



Centre of Excellence for
Health Systems &
Universal Health Coverage

Skills Demand Analysis of Institution and Home-based Supplementary Health Care Services in Bangladesh, 2020

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ACRONYMS

ACNHS	AYAT College of Nursing & Health Sciences
AKK	Amra Kaj Kory
AMCGH	Ahsania Mission Cancer and General Hospital
ANC	Ante-Natal Care
BCPS	Bangladesh College of Physicians and Surgeons
BHW	Bangladesh Health Watch
BIDS	Bangladesh Institute of Development Studies
BMC	BioMed Central
BMDC	Bangladesh Medical and Dental Council
BMDC	Bangladesh Medical and Dental Council
BMJ	British Medical Journal
BMRC	Bangladesh Medical Research Council
BRAC JPGSPH	BRAC James P Grant School of Public Health
BSA	Bangladesh Standards on Auditing
BSc	Bachelor of Science
BSMMU	Bangabandhu Sheikh Mujib Medical University
BTEB	Bangladesh Technical Education Board
BTRF	Bangladesh Therapy and Rehabilitation Foundation
BUHS	Bangladesh University of Health Sciences
CDD	Centre for Disability in Development
CEO	Chief Executive Officer
CHW	Community Health Worker
CME	Centre for Medical Education
CME	Centre for Medical Education
CoEHS&UHC	Centre of Excellence for Health System and Universal Health Coverage
COPD	Chronic Obstructive Pulmonary Disease
CRP	Centre for the Rehabilitation of the Paralyzed
DGDA	Directorate General of Drug Administration
DGFP	Directorate General of Family Planning
DGHS	Directorate General of Health Services
DMCH	Dhaka Medical College Hospital
DMF	Diploma in Medical Faculty
DRRA	Disabled Rehabilitation and Research Association
FCPS	Fellowship of College of Physicians and Surgeons
FKRF	Fasiuddin Khan Research Foundation
FWA	Family Welfare Assistant
FWV	Family Welfare visitor

GAAP	Generally Accepted Accounting Principles
GK	Gonoshasthaya Kendra
HA	Health Assistant
HRH	Human Resources for Health
HSC	Higher Secondary School Certificate
IHT	Institution of Health Technology
ILO	International Labor Organization
INGO	International Non-Government Organization
IRB	Institutional Review Board
KGH	Kurmitola General Hospital
KII	Key Informant Interview
MA	Master of Arts
MATS	Medical Assistant Training School
MBBS	Bachelor of Medicine and Bachelor of Surgery
MD	Doctor of Medicine
ME&HMD	Medical Education & Health Manpower Development
MLOP	Midlevel Ophthalmologist Personnel
MoHFW	Ministry of Health and Family Welfare
MPH	Master of Public Health
MPharm	Master of Sciences of Pharmacy
Mphil	Master of Philosophy
NCD	Non Communicable Disease
NGO	Non-Government Organization
NICRH	National Institute of Cancer Research and Hospital
NITOR	The National Institute of Traumatology & Orthopaedic Rehabilitation
PCA	Palliative care assistant
PCB	Pharmacy Council of Bangladesh
PhD	Doctor of Philosophy
PI	Principal Investigator
SACMO	Sub Assistant Community Medical Officer
SCSS	Smiling Children Special School
SDP	Skills Development Programme
SID	Statistics and Informatics Division
SMF	State Medical Faculty
SOP	Standard Operational Procedure
SSC	Secondary School Certificate
SSMCH	Sir Salimullah Medical College Hospital
UHC	Universal Health Coverage
UHFPO	Upazila Health and Family Planning Officer
UpHC	Upazila Health Complex
WHO	World Health Organization

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Note from Skills Development Programme

BRAC's Skills Development Programme has taken an initiative to enquire sector specific skills demand analysis since 2019. After conducted an analysis in the ICT enabled services, the healthcare skills demand analysis was a timely initiative, given the pandemic.

We would like to thank Mr. Asif Saleh, Executive Director, BRAC Bangladesh for his guidance in encouraging to conduct the study and Dr. Morseda Chowdhury, Associate Director, Health, Nutrition and Population Programme (HNPP) for her valuable insights, in setting the correct priority of the study.

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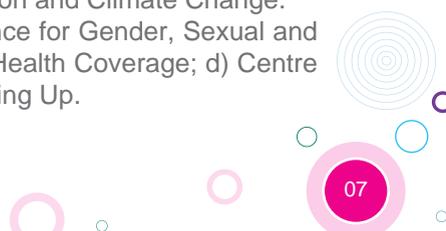


PROFILE OF THE RESEARCH ORGANISATION

The BRAC James P Grant School of Public Health (BRAC JPGSPH) was founded in 2004 in Dhaka, Bangladesh to address the unmet public health challenges in the developing world. The school was co-founded by BRAC, icddr,^b and BRAC University in recognition of the fact that developing country public health needs require immersive, community-based teaching and learning to provide locally innovated research and sustainable solutions. The school applies an interdisciplinary integration of Education, Training, Research and Advocacy to diverse health and development challenges, especially for the poor and the disadvantaged. Over the past decade, BRAC JPGSPH has gradually built up its research capacity in different sectors of public health, organised around five Centres of Excellence of which The Centre of Excellence for Health Systems and Universal Health Coverage (<http://www.coe-uhc.org/>) is the one, which will implement the study. The centre works to accelerate evidence informed, equitable and sustainable health systems action to facilitate Universal Health Coverage (UHC) in Bangladesh and globally. It serves both as a catalyst for evidence informed policy and practice, and national capacity development to implement UHC. Since inception in 2004, a total number of staff members of BRAC JPGSPH is more than two hundreds. The BRAC JPG SPH's pool of professional staffs (including professors, Associate professors and Assistant professors and Senior/Research Fellows) comes from diverse disciplines such as anthropology, sociology and behavioural sciences; medical, dental and health sciences; marketing and management, economics, statistics; and advocacy and communications. These professionals bring forth experiences in qualitative and quantitative research and the necessary interpersonal skills to forge, engage, and work with different stakeholders. So far, the school's learned faculty members and researchers have published about five hundred and fifty publications in peer-reviewed journals (2004 - 2018) including Lancet, Bulletin of World Health Organisation (WHO), Social Science and Medicine, World Development, BioMed Central (BMC) and British Medical Journal (BMJ) Journals etc. Details of professional staff members and their publications can be found in school's website (<http://sph.bracu.ac.bd/>).

BRAC JPGSPH, BRAC University has an independent Institutional Review Board (IRB) comprising member from BRAC, BRAC University, ICDDR^b and other institutions. The IRB was established in 2005 and commits members, faculty, and affiliates to comply with the standards of ethical code of conducts and to the rules and procedures used to enforce them.

¹ in the field of Maternal and child Health, Sexual and Reproductive health and rights, Nutrition and food security, Gender, Equity, WASH, Non-communicable Diseases, and Urbanization and Climate Change.
a) Centre for Non-communicable Diseases and Nutrition; b) Centre of Excellence for Gender, Sexual and Reproductive Health and Rights; c) Centre for Health Systems and Universal Health Coverage; d) Centre for Urban Equity and Health; e) Centre for Science of Implementation and Scaling Up.



Background and Methods

The health system of Bangladesh is characterized by 'shortage, inappropriate skill-mix and inequitable distribution' of its health workforce, which is essential for improving health outcomes and health status of a country (Ahmed et al. 2011, Joarder et al. 2019). It is also among the 57 countries with a critical shortage of health workforce (WHO 2006). The prevailing COVID-19 pandemic situation has exacerbated this already vulnerable situation. Besides doctors and nurses, the country is experiencing critical shortages of medical and nursing aids, medical technologists and technicians, and various categories of health workers, who provide physiotherapy, elderly and disability care, and palliative care including home-based care.

The overall demand for healthcare services and emerging trend in disease prevalence and has serious implications for the nature and level of professional and technical skill need of healthcare services (Begum and Mahmood 2017). More serious, however, is the question of medical technicians, who are most diverse in type, job description, level of skill and training, and relative importance at different job areas. Thus, this situation is both a crisis and an opportunity for building an 'adequate health workforce'. This needs to be recognised as an investment in the healthcare sector that is increasingly being recognised as a generator of employment opportunities, especially for women, and a facilitator for inclusive economic growth (Buchan, Dhillon and Campbell 2017).

This study was conducted amidst constraints in time and resources and also, under continuing community transmission situation. Thus, a quick survey applying telephone-based interview was used for the study (Smith EM 2005). The survey was done with the following objectives to explore a) Types of health care services in demand in the pandemic situation; b) Emerging employment opportunities for providing these services, including home-based services; c) The responsible authority tasked with certifying such cadres and the probability that they would certify the future emerging cadres; d) The availability of trainers for current and probable new courses; e) Current entry requirements for the existing courses and probable requirements for the new courses, and finally, f) The health care organisations that are likely to expand their business during and beyond COVID-19 pandemic. To address these objectives, it adopted a cross-sectional design to elicit relevant information and applied a combination of a) Rapid review, b) Quantitative assessment using a semi-structured questionnaire, and c) Qualitative assessment (e.g., key informant interviews (KII) with the stakeholders) using interview guidelines.

Results

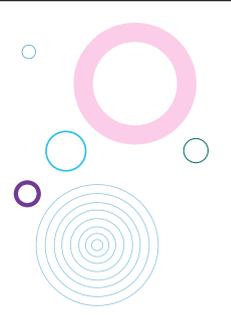
Findings from the rapid review

1. Considering the current COVID-19 situation and thereafter, there will be an
 - increased demand of various home-based services, such as; palliative care, non-communicable diseases (NCD) and elderly care, disability care, and mental health counselling. Under the circumstances, the NGOs and other non-profit service providing organisations must seize this opportunity to produce the extra health workers with appropriate training to deliver the above services. All these services should be provided at an affordable cost so that the poor also can avail these services in their emergency.

- 2. Due to high cost of healthcare, the elderly people were found to prioritize informal providers and alternative medicines such as homoeopathic, Unani, and ayurvedic treatments over formal providers/institutions; they faced significant barriers to accessing home-based care due to financial problems, unavailability of specific providers, required treatments or medications, and a lack of support for the caregivers.
- 3. Most of the home-based care organisations are mainly based in Dhaka and mostly located in urban settings. However, a few NGOs provide homecare services both in urban and peri-urban settings and some provide services outside of Dhaka like Chittagong, Khulna, Rangpur, Sylhet, Mymensingh, Rajshahi, and Barisal. These organisations usually train the nurses, attendants, and caregivers.
- 4. According to the Directorate General of Health Services (DGHS), 9 govt. Medical Assistant Training School (MATS) with 818 seats and 13 Institution of Health Technology (IHT) with 2,791 seats are currently available; minimum entry requirements for MATS and IHT courses is secondary school certificate (SSC) pass and duration of courses varies between 3-4 years including a one-year internship. The overall course fees varied for the public and private institutions.
- 5. Institutionally, chemotherapy, and radiotherapy were the most commonly used services by the patients under palliative care; pain relief medication, physiotherapy, and rehabilitation were the commonest services sought under the home-based care services. Both public and private hospitals and some non-govt. organisations (NGOs) offer palliative care and home-based care.

I. Findings from the quantitative survey

- The quantitative study was conducted among 131 respondents of six categories (Service user, Service provider, Trainer, Trainee, Employer, and Employee) under three major domains: Service, Training, and Job.
- The majority (80%) of the service users mentioned that they have visited a health care facility within the last six months to seek health care; majority sought care from private (40%) or public (30%) hospitals, the rest from an NGO/dispensary/clinic (30%).
- Pain management (97%) was the most common care received, followed by treatment of other illness/symptom management such as other physical and psychological symptoms apart from pain like breathlessness, weakness, anxiety, nausea, constipation etc.) and adherence support i.e., support to interact with patients in clinical, community and home settings where they provide education, treatment support and adherence counselling (50%).
- Regarding the type of additional care/service providers needed, the respondents mostly mentioned about home-based service providers (20%) followed by services by the nurse (17%), physiotherapist (7%) and counsellor (7%).
- According to the service providers in the health facilities, palliative and disability cares (each 55%) were most commonly available followed by home-based care (29%), chronic disease care (26%), elderly (23%) and NCD (13%) care. Half of these facilities (52%) had a dedicated unit to provide these services. Apart from doctors, other providers were nurse/midwives (52%), technicians (29%), paramedics (23%), palliative care assistants (13%) and others (physiotherapist, occupational therapist etc.) (26%).

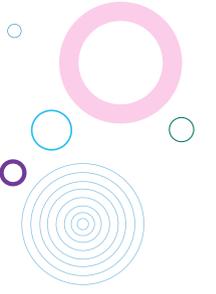


Around 42% of the service providers had training on palliative care followed by disability care (32%); 7% had training on lab technology, however, 23% of the reported to have no training at all. Majority of the respondents (77%) agreed that new type of Paraprofessionals/Paramedics/ Technicians will be needed in the facilities to ensure palliative and such cares.

- An equal proportion (33%) of training institutions were offering medical assistant and health technology courses each followed by disability care (28%), lab technicians (15%) and home-based nursing care (15%). The institutions offered different types of training e.g. diploma in medical faculty (25%), diploma in health technology (20%), basic certificate course (20%) and bachelor of Science (BSc) in physio/occupational therapy (15%). For half of these courses, the minimum entry requirement was SSC (53%) to higher secondary certificate (HSC) (23%). The course fee ranged from 50,000-2,00,000 BDT in 23% of the courses and more than 2,00,000 BDT in another 23% of the courses. Majority of the respondents mentioned that their institutions have an adequate trainer (65%). To improve the training quality, respondents recommended the revision of curriculum (25%), expand the duration of courses with a practical class (20%) and to recruit more trainers (15%).
- When asked about types of training that may be needed in the health sector in post COVID-19 scenarios, respondents mentioned about training on health technology such as the lab technologists and technicians collecting samples from the patients (35%); home-based care and nursing care (18% each) followed by Covid-19 related training (13%), physiotherapy (10%) and training for community volunteer/caregivers (10% each). The majority suggested a diploma as a pre-requisite of such training (30%) while some suggested this to be SSC (18%) and HSC (15%) level education.
- Nearly half (40%) of the organisations were providing home-based services for more than five years. All the organisations provided palliative care, elderly care, chronic illness/NCD care and personal care services. Majority of the organisations had service coverage within Dhaka (70%) and some (30%) were providing services both inside and outside Dhaka. Half of the organisations (56%) received less than 50 clients approximately per month. Nearly half (47%) of the organisations had an average 10-50 caregivers in total. Nurses and midwives were the most common categories of caregivers the organisations had (83%) followed by community care assistants (73%).
- According to the respondents, the market of home-based care in Bangladesh is promising (97%). High prevalence of chronic disease/NCD was a major reason (93%), followed by growing elderly population (90%), favourable business environment (43%) and some also mentioned about nuclear family structure (13%).
- According to the respondents, lack of qualified caregivers were the most limiting factor (83%) followed by lack of qualified trainers (77%).

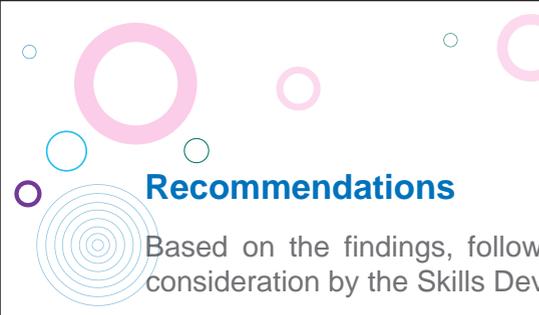
III. Findings from the qualitative survey

Five KIIs were conducted with authorities from the central level of the organisations to explore three domains: available training for paraprofessionals/technicians, the regulatory authority of the existing training, and the scope of endorsing new type of training/home-based care training. The key authorities were mostly between 30-58 years age and male except for one female respondent. All the respondents had a master's degree and one had an MBBS. respondents professional work experience ranged from 4.5 years to 30 years and had at least 3 years to 17 years of experience in their respective current organisations.

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- The respondents mentioned that different types of courses are available for various categories of paraprofessionals in Bangladesh such as medical assistants, nurse aids, health technologists, lab technologist and diploma pharmacists etc.
 - Regulatory bodies: According to respondents, the certification and accreditation authority varies for different types of training and courses of paraprofessionals. They mentioned that the State Medical Faculty (SMF) is the accreditation authority for MATS training and Medical Technologists courses, Pharmacy Council Bangladesh (PCB) provides accreditation and certifications to the Pharmacy Technologists and Director General of Health Services (DGHS) under Ministry of Health and Family Welfare (MoHFW) is responsible to provide accreditation and certifications of courses/ training for paramedics like Family Welfare visitors (FWVs), Health Assistants (HAs), Family Welfare Assistants (FWAs).
 - Demand and scope of new training/courses: The authorities had mixed opinions regarding the need for new training and cadres. Some of them expressed that new types of services and training such as health care technicians, who are needed for proper collection of pathological samples from the suspected patients (e.g., COVID-19) are needed in the health sector right now and also, in the post-COVID 19 situation. Others have disagreed and stressed on increasing the existing health workforce. Some of the respondents have highlighted the need to train the existing paraprofessionals and technicians on palliative care, home-based care, chronic diseases and disability care, and sample collection.
 - Feasibility of endorsing new training and cadres: The public sector authorities found it difficult to endorse new cadre and course due to complicated and lengthy administrative procedure which needs proper planning, technical and financial support shortage of qualified trainers.

Conclusions

Findings reveal an emerging demand of different types of facility and home-based palliative/rehabilitative/disability/elderly health care services during in COVID-19 crisis, which is projected to increase especially in the current and post-pandemic situation. However, the supply side is currently unable to meet the demand due to lack of institutional readiness for producing the cadres of the varieties discussed, including extra resources. Thus, the challenges and opportunities posed by the COVID-19 situation cannot be overemphasized. Now it is the policymakers' and programme planners' turn to seize this opportunity and train and produce relevant skilled health workforce in adequate number and of quality by taking appropriate institutional measures.



Recommendations

Based on the findings, following recommendations are made from different perspectives for consideration by the Skills Development Programme (SDP), BRAC:

i) From the service user's perspective

- Ensure availability of fulltime qualified service providers for home-based palliative/rehabilitative/disability/elderly care.
- Reduce cost of relevant care in public and private sectors; also to make such services available at grassroots/doorsteps of the targeted users at an affordable price.

ii) From the service provider's perspective

- Establish a dedicated department for home-based palliative/rehabilitative/disability/elderly care in each health facility with trained service providers to ensure the quality of services.
- Establish community-based and home-based palliative/rehabilitative/disability/elderly care service system.
- Production of paramedics, medical technologists and physiotherapists to be increased to meet demand.

iii) From trainer and trainee perspective

- Ensure training of trainers (ToT) for producing qualified trainers, practice-based curriculum and appropriate work placement opportunities.
- Introduce home-based palliative/rehabilitative/disability/elderly care in the national curriculum for allied health care professionals.

iv) From job providing organisations' perspective

- Incentives (monetary/non-monetary) and accreditation by MoHFW/Government of Bangladesh (GoB) to the organisations providing home-based palliative/rehabilitative/disability/elderly care.
- Specific policy to coordinate public-private partnership towards building a national system for home-based care palliative/rehabilitative/disability/elderly care.
- Active role of professional associations to enhance the scope of home-based palliative/ rehabilitative/disability/elderly care.

