

Original Article



Rehabilitation Infrastructure and Services in a Tertiary Hospital in Bangladesh

Md. Israt Hasan¹, Mohammed Emran², Md. Atiquzzaman³, Md. Shahadat Hossain⁴,
Taufiq Morshed⁵, Fatema Newaz⁶, Amitav Banik⁷, Abu Saleh Mohammad Mainul Hasan⁸.

Abstract

Background: Rehabilitation Medicine is the focal point on the refurbishment of the health and function, and reintegration of the patient into the community. Since inception, department of Physical Medicine and Rehabilitation (PMR) is dispensing state of the art services despite its fewer resources. **Objective:** To anticipate a brief recapitulation of the infrastructure of Rehabilitation medicine and its' services as well as demographic data and, disease pattern among the patients dealt by it in a Tertiary Hospital. **Materials and Methods:** This is a retrospective study executed in the department of PMR of Kurmitola General Hospital, Dhaka from January 2019 to December 2019. **Results:** Currently 4 Rehabilitation Physicians (Physiatrist) and 3 Physical Therapists, are involved in indoor, outdoor and, specialized PMR services with 4 indoor beds. Total thirty four thousands seven hundred thirty six (n=34,736) patients were studied who received our services, among them 35.62% were male and 64.38% were female. 16% of patients were under 20 years of age, about 61% of patients belong to 2nd, 3rd, 4th, 5th decades and 23% were above 60 years of age. Nonspecific Low Back Pain (NSLBP) were 23.80%, 8.29% Neck pain, cervical spondylosis 11.15%, lumbar spondylosis 11.52%, frozen shoulder 9.83%, PLID 7.39%, osteoarthritis 9.15%, facial palsy 0.53%, rheumatoid arthritis 4.47%, seronegative spondyloarthopathy 1.26%, Guillain-Barre` Syndrome (GBS) 0.15%, planter fasciitis 4.68%, 2.10 % postsurgical/post-traumatic stiffness and others were 5.13%. **Conclusion:** It is time demand to build more infrastructures country wide to improve physical medicine and rehabilitation services for the country people.

Key words: Infrastructure, Rehabilitation, PMR, Physiatrist

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Introduction

Physical medicine and rehabilitation (PM&R), also known as Physiatry or rehabilitation medicine, aims to enhance and restore functional ability and quality of life (QOL) to those with physical impairments or disabilities affecting the brain, spinal cord, nerves, bones, joints, ligaments, muscles and tendons.¹ Unlike other medical specialties that focus on a medical "cure," the goals of the physiatrist are to maximize patients' independence in activities of daily living (ADL) and improve QOL. Consequently, the person must be evaluated in relation not only to the disease but also to the way the disease

affects and is affected by the person's family and social environment, vocational responsibilities, economic state, interests, hopes and dreams.² The field of PMR also focuses on the restoration of health and function and reintegration of the patient into the community.^{3,4}

PMR started in Bangladesh since 1967 as Physical Medicine, and was later changed to PMR by a government order when Professor Muhammad Quamrul Islam ("Father of Physiatry" in Bangladesh) joined the Government Health Services at Dhaka Medical College Hospital after completing postgraduate

1. Physiatrist, Department of Physical Medicine and Rehabilitation, Kurmitola General Hospital, Dhaka, Bangladesh
2. Assistant Professor, Department of Physical Medicine and Rehabilitation, Khwaja Yunus Ali Medical College and Hospital, Sirajganj, Bangladesh
3. Physiatrist, Department of Physical Medicine and Rehabilitation, Kurmitola General Hospital, Dhaka.
4. Professor, Department of Physical Medicine and Rehabilitation, Shaheed Suhrawardy Medical College and Hospital, Dhaka, Bangladesh
5. Registrar, Department of Orthopedic, Kurmitola General Hospital, Dhaka.
6. Assistant Professor, Department of Physical Medicine and Rehabilitation, Kumudini Womens' Medical College Hospital, Tangail, Bangladesh
7. Assistant Professor, Department of Physical Medicine and Rehabilitation, Sir Salimullah Medical College Hospital, Dhaka, Bangladesh
8. Assistant Professor, Department of Physical Medicine and Rehabilitation, Sylhet MAG Osmani Medical College Hospital, Sylhet, Bangladesh

