2.094 (2016)	2.041 (2014)	0.502 (2015)	2.794 (2015)
<b>Nurses working in mental health sector (per 100,000 population) (26)</b>	0.873 (2016) (26)	0.796 (2016) (26)	0.558 (2016) (26)	7.384 (2011) (27)	3.278 (2017) (26)
<b>Social workers working in mental health sector (per 100,000 population)</b>	Not available	0.065 (2016) (26)	Not available	1.702 (2011) (27)	0.285 (2017) (26)
<b>Psychologists working in mental health sector (per 100,000 population)</b>	0.124 (2016) (26)	0.069 (2016) (26)	0.523 (2016) (26)	0.259 (2011) (27)	0.246 (2017) (26)
<b>Community health workers (per 1,000 people) (22)</b>	0.476 (2012)	0.581 (2016)	0.684 (2004)	0.087 (2015)	Not available

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
<b>Physical therapists</b>	2,135 (2019) (30)	Indian Association of Physiotherapists members: >25,000, including physical therapists, physical therapist assistants, and students (31)	402 (2019) (32)	15,000 (2017) (33)	440 (2015) (34)
<b>Occupational therapists</b>	Bangladesh Occupational Therapy Association professional and executive members: 280 (35, 36)	5000 (2015) (37)	10 (2019) – all members trained abroad (38)	Approximately 19,000 occupational therapists, physical therapists, speech-language pathologists, psychologists, medical interns and dietitians combined (39)	Not available
<b>Speech and Language therapists</b>	Not available	Indian Speech and Hearing Association members: >3440 (includes speech-language pathologists, audiologists, and speech, language, and hearing scientists) (40)	20–25 audiologists who practise speech therapy (23)	7 (41)	100 (42)

*Summary of country reports on the status of geriatrics and old-age psychiatry.*

## Bangladesh

The directory of doctors does not list Geriatrics as a speciality (50), implying that specialist geriatricians are, at best, rare. Barikdar et al. highlight how taking care of the elderly will be a major challenge for Bangladesh, due to inadequate resources allocated to elderly services and no proper planning or strategic interventions for providing holistic care (51). Indeed, other than the opening of the Dhaka Medical College Hospital special geriatric unit in April 2014, there are no other public-sector activities (52, 53). There is, however, ongoing work by the Bangladesh Association for the Aged and Institute of Geriatric Medicine (BAAIGM), a non-governmental organisation (NGO) operating specific health care and rehabilitation programmes for older people. The BAAIGM acts nationally as an advocate for improved geriatric care, as well as carrying out research on the health and socioeconomic status of the elderly in Bangladesh (54, 55). The BAAIGM also runs a 50-bed geriatric hospital, 50-bed dormitory for the elderly, and is constructing a rehabilitation centre in Gazipur with capacity for up to 500 elderly persons (53). Despite the lack of public-sector geriatric care, private institutions such as the Subarta Trust and Sir William Beveridge Foundation work to improve welfare for the elderly population. The Subarta Trust operates a residential complex with geriatricians and allied healthcare professionals, although such services are unaffordable to the urban middle class and poor (53, 56). The William Beveridge Foundation provides home care services to around 150 vulnerable elderly people, as well as access to trained geriatric doctors and physiotherapists (53, 57).

## India

Postgraduate training programmes in geriatrics do exist, although few. Evans et al. reported in 2011, only Madras Medical College had a full-time geriatric Doctor of Medicine (MD) programme and Indira Gandhi National Open University runs a part-time Postgraduate Diploma in Geriatric Medicine (58) Currently, the Medical Council of India lists

eight medical colleges offering a specific MD in Geriatrics, with a total annual intake (seats) of 42 (47). The 2010 government policy effort—the National Programme for the Health Care of the Elderly (NPHCE)—was expected to produce, in eight regional medical institutions, a Regional Geriatric Center (RGC), with a dedicated geriatric outpatient department and 30-bed geriatric ward, as well as trained geriatric health care workers, including postgraduates in geriatric medicine (59). These government-funded facilities may be free or highly subsidised for all individuals aged over 60 years (60). It was, however, not possible to ascertain the extent to which these changes have been successfully implemented, despite examination of available literature and consultation with local experts. Moreover, the NHPCE has been criticised for its focus on elderly care in institutions and neglecting preventative home-based measures, as well as failing to outline a decentralised vision that addresses regional differences (59). Despite these discrepancies, Indian doctors have founded both the Indian Academy of Geriatrics (61) and Geriatric Society of India (62), dedicated to sharing knowledge and delivering improved care to the elderly, the former of which has reportedly around 950 members (61), although not necessarily with specific qualifications in geriatrics. There has been also been an influx of Indian geriatricians who previously worked overseas in the private sector (63).