The unprecedented pandemic (a classic ‘low probability, high impact’ event) of COVID-19 has shaken both the developed and developing countries with its adverse health and socioeconomic consequences. Every day the death toll is rising. As of 23 September 2020, 31,425,029 confirmed cases and 967,164 deaths have been reported worldwide (WHO 2020). There has been advanced warning of such epidemic but the global political and health leadership failed to listen and act (WHO 2020). The poor preparedness of, and response by, the health system was challenged from different quarters. One of these relate to the key element for fighting the pandemic at the frontlines, the health workforce (2/3rds of which are women). At this time of crisis, the demand for an appropriately trained, motivated, and distributed health workforce has been phenomenal. As such, global shortage of health workforce has come to the forefront of discussion including measures to overcome this for necessary surge in capacity under resource constraints.

The pandemic response of Bangladesh has been slow, fragmented, uncoordinated and non-inclusive (Anwar et al. 2020). This has been reflected in every steps of containing COVID-19 such as testing, isolation, treatment, contact-tracing and quarantine including mobilization and management of the frontline healthcare workers. Before the pandemic, Bangladesh was among the 57 countries, who has critical shortages of healthcare workforces (WHO 2006). According to WHO, every doctor must be supported by at least three nurses and five technologists (WHO 2008). But in Bangladesh, the ratio has been nowhere near to this standard (Ahmed et al. 2011). The prevailing pandemic situation has exacerbated this already vulnerable state of the health workforce. Besides the doctors, nurse/midwives and dentists, the country is experiencing critical shortages of medical and nursing aids, medical technologists and technicians, and various other categories healthcare workers. As a stop gap measure, recently the Prime Minister of Bangladesh has announced the hiring of about 4,000 doctors, 3,000 nurse/midwives and 3,000 technologists and technicians to address the surge in demand (Financial Express 2020).

Under the on-going community transmission scenario, support will be needed for COVID-19 patients, who would have to remain at home while a cadre of home caregivers may assist them with the required services. These include, but not limited to, cancer patients who need palliative care (Ahmad 2011), stroke patients, who become dependent on care-givers (Mamin et al. 2017) and disabled patients requiring skilled disability care-givers (Uddin et al. 2019) in addition to the confirmed or suspected COVID-19 patients undergoing home treatment. In addition, there is a high need of technicians for operation and maintenance of various small and large medical equipment in about 30,000 secondary and tertiary health centres under the DGHS and the clinics/hospitals in the private sector. Thus, the current and future need for various categories of home care-givers, both general and with special skill sets, cannot be overemphasized.

Bangladesh is currently undergoing a demographic transition with a large base of productive youths. The GoB has made skills development as one of the national priorities for generating employment for this “youth dividend”. The past decade has seen an unprecedented pace of expansion of the formal technical and vocational education system in the country (Haolader et al. 2016). A recent Bangladesh Institute of Development Studies (BIDS) analysis of skill gaps in health sector projects huge demand for various categories of nurses, medical technologists, and technicians however, technical training in the sphere of healthcare still remains under-utilised (Begum and Mahmood 2017).



BRAC, a local NGO with global outreach launched the “BRAC Skills Development Programme” (SDP) in 2015 with an aim to create an inclusive and sustainable economic development for the youth (Zohir S et al. 2019) through apprenticeships and institution-based training programmes along with enterprise development support in the economic growth sectors. This Bangabandhu Sheikh Mujib Medical University (BSMMU) Hospital has been the technical support partner for providing palliative care assistant training to the BRAC-SDP learners. The successful absorption of both of these learners in the job market has encouraged the program to discover the overall care economy sector thoroughly and to explore its opportunities as well as the dynamics. In order to have an in-depth idea about the market demands and supply needs, SDP has begun sector specific skill demand analysis (Zohir S et al. 2019).

Considering the current COVID-19 crisis, a major paradigm shift is anticipated in the health care sector. The ‘new-normal’ situation will need more care workers to combat the pandemic effect and a large demand has already been created for various categories of health care workers. Based on this projection, this study aims to explore the potential employment opportunities in the public and private sectors in Bangladesh including home-based health care services. Thus, knowledge generated from this study focusing on the health care sector is expected to be useful for relevant policy makers and programme planners, both within and outside BRAC, to develop specific cadres and interventions targeted towards various health care service gaps in future.

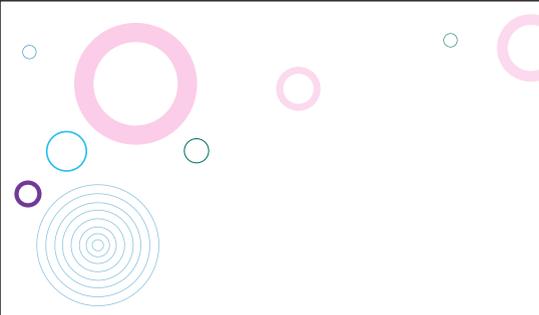
O BJECTIVES OF THE STUDY

General

To explore emerging employment opportunities in health care service sector given the current surge in demand for various categories of health care workers (beside doctors and nurses) in the formal system following COVID-19 pandemic and a major paradigm shift towards demand for home-based health care services.

Specific

1. To explore the **types of health care services in demand** outside formal health sector (e.g., sample collection technicians and lab technologists for COVID-19 tests; nurse-aids and midwives, physiotherapists, providers of palliative and other home-based health care services) at present and also, in the future post-COVID situation;
2. To explore emerging **employment opportunities** for providing these services at the formal facilities (public and private), who can support the mainstream health care providers in delivering these services and also, at home as needed;
3. To identify the **responsible authority certifying the** existing cadres and the probability that they would certify the future emerging cadres;
4. To explore the **availability of appropriately skilled trainers** for the existing, new and emerging training courses at institution level;
5. To explore the current **entry requirements** for the existing courses and probable requirements for the new courses, and finally,
6. To explore the **organisations** that are likely to expand their businesses in the health care sector in urban settings during COVID-19 pandemic and beyond.



OPERATIONAL DEFINITIONS

Health professionals: Well trained workers in jobs that normally require a university degree for competent performance, such as doctors, nurses, midwives, dentists, pharmacists) (Buchan, Dhillon and Campbell 2017).

Health associate professionals (/para-professionals): Requiring skills at tertiary educational level but not equivalent to a university degree, such as associate nurses, medical and pharmaceutical technicians, traditional practitioners that do not require formal training (Buchan, Dhillon and Campbell 2017).

Personal care workers in health services (/other health workers and technicians): Which includes health care assistants, CHWs and home-based personal care workers (Buchan, Dhillon and Campbell 2017).

Paramedics: A para-professional who is trained to give emergency medical treatment or assist medical professionals (e.g., Medical Assistants/SACMOs, midwives).

Medical technologists: A medical technologist is a para- professional who exercises technical and scientific functions in medical laboratories (e.g., lab technologists).

Home-based care: Defined as any form of assistance provided to a sick person (referred to as the patient) directly at home by family, friends and members of the local community, cooperating with the advice, and support from the health care professionals (Buchan, Dhillon and Campbell 2017).

Palliative care: Is an approach that improves the quality of life of patients and their families facing the problem associated with life-threatening illness, through the prevention and relief of suffering by means of early identification and impeccable assessment and treatment of pain and other problems, physical, psychosocial, and spiritual (Buchan, Dhillon and Campbell 2017).

Medication adherence: Is the degree to which the person's behaviour corresponds with the agreed recommendations from a health care provider.

Adherence support: Health service providers learn to interact with patients in clinical, community and home settings where they provide education, treatment support and adherence counselling.

Study approach and design

This time bound study adopted a cross-sectional design to elicit relevant information by specific objectives. The study design applied a combination of approaches that include: a) rapid review; b) quantitative assessment using semi-structured questionnaire; c) qualitative assessment (e.g., key informant interviews (KII) with stakeholders) using guideline to explore the perceptions and experiences of key stakeholders including their insights on the opportunities and challenges related to potential employment opportunities in health care sector, especially in a post-COVID-19 scenario. Due to constraints in time and resources and also, under lock-down conditions, a quick survey applying telephone-based interview method was applied for the study. This method is increasingly used in healthcare service research as it allows data to be collected from diverse geographical localities, is time and cost-effective compared to face-to-face interview, better response rate than postal surveys, and better completion of information (Smith EM. 2005).

Please see Table 1 for summary approaches by objectives.

Table 1: Summary of approaches by objectives

Specific objective	Scope	Study approach	Study tool
1. To explore the demand of health care services (e.g., home-based, palliative, disability care services etc.) outside formal health care system among the urban community considering the post Covid-19 scenario	<ul style="list-style-type: none"> o Assess use of such services available in the urban community and its demand for new type of services o Derive insights on new type of service demand e.g., care of elderly patients in isolation /quarantine situation o Home-based elderly care, palliative care, disability care 	<ul style="list-style-type: none"> o Rapid Review o Quantitative-Community survey 	Phone interview using a semi-structured questionnaire as talking points; using Google forms to enter data
2. To explore new employment opportunities at hospitals; to identify organisations that can produce them to support the mainstream healthcare providers in facilitating the delivery of services	<ul style="list-style-type: none"> o Identify current practices of using para-professionals/ technicians in hospitals o Assess current supply and demand for such service providers in hospital settings and gap identification o Identify organisations who can play a role in developing the new cadre and their capacity 	<ul style="list-style-type: none"> o Rapid Review o Quantitative-Facility survey 	Phone interview using a semi-structured questionnaire as talking points; using Google forms to enter data

<p>3. To identify the acceptable authority that would certify these new health care professionals and technicians</p>	<ul style="list-style-type: none"> o Identify existing process of certification and the authority o Feasibility/scope of endorsing new cadres, registration, certification, work placement o Appropriate authority to certify these new cadres 	<ul style="list-style-type: none"> o Rapid Review o Quantitative-Institution survey o Qualitative- Key informant Interviews (KIs) 	<p>Phone interview using a semi-structured questionnaire as talking points; using Google forms to enter data; guidelines for qualitative interviews</p>
<p>4. To explore the trainer availability for the existing, new and emerging training courses at institution level</p>	<ul style="list-style-type: none"> o Available training courses and trainer o Number, skills, qualification, work time/hour, pay scale o Scope of new training provision-upgrading trainers with new curriculum o Challenges-skill needed 	<ul style="list-style-type: none"> o Rapid Review o Quantitative-Institution survey 	<p>Phone interview using a semi-structured questionnaire as talking points; using Google forms to enter data</p>
<p>5. To assess the prerequisite education level to be eligible to apply for these new and emerging training courses</p>	<ul style="list-style-type: none"> o Existing pre-requisite o Recommended pre-requisite o Recommend target group for new training 	<ul style="list-style-type: none"> o Rapid Review o Quantitative-Institution survey 	<p>Phone interview using a semi-structured questionnaire as talking points; using Google forms to enter data</p>
<p>6. To assess the growth of the job providing organisations that are likely to expand their businesses in the health care sector in urban settings and beyond COVID-19</p>	<ul style="list-style-type: none"> o Identify key player and services provided o Their market size/value, market trend/growth, scope of expansion o Challenges 	<ul style="list-style-type: none"> o Rapid Review o Quantitative-Institution survey 	<p>Phone interview using a semi-structured questionnaire as talking points; using Google forms to enter data</p>



Detail of methods

I) Rapid review

According to the WHO, rapid review involves a type of knowledge synthesis in which systematic review process is accelerated and methods are streamlined to complete the review within a shorter span of time than in the case for typical systematic reviews (Andrea et al. 2017). This method has emerged as a streamlined approach 'to synthesis evidence in a timely manner typically for the purpose of informing emergent decisions faced by decision makers in health care settings' (Sara et al. 2012). Thus, prior to the field surveys, a rapid review of available documents was conducted to get an overview about the various facility and home-based health care services available in the country which are delivered by different categories of health care workers other than doctors/nurses /midwives. Besides, the review also included their education and training, training resources, current regulatory regime, scope of grooming new post-COVID-19 workforce, and challenges of operationalization such services. A rapid review search protocol along with a list of key terms to be used and also, a template for data extraction (Please see Annex 1 for document review protocol and Annex 2 for key search terms used, Annex 3 for the analysis framework) was developed to retrieve the published journal articles and unpublished grey materials from institutional websites, programme documents, SOP guidelines etc. through Google search as per objectives of the study and thematic analysis was done. The search period covered was from January 2017 to July 2020 and the search was conducted during 15 July -20 August 2020. In all, 73 documents (16 peer-reviewed journal articles, 51 docs from organisational websites and 6 others) were included for analysis.

II) Quantitative survey and qualitative interviews

Study was conducted in range of setting including community, facilities (public and private hospitals), NGOs, relevant training institutions, and service providing organisations. These are detailed below.

Study sites and study population

The study sites and population varied based on specific objectives. Study sites for survey and interviews were selected using the pre-identified lists. (Please see Annex 4 or the list of pre-identified sites). Study population was included purposively to get the perspectives from both the supply and demand sides.

Service users

To capture the demand side perspective, study population included community people e.g., users of palliative, disability, and other home-based health care, and/or any such relevant care services.

Service providers, trainers, employers, authorities

To capture the supply side perspective, study population included health care service providers, facility authorities, faculty from training institutions, students of relevant training programmes, employer and employee of home-based/palliative/disability care service providing organisations, faculty and students of relevant training providing institutions, and relevant key authorities from local and nation level. Please see Table 2 for study setting and population.

Table 2: Specific objectives, study setting, study population and selection criteria

Specific objectives	Study setting	Study population	Selection criteria
Obj. 1.	Community	Service users; will be identified/selected with support from facility, NGOs, and organisations providing such services	People with first-hand experience of using palliative/home-based/disability care
Obj. 2	Facility (public and private hospitals, NGOs)	Service providers	Service providers with first-hand experience of assisting/dealing with patients who needed such care at home
Obj. 3	Local (facility & organisation) plus central (national)	Authorities	Authorities who deals with issues such as authorization, registration, certification etc.
Obj. 4	Training Institutions	Faculty and students	Existing faculty and students of relevant training institutions
Obj. 5	Training Institution	Faculty and students	Same
Obj. 6	Home-based care service providing organisations	Employer and employee	Employer of both established and new organisations plus current and ex-employees

Sampling unit and sampling strategy

Sampling unit used included:

- > Community: Service users
- > Facility: public hospital, private hospital, NGO service providers
- > Training institutions/organisations: Trainers/Faculty/Trainees
- > Regulatory bodies: Central authorities
- > Relevant job providing organisations: Employer/Employee

The study applied purposive sampling techniques leveraging an already built network by the research team within health sector from past interactions with them for conducting various studies. According to specific objectives, initial lists of facilities (public and private hospitals), NGOs, relevant organisations and training institutions was developed. Using this primary lists, respondents of particular category were reached through purposive and convenient sampling.

Please see Table 3 for sample size.

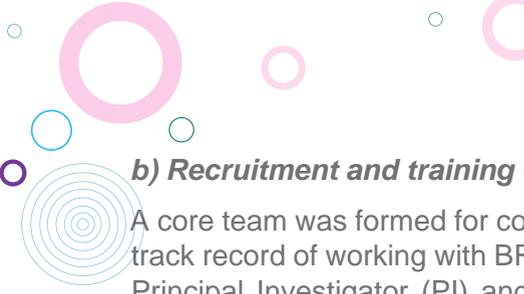
Table 3: Sampling unit, sample size

Category	Sampling Unit	Sample size
Quantitative	Service user-Public and private hospitals, NGOs	30 31
	Facility-Public and private hospitals and NGOs	
	Training institutions-Palliative care training Disability care training MATS (public& private) IHTs and others	40
	Job providing organisations -Established, mid-level and new companies	30
Qualitative	Central authorities-DGHS, DGFP, State Medical Faculty, PCB	5
Total number of data collected		136

Major steps followed to conduct the study:

a) Tools development and pre-testing

The study used semi-structured questionnaires to conduct the survey and used pre-designed Google form for entry and analysis of data. However, some open-ended questions were used to elicit perceptions and experiences of the relevant stakeholders to get a comprehensive picture. Thus, a set of tools were developed for each of the target groups. The questionnaire covered a broad range of topics from demand side (background information of respondent, health information, use of, and satisfaction with health facilities palliative/disability care, use of, and satisfaction with, home-based services, other support and services received and services needed) and supply side (background information on the respondent, professional affiliation, palliative care service experience, training, specialty, demand, supply, training, curriculum, scope of new training, regulatory process, strategies to promote palliative service etc.). Five pre-testing of the questionnaires were done within social network (Please see Annex 5 for pre-testing details). Tools were modified incorporating feedbacks. (Please see Annex 6 for English tools, Annex 7 for Bengali tools and Annex 8 for Consent forms)



b) Recruitment and training of field investigators

A core team was formed for conducting the study and experienced field investigators with proven track record of working with BRAC JPGSPH were recruited and trained. The team was led by the Principal Investigator (PI) and also included quantitative and qualitative researchers from the Centre at BRAC JPGSPH. The study team had medical graduate, anthropologist, and quantitative and qualitative experts. One day online group training was organised for the team. The training comprised participatory discussion on tool, data collection plan, and approach plus quality control measures. End-of-training debriefings and necessary feedback, suggestions, and guidance were provided by the core research team. (Please see Annex 9 for team composition).

c) Data collection approach

Data were collected through phone interviews. Study team used pre-identified list to call the respondents. Researchers briefly described the context and purpose of the study. Upon agreeing, the interview was taken at the same time; otherwise an appointment was made to take the interview as per respondents' convenience. The average duration of the interviews was about 20 minutes.

d) Quality control measures

Study team had one quality control supervisor to maintain integrity of data collection and also cross-checked quality of data collection. At the end of data collection each day, the team members had a group meeting on zoom call to check for any missed information and ways to mitigate problems, if any. A quality control checklist was developed for this purpose and used by the supervisor for random checking. In cases where inconsistencies were noted, interviewers were re-briefed on required techniques. Whenever necessary, re-interview were done by the supervisors for securing reliable and valid data. Thus the entire process ensured the reliability and validity of the data collected for the study.

e) Data management and analysis

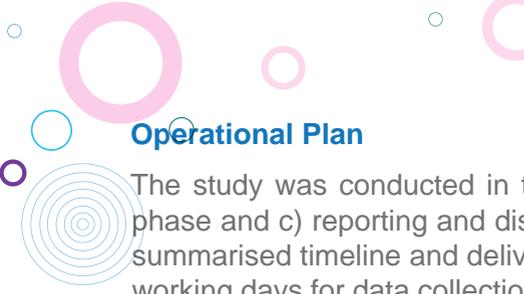
Quantitative data was cleaned, cross checked for missing variables, and entered into pre-designed Google form for analysis. This method of data management was helpful to accommodate the researchers working from home at different locations. An analysis plan was made to extract the tables for the report. For qualitative data, audio records (of those who give consent) was taken and used along with handwritten notes to prepare the transcripts on the same evening; this helped to minimize recall bias. Responses to the open-ended questions were coded and analysed thematically.

f) Triangulation and analysis of data

Triangulation of data was done by eliciting information on a particular issue from different sources e.g., rapid review plus quantitative and qualitative surveys. This enabled the team to produce a shared and structured analysis and checking validity of data drawing on data from different sources. Analysis of the data was done based on key themes identified from the objectives and description of its implications. Recommendations were made based on key findings according to themes.

g) Ethical Consideration

Ethical approval was to be obtained from the Institutional Review Board of BRAC James P Grant School of Public Health, BRAC University. Informed voluntary verbal consent including consent to record the conversation was obtained from the respondents. Participants were informed about the purpose, process, risk and benefit of the study. Respondents were given a choice to withdraw from the interview at any time during the study if they want. Privacy, anonymity, and confidentiality of respondents were maintained throughout the study and data was used for research purpose only.