Correspondence: Dr. Md. Israt Hasan, Physiatrist, Department of Physical Medicine and Rehabilitation, Kurmitola General Hospital, Dhaka, Bangladesh. Mobile: 01711-222912, E-mail: isratpmr@gmail.com

degree in PMR from Royal College of Physicians, UK.⁵ Kurmitola General Hospital (KGH) was set up in 2013 but the PMR department was inaugurated in 2018 under the supervision of two ardent Physiatrists. Since then, the department of PMR is rendering services as outdoor basis routinely. At the end of the year 2019, the indoor service has been prevailed. There are at most 04 beds (02 male and 02 female beds) in PMR department for indoor patients. PMR department also delivering services to the patients with musculoskeletal disorders and neurological problems right from the start. This department strived to tie in with other departments in yielding facilities, faith and satisfaction to the patients due to road traffic accidents, spinal cord injury, stroke, Cardiopulmonary conditions, musculoskeletal conditions like different types of arthritis, low back pain, neck pain, sports medicine, Intensive Care Unit (ICU), geriatric rehabilitation, regenerative medicine, palliative management and burn rehabilitation etc.

This study was accomplished with the aspiration to proffer information about rehabilitation infrastructure, rehabilitation services, demographic data and disease pattern among the patients dealt by this department during the tenure of study.

Materials and Methods

A cross sectional retrospective study at the PMR department in Kurmitola General Hospital (KGH) Dhaka conducted over a period of one year from January 2019 to December 2019. Data were collected reviewing of the previous records, interviewing the concerned authority of the different institutes and, were analyzed using Microsoft excel and statistical package for social sciences (SPSS). Means and standard deviation were used for continuous variables, and simple proportions were used for categorical data. The quantitative observations were indicated by percentages. The results were presented in diagram, chart and tables.

Results

There are 4 inpatient beds in which 2 for male and 2 for female. Currently working manpower are 4 rehabilitation physicians and 3 Physical therapists. (Table: I)

The services on everyday are inpatient, out door patient management along with physical therapy and therapeutic exercises. The physical therapy services are Short wave diathermy (SWD), Microwave diathermy (MWD), Transcutaneous electrical nerve Stimulation (TENS), Ultrasound therapy (UST), Traction, Wax bath, Electric shockwave therapy (EST), Interferential therapy (IFT), Neuromuscular electrical stimulation (NEMS), Infrared ray

(IRR). Our weekly specialized clinic services are Neuro-rehabilitation Clinic, Rheumatologic Rehabilitation Clinic, Sports Medicine Clinic, Musculoskeletal Ultrasound (MSK US), Platelet Rich Plasma (PRP) therapy, Interventional Physiatry. (Table: II)

There are 25 public tertiary institutes in Bangladesh with 85 Physiatrists, serving the physiatric rehabilitation services. The most of them are providing outpatient services and the common services are Physical medicine and rehabilitation including diagnostic and therapeutic interventional physiatry with MSK US, spinal interventions for back pain, PRP therapy, stem cell therapy etc. and, prescribing physiotherapy, involved in speech and language therapy, occupational therapy, rehabilitation nursing. (Table: III)

Total number of patients got services in this department from January 2019 to December 2019 were 34,736. Among them 12,373 (35.62%) were male and 22,363 (64.38%) were female. (Figure: 1)

16% of patients were under 20 years of age, about 61% of patients belong to 2nd, 3rd, 4th, 5th decades 23% were above 60 years of age. The majority were housewives (36%) followed by garments worker (31%), Service holder (10%), Businessman (5%), Student (3%), Teacher (7%) and, others (8%) of the patients. (Figure: 2)