Following a decade of advocacy, in 2010, the Department of Geriatric Mental Health at KGMU was recognised by the Medical Council of India as a subspecialty academic department with an approved speciality training programme available to one candidate (64). There are now two centres offering the DM (super speciality course) in Geriatric Mental Health (KGMU) and Geriatric Psychiatry (NIMHANS), with three and two seats available to applicants respectively (47). NIMHANS also offers one place on the Postdoctoral Fellowship (PDF) in Geriatric Psychiatry per year (63).

## Nepal

There is no specific training pathway for geriatricians, however, the Nepalese Society for Gerontology and Geriatrics (NSGG) is an established NGO, working to further the elderly care agenda, and promote geriatric research and training (65). Currently, the NSGG are working with the government to design a training pathway for geriatric nursing, as well as partnering with other agencies to train General Practitioners in identifying and managing geriatric syndromes (66). Dr Lochana Shrestha (67) outlines how the Nepalese Government have adopted a national policy, legislation and regulations on ageing, including taking steps to set-up geriatric wards in selected regional hospitals. However, limited resources present an ongoing challenge to the implementation of programmes for the welfare of the elderly (67). Additionally, information on the specific number and development of government hospitals and medical colleges with specialist geriatric units could not be found.

## Pakistan

Geriatrics is not yet an independent speciality with a respective training programme. Older patients are treated by general medical practitioners and primary care physicians, without access to specialist services for the elderly, such as mental health services, or rehabilitation centres for fractures, stroke, or movement disorders. In 1999, the government put forth a National Policy to promote better health of elderly people, with plans to train a group of health care providers for the elderly, including primary care doctors in geriatrics, physical therapists and social workers, however, this has not been implemented (45). Recent data regarding human resources for health in Pakistan were particularly sparse. Anecdotally, Professor Murad Khan of the Department of Psychiatry, Aga Khan University, reported no more than 5–10 geriatricians in the country, and only 5–10 clinicians with higher training in old-age psychiatry (having completed either a US Fellowship or UK speciality training programme abroad) (24). Of 520 psychiatrists (27), almost all are general adult psychiatrists, with limited facilities for sub-specialities such as old-age psychiatry, child and adolescent psychiatry, forensic psychiatry and substance abuse. Mental disorders of older adults, such as depression and dementia, are therefore managed variously by general adult psychiatrists, neurologists or general medical

specialists. Similarly, there is no separate curriculum or training in mental health for nurses. General nurses may opt to work in a psychiatric setting and then subsequently “learn on the job” (24).

## **Sri Lanka**

Historically, care for elderly patients is delivered by general physicians on general medical wards and through specialist health services, including mental health, disability and rehabilitation, though such services are not specifically aimed at older adults. In 2013, however, the University of Colombo Postgraduate Institute of Medicine (PGIM) pioneered the first ‘speciality training’ Postgraduate Diploma in Geriatric Medicine, supported by the Ministry of Health authorising successful applicants a 1 year period of release from their posts (68). Since 2017, the PGIM also offers an MD in Geriatric Medicine (69), with two seats available (70). However, the Sri Lankan directory of doctors currently lists only three geriatric physicians (71). Such programmes aim to train medical professionals to provide care to older adults in a diverse range of settings (such as hospitals, residential care facilities and the community), promote positive attitudes towards caring for the elderly and ensure active healthy ageing in Sri Lanka. Following the Protection of the Rights of Elders Act in 2000, the government established a National Council for Elders, with representatives from government ministries, the voluntary sector and individual experts, to develop and implement programmes to protect and promote the rights of elders. Such activities include funding access to psychological counselling, day centres and home-care, as well as trained carers for the elderly (68, 72). There are also several initiatives in progress to improve government health service provision for the elderly, including elderly-friendly hospital wards, health clinics, a stroke unit in each district general hospital and a stroke centre in each province (68). In 2014, Sri Lankan doctors also launched the Sri Lanka Association of Geriatric Medicine to promote geriatric education and research amongst the medical profession and public, by facilitating “elderly-friendly environments” in health care institutions and communities and coordinating the work of different organisations promoting the welfare of the elderly (73). Despite the notable increase in elderly health policies and initiatives in recent years, a lack of organisation and integration of existing health infrastructure and systems persists. Furthermore, the exact progress of government initiatives remains unclear.