Operational Plan

The study was conducted in three phases: a) inception phase b) data collection and analysis phase and c) reporting and dissemination phase. (Please see Annex 10 for work plan used with summarised timeline and deliverable of the phased activities). Considering the time constrain (18 working days for data collection), data collection sites were assigned to team members based on the objective and study population. List of study sites including name of facilities were followed by assigned members. During the inception phase, prior communication was made to the listed facilities/NGOs/organisations to identify/select respondents and rapport building. Since the study involved a range of study sites and study population, the study team members with relevant expertise led particular site and groups for data collection as described in the table below. (Please see Annex9 or team composition)

Challenges faced and strategies adopted to implement the study

Tracking down a variety of respondents as per study need, collecting their contact numbers, time consuming repeated communication to fix a date and time for interviews, non-response even after scheduling appointments, unavailability during day time due to busy schedule, reluctance to share information, concern over confidentiality of phone interviews, network problem while submitting online forms, and limited time for data collection were some of the major challenges that the study team faced during field operation. Various strategies were adopted to overcome these. For example, the study team applied snow ball technique for those providers, who agreed to share contacts of patients. Team also used their social networks to identify and reach the target respondents. The interviewers had to make several phone calls to set an interview; even after setting the interview, some respondents refused to participate in the study later.

Apart from tracing the respondents an additional challenge was confidentiality and credibility issue with the service providers. Respondents were hesitant sharing their organization's service related information resulting in direct and indirect refusal from potential respondents. To overcome this, study team sent formal letter signed by the PI of the study through email explaining the research background and objective with request to participate. To get the appointment of the respondent and schedule interview was also challenging as the service providers hardly have any time free during their working hour. Therefore, the interviewers had to schedule and conduct most of the interviews at night and submit the interviews in Google form next morning.

The study comprised of three major elements a) Rapid Review b) Quantitative study c) Qualitative study. The findings are presented according to each of the above components.

A) Findings from the Rapid Literature Review

In all, 73 articles and documents were included in the analysis. Of these, 16 were peer reviewed journal articles, 51 were various types of documents retrieved from the organisational websites, four were newspaper articles and two were thesis reports. The findings are described below according to the thematic objectives.

Demand for health care services outside formal system under COVID-19 scenario

A total of 15 documents were found under this theme; 12 were journal articles, two newspaper articles and one report. Of these, six mentioned palliative care services; four elderly care services and another four disability care available in different public and private facilities (Please see Annex 11)

Types of services used by the respondents and demand for more services

Chemotherapy and radiotherapy were the most commonly used services by patients under palliative care. On the other hand, pain relief medication, physiotherapy and rehabilitation were the common services sought under the disability care and home based services. Strengthening the palliative care, establishing proper elderly care and home-based disability care were demanded by most of the users. The summary of health care services in demand by the urban community post-COVID-19 pandemic is shown in Annex 12.

Experiences of the users and challenges faced

Most of the documents did not mention about patient experiences, user satisfaction or challenges faced by them while receiving home-based or other care services. Due to higher cost of healthcare, elderly people prioritized informal providers and alternative medicines such as homeopathic, unani and ayurvedic treatments as these are comparatively low-cost treatments (Abdullah et.al 2018). The service-seekers faced significant barriers to access home-based care due to financial problems, unavailability of treatments or medications, and a lack of support for the caregivers (Doherty et.al 2020). The same study also showed that many individuals with serious health problems experienced significant physical, emotional, and social suffering due to a lack of access to pain and symptom relief and other essential components of palliative care (Doherty et.al 2020).

New employment opportunities for para-professionals and other health care workers and its production

A total of 18 documents were found under this theme: four were journal articles, two newspaper articles, 11 documents retrieved from institutional websites and one report (Please see Annex 11). These articles mainly covered information regarding the organisations that can produce the health care para-professionals and other health workers to support the mainstream healthcare, providers in facilitating delivery of services (Please see Annex 13).

Palliative care services in Bangladesh

Review revealed that there are quite a number of organisations and facilities, which provided palliative care. Among these, Hospice Bangladesh and BSMMU offers home care to the patients. Both public and private hospitals and also some non govt. organisations offer palliative care and home care. BSMMU and Palliative Care Society Bangladesh provides 24 hours support over phone for the patients requiring palliative care. With regard to the availability of telemedicine facilities within the individual palliative care units, doctors taking the survey revealed that 61% of hospitals have audio service only, 22% have both audio and video services and 17% do not have any telemedicine facility (Rahman et al. 2018). The service providers responsible for the palliative care patients varied from physicians, nurses, nursing aid, psychologists, social workers and pharmacists etc. Among all the organisations BSMMU was found to offer wide range of courses on palliative care for the doctors, nurses, volunteers, palliative care assistants etc. (Please see Annex 13).

Disability care services

Four documents mentioned about the available disability care services in Bangladesh. National Foundation for the Development of the person with disabilities usually provide disability program implementation, advocacy, and financial support for the persons with disability, medical, social, and vocational rehabilitation including community based rehabilitation, as well as provision of assistive devices, gait aids, and communication devices to those who cannot afford it. A few numbers of these organisations are also working to provide education to PWD, particularly for children (Uddin et al. 2019). A wide range of professionals varying from physicians to physiotherapists, occupational therapists, and speech and language pathologists are providing service to the patients with different type of disability. A wide range of courses and trainings are available for the professionals such as fellowship and residency program for the physicians and bachelors, masters and diploma for the physiotherapists. (Please see Annex 13).

Scope of child palliative care

Positive responses were found regarding the presence of child palliative care on which 80% responded positive and 20% responded that they did not have any child palliative care in their respective hospitals. Out of the hundred physicians in the target group, only twenty five physicians were able to provide their valuable input for the survey (Rahman et al. 2018). The palliative care services are largely focused on adult patients and are not resourced or equipped to meet the unique needs of children and their families. There is a recognized need for a paediatric palliative care service which would focus on the needs of children and their families and would be seamlessly integrated with existing paediatric cancer care services at BSMMU, and which could support children and families throughout their illness trajectory, whether the outcome is cure or death (Doherty et al. 2018)

Shortage of health professionals in disability care service

One of the documents mentioned that most of these institutes lack the essential members of a multidisciplinary rehabilitation team. Currently, there are 103 Bangladesh College of Physicians and Surgeons (BCPS) fellows and 13 Doctor of Medicine (MD) residents in physical medicine and rehabilitation under the BSMMU (Uddin et al. 2019).

Training Facilities for Palliative Care in Bangladesh

BSMMU offers a wide range of palliative care courses for physicians, nurses, palliative care assistants, volunteers, other health and social professionals, caregivers/family members, etc.

The residency program under BSMMU also includes palliative medicine. The duration of the



course varied between 3 days to 5 years. Course fees ranged from 3000-15000 BDT except for the MD course program in palliative medicine. The residency program course fee depends on BSMMU rules. The name of the courses BSMMU offers is mentioned below:

- Basic Certificate Course in Palliative Medicine and Nursing
- Basic Certificate course for palliative care assistants
- Foundation Course in palliative care
- MD residency etc.

Training Facilities for Disability Care in Bangladesh

Fellowship of College of Physicians and Surgeons (FCPS) with 4 years duration and 5 years MD Physical Medicine and Rehabilitation program administered by BSMMU are applicable to the physicians. A bachelor's degree with a period of 4 years, a diploma degree with a period of 3 years and a master's degree are available to physiotherapists. (Uddin et al. 2019)

Training programs on disability care focused on physical, visual, speech, hearing, intellectual, deafblind disabilities and other physical impairments etc. (Centre for Disability in Development) The other training programs includes making and using assistive devices, management of epilepsy and Cerebral Palsy, MPH program etc. (Asian Institute of Disability and Development).

Number of clients served (monthly/yearly), turnover, and scope of expansion

The range of clients served monthly varies between 20 and 90 persons, as mentioned by these organisations. Yearly turnover, however, was not mentioned by the organisations. Most of the organisations mentioned that they will increase the service coverage and recruit more service providers because the demand is increasing. Some organisations mentioned that they will establish their service in other parts of the country, such as; in the Chittagong, Sylhet, and Khulna divisions (Please see Annex 13).

Regulatory authority, system preparedness for production of additional para-professional and other health workforce and entry requirements

A total of 13 documents were found from institutional website under this theme (Please see Annex 11). These website information mainly covered the information related to acceptable authority that would certify these new health care professionals and technicians, trainer availability for the existing, new and emerging training courses at institution level, prerequisite education level to be eligible to apply for these new and emerging training courses to assess the prerequisite education level to be eligible to apply for new and emerging training courses like palliative, disability, NCD care, and home-based care services. (Please see Annex 14) represent the information regarding training institutions, trainers, trainees and their authority.

Total number of MATS and IHT, duration of courses and admission pre-requisites

According to the DGHS, there are 9 governments. Medical Assistant Training School (MATS) and 13 Institutions of Health Technology (IHT) in Bangladesh. There are 818 seats at Medical Assistant Training Schools and 2791 seats at govt. Institute of Health Technology. Students, who received at least GPA 2.5 from a science background and must have biology in SSC, are eligible to admit in MATS and IHT courses. The course duration for MATS is 4 years with a 1-year internship. That means, their academic duration is 3 years and they have a 1-year compulsory internship. Besides that, the course duration for IHT is only 3 years. However, the requirement for their teacher/trainers was not mentioned in any of their institutional websites. Also, there is no information available about their capacity of students. Please see Annex 14 for the summary findings of the different available courses for paraprofessional's in Bangladesh and courses relevant information.

Course fees, accreditation and certifying authority

Course fees vary in different organisations, which is about BDT 1,500 for two weeks to BDT 1,45,000 approximately for the whole four years course cost. Most of the institutions accreditation and certification authorities are state medical faculty. Few other responsible organisations for accreditations and certifications are BSMMU, Bangladesh Nursing and Midwifery Council, Bangladesh Technical Education Board etc. (Please see Annex 14).

Growth of the job providing organisations in the urban settings and also, beyond COVID-19 pandemic

Under this theme, 27 documents were retrieved from different institutional websites (Annex 11). This website information mainly covered the materials related to assess the growth of the job providing organisations that are likely to expand their businesses in the health care sector in urban settings and beyond covid-19 situation in Bangladesh. A total of 27 job providing organisations website were explored for relevant information to understand their activities e.g. year of initiation, service areas, number of caregivers, caregiver category, monthly salary, service setting and service coverage. The common services provided by the companies included palliative care, physiotherapy, nursing care, doctors home visit, elderly care, child care, diagnostic and equipment rent service. Most of the companies preferred not to disclose the number of employees and salary range. Majority of the companies were in urban setting and with a Dhaka based service coverage. (Please see Annex 15 for the details).

Most of the organisations were established between 2010 and 2019. However, Sheba Nursing Home Care was established even earlier that was in 2000. Most of the organisations provide services like nursing home care, doctor home visit service, elderly care, child care, patient care attendant service, physiotherapy home care service.

Information regarding the client served are varies in different organisation, such as; Amar Astha organisation mentions that recently they are serving more than 90 clients every month. The nursing home care organisation mentioned that on average 315 happy patients served yearly. Home Aid Care home-based care organisation mentioned that they served 240 clients yearly. Sir William Beveridge foundation mentioned they monthly serve around 150 clients. Yearly turnover was not mentioned in any organisation's website.

Nursing home care organisation recruitment requirement is from 18 years to 35 years old candidate. Both male and females within this age range are capable of providing services. Amar Astha have more than 100 caregiver including 5 full-time employees. Family home care has 130 male and female nurses. Sir William has 30 full-time employees, and Patient home care BD have 40 employees. Most of the organisations recruit nurse, patient care attendants, midwives, nanny, brothers, physiotherapists, and doctors. The age range of caregiver 18-35 and their salary depends on organisation policy. Some organisation paid salary on a visit, hour and day basis, and some organisation paid salary monthly basis. The range of the salary is 9000-25500. Working duration depends on organisational policy. Most of the organisations have 6 hours, 8 hours, and 12 hours duty including day and night shift. The maximum organisations recruit the employees for full time duties and sometimes part-time employees as well. Some organisations recruit only full-time employees.

Most of the home-based care organisations are mainly based on Dhaka, mostly in urban settings. Nursing home care and home aid care provide services both in urban and peri-urban settings. Some organisations provide services outside of Dhaka like Chittagong, Khulna, Rangpur, Sylhet, Narayanganj, Munshigonj, Savar, Mymensingh, Rajshahi and Barishal.



Available training and pre-requisite of trainee

Most of the organisations provide basic home-based care trainings. They arrange skilled demand-based training for nurses, patient care attendants, and other caregivers. Prerequisite for most of the courses or trainings were minimum SSC pass.

Conclusions and recommendations

This Rapid Review revealed the surge in demand of para-professionals and other health workers for facility and home-based health care services under COVID-19 pandemic situation which is projected to continue post-pandemic. However, the supply of these workers is far from that needed and a large gap remains. Policymakers and stakeholders should be aware of this situation and take urgent measures to address this.

Based upon the findings above, following recommendations are made:

- Establish new services: Need to establish supportive care such as palliative care and NCD/disability/and elderly care at health facilities and at home by different organisations. Both the public and private sectors can initiate these services based on their capacity, preparedness and patients need.
- Extend the service coverage areas: Institutions that are currently providing home-based palliative, elderly, disability and NCD care services should extend their coverage areas so that everyone who needs these services can reach these services.
- Training of new cadre: As shortage of health workforce is common in Bangladesh, and the review revealed that the paraprofessionals are also not enough in the country. So authority should train and recruit different categories paraprofessionals for each services.
- Refresher training for the existing staff: Staff who are already providing different home-based care services should receive refresher training at regular intervals so that they remain updated to provide better services with confidence.
- Affordable cost: All these services should be provided at an affordable cost so that even the poorest and underprivileged can avail these services as needed.

B. Findings from the Quantitative Study

B.1 Respondents' Profile

The quantitative study was conducted among six categories of respondents (service user, service provider, trainer, trainee, employer and employee) under three major domains (service, training and job) (Please see Annex 17).

Service Users

The service users were mostly above 55 years of age (57%), female (60%) and married (83%). They were all Muslim and majority of them had \leq five years of schooling. About equal proportion (37%) of them were either unemployed or homemakers. Most of the respondents did not have their own income (68%) and was living in an urban place (68%).

Figure 1: Age distribution of the respondents

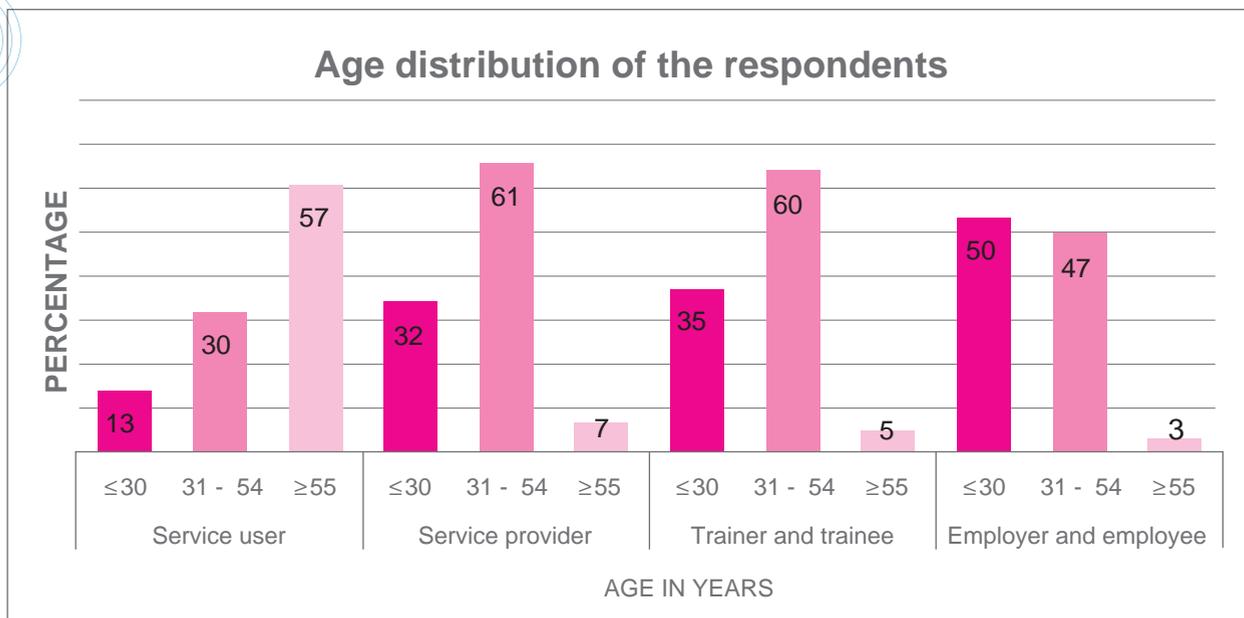
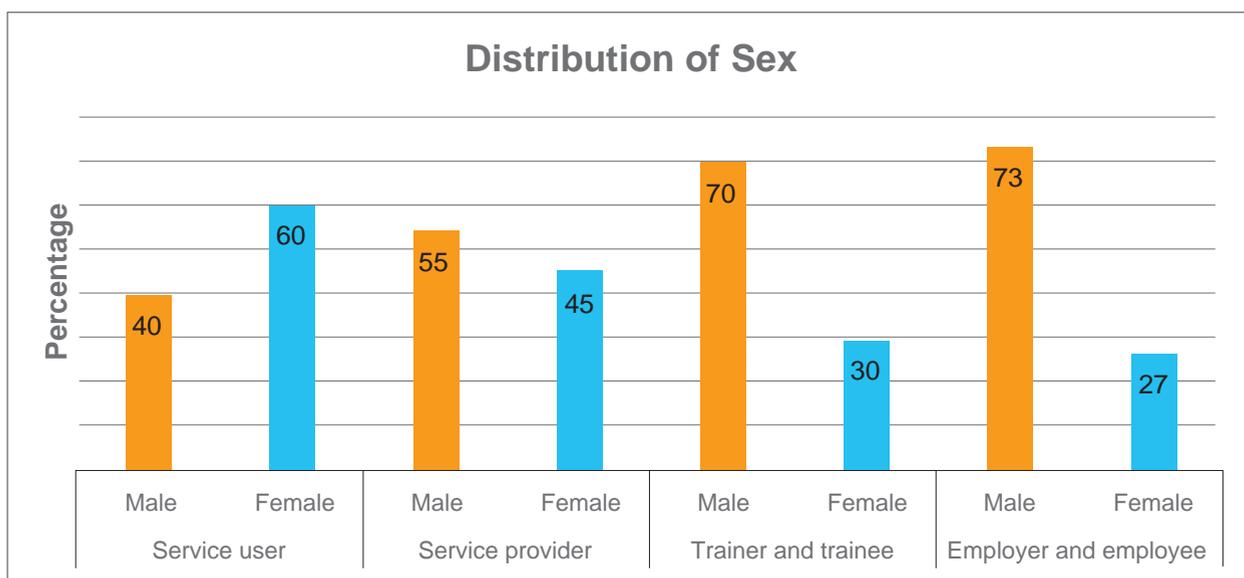


