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SPECIAL REPORT

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# WORLD HEALTH ORGANIZATION GLOBAL DISABILITY ACTION PLAN 2014–2021: CHALLENGES AND PERSPECTIVES FOR PHYSICAL MEDICINE AND REHABILITATION IN PAKISTAN

Fary KHAN, MBBS, MD, FAFRM (RACP)[1–4], Bhasker AMATYA, MD, MPH[1,4], Tahir M. SAYED, MBBS, FCPS[5], Aamir W. BUTT, MBBS, FCPS[5], Khalid JAMIL, MBBS, FCPS[5], Waseem IQBAL, MBBS, MSc (Pain Medicine), FCPS[5], Alaeldin ELMALIK, MBBS, FAFRM (RACP)[1], Farooq A. RATHORE, MBBS, FCPS, OJT[4,6] and Geoff ABBOTT, MBBS, FARM (RACP), Dip MSM[1]

*From the [1]Department of Rehabilitation Medicine, Royal Melbourne Hospital, Parkville, [2]Department of Medicine (Royal Melbourne Hospital), The University of Melbourne, Parkville, [3]School of Public Health and Preventive Medicine, Monash University, Victoria, Australia, [4]Committee for Rehabilitation Disaster Relief (CRDR), International Society of Physical and Rehabilitation Medicine (ISPRM), Geneva, Switzerland, [5]Armed Forces Institute of Rehabilitation Medicine, Rawalpindi, Pakistan and [6]Department of Rehabilitation Medicine, Combined Military Hospital Lahore Medical College, Lahore, Pakistan*

***Objective*: To provide an update on disability and outline potential barriers and facilitators for implementation of the World Health Organization Global Disability Action Plan (GDAP) in Pakistan.**

***Methods*: A 6-day workshop at the Armed Forces Institute of Rehabilitation Medicine, Islamabad facilitated by rehabilitation staff from Royal Melbourne Hospital, Australia. Local healthcare professionals (*n* = 33) from medical rehabilitation facilities identified challenges in service provision, education and attitudes/approaches to people with disabilities, using consensus agreement for objectives listed in the GDAP.**

***Results*: Respondents agreed on the following challenges in implementing the GDAP: shortage of skilled work-force, fragmented healthcare system, poor coordination between acute and subacute healthcare sectors, limited health services infrastructure and funding, lack of disability data, poor legislation, lack of guidelines and accreditation standards, limited awareness/knowledge of disability, socio-cultural perceptions and geo-topographical issues. The main facilitators included: need for governing/leadership bodies, engagement of healthcare professionals and institutions using a multi-sectoral approach, new partnerships and strategic collaboration, provision of financial and technical assistance, future policy direction, research and development.**

***Conclusion*: The barriers to implementing the GDAP identified here highlight the emerging priorities and challenges in the development of rehabilitation medicine and GDAP implementation in a developing country. The GDAP summary actions were useful planning tools to improve access and strengthen rehabilitation services.**

*Key words*: disability; rehabilitation; Pakistan; World Health Organization.

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Correspondence address: Fary Khan, Department of Rehabilitation Medicine, Royal Melbourne Hospital, 34-54 Poplar Road Parkville, Melbourne VIC 3052, Australia. E-mail: fary.khan@mh.org.au

There are an estimated 650 million people with disabilities (PwD) in the Asia-Pacific region (65% of the total global disability population), equating to 1 in every 6 persons (1–3). The United Nations (UN) Convention on the Rights of Persons with Disabilities (CRPD) recognizes that "disability is an evolving concept that results from the interaction between persons with impairments and attitudinal and environmental barriers that hinder their full active participation in society on an equal basis with others" (4). This "paradigm shift" in attitudes to PwD, views PwD as active members of society with equal rights (4) and delivered a normative framework for disability, ratified by 147 member states including Pakistan (3). Despite this commitment from UN Member states, there remains a significant gap in service provision for this cohort in the community in terms of healthcare and access to services. The implementation of rehabilitation policies and legislation are not optimal in many countries (1). In the South-Asia region (similar to other developing countries) (5), non-communicable diseases (NCDs), environmental factors, road trauma, disasters and man-made conflict are key factors contributing to disability prevalence (3).

Pakistan is the sixth most populous country in the world (population > 180 million, area approximately 800,000 km$^2$) (6), bordered by India, Afghanistan, Iran and China. Pakistan comprises 5 main provinces: Punjab, Khyber-Pakhtunkhwa, Sindh, Balochistan and, relatively smaller, Gilgit-Baltistan; and 3 territories: Federally Administered Tribal Areas, Islamabad Capital Territory and Kashmir (6). Punjab and Sindh are the most densely populated regions (7); however, approximately 64% of the Pakistani population live in remote and rural areas (7). There are significant disparities amongst the provinces in terms of capacity, infrastructure and level of governance, due to topography, security issues and/or natural disasters (3).

The median age of the population of Pakistan is 23 years (with over 35% of the population being younger than 14 years). Life expectancy at birth is 65 years

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(8). The literacy rate among adults aged 15 years and over is just above 56% (6, 8). According to World Bank income classification, Pakistan is categorized as a "low-middle" income country, and is ranked 146th (out of 186 countries) in the Human Development Index, with gross national income *per capita* (in 2013) of US $2,880 (6, 8). Pakistan remains impoverished and underdeveloped, with 60.2% of the population living below US$2 dollars a day (9). Gender inequities, particularly in marginalized populations, are prominent, with 58% of females over the age of 15 years being illiterate compared to 33% of males (6, 9). Universal education is yet to be achieved in Pakistan. Compared with other member countries of the South Asian Association for Regional Cooperation (SAARC) (Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal and Sri Lanka), Pakistan has low net primary (72.5% in 2012) and tertiary education enrolment rates of only 9.5% (9).

Overall spending on healthcare by the government of Pakistan is low, with total expenditure on health per capita of US $126 (in 2013), or 2.8% of total expenditure of gross development product (GDP) (6, 8). The majority of PwD in Pakistan, as in many developing countries (5, 10, 11), are economically deprived and experience difficulties in accessing basic health services, including rehabilitation services (7, 12). Similar to other SAARC countries, much effort has gone into improving the acute care sector, while post-acute care (including rehabilitation), is still undeveloped at many levels (7, 12). Overall, key determinants of poor health include: literacy, unemployment, gender inequality, social exclusion, rapid urbanization, and environmental degradation (3, 6). Furthermore, war/conflict, terrorism, chronic insecurity, frequent disasters (both natural and man-made), intertwined with political instability, poor governance and dependency on foreign assistance compound the lack of an effective healthcare system in Pakistan. Despite attempts to introduce various policies for PwD, they continue to have difficulty exercising their civil and political rights, and gaining access to education and employment (13). An estimated economic loss of approximately US $11.9–15.4 billion or 4.9–6.3% of Pakistan's GDP is attributed to exclusion of PwD as productive members of society (13, 14).