The disease pattern distributed as, 23.80% were NSLBP, 8.28% Neck pain, Cervical spondylosis 11.15%, Lumbar spondylosis 11.80%, Adhesive capsulitis 9.83%, PLID 7.39%, Osteoarthritis 9.43%, Facial palsy 0.53%, Rheumatoid arthritis 4.47%, Seronegative spondyloarthritis (SpA) 1.26%, GBS 0.15%, Planter Fasciitis 4.68%, 2.10 % post-surgical/post-traumatic stiffness and others 5.13%. (Table: IV)

Table I: Current strength of Rehabilitation Professional in KGH

Physiatrist/PMR specialist	4
Medical Officer	1
Trainee	0
Physiotherapist	3
Occupational therapist	0
Speech and language therapist	0
Rehabilitation Nurse	0

Table II: Current services of the department of PMR in KGH

Indoor service	Every day
Outdoor service	Every day
Physical Therapy - SWD, MWD, TENS, UST, Traction, Wax bath, EST, IFT, NEMS, IRR and, Therapeutic exercises	Everyday
Special clinic services given by PMR center	
Neuro-rehabilitation Clinic	Saturday
PRP therapy	Sunday
Sports Medicine Clinic	Monday
MSK-US	Tuesday
Interventional Physiatry	Wednesday
Rheumatologic Rehabilitation Clinic	Thursday

Table III: Current strength of physiatric rehabilitation services in public institutes of Bangladesh

Name of Institute	Service available (No of Physiatrist)	Rehabilitation service (Inpatient/Outpatient/Both)
BSMMU	PMR, PT, SLP,OT	20 Both
DMCH	PMR, PT, SLP,OT	8 Both
SSMCH	PMR, PT	4 Outpatient
ShSMCH	PMR, PT	4 Both
MuMCH	PMR, PT	2 Outpatient
NITOR	PMR, PT, SLP,OT	4 Outpatient
NINS	PMR, PT, SLP	4 Outpatient
NICVD	PMR, PT	1 Outpatient
SHNIBPS	PMR, PT	2 Outpatient
NIENT	PMR, PT	1 Outpatient
CMH	PMR, PT, SLP,OT, Rehab nursing	5 Outpatient
SKH	PMR, PT	2 Outpatient
CMCH	PMR, PT	6 Outpatient
COXMCH	PMR, PT	1 Outpatient
RmMCH	PMR, PT	1 Outpatient
CuMCH	PMR, PT	2 Outpatient
SOMCH	PMR, PT	4 Outpatient
SBMCH	PMR, PT	1 Outpatient
FMCH	PMR, PT	1 Outpatient
MMCH	PMR, PT	1 Outpatient
RMCH	PMR, PT	2 Outpatient
RpMCH	PMR, PT	3 Outpatient
MARMCH	PMR, PT	1 Outpatient
SZMCH	PMR, PT	4 Outpatient
SSANS	PMR, PT	1 Outpatient
25	85	

(BSMMU: Bangabandhu Sheikh Mujib Medical University, DMCH: Dhaka Medical College Hospital, SSMCH: Sir Salimullah Medical College Hospital, ShSMCH: Shaheed Suhrawardy Medical College Hospital, MuMCH: Mugda Medical College Hospital, NITOR: National Institute of Traumatology and Orthopedic Rehabilitation, NINS: National Institute of Neurosciences & Hospital, NICVD: National