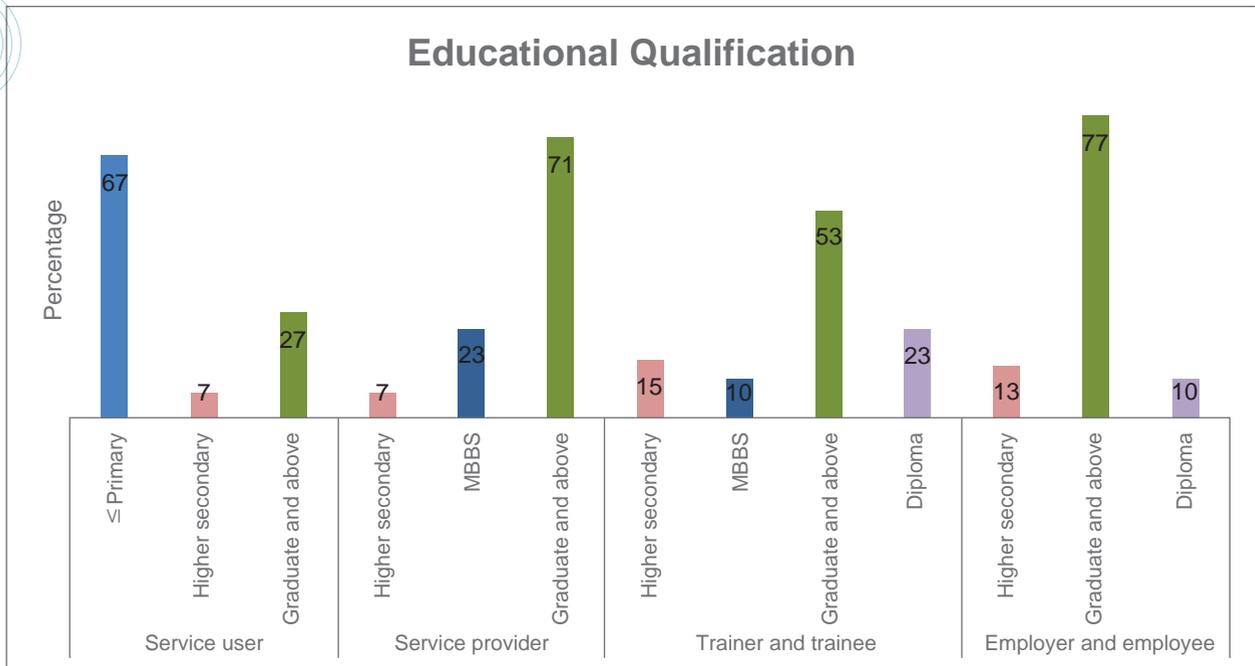
Figure 2: Sex distribution of the respondents



Trainer/Trainee

More than half of the respondents were between 31 to 54 years age, majority of them were male (70%) and Muslim (88%). 70% were of academic positions with mostly graduate and above educational qualification (53%) and with more than five years working experiences (68%). Half of the respondents had no specialization (53%), those, who had specialization were mainly on disability care (30%) and palliative care (13%). Majority of the respondents were trainer (68%) and the rest were trainee.

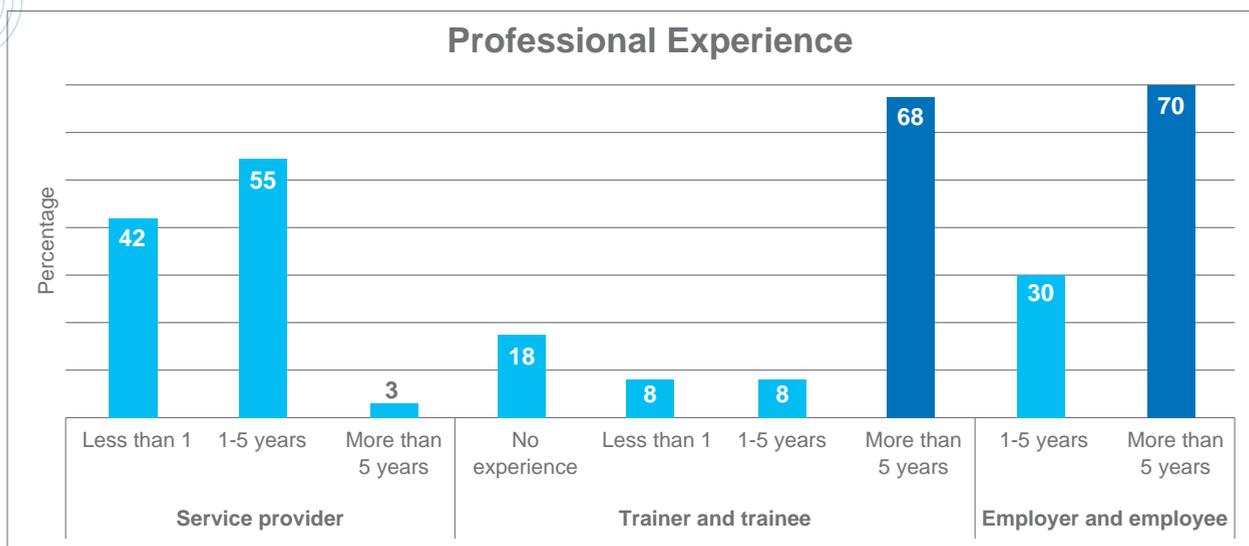
Figure 3: Educational qualification of the respondents



Employer/Employee

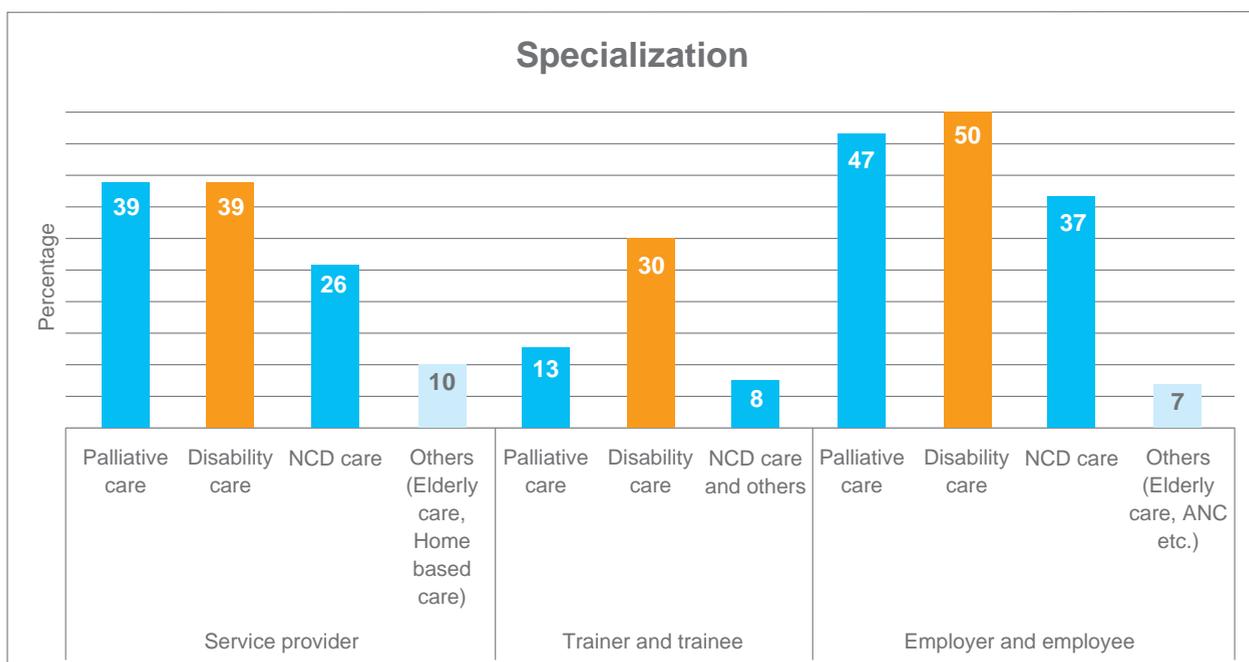
Half of the respondents were less than 30 years of age (50%), mostly male (73%), Muslim (90%) and majority of them had graduation and above educational qualification (77%). Majority of the respondents were employer of the respective companies (63%) with senior management positions (e.g. Director, Managing director, CEO, Coordinator) (60%). Most of them had more than five years working experiences (70%). Respondents were mostly specialized in disability care (50%), palliative care (47%), NCD care (37%) and other area like elderly care, ante-natal care, post-natal care (7%). And then again, 30% of the respondents reported that, they had no specialization in the above mentioned area.

Figure 4: Professional experience of the respondents



More than half (55%) of the service providers had 1-5 years professional experience. Majority (68%) of the trainer and 70% of company employer plus employees had more than 5 years of professional experience.

Figure 5: Specialization of the respondents



An equal percentage of service providers had specialization on palliative (39%) and disability (39%) care. Others had specialization on NCD (26%) and elderly and home based care (10%). Trainers mostly (30%) had specialization on disability care followed by palliative (13%) and NCD plus other care (8%). Half (50%) of the employer and employees had specialization on disability care followed by palliative (47%) and NCD (37%) care.

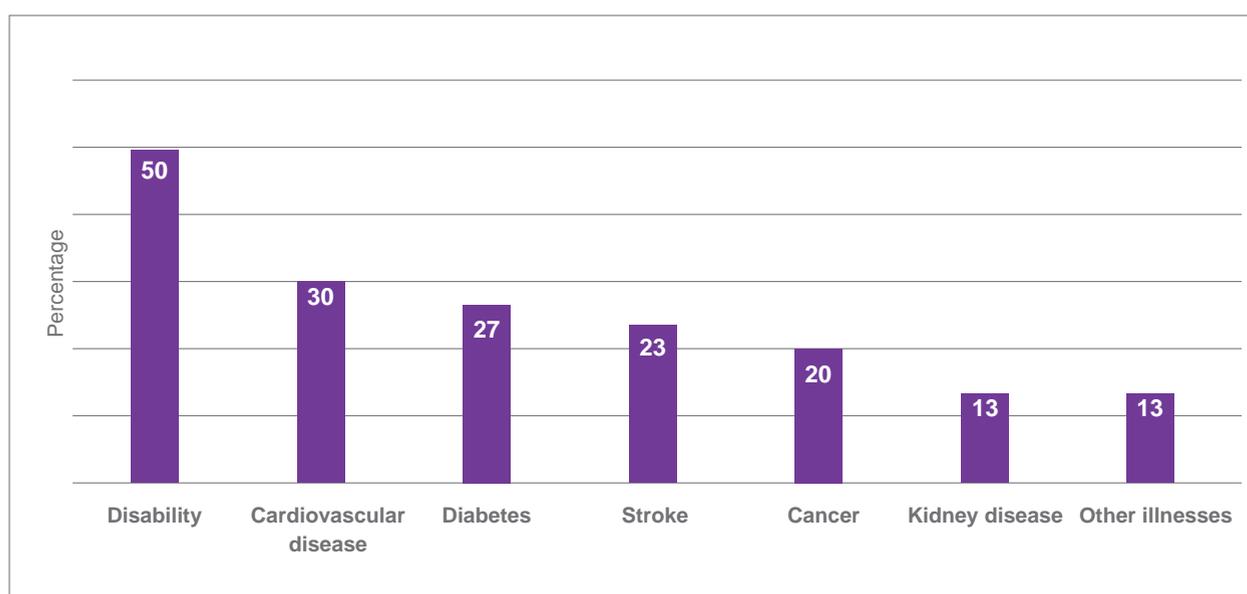
B.2 Service users

Given the already existing demand of health care services in the country, the study explored the demand of new type of health care services (e.g., home-based, palliative, disability care services etc.) outside formal health care system among the urban community considering the post Covid-19 scenario. The study devired insights on new type of service demand from patients seeking such care during COVID 19 pandenmic from a demand side perspective.

Disease profile of the service users

Majority (73%) of the service users reported their health status as good but when asked whether they have any diagnosed or terminal illness half of them mentioned about disability (50%) and rest of the respondents' mentioned about cardiovascular disease (30%), diabetes (27%), stroke (23%) and cancer (20%) (Figure 6).

Figure 6: Disease profile of the service users (Multiple response)



Majority (80%) of the service users mentioned they have visited a health care facility within last six months to seek health care. Nearly half of them visited a private hospital (40%), an equal proportion visited a public hospital (30%) and a NGO/dispensary/clinic (30%). Pain management was the most common care (97%) they received from the facility, followed by treatment of other illness/symptom management such as psychological symptoms apart from pain like breathlessness, weakness, anxiety, nausea, constipation etc. (67%) and adherence support i.e., support to interact with patients in clinical, community and home settings where they provide education, treatment support and adherence counselling (50%). Type of care respondent needed recently was NCD care (57%) followed by home-based (33%), palliative (20%), disability and elderly care (10%). A majority (80%) reported that they were able to get desired services.

More than half of the respondents were satisfied with the serviced they received (67%). Nearly half of the respondents received services from doctor (43%) followed by home care provider (20%), nurse (13%) and physiotherapist (3%). However some respondents (20%) mentioned they were not able to get desire services. **Financial problem was a major challenge to receive care (53%), followed by transport shortage (40%), physical support (23%), caregiver and medicine shortage (8%). shortage (13%) (Table 1).**

Table 1: Care seeking behavior of the respondents

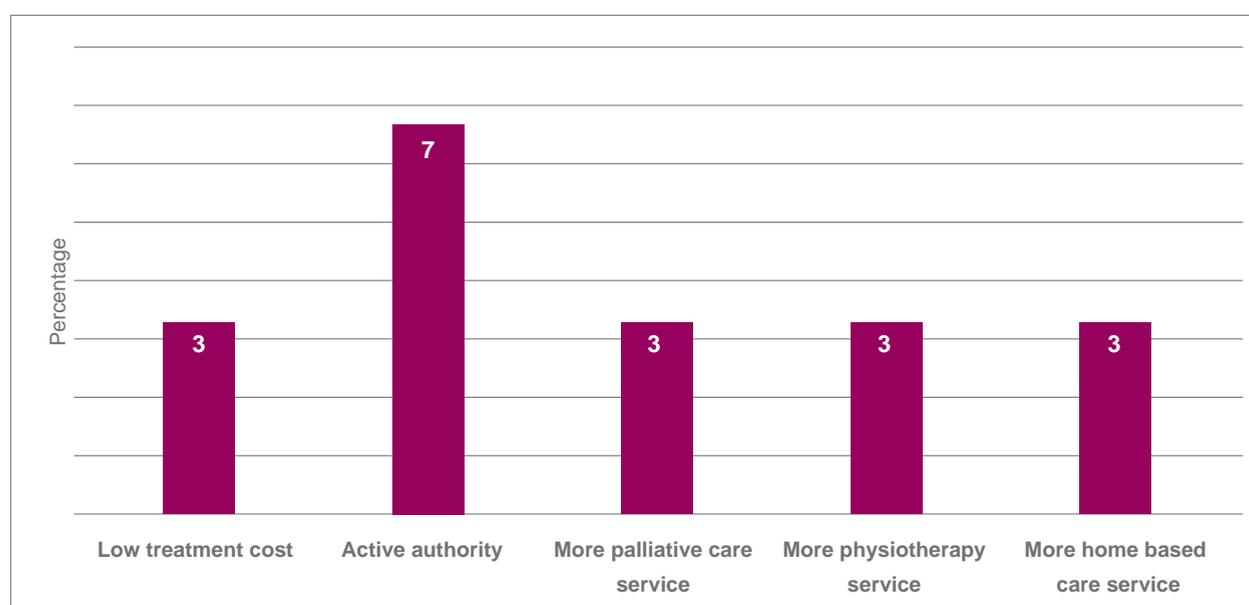
	Percentage (%)	No. of observation (n)
Last time visited a facility to seek care for NCD/terminal illness		
≤6 months ago	80.0	24
6-12 months ago	20.0	6
Type of facility visited to seek health care		
Private hospital	40.0	12
Public hospital	30.0	9
NGO/private dispensary/Clinic	30.0	9
Type of care received in that facility (multiple response)		
Pain management	96.7	29
Treatment of illness/ symptoms apart from pain management	66.7	20
Adherence support ^a	50.0	15
Type of care needed recently (multiple response)		
NCD care	56.7	17
Home based care	33.3	10
Palliative care	20.0	6
Elderly and disability care	10.0	3
Able to get the desired service		
Yes	80.0	24
No	20.0	6
Service provider		
Doctor	43.3	13
Homecare provider	20.0	6
Nurse	13.3	4
Physiotherapist	3.3	1
Did not able to get desired service (N/A)	20.0	6
Level of satisfaction after receiving the service from the facility		
Very satisfied	66.7	20
Somewhat satisfied	23.3	7
Not at all satisfied	10.0	3
Type of challenges you faced to receive the care (multiple response)		
Financial	53.3	16
Transport	40.0	12
Physical support	23.3	7
Caregiver shortage	13.3	4
Medicine shortage	6.7	2

^aAdherence support -Health service providers support to interact with patients in clinical, community and home settings ,where they provide education, treatment support, and adherence counselling.

Demand for additional care

Half of the respondent could not specify whether they needed additional clinical care and support to help to manage symptoms (53%) while some (20%) said they needed additional care and rest reported they did not require additional care (27%). Those who needed additional care/support mainly mentioned about active administrative support (7%); however the needs for palliative (3%), home-based care (3%), and physiotherapy (3%) and also to lower treatment cost (3%) were equal (Figure 7).

Figure 7: Reported need of additional care (multiple response)



Regarding type of additional care/service providers needed; the respondents mostly mentioned about home-based service providers (20%) followed by nurse (17%), physiotherapist (7%) and counsellor (7%).

A.3 Service providers

Given the already existing shortage of health care services in the country, the study explored the new employment opportunities at hospitals; to identify organisations that can produce them to support the mainstream healthcare providers in facilitating the delivery of services to understand the supply side perspective. The findings present current practices of using para-professionals/technicians in hospitals and also, identified organisations that can play a role in developing the new cadre and their capacity.