An overview of disability and current rehabilitation status in Pakistan is set out below.

### *Burden of disability*

There is limited epidemiological data on disability and disability-related burden in Pakistan. Based on the 1998 population census, there are an estimated 3 million PwD in Pakistan, and a disability prevalence rate of 2.5%. This is significantly lower than the "world-wide" disability prevalence rate estimation of 15% (or 1 in 7 people) based on the World Report on Disability (1). Based on this reported prevalence of disability and a population of 185.1 million (2014) (7), the number of PwD in Pakistan may exceed 27 million people. NCDs remain a significant cause of overall burden of disease in Pakistan, contributing an estimated 40.3% of overall disability-adjusted life years (DALYs) in 2012, followed by injuries, which account for 11% of DALYs (15). Amongst NCDs, DALYs attributed to cardiovascular disease (CVD) is the highest (7.3%), followed by behavioural conditions (5.1%), cancer (4.5%), and neurological conditions (3.6%) (15). NCDs contribute to 50% of overall mortality, with 19% due to CVD alone; while communicable diseases contribute 39% and injuries 11% (8). Consistent with other SAARC countries, the prevalence of disability in Pakistan is increasing due to natural disasters and conflict, cultural factors, political instability, increase in chronic conditions, an ageing population and economic down-turn (3, 13). Despite the lack of conclusive data, the economic and social costs of disability are significant for PwD (their families), the community and the nation (1).

### *Disability policies and legislation*

National development policies in many South-Asian countries have not adequately addressed the concerns of PwD. In response to the UN's International Year of Disability 1981, the government of Pakistan initiated their first law dealing specifically with disability: the "Disabled Persons (Employment and Rehabilitation) Ordinance 1981", to promote equal working rights, focusing on employment and segregated education for PwD (13). The Ordinance specified that all government agencies and companies with more than 100 employees were required to ensure that at least 1% of their workforce consisted of PwD or pay a levy; this law, however, is poorly implemented. After a hiatus of 20 years, in consultation with the health, education, labour, housing and science and technology ministries, as well as relevant non-governmental organizations (NGOs) and local organizations, the first "National Policy for Persons with Disabilities" was approved in 2002 (13). The policy advocates rights of PwD for access to medical and rehabilitation services, education, employment and social participation and systematically specifies guiding principles and strategies, with the focus on empowering PwD. In 2006, the "National Plan of Action" was introduced to provide a roadmap for implementing the national policy, with short- and long-term measures. However, due to the amended Constitution and division of legislative powers (from

federal to provincial government), including social welfare, mental illness, workers' welfare, employer liability and education, the policy was not endorsed (13, 16). In 1990, the Pakistan "Convention on the Rights of the Child" was ratified for rights of children with disabilities (Article 2, Article 23). The "National Plan of Action for Children (2006 to 2015)" was further ratified, for rights of children with disabilities and PwD (17). The "Convention on the Elimination of all Forms of Discrimination against Women", ratified in 1996, however, did not directly address the rights of women with disabilities. Similarly, the "National Education Policy" (2009) did not contain any direct objective to address the needs of children and women with disabilities (17). Pakistan signed the UNCRPD in 2008 and ratified the convention in 2011 (3). Furthermore, the UNCRPD Secretariat for the Implementation of the Convention was established in 2012 and a formulation of a Core Committee followed to monitor/coordinate with all stakeholders for implementation of the Convention (17).

Policy approaches to disability have largely improved in the last few years in Pakistan, and there is better collaboration between acute and rehabilitation facilities and various NGOs, who provide social care for PwD. More work, however, is needed for the government to implement better laws and policies, for services to be efficient and effective, and for organizations working with PwD to adopt a co-ordinated approach to communicate their needs. There is much to be done with regard to disabled access to buildings, parking, transportation, and access to advocacy, provision of assistive devices, aids, counselling, social welfare and assistance to PwD. In general, there is lack of public awareness of economic and social implications for PwD. The CRPD offers a blueprint for a rights-based approach to mainstreaming PwD, underlining the government's commitment to protecting the civil, political, social and economic rights of PwD. However, many agree that little has changed in accordance with the framework, set up in the CRPD framework (7, 13), and millions of PwD remain excluded from healthcare, rehabilitation, and social participation.

*Human resources*

There are an estimated 8 physicians per 10,000 population in Pakistan, which is significantly higher than other SAARC member countries, except India (with 16 physicians per 10,000 population) (3). (Table I). Overall, it is estimated that there are more than 200,000 doctors, 33,793 specialist doctors (more than 170 trained neurologists) registered with the Pakistan Medical and Dental Council (as of October 2015) (18). There are an estimated 46,000 nurses and 4,500 lady health visitors currently registered in Pakistan (3, 6). To date, 48 physicians have qualified as physical medicine and rehabilitation (PM&R) fellows, the majority ($n$=32) of whom work in military facilities; while the remainder work in the private and public sectors, which service the majority of PwD in Pakistan (18). Currently, there are an estimated 1,700 physiotherapists in Pakistan, with 1,300 expected to graduate annually. There are approximately 200 trained occupational therapists, 250 speech and language therapists, and no formally trained nurses in rehabilitation. There is a significant shortage of trained and available healthcare professionals with inequitable staff distribution across rural areas (particularly in the rehabilitation sector) (7). Importantly, there is still no formal professional organization representing PM&R specialists. PM&R staff from various rehabilitation settings are focusing on building interdisciplinary teams, communication and decision-making processes in order to operate as cohesive teams.