The National Institute of Mental Health is the largest mental health hospital in Sri Lanka, with a specific Psycho-Geriatric Unit to treat the elderly, particularly dementia (74). However, none of the team of Consultants have listed old-age psychiatry credentials (75). In 2017, PGIM also commenced an MD in Old Age Psychiatry and have since accredited several training centres to deliver this course; four trainees are undergoing this training at present and the first old age psychiatrist is expected to be Board Certified in 2022 (70).

## **Health funding**

Table 3

### **Average healthcare expenditure, 2017 (76)**

Table 3

shows the average healthcare spending by type of financing, as well as total health expenditure, per person in 2017. Nepal's health spending, as a percentage of GDP, was significantly greater than that of other countries, however, all study country healthcare expenditure was below the global average of 10.0% of GDP. Furthermore, government spending in all study countries, except Sri Lanka, was less than the WHO spending target for LMICs of US\$ 60 per capita by 2015 to deliver essential health interventions (77).

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
<b>Government (\$ per person)</b>	7.24 (5.50–9.32)	18.25 (13.35–23.78)	11.21 (8.44–14.34)	10.41 (7.81–13.52)	64.74 (50.91–81.63)
<b>Pre-paid private (\$ per person)</b>	1.18 (0.56–2.26)	6.88 (3.35–12.39)	4.60 (2.11–8.68)	1.76 (0.87–3.15)	9.27 (4.68–17.40)
<b>Out-of-pocket (\$ per person)</b>	29.22 (20.94–40.33)	43.20 (32.03–60.02)	30.59 (22.14–41.48)	22.15 (15.49–30.71)	72.92 (55.37–95.34)
<b>Development assistance for health (\$ per person)</b>	2.72	0.60	3.65	2.74	4.65
<b>All-cause total (\$ per person)</b>	40.36 (31.49–51.66)	68.93 (54.44–87.48)	50.06 (39.51–63.09)	37.06 (29.22–46.28)	151.59 (124.15–182.03)
<b>All-cause total (% of GDP)</b>	2.48 ((1.92–3.21)	3.53 (2.80–4.49)	5.49 (4.29–7.02)	2.81 (2.19–3.51)	3.95 (3.24–4.77)

FIGURE 1

## Type of healthcare financing, as % total healthcare expenditure, 2017 (76)

### Social security

INSERT TABLE 4 HERE

**Table 4** shows the national retirement age for each study country as well as the social security programmes available to the elderly including special provision for those with dementia. In countries such as Sri Lanka, the retirement age of 55 is significantly lower than the Organisation for Economic Co-operation and Development (OECD) average retirement age of 64.3 years (103), whilst the life expectancy of 76.6 years is relatively close to the OECD average of 80.0 years (104). This combination will inevitably lead to a growing elderly retired population unless there is a future change in retirement policy. Most of the study countries have established some social protection provided for the elderly in the form of an old-age social pension, however, the Government of Pakistan operates a social insurance system, providing contributory pensions to retired employees and reportedly reaching just 2.30% of people aged over 65 (89). Financial provision for those diagnosed with dementia was not available in most countries, apart from India and Nepal, the latter of which involved a contribution towards the cost of care at only four specific hospitals. Traditionally, care for the elderly relied upon older person co-residing with the family and receiving care at home, however, most study countries now have a limited number of state and privately funded care homes for older adults requiring long term care.