Findings

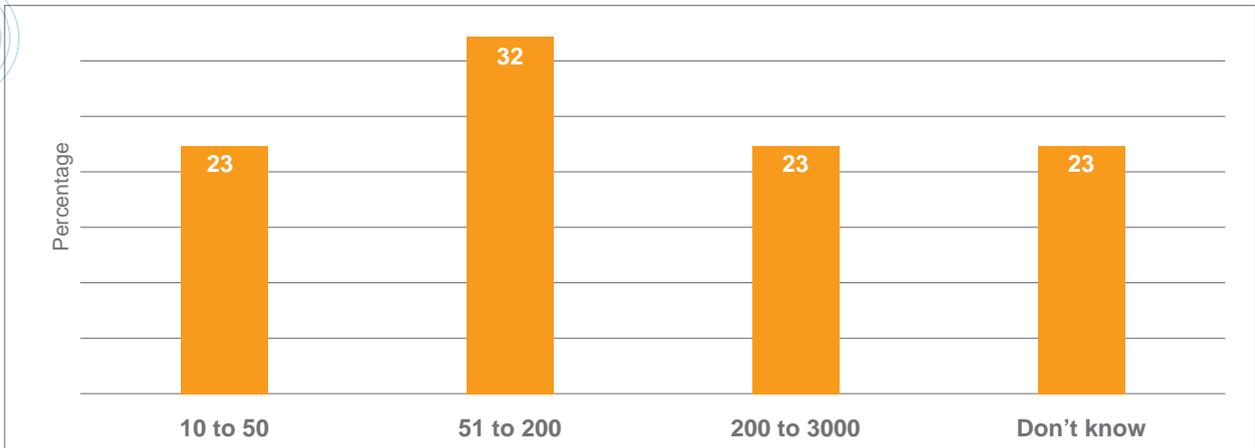
According to the service providers, **palliative and disability care (each 55%) were most commonly available followed by home-based care (29%), chronic disease care (26%), elderly (23%) and NCD care (13%)**. Half of these facilities (52%) had dedicated unit to provide these services. Similar types of services are largely provided by the medicine department (26%). These types of care were mostly sought by the cancer (58%) and disable (32%) patients followed by the Geriatric and neurology/ rheumatology patients (29%).

Table 2: Facility and service availability

	Percentage (%)	No. of observation (n)
Service availability (multiple response)		
Palliative care	54.8	17
Disability care	54.8	17
Chronic disease care	25.8	8
Home-based care	29.0	9
Elderly care	22.6	7
NCD care	12.9	4
Dedicated unit to provide these services		
Yes	51.6	16
No	48.4	15
Other departments that usually provide these services		
Medicine	25.8	8
Oncology	16.1	5
Orthopaedics	9.7	3
Surgery	6.5	2
Others (Neurology, paediatric unit etc.)	6.5	2
Types of patients who usually comes for palliative/ home based/ disability care services (multiple response)		
Cancer patient	58.1	18
Disable patients	32.3	10
NCD patients	16.1	5
Pulmonary(lung) disease	12.9	4
Others (Geriatric, neurology, rheumatology patients etc.)	29.0	9

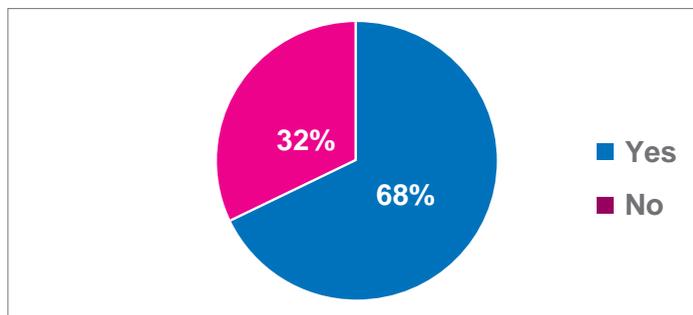
The range of average number of patients receiving palliative and like services from this facilities monthly was within 51-200 (32%) in most cases (Figure 8).

Figure 8: Range of average number of patients at the facility



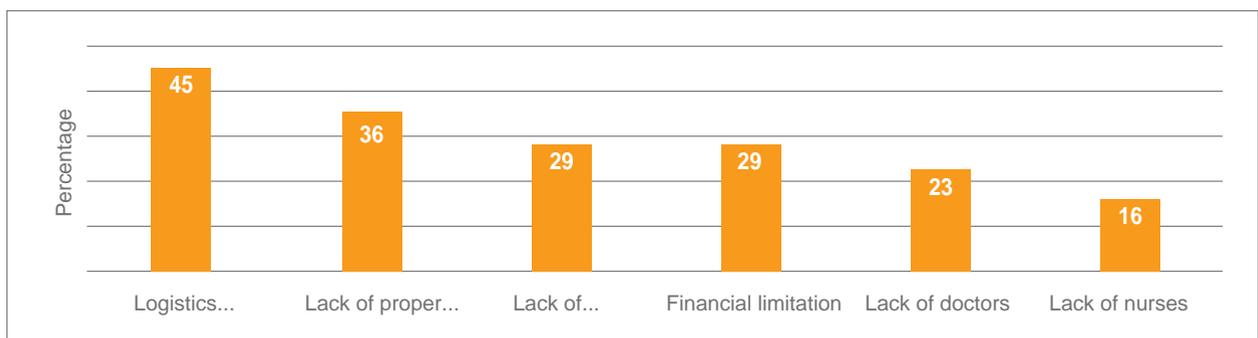
According to the service providers, 68% of the patients came to that facility were satisfied with the services and the rest 32% were not satisfied with the services (Figure 9).

Figure 9: Patients satisfaction from the provider's perspective



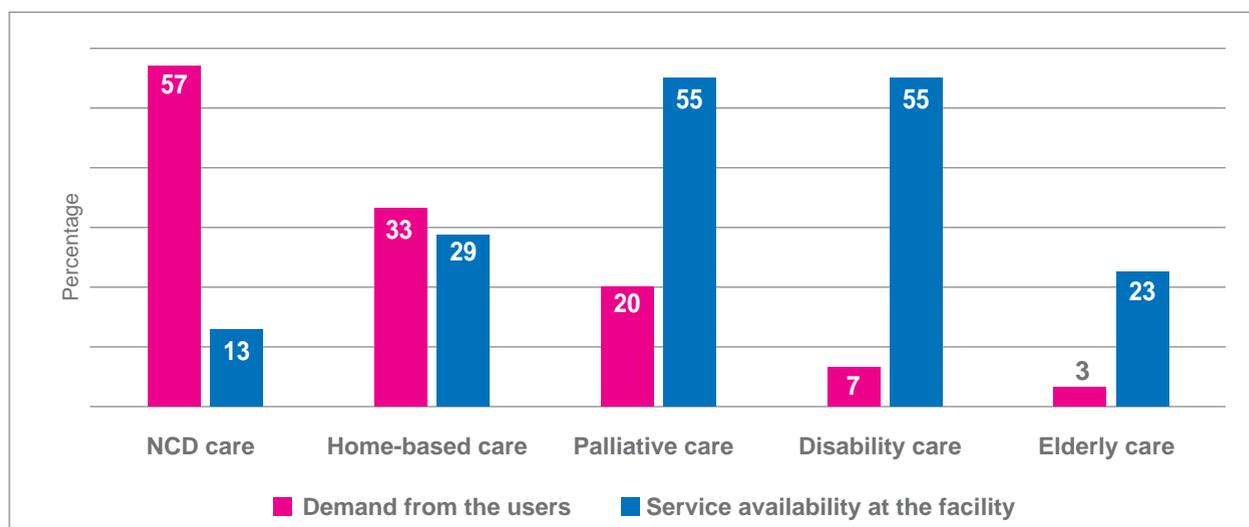
Logistics limitation (space and equipment) was mentioned as a major challenge (45%) to provide palliative/elderly/disability care, followed by lack of patient awareness (36%), lack of required paraprofessionals (29%), financial limitations (29%), lack of doctors (23%) and lack of nurses (16%) (Figure 10).

Figure 10: Challenges faced by the service providers in service delivery (Multiple response)



From the responses of service users and service providers the underlying gap in palliative care, home based care like services was demonstrated in the following graph. **In terms of NCD care, 57% respondents stated they need this service whereas only 13% of the facility had such services.** In home based care services this gap was 4.3 percentage points. On the contrary, demand of the service users were much less than the availability of palliative care and disability care (20% vs. 55% and 7% vs. 55% respectively). In terms of elderly care the service demand was less than the availability (3% vs. 23%) (Figure 11).

Figure 11: Gap between the service users demand and service availability (Multiple response)



The Doctors with (77%) and without (84%) specialization were the main providers for palliative and other types of care. Apart from doctors, other providers were nurses/midwives (52%), pharmacist (29%), paramedics (23%), palliative care assistants (13%) and others (Physiotherapist, occupational therapist etc.) (26%). Though a majority of the service providers (74%) were satisfied with their current job but most of them (68%) mentioned that their facilities did not have adequate number of service providers for palliative and other types of care mentioned above.

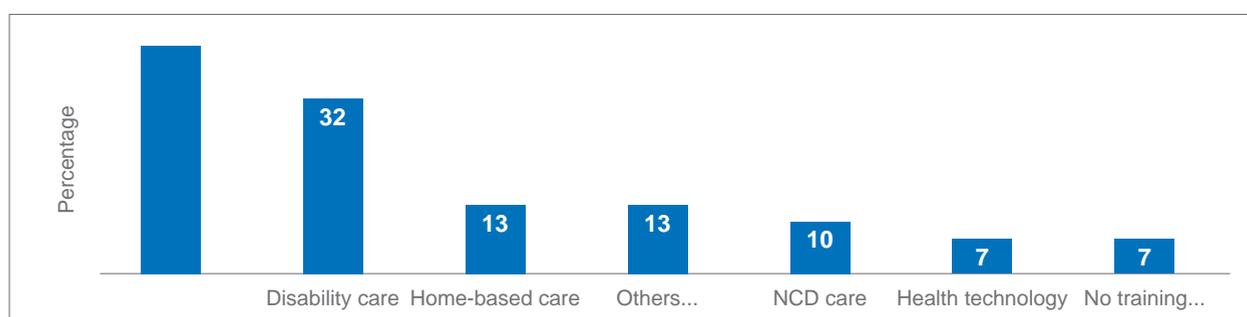
Table 3: Service provider and their job satisfaction

	Percentage (%)	No. of observation (n)
Main palliative care, home-based care, disability care providers (multiple response)		
Doctors without specialization	83.9	26
Doctors with specialization	77.4	24
Nurses/ Midwives	51.6	16
Pharmacist/ Technicians	29.0	9
Paraprofessionals/Paramedics	22.3	7
Palliative care assistant (PCA)	12.9	4
Others (Physiotherapist, occupational therapist etc.)	25.8	8
Facility have adequate palliative/similar service providers		
Yes	32.3	10
No	67.7	21
Satisfied with current job		
Yes	74.2	23
No	25.8	8

Training of the service providers

Around 42% of the surveyed facility reported that the service providers in their facility had training on palliative care followed by disability care (32%). The paraprofessionals also had training on home based care (13%), NCD care (10%), health technology (7%) (Figure 12).

Figure 12: Types of training the paraprofessionals/paramedics technicians working in this facility have (Multiple responses)



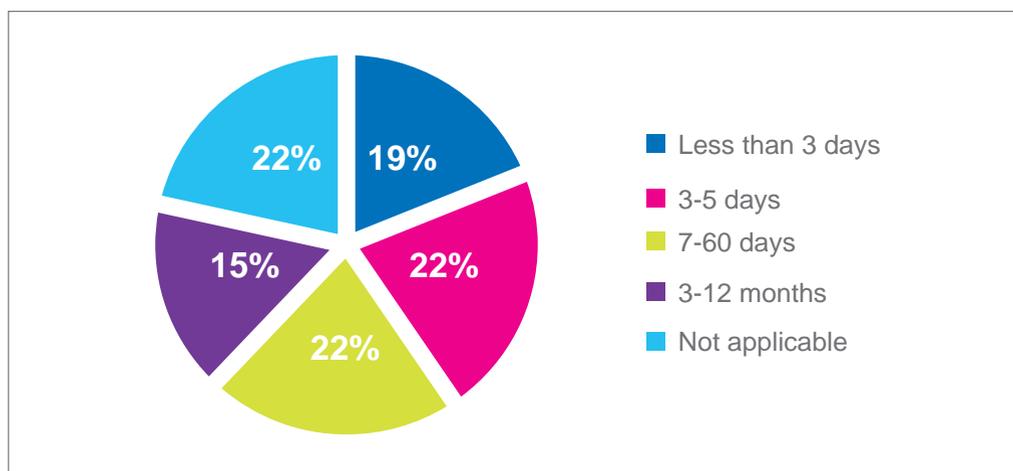
Respondents were asked about their training status and around 61% said that they received training from private institute, 16% from public institute and 23% said that they didn't get any training at all. Majority of the service providers (65%) were satisfied with the quality of trainings they received.

Table 4: Training of the service providers

	Percentage (%)	No. of observation (n)
Source of training		
Private institute	61.3	19
Public institute	16.1	5
Didn't receive any training	22.6	7
Satisfied with the quality of the training		
Yes	64.5	20
No	12.9	4
Not applicable	22.6	7

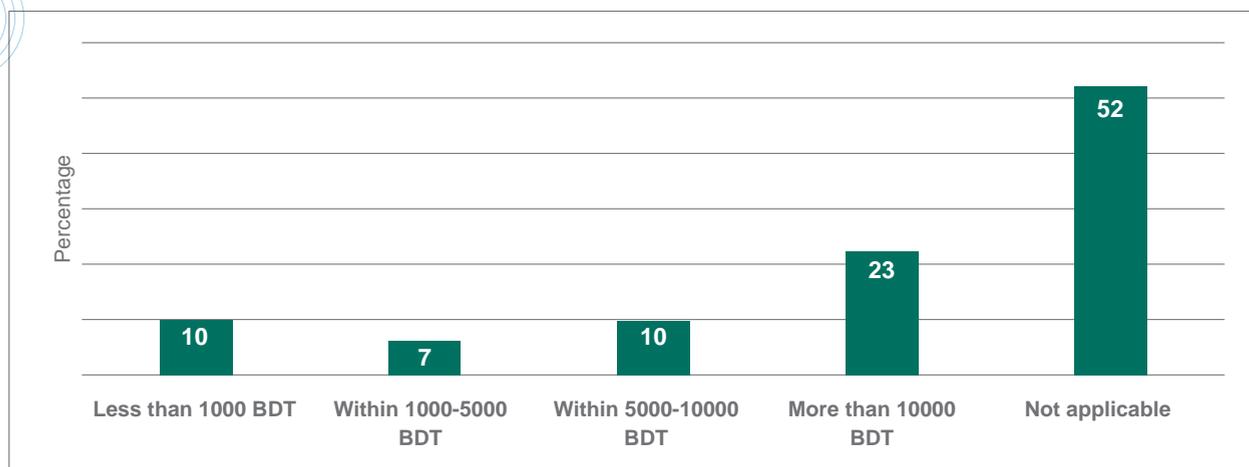
The duration of training varied and 19% respondents reported that, the training duration was less than 3 days. Around 22% said that, the duration was from 3 -5 days, 22% said 7 – 60 days, and 15% stated that they had attended 3 – 12 months long training (Figure 13).

Figure 13: Duration of the training



Training fees were not applicable for some of the respondents as the fees was arranged by their organisation (29%) however, 23% of the respondents said that they paid more than BDT 10,000 for the training.

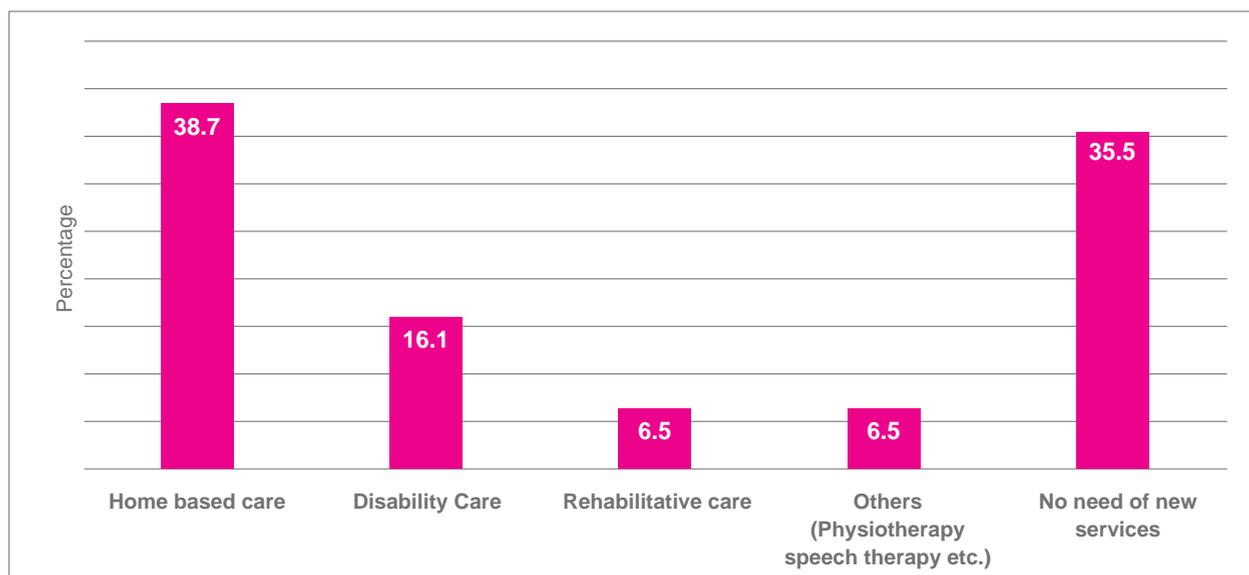
Figure 14: Fees of the training



New type of service demand in post COVID 19 scenario

Providers were divided in their opinion about the necessity of home-based care (39%). They mentioned other services that may be needed post Covid-19 such as disability care (16%), rehabilitative care, physiotherapy and speech therapy (13%). Although, 36% of them said that there will be no need of new services in post COVID19 scenario (Figure 15).

Figure 15: Types of new services will be needed in health sector in post COVID 19 scenario



Majority of the respondents (77%) agreed that new type of paraprofessionals/paramedics/ technicians will be needed in the facilities to ensure palliative and such cares. According to the respondents, these paraprofessionals will mainly come from nurses (36%) and allied healthcare professionals (36%), including lab technologist (23%), home-based care givers (16%) and doctors (10%).