*Service delivery*

Since the adoption of the CRPD in 2011, there has been an increased awareness of the disability-inclusive national development strategies, goals and programmes in Pakistan. However, the health system in Pakistan has faced enormous challenges in recent decades, due to sectoral conflicts, natural disasters, poverty, political uncertainty and a decrease in international aid. In 2010, there were 989 public hospitals and 800 private hospitals, 596 rural health centres and 4,910 basic health units at the primary healthcare level (19, 20). According to the World Health Organization (WHO), there are a mean of 6 hospital beds per 10,000 population (3). Rehabilitation services are increasing significantly in Pakistan, compared with its counterparts in the region. There are 3 established rehabilitation centres, 15 departments of rehabilitation medicine, 32 physiotherapy departments (mainly in the army) currently operational in Pakistan (7). In addition, there are 4 smaller regional facilities that provide supportive rehabilitation, including community-based rehabilitation programmes. There are however, only 2 institutes of PM&R in the country: the Armed Forces Institute of Rehabilitation Medicine (AFIRM) primarily catering for the military, and another in private sector (21). It is estimated that PM&R is being practiced at 23 locations in the country; however, most of these centres do not follow a multidisciplinary approach (7). There are also some centres for spinal cord injuries run by NGOs and physiotherapists (7, 21). In 1997 the College of Physicians and Surgeons of Pakistan recognized PM&R as a specialty and provided the fellowship training programme in PM&R. Currently, along with the AFIRM,

**Table I.** Summary of current health systems/resources for disability in South Asian Association for Regional Cooperation member countries

| Country | Afghanistan | Bangladesh | Bhutan | India | Maldives | Nepal | Pakistan | Sri Lanka |
|---|---|---|---|---|---|---|---|---|
| Population[a] | 30.6 million | 156.6 million | 0.75 million | 1.2 billion | 0.35 million | 27.8 million | 185.1 million (2014)[b] | 21.3 million |
| Economic statistics | GNI per capita (2013): $2,000<br>Total expenditure health: 8.1% of GPD<br>HDI rank: 175<br>Annual disability spending: **US**$34.8 million | GNI per capita: $2,030; Total expenditure on health: 3.7% of GPD<br>43% living below poverty line (US$ 1.25/day)<br>HDI rank: 146; Annual disability spending: no information | GNI per capita (2013): $7,210<br>Total expenditure on health: 3.6% of GPD<br>HDI rank: 140<br>Annual disability spending: no information | GNI per capita: $5,350; Total expenditure on health: 4.2% of GPD<br>HDI rank: 136<br>Annual disability spending: Indian rupee 4.8 billion | GNI per capita: $8,110; Total expenditure on health: 10.8% of GPD<br>HDI rank: 104<br>Annual disability spending: no information | GNI per capita: $2,260; Total expenditure on health: 6.0% of GPD<br>HDI rank: 157<br>Annual disability spending: no information | GNI per capita[b]: $4,920; Total expenditure on health: 2.8% of GPD<br>HDI rank: 146<br>Annual disability spending: Pakistani rupee 366 million | GNI per capita: $9,470; Total expenditure on health: 3.4% of GPD<br>HDI rank: 92<br>Annual disability spending: Lankan rupee 25 million |
| Human resources (healthcare) | Physicians: 2.3/10,000 people;<br>No specific specialization in PM&R<br>No data on other healthcare and allied health personnel | Physicians: 3.6/10,000 people;<br>Currently active: PM&R physicians: 200. PT: 1300; PT assistants: 600; SLTs: 33; P&O technicians: very few; over 900 persons completed CBR training courses | Physicians: 0.074/10,000 people; nurses/midwives: 0.3/10,000 people<br>No information on rehabilitation professionals | Physicians: 7/10,000 people;<br>several national institutions and 250 private institutions conduct training courses for rehabilitation specialists | Physicians: 16/10,000 people; nurses: 44.4/10,000 people; PT: 22 (2005)<br>No information on rehabilitation professionals | Physicians: 0.21/10,000 people (2004)<br>No information on rehabilitation professionals | Physicians: 8/10,000 people (113,700 doctors, 21,800 specialist doctors); Nurses 6/10,000 people (46,000 nurses and 4500 lady health visitors);<br>PM&R specialists: 38 (25 in armed forces) | Physicians: 6.8/10,000 people; currently employed in government hospitals: 363 PTs; 107 OTs and 35 S<s; 8,000 of the 14,000 CBR volunteers;<br>No trained PM&R physician |
| Health services/ infrastructures | Access to health centres: 51% and hospital: 32.4%;<br>Many rehabilitation services funded by NGOs and charities<br>PT services: 44/364 districts; CBR and outreach programmes<br>implemented: 80/364 districts; orthopaedic centres: 13/34 provinces | Approximately 4 beds/10,000 people; piloting 68 Integrated Disability Service Centres in 64 districts, with 323 PTs, 83 OTs, 37 P&O and 19 speech therapists. Many rehabilitation services funded by NGOs and charities | 32 hospitals, 192 basic health units, 48 indigenous hospitals and over 550 outreach clinics, free healthcare services to cover 90% population (2012). No information on rehabilitation centres | 5 composite, 4 regional and 120 district rehabilitation centres, institutions at intermediary and district level exist for PwD | 1 main referral general public hospital, 6 regional public general hospitals, 13 hospitals, 132 healthcare centres, 108 health posts. Many rehabilitation services funded by NGOs and charities | 19 medical colleges, >100 paramedical institutions, no rehabilitation professionals.<br>Many rehabilitation services funded by NGOs and charities | 989 public, 800 private hospitals, 596 rural health centres and 4910 basic health units at the primary healthcare level (2010).<br>15 departments of rehabilitation medicine, 32 PT departments (mainly in army)<br>Approximately 6 beds/10,000 people | 5 rehabilitation hospitals; 50 base and district hospitals with PT units, 8 physical rehabilitation centres in 6 districts produce P&O devices. |
| Disability data | PwD: 0.9 million; Disability prevalence: 2.7 (2005); 4.8% of total population | PwD: 13.3 million; Disability prevalence: 9.0 (2008); (approximately 750,000 persons) of the population in need of P&O services | PwD: 0.02 million; Disability prevalence: 3.4 (2005) | PwD: 22 million, Disability prevalence: 2.1 (2001)<br>Proportion of PwD to total population 1.8–2.1%; | PwD: 9,216; Disability prevalence: 3.4 (2002) | PwD: 0.1 million, Disability prevalence: 0.5 (2001) | PwD: 3.3 million,<br>Disability prevalence: 2.5% (1998) | PwD; 0.3 million, Disability prevalence: 1.6 (2001);<br>Approximately 105,000 persons require P&O services |
| Disability type | Physical: 36.5%, visual and hearing: 25.5%, intellectual: 18.8%, mental: 9.7%, multiple: 9.4% | Physical: 22.5%, visual: 13.7%, hearing: 16.8%, intellectual (memory loss): 10.1%, mental: 12.8%, others 24.2% | Physical (mobility): 17.4%, visual: 23.5%, hearing: 35.7%, speech: 17.8%, mental: 5.5% | Movement: 27.9%, visual:48.5%, hearing: 5.8%, speech: 7.5%, mental: 10.3% | Visual: 33.2%, speech: 28.6%, Mental: 27.8%, others 10.4% | Physical: 39.3%, blind: 15.9%, deaf: 24.6%, mental (retarded): 12.7%, multiple: 7.5% | Physical: 18.9%, visual: 8.1%, hearing: 7.4%, intellectual: 7.6%, mental: 6.4%, multiple: 8.2%, others 43.4% | Physical: 55.3%, visual: 25.2%, hearing/ speech: 26.7%, mental: 25.1%% |
| Disability legislation for PwD | CRPD ratified: 2012; Comprehensive national disability policy 2003; National Disability Action Plan (2008–2011); National Priority Programme "Health for<br>All Afghans" from 2012; Physical Rehabilitation Strategy | CRPD signed and ratified: 2007; Disability Welfare Act (2001); National Policy on Disability (2004); National<br>Action Plan on Disability (2006); Disability Rights and Protection Act (2013); signatory to the Asian and Pacific Decade of PwD (2002–2012) and (2013–2022) | CRPD signed 2007; no information in regards to laws and policies for PwD | CRPD signed and ratified: 2007; PwD Equal Opportunities, Protection<br>of Rights and Full Participation Act (1995); Mental Health<br>Act (1987); National Policy for Persons with Disabilities (2006); Rehabilitation Council of India Act (1995) | CRPD signed 2007 and ratified 2010; Law on Protecting the Rights of People with Special Needs and Financial Assistance (2009); National Disability Policy; Strategic Action Plan 2009–2013; Action Plan for Children with Disabilities 2008–2013 | CRPD signed 2008 and ratified:2010; Person with Disability Welfare Act 2039; Person with Disability Welfare Regulation 2051, National Disability Policy 2006; National Disability Action Plan 2006–2016 | CRPD signature 2008, ratification 2011; National Policy for PwD: 2002; National Plan of Action 2006–2025; the Disabled Persons (Employment and Rehabilitation) Ordinance1981; Convention on the Rights of the Child 1990; Convention on Elimination of all Discrimination against Women 1996 | CRPD signed 2007; Protection of the Rights of Persons with Disabilities Act<br>(1996); RanaViru Seva Act (1999); Visually Handicapped<br>Trust Fund Act (1992); Disabled Persons' Accessibility Regulation (2003); National Policy on Disability (2003); Action Plan for PwD (2011) |