**TABLE 4** Social security programmes for the elderly

	Bangladesh	India	Nepal	Pakistan	Sri Lanka
<b>Retirement age (years)</b>	<p>Public sector (freedom fighters): 60, the government has implemented a court directive to lengthen service by 1 year</p> <p>Public sector (non-freedom fighters): 59 (78)</p>	<p>Public sector: 60 (79), raised to 65 years for central government doctors (80)</p> <p>Private sector: 58 (79)</p>	<p>Public sector: 58, but deferred in certain instances</p> <p>Health professionals and Parliament workers: 60</p> <p>Teachers: 63</p> <p>Court workers: 65 (81)</p>	<p>60 (men), 55 (women), with at least 15 years of contributions; miners can claim the pension earlier under certain conditions (82)</p> <p>Government has proposed for retirement age to be increased to 63 (83)</p>	<p>55 (84)</p>
<b>Old age social pension</b>	<p><u>Old Age Allowance</u></p> <p>Targeting approach: income-tested</p> <p>Eligibility criteria: age <math>\geq 65</math> (men) and <math>\geq 62</math> (women) with an annual income of &lt;10,000 takas (\$118), not receiving any other government or nongovernment allowance, only one member of a family can receive the pension</p> <p>Monthly benefit: 500 takas (\$6) (paid every 3 months)</p> <p>(82, 85)</p> <p>Government plans to introduce a universal pension scheme for private sector jobholders (86)</p>	<p><u>Indira Gandhi National Old Age Pension Scheme</u></p> <p>Targeting approach: income-tested</p> <p>Eligibility criteria: age <math>\geq 60</math>, with an annual income not exceeding a certain limit, which may vary across states</p> <p>Monthly benefit: 200 rupees if age 60-79</p> <p>500 rupees if aged <math>\geq 80</math>; additional amounts may be paid and vary by state</p> <p>(82, 87)</p> <p><u>Indira Gandhi National Widow Pension Scheme</u></p> <p>Targeting approach: income-tested</p> <p>Eligibility criteria: widows aged <math>\geq 40</math>, with annual income not exceeding a certain limit, which may vary by state</p> <p>Monthly benefit: 300 rupees</p> <p>(82, 87)</p>	<p><u>Old Age Allowance</u></p> <p>Targeting approach: pensions-tested</p> <p>Eligibility Criteria: age <math>\geq 65</math> (<math>\geq 60</math> for Dalits, single and divorced women, and residents of Karnali Zone)</p> <p>Monthly benefit: 2000 rupees; 1,000 for members of the Rautes, Chepang, and certain other ethnic groups (paid every four months) (82, 88)</p>	<p>Social insurance system</p> <p><u>Old-age pension</u></p> <p>Eligibility criteria: retirement age as above</p> <p>Monthly benefit: 2% of average monthly earnings in the last 12 months multiplied by the number of years of contributions paid (minimum 5,250 rupees)</p> <p>(82, 89)</p>	<p><u>Senior Citizen's Allowance for Strengthen Elderly</u></p> <p>Targeting approach: income-tested</p> <p>Eligibility criteria: age <math>\geq 70</math> with income below a certain threshold</p> <p>Monthly benefit: 2000 Sri Lankan rupees</p> <p>(90)</p>

**Social security for people with dementia**

No financial benefits/social protection for dementia carers (28)

Indira Gandhi National Disability.

Pension Scheme

Targeting approach: income-tested

Eligibility criteria: aged  $\geq 18$ , with an assessed degree of disability  $\geq 80\%$  and annual income not exceeding a certain limit, which may vary across states

Monthly benefit: 300 rupees (central contribution), additional amounts may be paid and vary by state

(82)

Integrated Programme for Older Persons Scheme

Provides funding for up to 90% of the project costs to eligible agencies for establishing and maintaining old age homes, day care centres, mobile medicare units and delivering non-institutional services to older persons–this includes the running of day care centres for patients with dementia (91)

Assistance for construction of old age homes for older persons Scheme

Provides funding for construction of old age homes–Scheme is presently under formulation

(91)

Department of Health Services provides 100,000 Nepalese rupees to patients diagnosed with Alzheimer's disease, to cover the cost of healthcare from four enlisted hospitals (National Academy of Medical Sciences, Tribhuvan University Teaching Hospital and Patan Academy of Health Sciences in Kathmandu Valley and BP Koirala Institute of Health Sciences in Dharan) (96)

None (97)

Not available

Rashtriya Vayoshri  
Yojana

Provides physical aids and assisted-living devices to senior citizens belonging to the below the poverty line (BPL) category

(92)

Pradhan Mantri Jan  
Arogya Yojana

Provides coverage of up to 500,000 rupees per family per year for secondary and tertiary hospitalisation to over 107.4 million eligible poor and vulnerable families (approximately 500 million beneficiaries)