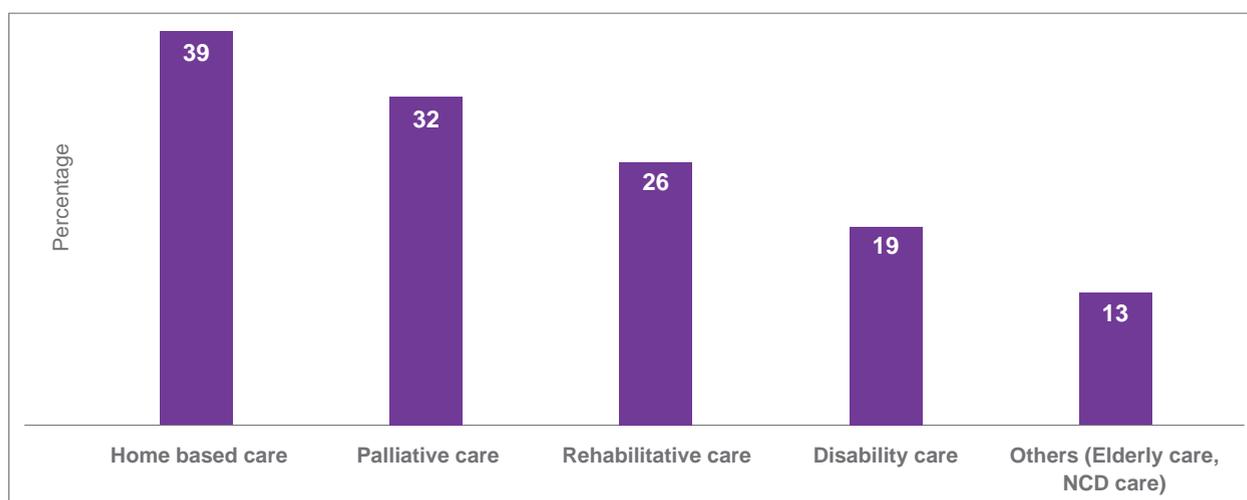
Table 5: New type of service demand

	Percentage (%)	No. of observation (n)
New type of Paraprofessionals/Paramedics/ Technicians in the facility will be needed to ensure palliative and such cares		
Yes	77.4	24
No	22.6	7
These new paraprofessional/technicians will be from		
Nurse	35.5	11
Allied health care professional ^a	35.5	11
Medical assistants, lab technicians and others	22.6	7
Home based care giver	16.1	5
Doctor	9.7	3
Types of additional service the new cadres can offer to support mainstream providers		
Home based care	38.7	12
Palliative care	32.3	10
Rehabilitative care	25.8	8
Disability Care	19.4	6
Others (Elderly care, NCD care)	12.9	4

^aAllied health professionals are health professional other than a registered nurse or physician assistant.

According to the respondents, types of additional service that such cadres can offer to support mainstream providers are mainly home-based care (39%), palliative care (32%) and rehabilitative care (26%).

Figure 16: Types of additional service the new cadres can offer to support main stream providers (Multiple response)



A.4 Training Institutions related findings

Technical training in the sphere of healthcare still remains inadequate in the country. Given the scenario, the study explored the trainer availability for the existing, new and emerging training courses at institution level. The findings presents detail information on available training courses and trainer number, skills, qualification, work time/hour, pay scale. Also highlights the scope and challenges as well of new training provision including upgrading trainers with new curriculum.

Training related information

Diploma in medical faculty (25%) was offered by 25% of the institutes, where the minimum educational requirements was secondary school certificate (SSC) pass and the cost ranged from 10,000 -2,00,000 BDT. Similarly, Diploma in Medical Technology/ Health Technology was offered by 20% of the instituions where the applicants must have to be SSC pass and the cost of this programme was 10,000 – 2,30,000 BDT. Basic certification courses on different topics were offered by 20% of the institutions where the eligibility criteria mostly depend on the course curriculum and the cost varied from 1,000 BDT to 50,000 BDT. Training courses on BSc in Physiotherapy, occupational therapy were offered by 15% of the organisations where the minimum educational qualification was higher secondary certificate (HSC) pass and the cost ranged from 2,00,000 – 5,00,000. Only one organisation offered diploma in nursing course where they enrolled HSC pass students and the cost range was 1,80,000 – 3,50,000 BDT. Also, 10% of the institutions said that they didn't have any certification courses.

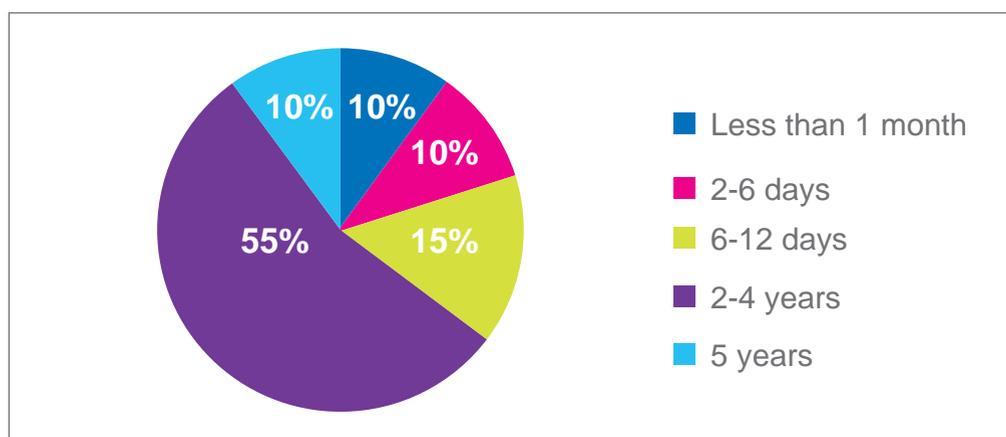
Table 6: Educational qualification and cost of training courses

Name of the training course	Percentage (%)	No. of observation (n)	Minimum required educational qualification	Approximate range of the Fees
Diploma in Medical Faculty (DMF)	25.0	10	SSC	10,000 - 2,00,000
Diploma In Medical Technology/ Health technology	20.0	8	SSC	10,000 - 2,23,000
Basic certificate course	20.0	8	At least 8th grade to MBBS*	1,000 - 50,000
BSc in Physiotherapy, occupational therapy	15.0	6	HSC	2,00,000 - 5,00,000
Diploma in nursing	2.5	1	HSC	1,80,000- 3,50,000
Vocational training for disable people and their caregiver	2.5	1	Not required	1,000 - 5,000
Community Handicap and Disability Resource person (CHDRP)	5.0	2	HSC	Free
No certification course	10.0	4	Not required	Free

*Depends on the course curriculum

More than half of the courses were of 2-5 years duration (50%) while minimum duration of course was less than one month (10%).

Figure 17: Duration of the training programme



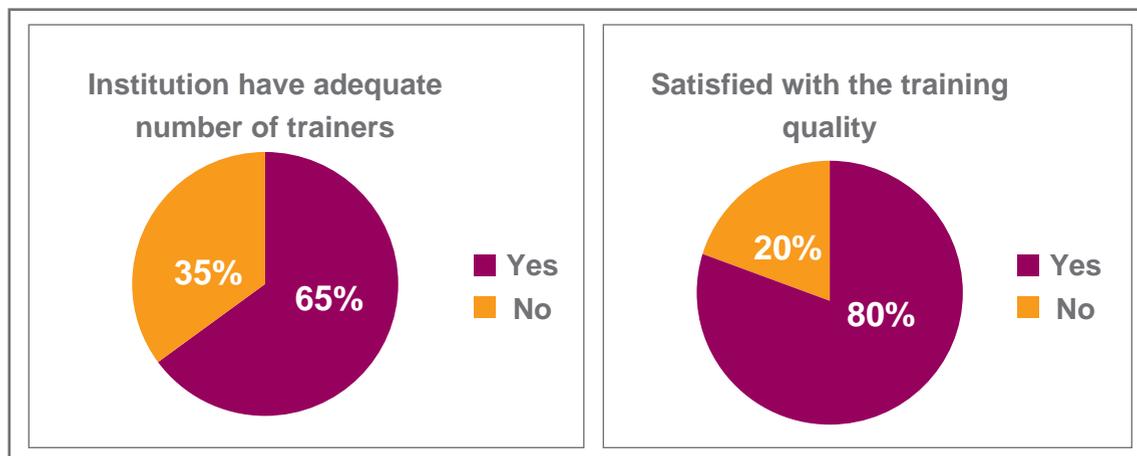
Nearly half of the courses (43%) were targeted for SSC students with science background. Around 20% of the courses were targeted for staff and volunteers. Most of the training institutions yearly training capacity was less than 50 (38%) and only 12.5% institution had training capacity of more than 500 trainees per year.

Table 7: Target group and training capacity of the institution

	Percentage (%)	No. of observation (n)
Target group (Multiple response)		
SSC passed students with Science background	42.5	17
HSC passed students with Science background	15.0	6
Staff and Volunteers	20.0	8
Family members	7.5	3
Nurses	15.0	6
Allied health professionals	10.0	4
Doctors and others	7.5	3
Training capacity of the institution (yearly)		
less than 50	37.5	15
51 - 100	20.0	8
101 - 500	30.0	12
More than 500	12.5	5

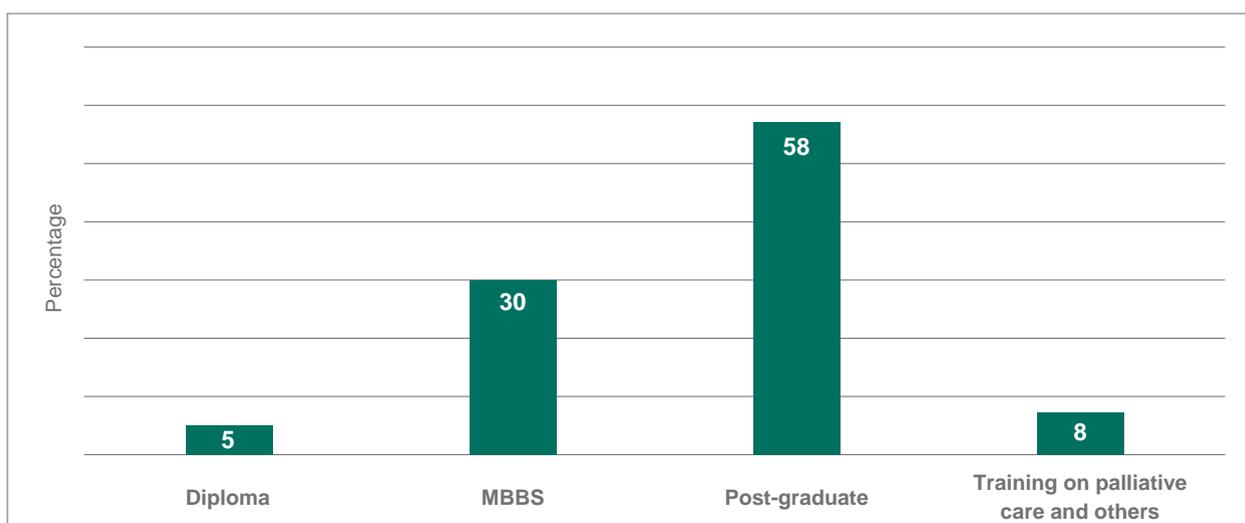
Majority of the respondents (65%) mentioned their institutions has adequate trainer and 80% of the respondents said that they are satisfied with the training quality (Figure 18).

Figure 18: Adequacy of the trainer and satisfaction with the training quality



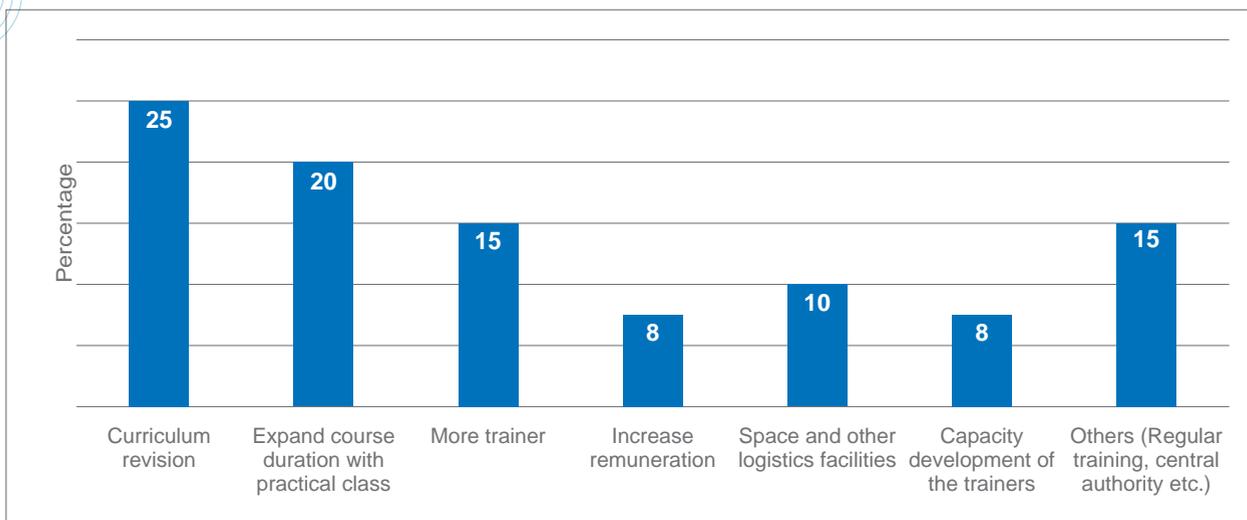
Respondents were asked about what was the pre-requisite to be a trainer and most respondents said that post-graduate (58%), MBBS (30%), training on palliative care (8%) etc. were the minimum qualification to be a trainer (Figure 19).

Figure 19: Pre-requisite to be a trainer



To improve the training quality the respondents recommended revision of the existing curriculum (25%), expand course duration with practical class (20%) and to recruit more trainers (15%).

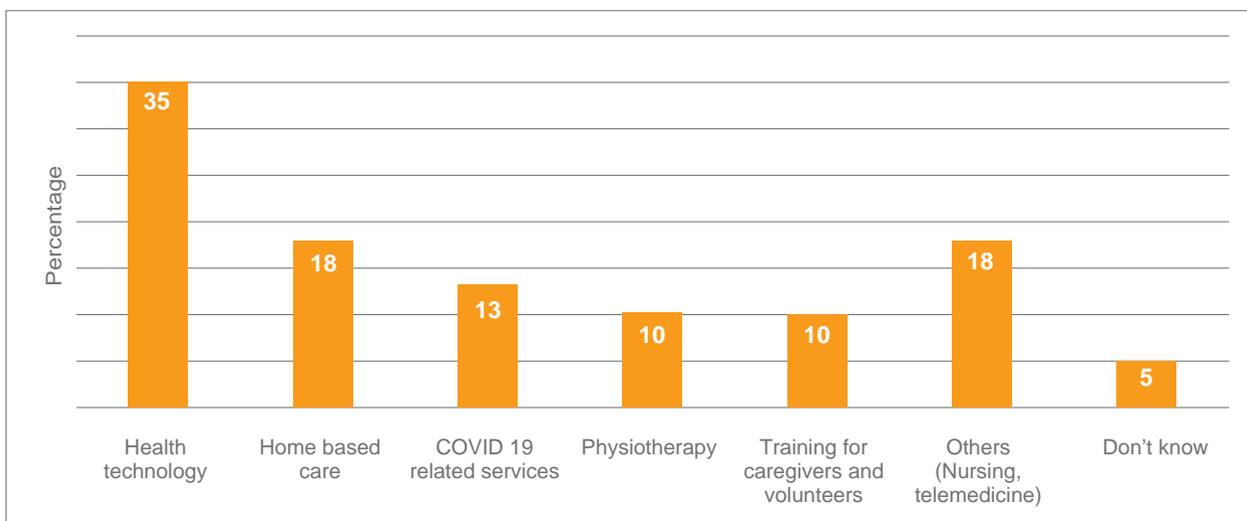
Figure 20: Way forward to improve the training quality (Multiple response)



Endorsing new type of training /home-based care training

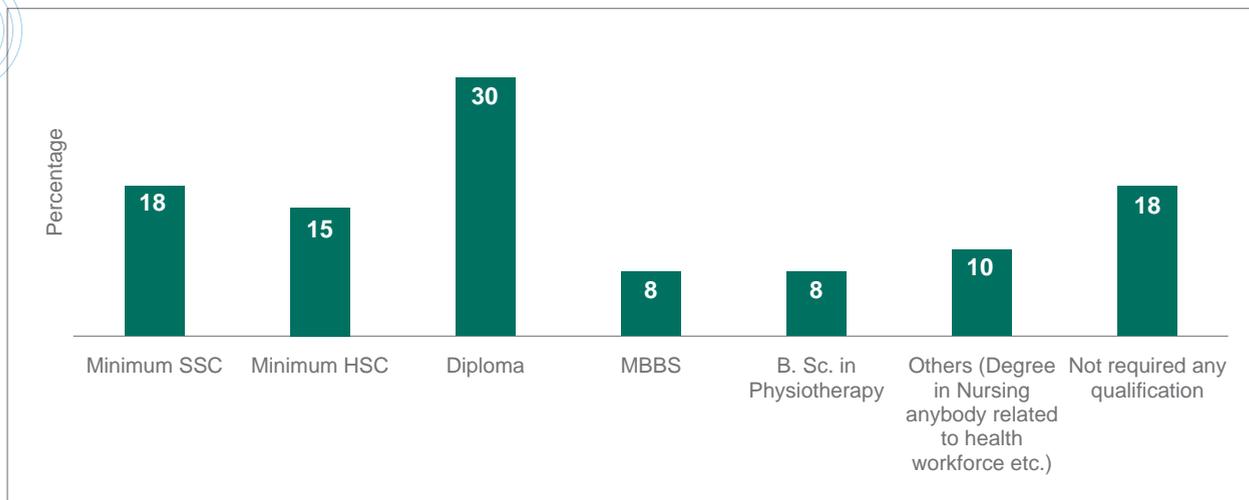
When asked about types of training that may be needed in health sector in post COVID 19 scenario, majority of the respondents mentioned about training on health technology (35%), while others mentioned about home-based care (18%) and nursing care (18%) followed by Covid-19 related training (13%), physiotherapy and training for community volunteer/caregivers (10% each).

Figure 21: Types of training that may be needed in health sector in post COVID 19 scenarios (Multiple response)



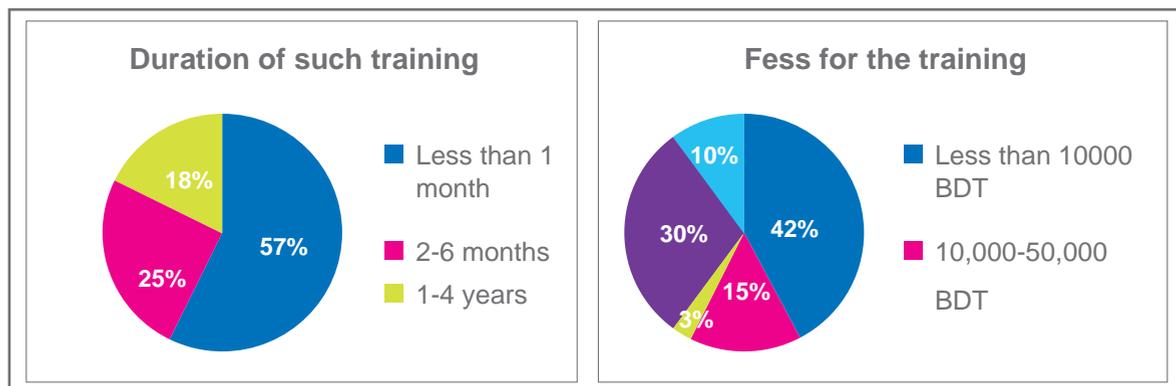
Majority suggested diploma as pre-requisite of such training (30%) while some suggested SSC (18%) and HSC (15%).