**Table I** cont

| Country | Afghanistan | Bangladesh | Bhutan | India | Maldives | Nepal | Pakistan | Sri Lanka |
|---|---|---|---|---|---|---|---|---|
| Support scheme for PwD | Financial support only to persons with war-related disabilities; services available for all PwD | Allowances programme: 300 Taka per person/month | No information | Disability pension for persons living below the poverty line, aged 18–59 years, with severe (>80%) or multiple disability | Home for people with special needs (psychiatric and geriatric patients); monthly financial allowance for persons with visual disability (totally blind) | No information | Benazir Income Support Programme; Financial assistance through Pakistan Bait ul Mal; Free medical treatment to PwD and their dependent family members in Federal/Provincial Government hospitals/dispensaries; 50% concession in air/train fare for PwD; 2% employment quota reserved in public and private sector; 10-year age relaxation in upper age limit for Government service | No information |
| Research and evaluation | Limited research in rehabilitation field | Research in rehabilitation field limited to acute care outcomes. Member of ISPRM | No research in rehabilitation field | Currently an upward trend in research in the medical rehabilitation. Member of ISPRM | No research in the rehabilitation field | No research in rehabilitation field | Currently an upward trend in research in the medical rehabilitation | Research in rehabilitation limited mostly to acute care outcomes. |

Main sources: WHO Country Profile; WHO Health Statistics 2011; WHO Disability and rehabilitation status 2004 (14); ESCAP 2012.
[a]Population in millions in 2013 unless stated otherwise; [b]Statistical Yearbook for Asia and the Pacific 2014.

CRPD: Convention on the Rights of Persons with Disabilities; HDI: Human Development Index; GDP: gross domestic product; GNI: gross national income; ISPRM: International Society of Physical and Rehabilitation Medicine; OT: occupational therapists; NCDs: non-communicable diseases; P&O: prosthetics and orthotics; PM&R: physical medicine and rehabilitation; PT: physiotherapists; PwD: persons with disability; SLTs: speech and language therapists; WHO: World Health Organization; CBR: community-based rehabilitation.

there are 5 other departments/institutions for fellowship training in PM&R: 2 in Lahore, and 1 each in Karachi, Peshawar and Muzaffarabad. However, there is currently no undergraduate teaching programme of rehabilitation medicine in medical institutes.

Table I compares data on disabilities, disability legislation, healthcare infrastructures and resources and support services in Pakistan with those for other SAARC countries.

### *Study objective*

The objective of this cross-sectional study was to provide an update on the current rehabilitation efforts in Pakistan based on implementation of the WHO's Global Disability Action Plan (GDAP) (2014–2021) (Table II). Interactive feedback from Pakistani rehabilitation professionals was utilized during an organized workshop programme to document the challenges and strengths expressed by attendees corresponding to the established objectives listed in the GDAP.

## METHODS

The authors (FK, BA, GA, AE) were invited as independent experts (November 2015) by the Medical Directorate, Military General Headquarters and the Armed Forces Institute of Rehabilitation Medicine (AFIRM), based in Islamabad, Pakistan, to assist with the assessment and planning rehabilitation needs of disaster victims, including those affected by the recent Hindu Kush earthquake (7.5 magnitude on 26 October 2015); and to assist in education and training of rehabilitation staff at AFIRM. One focus was to utilize the GDAP framework to build workforce capacity, develop standards and key performance indicators, operational set-up for rehabilitation services, infrastructure for a sustainable horizontal health system, development of a rehabilitation care-model from acute setting through to community, referral management, consumer involvement, and research methodology (data collection, rehabilitation registry) based on the Australian experience. This exercise was approved by the AFIRM and the Royal Melbourne Hospital.