Institute of Cardiovascular Diseases, SHNIBPS: Sheikh Hasina National Institute of Burns and Plastic Surgery, NIENT: National Institute of ENT and Hospital, CMH: Combined Military Hospital, SKH: Sarkari Kormochari Hospital, CMCH: Chattogram Medical College Hospital, COXMCH: Cox's Bazar Medical College Hospital, RmMCH: Rangamati Medical College, CuMCH: Cumilla Medical College Hospital, SOMCH: Sylhet MAG Osmani Medical College Hospital, SBMCH: Sher-e-Bangla Medical College Hospital, FMCH: Faridpur Meical College Hospital, MMCH: Mymensingh Medical College Hospital, RMCH: Rajshahi Medical College Hospital, RpMCH: Rangpur Medial College Hospital, MARMCH: M Abdur Rahim Medical College, SZMCH: Shaheed Ziaur Rahman Medical College Hospital, SSANS: Shaheed Sheikh Abu Naser Specialized Hospital, PMR: Physical Medicine and Rehabilitation, PT: Physiotherapy, SLP: Speech and Language Pathologist, OT: Occupational therapy, Rehab nursing: Rehabilitation nursing.)

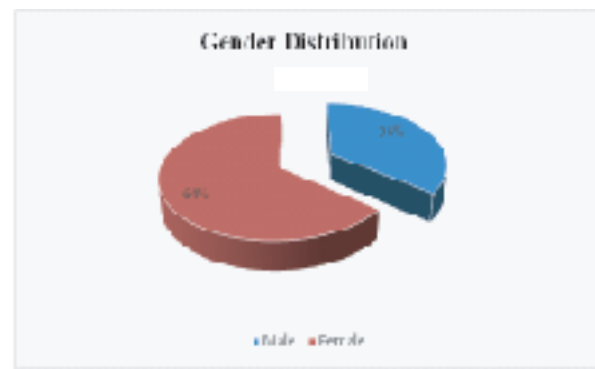


Figure 1: Gender distribution of the patients

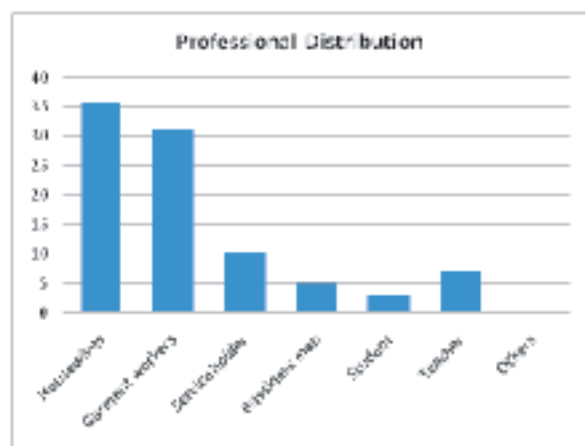


Figure 2: Professions of the patients

Table IV: Disease profile of the patients

Disease	Total	%
NSLBP	8266	23.80
Neck Sprain and Strain	2879	8.28
Cervical Spondylosis	3873	11.15
Lumbar Spondylosis	4101	11.80
Adhesive Capsulitis	3414	9.83
PLID	2567	7.39
Osteoarthritis	3276	9.43
Facial Palsy	184	00.53
Rheumatoid Arthritis	1552	4.47
SpA	437	1.26
GBS	52	00.15
Plantar Fasciitis	1625	4.68
Post-surgical/traumatic Stiffness	729	2.10
Others	1781	5.13

Discussion

The call for rehabilitation care is shooting up as our population ages and acute treatment revamps.⁶ Some Asian countries do not have an official Rehabilitation service system or offer only limited service. However, Rehabilitation medicine is growing rapidly in the region, and the need for Rehabilitation medicine will expand with industrialization, economic growth, and political maturity. The numbers of physiatrists and trainees are increasing rapidly in many countries compared with the data reported in 2001.⁷ In Bangladesh BSMMU got the highest number of rehabilitation physician and support staffs compared to other hospitals of the country. There are an estimated 2200 PTs in the country but we have only 3 and among 244 OT's we got none.^{8,9} Although Health-care indicators in Bangladesh, including budget allocation and facilities, are graded as poor, to adjoin the need, we planted the department of PMR in 2018. Our study has been pivoted to find out the challenges we face and within limited resources how we built and provide, a state of the art medical rehabilitation service in KGH. Specialized clinic and various interventional procedures are bustling instead of dire shortfall of academic staffs. We pledge all kind of evidence based treatments for neuro-musculo-skeletal disorders in outdoor and in indoor, we follow recent evidence based rehabilitation protocols for neurological, orthopedic, cardiac, pulmonary, pediatric neuro-developmental disorders and rheumatological disorders.