(93)

Welfare of Parents  
and Senior Citizens  
Act 2007

Mandates needs-based maintenance (food, clothing, residence, medical attendance and treatment) for parents/grandparents from their children to protect the life and property of senior citizens

(91)

Income Tax Act 1961

Section 80U:  
deduction can be claimed by an individual if they are certified by the medical authority to be a person with disability (94)

Section 80DDB:  
deduction can be

		claimed by an individual for themselves or a dependant relative, for expenditures incurred for medical treatment of specified diseases (94), including dementia (95)			
<b>State care homes</b>	Community-based services for dementia are available, but in the capital and main cities only (28)  Six aged care homes (Santi Nibas) in six divisions (98)	Six full-time residential care facilities and around ten day-care services exclusively for people with dementia (99)  Welfare of Parents and Senior Citizens Act 2007 contains enabling provisions for setting up of old age homes for providing maintenance to senior citizens (91)	70 old age homes (OAHs), of which 11 get government grants (100)  One government-run residential facility (Pashupati Bridrashram), with the capacity for 230 elderly people (67, 100)	Very few old-age homes located in Karachi, run by charities, though none specifically for people with dementia (24)  Families are more likely to accept home help than send persons with dementia to a nursing home (97)  No tradition of old-age homes, reliance is on elderly co-residing with family (101)	Most residential care homes are run by local, often faith-based, voluntary social service organisations: two-thirds have 30 places or fewer, 18% have more than 50 places and there are a growing number of private fee-paying long term care residential homes, most in or near Colombo, caring for 10-30 people (102)

Table 5

## Old age social pension adequacy (105)

Table 5

shows old-age social pension adequacy in Bangladesh, India, Nepal and Sri Lanka. For the purposes of this research, we focus on a social (or non-contributory) pension paid by the state to an individual upon their retirement. This is known, according to the World Bank five-tier pillar framework, as Pillar zero “non-contributory social assistance financed by the state, fiscal conditions permitting” (106). The percentage of GDP allocated to such social pensions is very low, and apart from in Nepal, the monthly benefit is significantly below the poverty line of \$1.90 per day, as defined by the World Bank. The combination of a very low or, in the case of Pakistan, non-existent social pension provision, together with high out-of-pocket payments for health care poses a significant barrier to accessing adequate health care, particularly for the poorest and most vulnerable section of the elderly population.

	Bangladesh	India	Nepal	Sri Lanka
Monthly benefit (local currency)	500 takas	200 rupees	2,000 rupees	2,000 rupees
Monthly benefit (\$)	6	3	19	13
% of older people (65+) receiving social pension	34.90	17.74	46.80	No data
% of population over age of eligibility covered	34.9	17.7	79.9	32.8
% of GDP per capita	5.2	2.2	30.8	3.8
% of \$1.90 poverty line (PPP)	29	20	110	72
Cost of social pension as % of GDP	0.102	0.035	0.703	No data

## Discussion

This study is the first broad assessment of the current situation of health and socioeconomic resource provision for the elderly in these South Asian countries.

## Principal findings

Bangladesh, India, Nepal, Pakistan and Sri Lanka have limited resources dedicated to the care of older adults, specifically human resources, health funding and social security. Publically available data were limited, in particular regarding human resources for older persons’ health, especially mental health care. This is consistent with the well-documented gap in mental health treatment, prevention and quality of care (107).

A lack of geriatrics and old-age psychiatry as established specialities presents significant challenges to elderly healthcare. Without specialist clinicians with a comprehensive knowledge of the health needs of the elderly, health services may not be appropriately equipped to provide high-quality care. Although most study countries had government and non-governmental organisations working to promote and expand services for the elderly, including geriatric health education, only India and Sri Lanka had established academic institutions offering postgraduate training programmes in geriatrics. Both countries offer a Postgraduate Diploma or MD in Geriatric Medicine, with only a small number of seats available to potential candidates, in comparison to other medical or surgical specialities. Since 2011, only India offers postgraduate training in old-age psychiatry with five seats available for the DM in Geriatric Psychiatry. Lodha and De Sousa highlight the gross inadequacy of these numbers, reporting India has 5000 general psychiatrists, to cater for 21 million older persons with a reported need for mental health services (108), along with an estimated 100 memory clinics to provide diagnostic services, medication and post-diagnostic support to a population of over 100 million elderly (99).