Figure 22: Minimum pre-requisite of such training



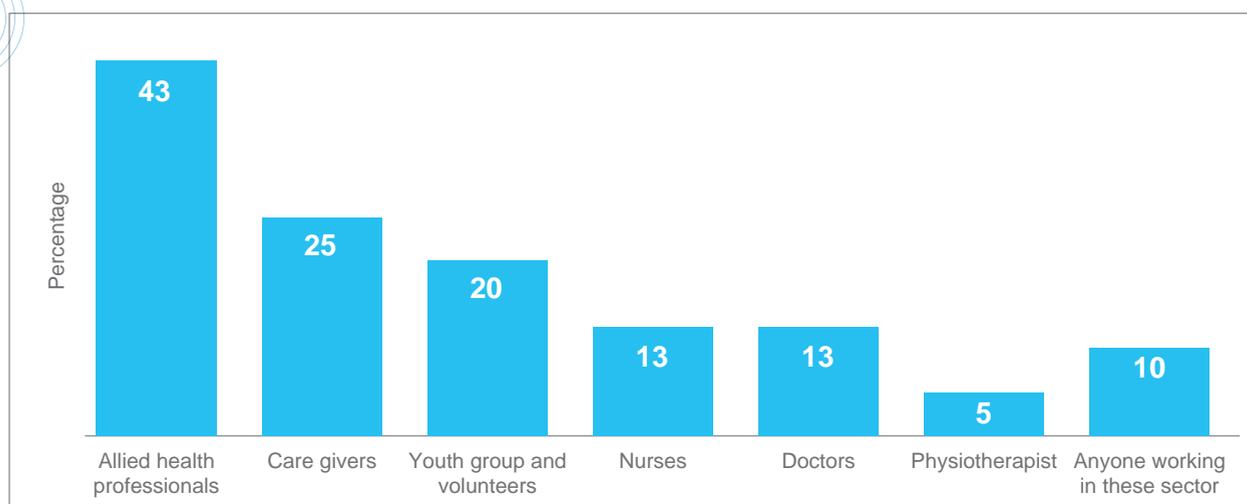
According to majority of the respondents' the training should be less than one month duration (58%) with fees less than 10,000 BDT (43%).

Figure 23: Duration and fees for the training



Most of the respondents preferred DGHS as the accreditation/certification authority for new courses (43%). **Respondent recommended to target allied health professionals mostly for new courses (43%) followed by caregivers (25%), youth group and volunteers (20%) (Figure 24).** Almost all respondents thought existing trainers will be adequate for new training programmes (83%).

Figure 24: Target group for the training (Multiple response)



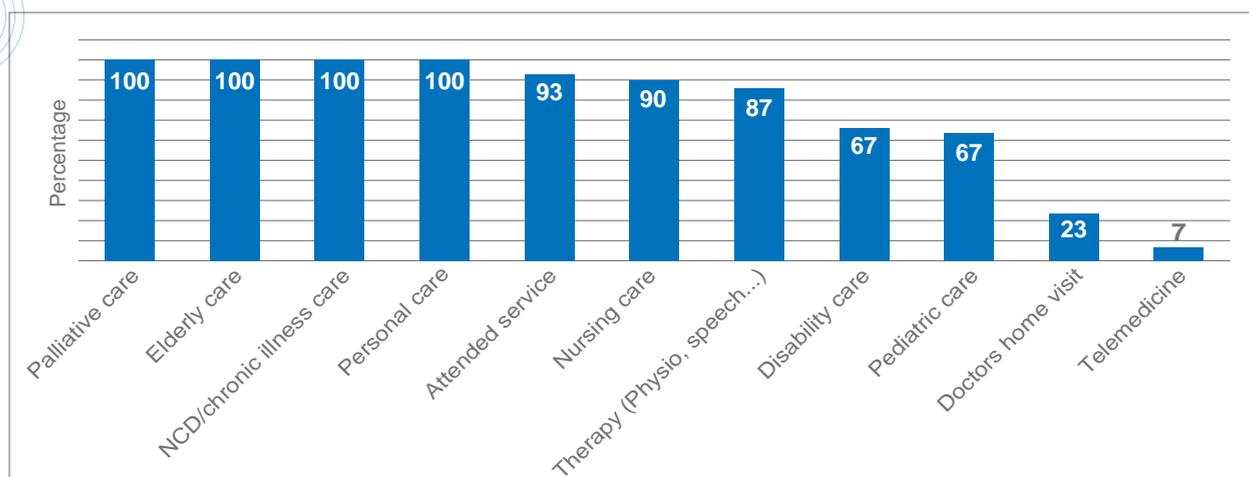
A.5 Home-based job providing organisations

Given that the economic recovery depends on re-skilling people and placing them in jobs that remain lucrative, which applies for health sector as well, the study assessed the growth of the job providing organisations that are likely to expand their businesses in the health care sector in urban settings and beyond COVID-19. The findings presents information of already exiting players in this field, services they provide, their market size/value, market trend/growth, scope of expansion and challenges as well.

Organisational profile

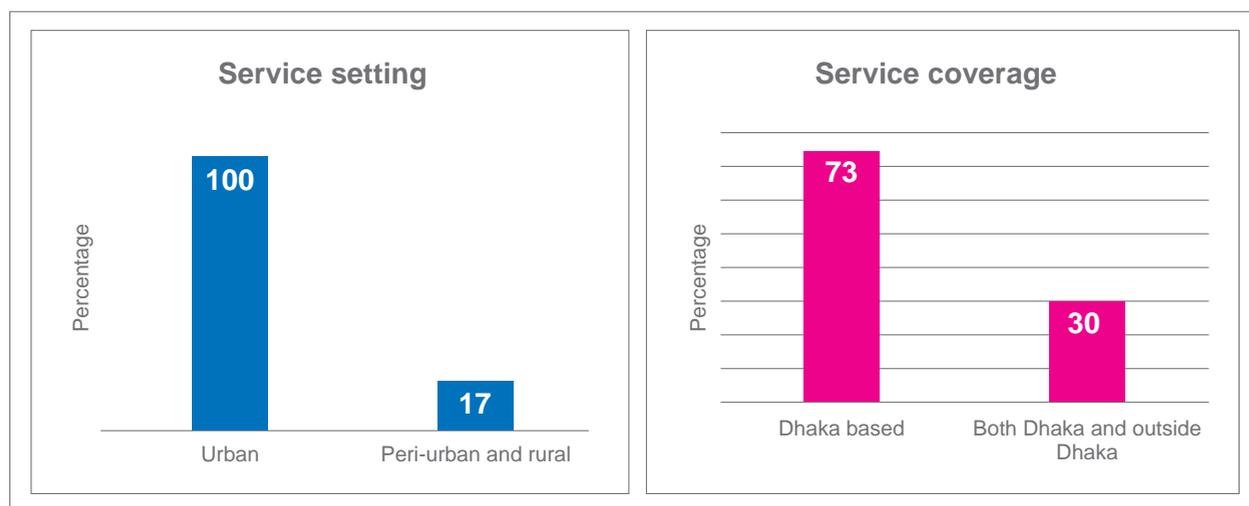
Nearly half respondents (40%) said that their organisations were providing home-based services for more than five years. Around 37% of the organisations were for providing these services for one to five years, 20% of the organisations were working for less than a year whereas, only 3.3% of the respondents reported that they didn't know about the service provision of their organisation. **All the organisations provided palliative, elderly care, chronic illness/NCD care and personal care services (100% each).** Other common services included attended service (93%), nursing care (90%), different types of therapy e.g. physio, speech, occupational therapy (88%), disability care (67%) and paediatric care (63%). Doctors home visit (23%) and telemedicine (7%) were least provided service areas (Figure 25).

Figure 25: Service areas (Multiple response)



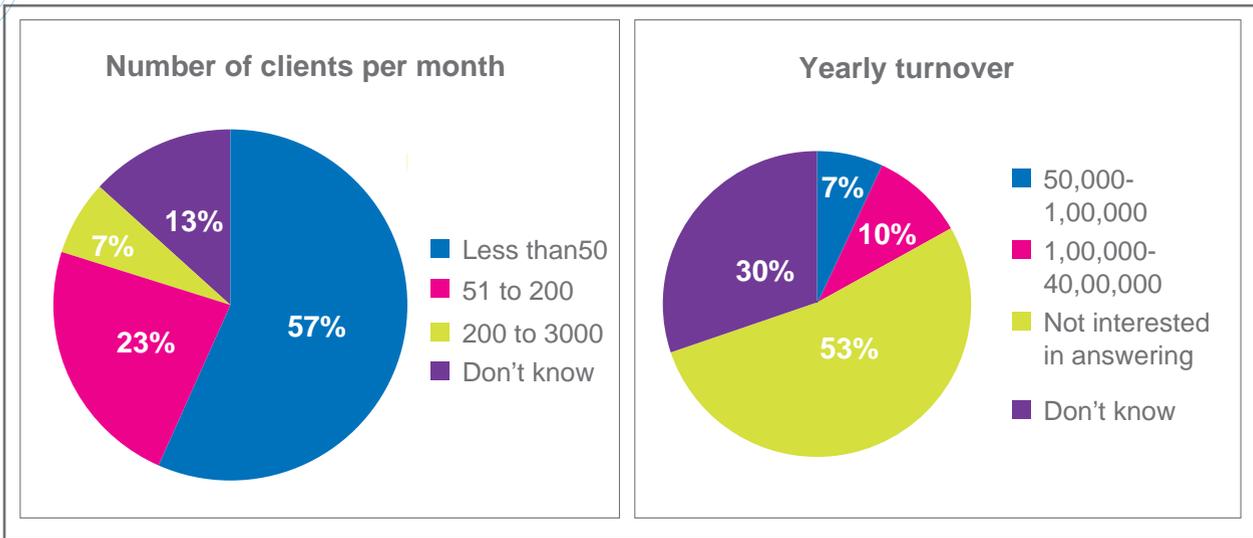
All of the organisations had urban based service provision (100%), a few had service provision in peri-urban and rural setting (17%) as well. Majority of the organisations had service coverage within Dhaka (70%) and some (30%) were providing services in both inside and outside Dhaka (Figure 26).

Figure 26: Service setting and coverage of the organisations (Multiple response)



Half of the organisations (57%) received less than 50 clients approximately per month. However, for a few of the organisations (7%) the monthly client numbers ranged between 200-3000. More than half of the organisations (53%) were not interested to share their yearly turn over, 30% mentioned they did not know the information. Among the rest, 10% of the respondents' mentioned their organisations yearly turn over ranged between BDT 1,00,000 - 40,00,000 and for 7% the range was between 50,000 - 1,00,000 (Figure 28).

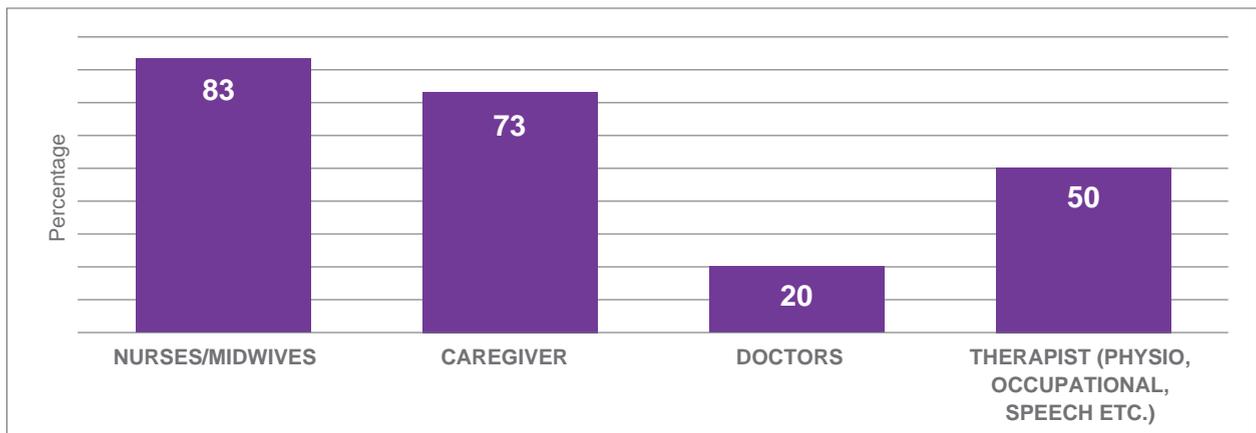
Figure 27: Number of clients per month and yearly turnover of the organisations



Caregivers' profile

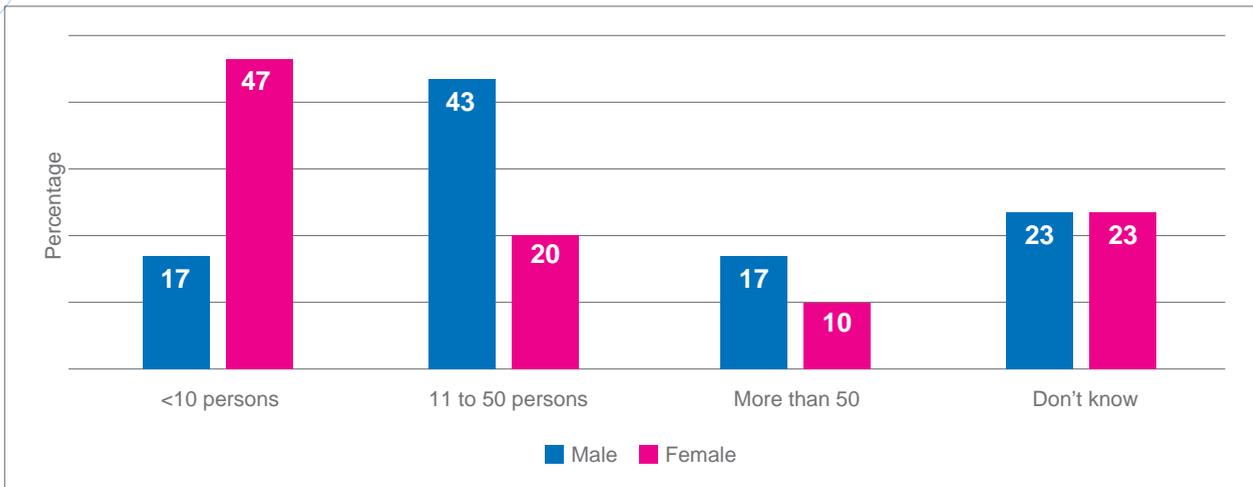
Nurses and midwives were the most categories of care givers the organisations had (83%) followed by community care assistant (73%) (Figure 28).

Figure 28: Caregiver category (Multiple response)



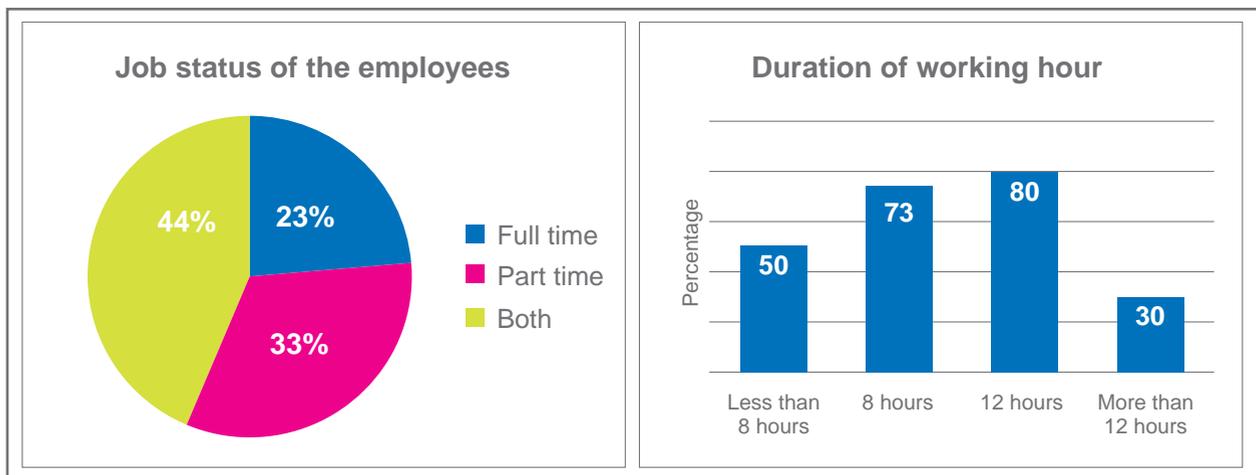
Half of the organisations (53%) had around 11-50 male care givers while in case of female staffs the percentage was 43% (who had 11-50 female care givers). Nearly half (47%) of the organisations had an average 10-50 caregivers in total (Figure 29).

Figure 29: Number of caregivers in the organisation (Multiple responses)



Majority of the caregivers were between 18 to 35 years age (67%). Majority of the respondents' (80%) mentioned the duration of their working hour was 12 hours. Nearly half of the organisations had both full time and part time employees (43%) (Figure 30).

Figure 30: Job status and working hour (Multiple responses) of the employees



Nearly half of the organisations did not have any training program (40%), while some had in-house training for their staffs only (40%). Those, who were offering training, 30%, were basic course and 23% foundation course and minimum pre-requisite for entry was HSC (10%).

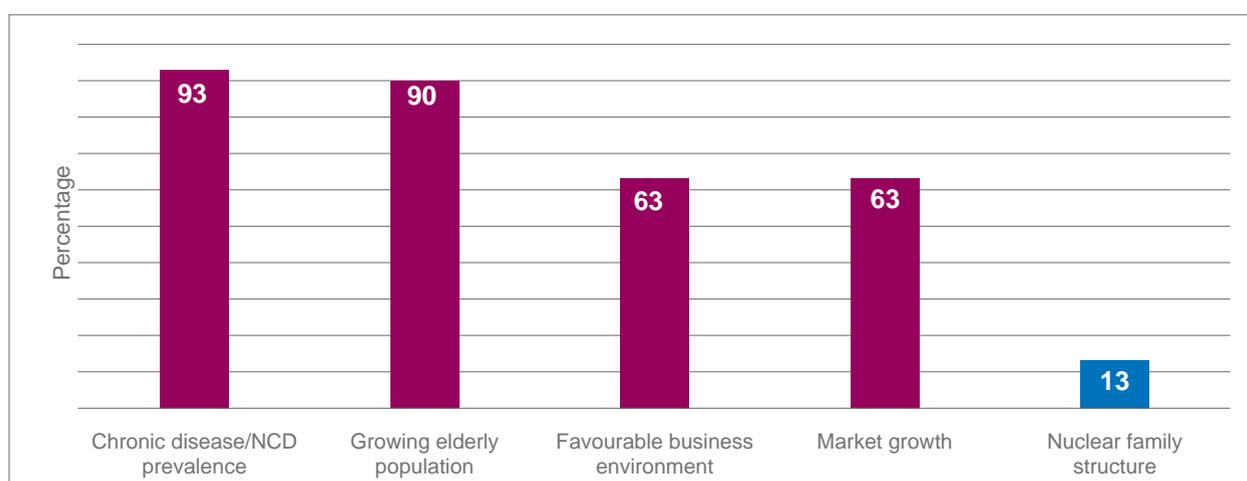
Table 8: Availability of the training and pre-requisites for the training programme

	Percentage (%)	No. of observation (n)
Types of training available in your organisation		
Basic course	30.0	9
Foundation course	23.3	7
Others	6.7	2
Did not provide any training	40.0	12
Pre-requisites for the training programme		
Minimum SSC	6.7	2
Minimum HSC	10.0	3
Diploma	3.3	1
Applicable for staff only	40.0	12
Didn't have any training programme	40.0	12

Scope of expansion

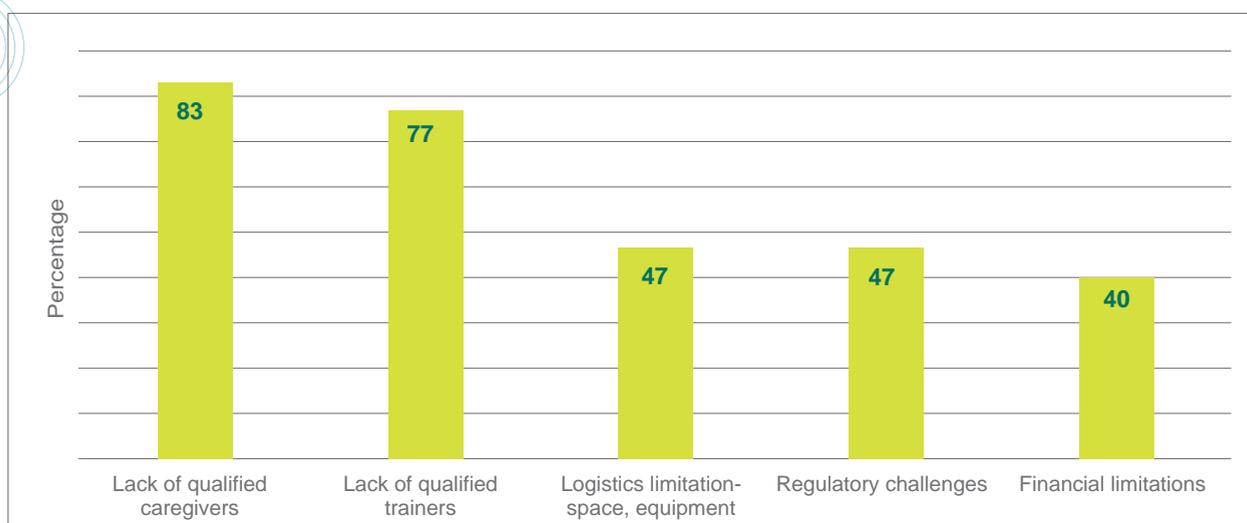
According to almost all of the respondents (97%) the market of home-based care in Bangladesh is promising. High prevalence of chronic disease/NCD was a major reason (93%) the respondents mentioned for the market demand followed by growing elderly population (90%), favourable business environment (43%) and some also mentioned about nuclear family structure (13%).