In last year we have attended 34,736 patients in outdoor. The majority were the female (64.38%). A cross sectional study at community level for detection of painful musculoskeletal disorders showed that musculoskeletal complaints are predominant in females.¹⁰ Another study in Rangpur Medical College Hospital (RpMCH) also demonstrated 55.1% were female patients.¹¹ This may be due to increased literacy rate and awareness among female patient. On the other side, government is taking strong initiative for the improvement of female health awareness. Occupation of patients were

housewives (38%) followed by Farmer (32%), Service holder (7%), Businessman (5%), Student (3%), Teacher (7%) and others (8%) of the patients. Housewife was the profession of 52.33% in one observation whereas 37.3% were housewife in different one where 16.3% were farmer, 15.1% service holder.^{10,12} According to a study 6.48% of patients were under 20 years of age, 14.79% were in 21-30 years, 25.14% were in 31-40 years, 21.98% were in 41-50 years, 17.15% were in 51-60 years and 14.42% were above 60 years of age.¹² Another one showed most (23.36%) of were between 40-49 years.¹⁰ It was also found in a study, 49.9% were in 41-50 years age.¹¹

The majority of the patients had PLID (21.60%) and, 10.99% stroke, cervical spondylosis 11.15%, lumbar spondylosis 11.52%, frozen shoulder 10.83%, low back pain 9.49%, osteoarthritis 8.25%, facial palsy 0.43%, rheumatoid arthritis 5.47%, seronegative SpA 0.26%, GBS 0.10%, acute neck sprain/strain 5.68% and others 4.18%.¹² The patients with the back pain was the highest (44.85%) in other documentation.¹³ Study performed at Chittagong Medical College Hospital, Shaheed Suhrawardy Medical College Hospital and, at RpMCH found highest prevalence of back pain.¹¹⁻¹³ The NSLBP was documented as most common (59.95%) disease in a similar study.¹¹ It also shows 66.45% of patients are rheumatological, 11.95% neurological and, 21.60% orthopedic and other conditions. Whereas, 24.86% were rheumatological, 7.34% in mechanical, 12.99% neurological, 8.47% were pediatric patients in a different article.¹⁴

In KGH the referral system and interaction among different departments is improving gradually and importance of PMR department is being appreciated. This may be one of the reasons for increasing majority of rheumatologic patients seeking PMR consultation. From the above discussion, it is clearly demonstrated that the findings of the study performed in PMR department of KGH is consistent with the findings of different institutes of Bangladesh. The total numbers of patients attending PMR Department have been increasing day by day. The most of the patients are coming to this department from different regions of Bangladesh. Moreover, referred patients are also seen from departments of KGH especially Medicine, Neurology, Pediatrics, Nephrology, Orthopedics, Surgery, Urology, Cardiology, Oncology and Gynaecology department. The patients who have taken our services, they have come and are followed up, rehabilitation programs were executed to prevent contracture, disability, handicap, and improve QOL.

It is a time demanding worthy issue to invest in developing more infrastructures in medical rehabilitation field in Bangladesh.

This study is done in one public tertiary hospital of Bangladesh and it may not reflect the total scenario of patients getting treatment from PMR department. A uniform data system (UDS) for Medical Rehabilitation is maintained in USA and published annually. We should develop the UDS in our country as we do not have this type of system yet.

Conclusion

There is a huge vacuum in rehabilitation medicine in our country likely due to lack of awareness among general population as well as health care providers, despite the health-care systems of Bangladesh has progressed in the last three decades. In view of the changing land scape of medicine, which includes focusing on diversity and inclusion as well as developing a culturally competent work force, PMR is considered to be the specialty of the future due to its rapid growth potential, opportunities for sub specializations and unique skills.

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