### *Participants and procedure*

A 6-day training workshop programme was held at the AFIRM. A total of 33 healthcare professionals from various medical rehabilitation centres (including rural areas) attended the workshops, including: 14 rehabilitation physicians, 3 neurologists, 2 general practitioners, 5 nurses, 2 prosthetists, 2 occupational therapists, 4 physiotherapists and 1 speech pathologist. Input was also obtained from 2 social workers and 1 clinical psychologist. These participants were invited by the Military General Headquarters (GHQ), Pakistan Army, the Army Medical College and Armed Forces Postgraduate Medical Institute, Rawalpindi. In addition, authors also met with a number of independent NGOs working in Peshawar, including the Pakistan Institute of Prosthetics and Orthotic Sciences, and the Pakistan Paraplegic Centre.

Over a 6-day period, the authors (FK, BA, GA, AE) assumed a facilitator role in conducting an extensive teaching programme, including workshops and consensus meetings

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**Table II.** World Health Organization Global Disability Action Plan 2014–2021: Better health for all people with disability (22)

The action plan provides a comprehensive list of specific actions and metrics of success to achieve the plan's following 3 objectives:

1. Remove barriers and improve access to health services and programmes;
2. Strengthen and extend rehabilitation, assistive technology, assistance and support services, and community-based rehabilitation;
3. Strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services.

based on the objectives listed in the GDAP. Prior to the detailed workshops, the authors summarized the state of evidence in the field of rehabilitation in the form of multiple plenary and interactive panel sessions. The teaching sessions included basic principles of rehabilitation, evidence-based practices, disability care planning, linking information technology, data and health record systems with acute hospital referrers and those in the community; capacity building; leadership skills development and nursing and symptomatic management (spasticity, pain, wound care, etc.). The "host" hospital lead medical and allied health team also provided presentations on their health services, including specific challenges faced by their rehabilitation staff. All information volunteered was supplemented with more specific recorded data during the workshop settings. During the workshops the participants were divided into 3 panels to ensure that the various specialist and skill base were evenly distributed. Each panel focused on 1 of the 3 GDAP objectives and were provided with a printed overview of the GDAP with blank corresponding columns to complete their responses. Based on their experiences and the issues they faced in service delivery, the participants in each panel were then asked to work out and discuss their views and perspectives of various problems that were highlighted relating to service provision, attitudes/approaches to PwD, gaps in service provision, education, related challenges and potential barriers and solutions designed for these issues. At all times the GDAP was used as a blueprint for discussion and allowed the authors to educate the audience, many of whom were not familiar with the GDAP document (mainly nurses and some allied health). Each panel included 2 speakers who presented on behalf of their designated panel, followed by a large group discussion for opportunity to brainstorm additional and emerging issues. Finally, a formal iterative decision-making and consensus process (with ≥80% of the participants agreeing) was conducted, tabulating potential challenges and facilitators in implementation of the GDAP.

*Data collection and analysis*

Throughout the workshops, participants submitted their responses in writing for each GDAP objective. They were encouraged to document any emerging issues and present these in the large group interactive session. The author-facilitators recorded additional information, comments and recommendations provided by the participants, where possible. All data were collated using content analytical technique (23). Two authors (FA, BA) scrutinized each response and coded the information using a line-by-line process, which were further clustered into a common suggestive "term". When no consensus was met about the possible "term", a final consensus was made by discussion amongst all the authors. Four authors (FA, BA, GA, AE) discussed the final content analysis and reviewed the preliminary version of terms for refinement.

In addition, a literature search of academic and grey literature using available internet search engines and websites was conducted for relevant publications (including academic articles, reports, related website contents, etc.), and relevant information discussed with participants. Known experts in this field were also contacted for further information on disability-related policies and legislation in Pakistan.

## RESULTS

All participants ($n=33$) contributed actively to group discussions and the consensus method. Most were not familiar with the GDAP, and reported a lack of available information about the current developments and programmes with regards to disability. The participants provided multiple responses (in writing) across each GDAP objective. The participants agreed that the GDAP provides comprehensive summary actions for PwD and offers the government, policymakers, and other relevant stakeholders a blueprint for implementing the recommendations of the World Disability Report. Overall, for GDAP objective 1: participants indicated 62 potential challenges/barriers and 51 potential facilitators/enablers; for GDAP objective 2: 68 challenges/barriers and 55 facilitators/enablers; for GDAP objective 3: 29 challenges/barriers and 28 facilitators/enablers. Based on participants' feedback, consensus agreement and collation of data, a number of common suggest "terms" were coded. The final set of "terms" were formulated, which included for GDAP objective 1: 50 potential challenges/barriers and 49 potential facilitators/enablers; objective 2: 54 challenges/barriers and 55 facilitators/enablers and objective 3: 19 challenges/barriers and 20 facilitators/enablers. The final set of the potential facilitators and challenges in implementation of the proposed standard actions in the GDAP for rehabilitation are summarized in Table III.

## DISCUSSION

Pakistan has a multi-tiered, mixed healthcare delivery system, which includes both state and provincial, and profit and not-for-profit service provisions. Similar to other SAARC member countries, although communicable diseases still account for a predominant share of morbidity and mortality, Pakistan is in a stage of an epidemiological transition due to the increasing prevalence of NCDs (3). The Pakistani Health Department has prioritized NCDs and rehabilitation as 1 of the key agendas (6). Levels of funding, human resources and health infrastructure are largely poor, particularly in rural areas of Pakistan (7). In past decades, healthcare facilities and programmes have grown exponentially in most areas of Pakistan. However, many are fragmented and/or work in isolation, and many programmes run only on a time-limited basis (6). There is duplication and wastage of resources, as many healthcare initiatives/facilities are supported or funded by different levels of government and/or development partners