Figure 31: Enabling factors for market growth (Multiple response)



On the other hand, lack of qualified caregivers were the most limiting factor (83%) followed by lack of qualified trainers (77%). A substantial proportion also mentioned about logistics limitation and regulatory challenges (47% each) while financial barrier was least mentioned (40%) (Figure 32).

Figure 32: Factors limiting market growth (Multiple responses)



C. Findings from the Qualitative Study

One of the prime objectives of the study was to derive insights of the key stakeholders on regulatory perspective. The finding presents an in-depth understanding and insights of existing process of certification and the authority, feasibility/scope of endorsing new cadres, registration, certification, work placement including appropriate authority to certify these new cadres.

Table 1. Socio-demographic profile of KII respondents

SL No.	Age (in years)	Sex	Designation & Organisation	Highest educational qualification	Professional experience (in years)	Duration of service in current institution (in years)
1	30	Female	Assistant Secretary, Pharmacy Council of Bangladesh (PCB)	MPharm	4.5	4
2	51	Male	Assistant Director, Medical Education & Health Manpower Development (ME&HMD)	MBBS	22	3
3	41	Male	Deputy Program Manager, Centre for Medical Education (CME)	MPH	11	4
4	45	Male	Secretary, The State Medical Faculty of Bangladesh	Mphil	17	17
5	58	Male	Assistant Director, Common Services, DGFP	MA in Sociology	30	3

Domain 1: Training of paraprofessionals/technicians in Bangladesh

Trainings currently available for paraprofessionals/technicians in Bangladesh

According to the authorities, there are trainings and courses available for Medical and Laboratory Technologist, Health Technologist and Radiotherapy Technologists, Medical and Pharmacy Assistants. Regarding paramedics, authorities mentioned about trainings available for Family Welfare Visitors (FWV), Health Assistants (HA), Community Health Workers (CHW), Medical Assistants and Midlevel Ophthalmologist Personnel (MLOP).

Training program type, duration and course curriculum

Respondents mentioned that different types of courses are available for paraprofessionals in Bangladesh. Some are basic courses and some provides foundation courses. Most of the courses are mainly of three years duration followed by one year internship. Pharmacy technologists receive basic certification course organised by the Pharmacy Council Bangladesh (PCB), which mainly covers indications (dose, duration etc.) of medicines for different diseases. The diploma course for Pharmacy Technologists which is provided by PCB is a 3 year course with six months mandatory internship. Duration of different certification courses provided by SMF is as below-

- A. Medical Assistants [3 years course plus 1 year Internship, 3 month each subjects (3*3=9 months) in District hospitals and 3 months in Upazila Health Complex (UpHC) for overall all subjects]
- B. Medical Technologists [3 years course, divide in 2nd and 3rd year and then 3 months field training in UpHC or DH, no internship]
- C. Midlevel Ophthalmologist Personnel (1 year course on eye related issues)
- D. Community Health Worker (1Year course on basic/primary treatment)

The foundation training of Medical Assistants covers three basic subjects, which are Medicine, Surgery and Gynaecology. Medical Technologist course curriculum covers full academic courses and includes disciplines, e.g. Anatomy, Microbiology, Physiology, Pharmacology, Laboratory Medicines, Radiology, Radiotherapy and Physiotherapy. MLOP is a one year course on Ophthalmology, CHWs receive one year basic course on primary health care. According to SMF authority Medical Assistants and Laboratory Technologist courses covers all basic subjects necessary for not only primary care but also for different services like home-based care, NCDs, Palliative Care and Disability Care. The FWVs, HAs, CHWs receive 3-5 days of training on elderly care and NCDs. Upazila Health and Family Planning Officer (UHFPO) provide these training to them.

“We provide basic training on NCD and elderly care to the paramedics (FWVs, FWAs, and HAs). They receive 3-5 days of training on elderly care and NCDs. Upazila Health and Family Planning Officer (UHFPO) provide this training to them.” [KII_DGFP]

The authority gave example of trained SACMOs working in District hospitals and Upazila Health complexes.

“We provide full professional trainings to our paraprofessionals. Trainings for Medical Assistants and Medical technologists are very well-known; others two are our new professionals.” [KII_SMF]

Training Institutions

Respondents mentioned that different public and private institutions provide different types of trainings and courses to the paraprofessionals. Most of the respondents were not aware of the exact number of the training institutions in Bangladesh. The number of training institutions for different paraprofessionals under the SMF was as follows-

Table 2: Training Institutions under SMF

Type of Training Institutions	Public	Private	Total
Medical Assistant Training School (MATS)	9	Private-200 (100 functional)	Total- 120 approx. functional
Lab/Medical technologist Training Institution	13	27	40
MLOP Training Institution	3	0	03
CHW Training Institution	0	9	09

Pre-requisition, target group and training fees

According to authorities, the trainings are open for all, anyone can receive the training and that they do not have any specific target group as trainees. However, Secondary School Certificate (SSC) is the minimum pre-requisite for any kind of paraprofessionals for any institutions. Regarding trainer, authorities mentioned that subject-wise trainers (e.g. physicians, pharmacists, medical technologists) provide the trainings. Authorities also mentioned that the fees for the paraprofessional’s courses/trainings is reasonable in public institutions e.g. for a three years course the admission fees is BDT 6,000-8,000 with no further charges required for rest of duration while in private institutions the cost is approximate BDT one lakh for the similar course.

“As far as I know, the paraprofessionals need to spend about BDT 12-15,000 per year (for 3 years) to complete this training.” [KII, Medical Education & Health Manpower Development (ME&HMD)]

Capacity of training institutions

Authorities mentioned that around 5,000 paraprofessionals are trained from public institutions each year in Bangladesh and approximate 15-16,000 from private institutions. Despite this, all the respondents stressed that there is ample shortage of paraprofessionals in Bangladesh

“Likewise other health professionals (physicians and nurses), we have shortage of paraprofessionals as well. Considering our overall population, I would say massive crisis of paraprofessionals in our country.” [KII_DGFP]

Domain 2: Regulatory provisions for paraprofessionals/technicians training in Bangladesh

According to respondents, the certification and accreditation authority varies for different types of trainings and courses of paraprofessionals. They mentioned that the SMF is the accreditation authority for MATS trainings and Medical Technologists courses, PCB provides accreditation and certifications to the Pharmacy Technologists and DGHS under MoHFW is responsible to provide accreditation and certifications of courses/ training for paramedics like FWVs, HAs, FWAs.

“The MoHFW recruits the paramedics and provides them the training. MoHFW is the authority who is responsible for the accreditation and certification of the paramedics.” [KII_DGFP]

Domain 3: Scope of endorsing new training/courses for palliative, home-based and such care

Demand and scope of new trainings/courses

The authorities had mixed opinions regarding the need of new training and cadres. Some of them expressed that new types of services and trainings, especially of health care technicians and home-based care will be needed in the health sector post-COVID19 situation; while others have disagreed to this and stressed to an increase of existing health workforce. Some of the respondents have highlighted the need to train the existing paraprofessionals on palliative care, home-based care, chronic diseases, and disability care. However a few of them thought the existing trainings are adequately covering the disciplines.

“I think in post-COVID 19 situation, there will be demand of new services and trainings in health sector. Demand for the services for palliative care, home-based care for chronic diseases, disability care will be needed and we need to prepare our paraprofessionals accordingly”. [KI_SMF]

“I don’t think, considering post-COVID 19, there will be demand of new services and trainings in health sector. Rather increasing staffs would be better for our overall health sectors, as we normally need more staffs.” [KII_CME]

Feasibility of endorsing new training and cadres

The public sector authorities found it difficult to endorse new cadre and course due to complicated and lengthy administrative procedure which needs proper planning, technical and financial support. Apart from administrative challenges, the authorities pointed to a shortage of qualified trainers and financial barriers. According to them an overall improvisation is needed to health system but again this is a huge issue, they mentioned.

“Govt. should think about the health system seriously, and based on this corona situation and need to develop the paraprofessionals accordingly. If possible, should recruit and create new cadre who would be able to provide home-based services including NCD and palliative care. If not possible then, should engage the existing staffs through refresher training.” [KII_SMF]

“Actually we can’t do anything considering the COVID 19 situation. But in general, to introduce a new cadre is not so easy matter. We have to face challenges as we need to develop trained /skilled trainers who will train the paraprofessionals, and there would be a financial challenge as well.” [KII_ME&HMD]

Suggested accrediting authorities for new courses

Most of the respondents said that MoHFW would be the appropriate and acceptable authority to provide the accreditation and certification to any new cadre. However, some of them added that based on their knowledge, as probably DGHS, ME&HMD or SMF which is under MoHFW are already providing the accreditation and certification to the paraprofessionals, hence, these would be the appropriate and acceptable authority to accredit and certify the new cadre.

“MoHFW would be appropriate and acceptable authority to accredit and certify any new cadre.”
[KII_PCB]

Recommendation regarding endorsement of new cadre and training

Given the complexity of public sector to endorse new cadre and course; the authorities suggested that private sectors and NGOs should take initiative to produce new paraprofessionals/ technicians by introducing required training.

“I would suggest producing new staffs to provide home-based care, NCDs, palliative care services and so on... .. Actually from govt. level it would be difficult and will take a long time to implement, therefore, NGOs should come forward and take initiative.” [[KII_DGFP]

Implications of the findings

Unmet demand of varieties of home-based palliative/ rehabilitative/disability/elderly care services (Objective 1)

Beside facility-based services, findings reveal that there is also a high demand for home-based palliative/ rehabilitative/disability/elderly care services, which the users were mostly getting from physicians due to a lack of trained paraprofessionals and logistic limitations in the facilities. The findings indicate high demand for skilled paraprofessionals, who can support the mainstream health system in providing home-based palliative care including paediatric palliative care, customized elderly and NCD care, and disability care. The service users faced significant barriers in accessing home-based care due to financial problems, unavailability of specific providers, required treatments or medications, and a lack of support for the caregivers.

Lack of service providers, supplies and absence of a coordinated approach to provide varieties of home-based palliative/ rehabilitative/disability/elderly care services (Objective 2)

Findings reveal that there are quite a number of organisations and facilities in the country, which provide palliative care. The service providers responsible for the palliative care patients varied from physicians, nurses, nursing aids, psychologists, social workers, and pharmacists. Most of these institutions lack a multidisciplinary team for a coordinated approach to provide these services. From provider perspective, logistics limitations (space and equipment) was mentioned as a major challenge to provide palliative/elderly/disability care, followed by lack of patient awareness, lack of required paraprofessionals plus doctor and nurses. Less than half of the providers had training on palliative care and other such care and agreed that new type of Paraprofessionals/Paramedics/ Technicians will be needed in the facilities to ensure palliative and such cares. Providers emphasized training on health technology such as the lab technologists and technicians; home-based care and nursing care followed by Covid-19 related training, physiotherapy and training for community volunteer/caregivers,

Complicated regulatory process is a drawback for endorsement of new training (Objective 3)



The certification and accreditation authority varies for different types of training and courses of paraprofessionals. The need for new types of services and training especially of healthcare technicians in the health sector now and in post- COVID 19 situation were highlighted. Apart from new trainings, the need to re- train the existing paraprofessionals were stressed. Apart from willingness, bureaucratic public system is a major drawback to endorse new cadre and courses in public system.

Insufficient training, backdated curriculum and public sector lagging behind (Objectives 4.5)

Findings reveal that a number of institutions both in public and private sectors are offering training in the health technology courses, disability/NCD/home-based care, lab technician courses, and also on physio-occupational therapy courses. The courses varied in terms of duration (basic/certificate/foundation/diploma/graduation courses) and fees and most had low entry requirements. The available courses are insufficient and in a limited capacity compared to the growing demand of service needs. Private sector played a prominent role in providing these trainings than the public though the fees were higher. Backdated curriculum, low entry requirements, lack of trained trainers/faculty, lack of practicum etc. were downgrading the applicability and quality of trainings offered.

Mostly urban based coverage, promising market scope (Objective 6)

There are a number of job providing organisations mostly established between 2010-2019, who are providing services like nursing home care, doctor home visit service, elderly care, child care, patient care attendant service, physiotherapy home care service etc. Most of these organisations recruit nurse, patient care attendants, midwives, physiotherapists, and doctors. Despite growing need, very few relevant organisations could expand their service coverage due to financial limitations and trainer availability. High prevalence of chronic disease/NCD, demographic change with increasing elderly population, cost of health care etc. is indicating the scope of market expansion given appropriate strategies are taken to overcome the above limiting factors including increased investments in the sector.

CONCLUSIONS

Findings from the rapid review and primary enquiry reveal the need for paraprofessionals and an emerging demand of different types of home-based palliative/rehabilitative/ disability/elderly health care services in COVID-19 crisis, which is projected to be increased in post-pandemic situation. However, the supply side is currently unable to meet the need due to shortage of institutional readiness for producing needed cadres of the varieties discussed, including extra resources. Besides, public sector bureaucratic system may pose additional challenge to endorse new courses. Private-public partnership is absent; private sector is not recognized for their contribution. Both the opportunities and the challenges provided by the COVID-19 situation cannot be overemphasized; now, it is the turn of the policy makers and stakeholders to seize the opportunity and take appropriate institutional measures to produce the health workforce in adequate number and of quality to meet the current and emerging demands in the coming days.

RECOMMENDATIONS

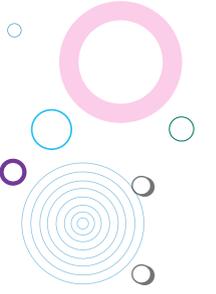
Based on the findings, we are putting forward some recommendations from different perspectives for consideration by the SDP, BRAC:

i) From service users perspective

- Ensure availability of full time qualified service providers' for chemotherapy, radiotherapy, pain relief medication, physiotherapy, rehabilitation care, and various home-based palliative/rehabilitative/disability/elderly care were high priority of the service users.
- Shortage of disability care, especially services that require essential members of multidisciplinary rehabilitation services.
- Child palliative care services are scarce as most services focus on adult patients. There is a recognized need for a paediatric palliative care service which would focus on the needs of children and their families.
- Reduce cost of relevant care in public and private sectors; also to make such services available at grassroots/doorsteps of the targeted users at an affordable price.
- The shortage of healthcare professionals; especially paraprofessionals need to be addressed. Training and recruiting different categories of these paraprofessionals will help users to receive such services.
- Strengthening the palliative care, established proper elderly care and home- based disability care were demanded.
- Improve quality of care especially in public facilities and established dedicated unit, patient counselling facilities to aware and educate the patients.
- Monitor and regulate cost of related services in private sector.
- User friendly system to avoid discrimination in service provision.

ii) From service providers perspective

- Establish dedicated department with indoor services for home-based palliative/rehabilitative/disability/elderly care in each facility with trained service providers and in a coordinated approach to ensure quality of services.
- Institutional lack of the essential members of a multidisciplinary rehabilitation team needs to be addressed.
- Availability of telemedicine facility can enhance the service provision.
- Establish community based/home-based palliative/rehabilitative/disability/NCD/elderly care service system with sufficient social workers and health care volunteers.
- Production of paramedics, lab technicians and physiotherapists to be increased to meet demand.
- Proper recognition, accreditation and expansion of scope of professional work for home-based palliative/rehabilitative/disability/elderly care and lab-based care service providers.



iii) From trainer and trainee perspective

- Ensure ToT for producing qualified trainers, practice-based curriculum and appropriate work placement opportunities.
- Introduce home-based palliative/rehabilitative/disability/elderly care in national curriculum for health care professionals; expand scope of higher education in these fields
- Introduce basic level courses in Bengali to Bengali version along with regular English version courses.
- Establish training institutions at district levels to expand the capacity of training provision.
- Introduce scholarships and waivers for poor/ meritorious students.
- Provide logistics and space to support private institutions.
- Train and recruit different categories paraprofessionals for each services.
- Train already existing paraprofessionals and technicians on palliative care, home-based care, chronic diseases and disability care.

iv) From job providing organisations' perspective

- Incentives (monetary/non-monetary) and accreditation by MoHFW to the organisation providing home-based palliative/rehabilitative/disability/elderly care.
- Specific policy to coordinate public-private partnership towards building a national system for home-based palliative/rehabilitative/disability/elderly care.
- Active role of professional associations to enhance the scope of home-based palliative/rehabilitative/disability/elderly care.
- Professional safety especially for female home-based care givers.
- Given the service demand, job producing organisations need to expand the coverage beyond Urban and Dhaka based settings to reach those who need the service.
- The organisations need to arrange regular on-job re-fresher training for their employees on relevant service areas to keep them updated.

v) New employment opportunities

- Production of paramedics, medical technologists, and physiotherapists to be increased to meet demand.
- New types of services such as health care technicians, who are needed for proper collection of pathological samples from the suspected patients (e.g., COVID-19), are needed in the health sector right now and also, in the post COVID-19 situation.
- Facilitate and simplify the endorsement and accreditation process of new employment opportunities by the regulatory bodies.

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