Similarly, numbers of allied healthcare professionals per capita are very low (Table 2), suggesting a range of services such as carers, physiotherapy, occupational therapy and speech and language therapy have insufficient staff to meet

the growing requirements of the ageing population. The Comprehensive Geriatric Assessment, generally considered the gold standard assessment for multimorbid, frail older persons, specifically outlines the need for a multidisciplinary approach (109). Yet, while most of the study countries have some access to a range of allied health workers, the number and level of training were variable. For example, in India, there are centrally accredited Masters and PhD-level programmes available in most universities to train occupational therapists, ensuring that all those trained have a standardised set of skills (37). However, Nepal has no established training programmes, and all members of the Association of Nepal's Occupational Therapists are trained abroad (38). Thus, with eight occupational therapists servicing the country, there is approximately only one occupational therapist per 500,000 persons reported to have some form of disability (110). With total average healthcare spending (Table 3) falling markedly below the global average, there is a need to re-allocate public resources to healthcare. Only then can stakeholders facilitate increased training and distribution of specialist clinicians, as well as allied health and social care workers, with the specific skills and knowledge to provide high-quality services for the elderly.

Between 48.1–72.0% of all health expenditure was out-of-pocket spending, with less than half of all costs financed by the government (Fig. 1). Personal spending in Bangladesh accounted for 72.0% of health expenditure, with only 18.2% of healthcare costs covered by the government (Fig. 1). This indicates significant monetary strain on the elderly population, with few resources to meet the cost of ill-health. Without access to affordable healthcare, vulnerable elderly members of society risk financial catastrophe and poverty, as a direct result of having to pay for healthcare. This phenomenon was demonstrated by Berman et al. (111), who found that in 2001, out-of-pocket healthcare payments in India and Pakistan propelled 3–25% of the population below the poverty line. The study also showed that, in 2005, the proportion of personal spending on health was 76.1% and 80.9% in India and Pakistan respectively, highlighting a more than 10% decrease in out-of-pocket expenditure throughout the next decade. By comparison, out-of-pocket expenses in Bangladesh have risen by 15% from 62.6%, whilst Sri Lankan proportions remained relatively unchanged from 46.3% (111). Without rapid and drastic changes in healthcare financing, with improved financial protection for the elderly, unregulated out-of-pocket payments constitute a major access barrier to healthcare and undermine country progress to achieving UHC.

Social protection provision in all study countries is modest, with the government of Pakistan offering no social pension at all. Pillar Zero (or non-contributory) pensions provide a minimum level of financial protection in Bangladesh and India, costing between 0.0-0.1% of GDP and covering 17.7–34.9% of those eligible (Table 5). Nepal stands out, with the government spending a slightly greater proportion of 0.7% of GDP on a social pension above the daily poverty line, and reaching 79.9% of those eligible. Social security payments for those with dementia, however, are virtually non-existent, apart from in India and Nepal where many people may not be aware of their right to access such funding. For example, although the Government of Nepal offers several funding provisions to deliver health services to the elderly, as well as financial subsidies for selected disease (67, 112), awareness of these schemes is minimal (112, 113). The number of state care homes across each study country is also blatantly disproportionate to need, reflecting a tradition of family caregiving (Table 5). However, with the rapid ageing of the population, the government is required to develop alternate caring arrangements, including specialist dementia provision, accessible to the elderly population, including those in rural or impoverished areas.

## **Strengths and weaknesses of the study**

It is likely that not all health and socioeconomic resource provisions for older people were identified. The study data were obtained from searches of publically available literature and supplemented by enquiries to local institutions and personal contacts. Consultation with local experts enabled snowballing of additional relevant reports and data, that may not otherwise have been identified. The search, however, was conducted in English, thus may have missed results in other languages.

In terms of numbers of various healthcare personnel, it was not known if the data gathered were representative of human resources available through all sources of healthcare available including public health services, health insurance, non-profit organisations and private medical care. Furthermore, it was uncertain what proportion of each study country population is accessing government-funded health care as, in some countries, only those paying tax are entitled to free healthcare. In these cases, the government average health expenditure may not be accessible to certain elderly populations who need it most. Also, the average expenditure on the services of herbal and traditional practitioners may not be included in overall average healthcare expenditure but could be a significant source of healthcare provision for the elderly in these nations.