**Table III.** Potential challenges and facilitators in implementation of the World Health Organization Global Disability Action Plan 2014–2021 in Pakistan ($n = 33$)

| Actions | Potential challenges/barriers | Potential facilitators/enablers in the next 5–6 years |
|---|---|---|
| *Objective 1: Remove barriers and improve access to health services and programmes* | | |
| 1.1 Develop and/or reform health and disability laws, policies, strategies and plans | • Lack of definition for disability<br>• Low priority of health in legislative process<br>• Health priority more driven towards acute sector and NCDs<br>• Unstable political and economic situation<br>• Poor political commitment<br>• Existing policies underfunded<br>• Lack of coordination/collaboration amongst different government sectors and ministries<br>• Lag in implementation of existing policies<br>• Lack of consensus on who is responsible for enforcing and/or funding new legislations/policies<br>• Lack of education/knowledge about disability amongst policymakers, government authorities, etc.<br>• Lack of disability-related data | • Knowledge management capacity-building initiatives for policymakers, government authorities through media, awareness programme, lobbying<br>• Adequate resource allocation<br>• Review existing policy documentation and surveillance systems<br>• Governing body to develop health policies from coordination to implementation; sectoral approach for alignment in disability care<br>• Input from rehabilitation physicians in policy,<br>• Strengthen management capacity, public-private partnerships through legislation and regulation<br>• Establish a secondary level body of advocacy/oversight for implementation and evaluation of policies<br>• Coordination and communication between central and provincial bodies<br>• Strengthen National Health Information systems<br>• Involve rehabilitation physicians, PwD and community organization in policy, legislation, programme development<br>• Linkage with SAARC regional organizations<br>• International cooperation and WHO support |
| 1.2 Develop leadership and governance for disability-inclusive health | • Lack of central body for developing governance<br>• Lack of coordination/collaboration among different government sectors, hospitals (private and public), DPOs, NGOs<br>• Lack of process to involve all stakeholders (including rehabilitation medical professionals) in policy development<br>• No disability-rehabilitation standards or key performance indicators<br>• No specific accreditation standards or criteria for rehabilitation facilities and for staff<br>• Limited workforce leadership development programmes | • Establishment of legislative and central capacity building body which included governmental authorities, health professionals, PwD and families, representative form regional health departments, quality of services, NGOs and DPOs<br>• Capacity-building for educators for health work-force<br>• Implement plan for quality control and health inputs<br>• Coordinate and link various NGOs and DPOs with hospitals<br>• More active role of rehabilitation medicine departments in facilitating leadership skills and governance<br>• Improve web-based access to evidence-based guidelines/protocols and outcome measures for disability<br>• Development key performance indicators and Standards of Care and accreditation criteria for rehabilitation facilities and staff |
| 1.3 Remove barriers to financing and affordability for PwD | • Budget deficit and inadequate financial support<br>• Lack of accurate data; underestimation and underrepresentation of disability prevalence, cost data, etc.<br>• Decreased international aid<br>• Lack of rehabilitation facilities in public sectors<br>• Out-of-pocket payment for services and assistive devices/aids<br>• Lack of government/private insurance<br>• Lack of enforcement and evaluation of legislation policy for employment/education/health for PwD | • Increased health budget expenditure<br>• Develop health insurance policies and coverage for PwD<br>• Proper utilization of exiting social security systems such as "Zakat"<br>• Use indigenous resources<br>• More international financial assistance<br>• Training and educational programme for PwD – build workforce<br>• Improvement of social welfare, livelihood and benefits for PwD |
| 1.4 Remove barriers to service delivery | • Lack of infrastructure<br>• Non-disability friendly public places and transport<br>• Corruption<br>• Conflicts/war and terrorism<br>• Topography of Pakistan distinct rural hard to access setups<br>• Lack of rehabilitation for specific conditions such as stroke, spinal cord injuries etc.<br>• Lack of multidisciplinary team approach and systems/models of care<br>• Lack of integration with acute hospitals | • Accountability of resource allocation<br>• Development of infrastructure and awareness of existing services<br>• Development of comprehensive counter-terrorism and conflict policies<br>• Structured standard referral systems: acute to sub-acute<br>• Promotion of community-based rehabilitation<br>• Development of Mobile Units to deliver care in remote areas<br>• Train healthcare workers for home-based/community-based care<br>• Telerehabilitation and local technology<br>• Improve provision of disability friendly public facilities and transportation<br>• Public awareness and educational programmes<br>• Public-private sector partnership for service provision |

**Table III** cont.

| Actions | Potential challenges/barriers | Potential facilitators/enablers in the next 5–6 years |
|---|---|---|
| 1.5 Overcome specific challenges to the quality of healthcare experienced by PwD | • Limited access to disability services, particularly in rural areas<br>• Lack of adequate referral system<br>• Lack of human resources<br>• High illiteracy, poverty<br>• Discrimination and stigma<br>• Poor awareness of health services<br>• Misconception and cultural belief about disability<br>• Belief in traditional or native healers<br>• Lack of adequate primary care services<br>• Lack of follow-ups | • Central body to implement national health policy<br>• Enhance interdisciplinary interaction<br>• Decentralization of healthcare facilities including rehabilitation<br>• Minimization of cultural stigma through public campaigns/awareness programmes<br>• Skill training and educational programmes for healthcare staff<br>• Development of consumer organizations for advocacy (including PwD at national and local level)<br>• Development of strategies for engagement of staff and PwD (and families) |
| 1.6 Meet the specific needs of PwD in health emergency risk management | • Lack of infrastructure and human resources<br>• Lack of emergency assistance programmes for PwD<br>• Lack of access to healthcare services, public transports etc.<br>• Minimal collaboration and/or referrals between emergency staff and rehabilitation personnel in tertiary facilities<br>• Lack of disability-centred measures paramedical services/disaster management plans<br>• Lack of adequate primary care services<br>• Lack of follow-up | • Assessment and evaluation to identify need to mobilize resources<br>• Coordination of intervention<br>• Build healthcare infrastructure and human resource capacity<br>• Inclusion of emergency responses in resettlement plans for PwD<br>• Improve communication systems and collaboration between acute and rehabilitation staff<br>• International cooperation in humanitarian crises |
| *Objective 2: Strengthen and extend rehabilitation, habilitation, assistive technology, assistance and support services, and community-based rehabilitation* | | |
| 2.1 Provide leadership for developing policies, strategies and plans | • Same as 1.1 above<br>• Inadequate financial support and budgetary constrain<br>• Lack of accurate data; underestimation and underrepresentation of disability prevalence, cost data, etc.<br>• Lack of awareness of extent of problems/issues facing disability | • Same as 1.1 above<br>• More active role of Department of Rehabilitation Medicine<br>• Establishment of the formal National society of PM&R<br>• Public awareness through national forum |
| 2.2 Provide adequate financial resources | • Same as 1.2 above<br>• Acute care driven healthcare system | • Same as 1.2 above<br>• Improvement of social welfare and livelihood |
| 2.3 Develop and maintain a sustainable workforce | • limited skill base interdisciplinary workforce<br>• Lack of undergraduate courses in rehabilitation in medical schools<br>• Limited infrastructures and professional courses/training programmes in academic institution<br>• No educational standards or key performance indicators for rehabilitation or continuous medical education evaluation<br>• No staff development or appraisal systems in hospitals or community settings<br>• Lack of guidelines/protocols<br>• Limited access to education or IT-based learning<br>• Limited opportunity for training in new innovations and therapy<br>• Inadequate distribution of healthcare professionals – mostly urban setting<br>• Poor awareness amongst healthcare professionals about workforce development<br>• Demoralised workforce | • Develop a strategic workforce development plan by the government and establishment of national observatory for human resources<br>• More funding and opportunity to develop a skilled workforce<br>• More courses on rehabilitation in academic institutions and hospitals<br>• Development of strategies for upskilling, empowerment and staff engagement<br>• Develop teaching models, using interactive problem-based learning<br>• Increase clinical capacity through organized educational activities, e.g. journal clubs, grand rounds. etc.<br>• Motivation of clinical staff<br>• Promotion of interdisciplinary teaching and interaction<br>• Establish workforce management and retention programmes<br>• Collaboration with international partners for staff training overseas |

**Table III** cont.

| Actions | Potential challenges/barriers | Potential facilitators/enablers in the next 5–6 years |
|---|---|---|
| 2.4 Expand and strengthen rehabilitation services ensuring integration, across the continuum of care | • No accreditation standards or key performance indicators for rehabilitation<br>• Rehabilitation services included with other general hospital services not well integrated nor identified for attention<br>• Lack of structured standard referral systems from acute to sub-acute care to community<br>• Lack of healthcare delivery models for Rehabilitation services<br>• Minimal integration of community based programmes with acute services<br>• Poor follow-up after discharge from acute facility and rehabilitation hospitals<br>• Lack of family/carer education | • Development of accreditation standards for rehabilitation facilities and key performance indicators<br>• Develop rehabilitation services within the existing health infrastructure<br>• Improved profile of rehabilitation services in acute hospitals and integration of these services with other acute care sectors<br>• More community-based rehabilitation services linked with main hospital networks<br>• Incentives and mechanisms for retaining healthcare personnel especially in rural and remote areas<br>• Use of IT systems, telemedicine and web-based services for improving awareness and access<br>• Provision of equipment and technology for therapy in rehabilitation |
| 2.5 Make available appropriate assistive technologies | • Lack of government services and health insurance<br>• Private insurance does not include cover for rehabilitation mobility aids (wheelchairs, cane, and walker), or those for activities of daily living, orthotics, or prosthetic devices<br>• Lack of awareness<br>• Lack of human resources and infrastructure | • Adequate financial support<br>• Advocacy for assistive technology funding<br>• Inclusion of PwD and consumer organizations to raise awareness about technology<br>• Expansion of assistive technologies to rural areas<br>• Development and/or establishment of allied health rehabilitation services within the existing health infrastructure<br>• Development of Mobile Units |
| 2.6 Promote access to a range of assistance and support services | • Minimal information available to public about access to rehabilitation services<br>• Lack of coordination with NGOs, DPOs and other charitable consumer/organization<br>• Lack of insurance/government support for accessing rehabilitation services | • Campaign/awareness programme involving DPOS, NGOs and other charitable/consumer organizations<br>• Develop Mobile Units to deliver care in remote areas<br>• Expansion of community-based rehabilitation<br>• International aid including WHO<br>• Develop research programmes |
| 2.7 Engage, support and build capacity of PwD and caregivers | • Exclusion of caregivers of PwD in care services<br>• Poverty<br>• High illiteracy<br>• Misconception and cultural belief about disability<br>• Belief in traditional or native healers<br>• Pursuit of social support by PwD<br>• Lack of social security<br>• Lack of family support | • Involvement and education of caregivers in rehabilitation settings<br>• Improve awareness of existing services/benefits for PwD/carers<br>• Development of consumer support organizations for PwD at national and local level<br>• Skill training for carers<br>• Expansion of community-based rehabilitation through inclusion of carers in decision-making processes. |
| *Objective 3: Strengthen collection of relevant and internationally comparable data on disability and support research on disability and related services* | | |
| 3.1 Improve disability data collection (survey) | • Lack of universal coding system<br>• Lack of trained human resource<br>• Lack of reporting and information-gathering systems<br>• Unreliable timely access to patient medical records<br>• Rehabilitation workforce minimally trained in research methodology including data collection<br>• Cultural barrier/misconception – unwilling to disclose<br>• Logistical/ethical issues | • Promotion of operational research in disability and health systems<br>• Set a minimal data set for rehabilitation<br>• Set a universal coding system<br>• Improve processes relating to clinical documentation/measurement tools<br>• Commence medical staff training in research methodologies<br>• Establish hospital-based IT systems for data entry<br>• Disability specific registries in the future |
| 3.2 Reform national data collection systems based on the ICF | • Lack of standard data collection systems<br>• Minimal awareness and no incentive for hospitals or staff to participate<br>• Limited staff training and support for ICF usage<br>• Lack of national registries<br>• Lack of financial support | • Implementation and training in ICF model<br>• Develop standard data collection systems<br>• Mandatory data collection across all sectors<br>• Linkage of performance indicators to health outcomes<br>• Involvement and active participation of National Federations, NGOs, DPOs |

**Table III** cont.

| Actions | Potential challenges/barriers | Potential facilitators/enablers in the next 5–6 years |
|---|---|---|
| 3.3 Strengthen research on priority issues in disability | • Research not identified as a priority for rehabilitation<br>• Lack of awards or recognition for research works<br>• Limited support and IT available for research<br>• Limited staff capacity and training for research<br>• Lack of available research professionals<br>• Limited guidance and/or mentorship<br>• Lack of funding for research | • Involve government and academic institutions to conduct research<br>• Train research professionals<br>• Improve access to IT and web-based programmes<br>• Build research capacity in rehabilitation<br>• Cooperation with international partners in research and development<br>• Involvement and active participation of National Federations<br>• International aid/assistance in research capacity building<br>• Establish national research centre/foundation |

Sources:
WHO Country Cooperation Strategy at a Glance: Pakistan May 2014;
WHO Country Profile: Pakistan;
IOM Country Fact Sheet: Pakistan 2014;
WHO Health Statistics 2011;
ESCAP Statistical Year Book for Asia and the Pacific 2014; WHO Global Infobase;
WHO Bulletin; UN Human Development Report 2014.
CRPD: Convention on the Rights of Persons with Disabilities; DPOs: Disabled People's Organizations; GDP: Gross Domestic Product; ICF: International Classification of Functioning, Disability and Health; IT: information technology; NCDs: non-communicable diseases; NGO: non-governmental organization; PM&R: Physical Medicine and Rehabilitation; PwD: persons with disability; SAARC: South Asian Association for Regional Cooperation; WHO: World Health Organization.

within overlapping topographical areas (24). Service provision at the federal level is fragmented, with provincial and district health departments, military and social security institutions, NGOs and private sector providing services mostly through vertically-managed disease-specific mechanisms (7, 12). Many physicians, particularly PM&R specialists, International NGOs and NGOs working in the field of disability management are working in isolation with little coordination. Furthermore, discernible urban-rural disparities in healthcare delivery and an imbalance in the health workforce compound the overall the problem in healthcare system. Similar to other developing countries, Pakistan has limited research and data on disability, impeding formulation of policies and programmes (7).