Finally, while there are data available on existing or developing legislation and policies, as well as pension schemes and grants with respect to elderly care provision, further analysis of the implementation and efficacy of these initiatives in the study countries is beyond the scope of this research.

## **Possible interpretations and implications for clinicians or policymakers**

As the global movement towards UHC progresses, the gaps in resource provision for the elderly in South Asian countries will present a significant challenge for policymakers. Above all, the current lack of funding presents a large barrier to reform of existing health infrastructure for the elderly. Without rapid increases in health funding, it is inconceivable that health service provision will catch up with the health and social care needs of the rapidly growing elderly population. In addition, new training programmes for groups of healthcare workers for the elderly, including doctors, nurses and allied healthcare professionals will need steady implementation. This will expand the workforce available for elderly care and ensure that patients have access to the necessary specialist health services aimed at older adults. Scaling up recruitment and training in geriatric psychiatry must be a priority to address the growing mental health needs of the elderly, and address gaps in mental health treatment, prevention and quality of care. Finally, updating pension schemes and increasing financial support for health and social care will likely lead to improved outcomes for the elderly and a reduced burden of illness. This is contingent upon services being largely accessible to the elderly population, including those in rural or impoverished areas.

## **Unanswered questions and future research**

Having established what provision there is in countries for older people, future research investigating what data are available on access to elderly care provided is required. If data are insufficient, a survey of the level of awareness and uptake of resources in representative populations from South Asian countries, Bangladesh, India, Nepal, Pakistan and Sri Lanka, would be valuable in this regard. Equally more information provided by study country institutions and personal contacts would be useful where data are not publicly available.

Constituting a comprehensive picture of both provision of, and access to, elderly care services in these countries will enable more informed identification of key priorities for clinicians and policymakers.

## **Conclusions**

Inadequate health and socioeconomic resource provision for the elderly is an imminent threat to the global ageing population and achieving UHC. This is recognised by the WHO and by country governments. In the study countries, discrepancies in the growing health and social care needs of the elderly, and services available, are indicative of inadequate funding. Despite the presence of government and non-governmental institutions working to promote and expand services for the elderly, insufficient workforce and government pension and social security schemes present major challenges to existing health and social care systems. There is a need to further recognise geriatrics and

geriatric psychiatry as important respective specialities, essential to addressing the specific health needs of the elderly population. This must occur alongside formalising and expanding training programmes to develop a system of health care providers for the elderly, including a range of allied healthcare professionals. Pension reform and increased financial support for health and social care are also critical to protect an increasingly multimorbid population from catastrophic health expenditure and improve access to those in need. Further investigation of access to health and socioeconomic resources is also important to guide governing bodies future inquiry and, ultimately, priority setting to improve elderly health.

## **Abbreviations**

BAAIGM Bangladesh Association for the Aged and Institute of Geriatric Medicine

BPL Below Poverty Line

DM Super Speciality Course (India)

GDP Gross Domestic Product

KGMU King George's Medical University

LMICs Low- and middle-income countries

MD Doctor of Medicine

NCDs Non-communicable diseases

NEESAMA North East England South Asia Mental Health Alliance

NGO Non-governmental organisation

NIMHANS National Institute of Mental Health and Neuro-Sciences

NPHCE National Programme for the Health Care of the Elderly

NSGG Nepalese Society for Gerontology and Geriatrics

OAHs Old age homes

OECD Organisation for Economic Co-operation and Development

PDF Postdoctoral Fellowship

PGIM Postgraduate Institute of Medicine (University of Colombo)

PPP Purchasing power parity

RGC Regional Geriatric Center (India)

SALTs Speech and language therapists

SDG Sustainable Development Goal

UHC Universal healthcare coverage

UK (The) United Kingdom (of Great Britain and Northern Ireland)

US (The) United States (of America)

WHO World Health Organisation

## **Declarations**

## **Ethics approval and consent to participate**

Ethical approval was not sought for this study as it did not involve human subjects or identifiable human material and data.

### **Consent for publication**

Not applicable.

### **Availability of data and material**

All data generated or analysed during this study are included in this published article.

### **Competing interests**

The authors declare that they have no competing interests.