Although the profile of rehabilitation medicine has improved in Pakistan, compared with other SAARC member countries, it remains underdeveloped (especially in rural settings) and poorly integrated with the acute healthcare systems. There is limited funding for comprehensive disability management and minimal awareness regarding rehabilitation amongst the public and healthcare professionals (25). Rehabilitation is still confused with "physiotherapy and exercise" by the general public and by many healthcare professionals, who are unaware of existing comprehensive rehabilitation settings (21). Other barriers include a lack of a central coordination body, limited health services infrastructure and human resources. The healthcare system itself at the federal, provincial and district level is fragmented. At the community level, care of PwD (including community-based rehabilitation) is predominantly funded by NGOs and charitable organizations, such as the National Collective of Organizations Working for Disabled Persons, Handicap International, Christian Blind Mission, International Red Crescent, etc. (19). Cultural stigma and the perception of disability as an end-of-life situation, is common in Pakistan and results in poor management of PwD. Furthermore, Pakistan suffers from periodic major natural disasters (earthquakes, unprecedented floods, heat-waves) which further escalate disability prevalence within the already overstretched healthcare system. Likewise, growing militancy, leading to armed conflict and internal population displacements/migration, has created security-compromised areas, making access to healthcare problematic.

Disability is a human rights issue and all PwD are active participants in society (1). The GDAP provides comprehensive summary actions for disability and offers the Pakistani government, policymakers and other relevant stakeholders a blueprint for implementing the recommendations of the World Disability Report. The Pakistani people now have an opportunity and imperative to improve and build on existing care

programmes for comprehensive care for PwD. Based on feedback and consensus from participants in this report, there is a strong will and impetus to improve the disability and rehabilitation sector in Pakistan. Importantly, there is a need for centralized leadership for provision of standards for rehabilitative care and key performance indicators for rehabilitation facilities, staff engagement, up-skilling the workforce, development of infrastructure and support systems, access to equipment for therapy, and integration of all relevant sectors (including NGOs and consumer groups). These need to be supplemented by local community-based rehabilitation centres (especially in rural settings), with establishment of regional hubs for improved access and broader-based services. Given the fragmented nature of existing rehabilitation services, there is the opportunity for professionals to work together to achieve improved clinical practice and service delivery, training, education and research. A collaborative, coordinated and pro-active lobbying effort by rehabilitation medicine professionals, consumer organizations and NGOs will prioritize challenges that need to be addressed for implementation of the GDAP. Most recently, the WHO approved the new collaboration plan with the International Society of Physical and Rehabilitation Medicine (ISPRM), which is a milestone for ISPRM as an NGO in special relations with the WHO (26). This collaboration plan reacts to the WHO GDAP and defines concrete projects that respond to the objectives and recommended actions of the GDAP.

### *Study limitations*

There are several limitations in this study. First, this study is cross-sectional and is not intended to test specific hypotheses through systematic analysis, it uses content analytical technique (16) to summarize data derived from interactive feedback from healthcare professionals attending an organized workshop programme. This is intended as a preliminary descriptive study, with the aim of updating rehabilitation efforts and plans in Pakistan based on the GDAP, and identifying challenges and strengths from the perspective of participants. Secondly, the study cohort is comprised of health professionals selected by the AFIRM and, although there was feedback from families of affected persons, it did not include other stakeholders (such as social work organizations, organizations of PwD, and PwD), which may limit the generalizability and validity of these findings. However, the study cohort includes rehabilitation professionals from a wide geographical population in Pakistan, and represents the wider sample currently operational in the community. The authors were not involved in participant selection as this was beyond their authority. The authors believe that the findings reflect the current issues/problems faced in the country at large. They are unaware of any similar study conducted in Pakistan or any SAARC country that address such issues.

### *Conclusion*

As in many developing countries (5), the rights and healthcare needs of PwD in Pakistan remain limited to policies and legislation, with many barriers to their inclusion in key aspects of society. Many PwD remain marginalized, and their capabilities underestimated. Despite strong commitment from government, the gap between policy and practice continues to exist. A participatory framework to build disability-inclusive and sustainable development is in progress. There was consensus amongst all workshop participants that the following steps are necessary in order to further develop rehabilitation medical services in Pakistan:

- Develop and tailor GDAP recommendations to suit the local environment for accessibility to mainstream services, policymakers and administrators
- Establish leadership from the Ministry of Health for rehabilitation standards, accreditation and key performance indicators
- Develop evidence-based healthcare models or systems (e.g. patient referrals from acute to rehabilitation services, follow-up after discharge from acute care, timely access to medical records, etc.)
- Integrate rehabilitation services with acute health services and incorporation of rehabilitation medicine department within the health system in medical schools and hospitals (especially public hospitals)
- Develop and implement systematic data collection for disability to develop national registry
- Establish a central body for oversight and coordination of rehabilitation for efficiency and efficacy
- Improve infrastructure for disabled access for transport and buildings; and social support systems
- Upskill, educate and develop the rehabilitation workforce using innovation, technology/web-based systems
- Engage the workforce, consumers (caregivers) and NGOs for lobbying government, improving awareness of disability services, and determining the social and economic impact of disability
- Strengthen investment in research at every level to improve understanding, awareness and centrality of disability issues.

The role of rehabilitation in global health is expanding to address the rights and needs of the growing number of PwD. The GDAP summary actions are useful planning tools for improving access to, and strengthening, rehabilitation services, and data col-

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lation for outcome research and benchmarking. All workshop participants in this study appreciated the process and emphasized the urgent need to empower PwD and include them in mainstream society and development. In order to achieve the objectives of the GDAP, strong leadership from governmental bodies, political commitment, investment in local infrastructure/human resources, dissemination of information and advocacy of disability inclusive development are urgently needed.

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