## **Funding**

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## **Authors' contributions**

RW, MV, NS and SMP conceived the study and RW oversaw the study. NM led the data collection and analysis, wrote the original draft and oversaw the editing of the final manuscript. GP was a major contributor to data collection and analysis and writing the manuscript. Other authors made contributions to specific sections of the report and all authors read and approved the final manuscript.

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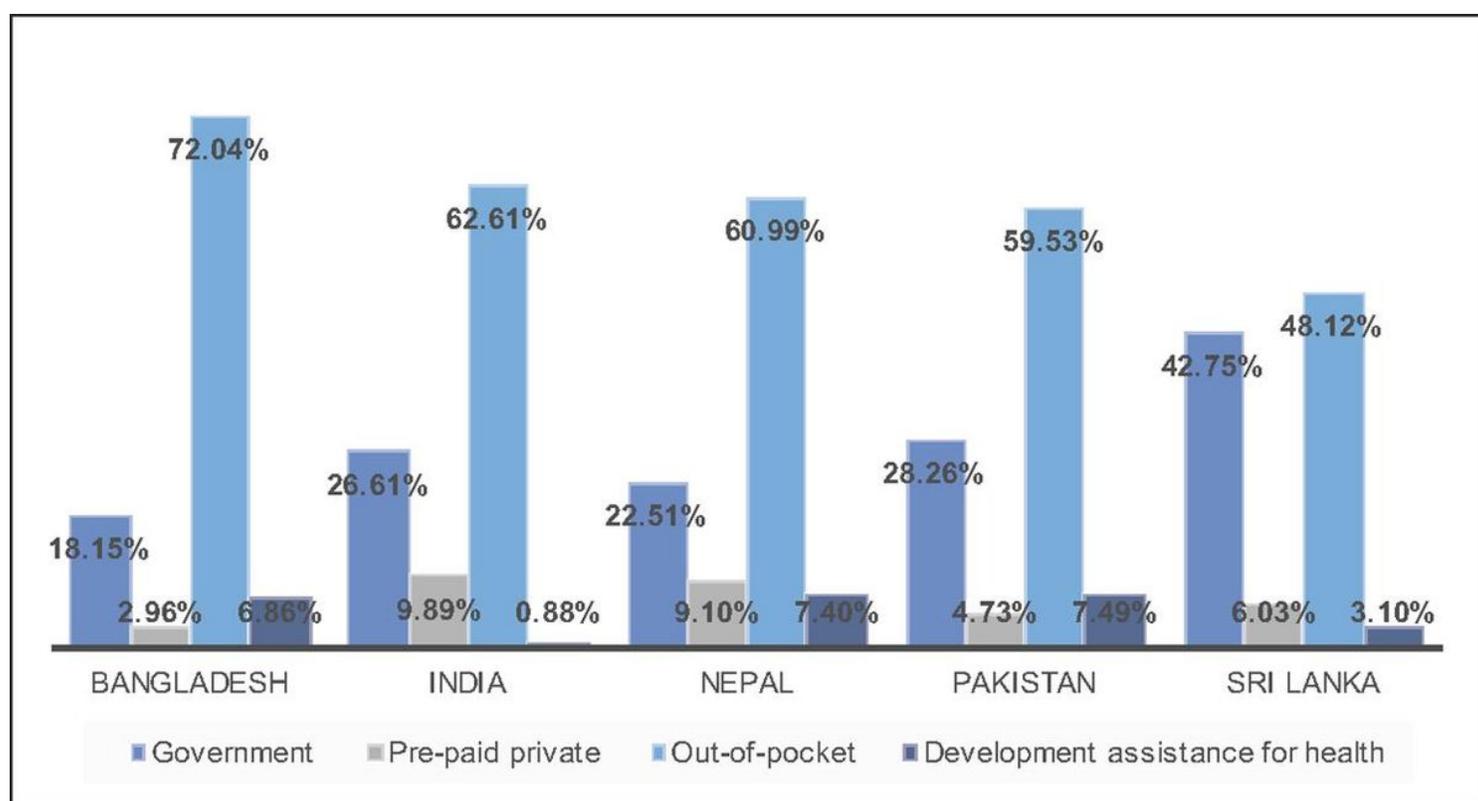
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## Figures



**Figure 1**

Type of healthcare financing, as % total healthcare expenditure, 2017 (76)