NATIONAL REHABILITATION FRAMEWORK- COVID-19 PERSPECTIVE: A NARRATIVE REVIEW

Nazia Mumtaz, Ghulam Saqulain*, Nadir Mumtaz**

Riphah International University, Lahore Pakistan, *Capital Hospital, Islamabad Pakistan, **Federal Board of Revenue, Islamabad Pakistan

ABSTRACT

Pakistan's fragile health care system' response to COVID-19, will eventually come under public health rehabilitation oriented forensic analysis. Pakistan's health care system is deficient both in terms of manpower and resources. Following the acute respiratory phase of COVID-19, rehabilitation of sequelae & complications is essential. The aim of this study is to highlight the need of a National Rehabilitation Framework in the wake of COVID-19 pandemic to provide rapid, safe and efficient rehabilitation services. For this purpose, we conducted a narrative review with search of major databases for published literature for studies with Keywords "COVID-19, Rehabilitation, Sequelae, Telehealth and combination of words". After screening of 210 articles, 30 full text, English articles and news were utilized.

Keywords: COVID-19, Rehabilitation, SARS-CoV-2, Telehealth.

INTRODUCTION

It is being ad nauseum being repeated that the world will be a different place following the spread of COVID-19 caused by a beta coronavirus, named SARS-CoV-2[1]. Disinformation, myths and unsubstantiated news run the rounds amongst the health professionals and layman alike. With the Chinese success story in the backdrop, despite a state controlled media, the Government of Pakistan issued National Preparedness & Response plan to deal with COVID-19 threat including guidelines and SOPs for inbound flights to Pakistan[2], however, what has been exposed or will be exposed in the coming months is the healthcare system and infrastructure both in the public and the private sector, Pakistan's' fragile health care system is quite evident with just 1279 public hospitals, 220829 doctors and 108474 nurses and is said to have the capacity of 0.6 bed for 1000 patients and a meager resource allocation of 0.75% of GDP[2]. On the one hand the public sector hospitals traditionally have insufficient ventilators or life support systems and any exponential increase in critically ill patients of COVID-19 will burden the existing healthcare facilities. This is typical for developed countries[3], compounded with the in the consumption and need of medical supplies[4]. In our case this is marred by the poor literacy, lack of hand hygiene, density of population and lack of social distancing[2].

A million ventilators might be required in United States alone to deal with the situation arising from the COVID-19 pandemic[3]. In Pakistan, with inherent and severe deficiencies before COVID-19, pandemic in the Intensive Care Units in the country[5], and heavy workload and mechanical ventilation requirements[6], the present situation is pathetic. As reported in a leading national newspaper[7], Pakistan Institute of Medical Sciences, the largest public sector hospital in the Federal Capital was recently provided 26 ventilators which were made functional after frantic efforts by the concerned hospital for the treatment of COVID-19 patients. Also a COVID-19 isolation ward of 80 beds in this hospital has been established after diverting life support systems from other units. The situation in the second largest hospital Polyclinic is equally disconcerting asthere are only four ventilators. The ordinary citizen can only resort to such category of hospitals in case of extreme and life threatening sickness. Whereas there is a fortunate class which has

Correspondence: Dr Ghulam Saqulain, ENT Department, Capital Hospital, Islamabad Pakistan
Email: ghulam_saqulain@yahoo.com
Received: 14 Jun 2020; revised received: 18 Jul 2020; accepted: 23 Jul 2020

recourse to security services healthcare, corporate or panel entitlement and reimbursement. It is the former which we are presently concerned about as this class will be diagnosed later due to non-affordable testing and diagnosis, inability and reluctance to go for hospitalization especially as it entails loss of temporary livelihood.

In the current situation, 1) Tracing of contacts, 2) Testing and 3) Treating is the need of the hour[2], however, the acute respiratory phase of COVID-19 is followed by prolonged bed rest syndrome including bed sores etc. This is followed by sequelae of mechanical ventilation, including aspiration, dysphagia, and neuropsychological manifestation[8]. Hence, from a clinical perspective impacts of intubation and prolonged mechanical ventilation leads to medical complexities requiring a post-acute care regime catering to improve immobilization, psychosocial function, and speech and swallowing rehabilitation, and respiratory function. Such an approach demands a multidisciplinary management[9], which is lacking in our setups because of different reasons. To deal with such situations we need rehabilitation of problems including weakness, fatigue, stiffness of joints, swallowing disorders, neurological and psychological issues, mobility issues and transition to daily life and work and other unknown problems which may arise following this novel disease[10].

WHO framework of rehabilitation services meeting had recommended rehabilitation to be integrated with all tiers of health care system[11]. But in our case one should expect facing hurdles in the way of rehabilitation though, a national policy on disability was announced in Pakistan in 2002[12], but no efforts were made towards a comprehensive rehabilitation framework.

Therefore this study was conducted with the objective to highlight the need of a National Rehabilitation Framework in the wake of COVID-19 pandemic to provide rapid, safe and efficient rehabilitation services, which is the need of the hour. To achieve this purpose, as depicted in fig-1, we conducted extensive literature search involving major databases like Web of Science, Medline, Google & Google scholar as well as search of bibliography of published literature for studies with Keywords "COVID-19, Rehabilitation, Sequelae, telehealth and combination of words" with no limitation of dates of publication. After removal of duplicates, articles in languages other than English and those in which full text were not available, we downloaded around 210 articles and news. Articles were skimmed for tittles of relevance to identify 50 articles, which were abstracted and 30 used for literature review for the manuscript.

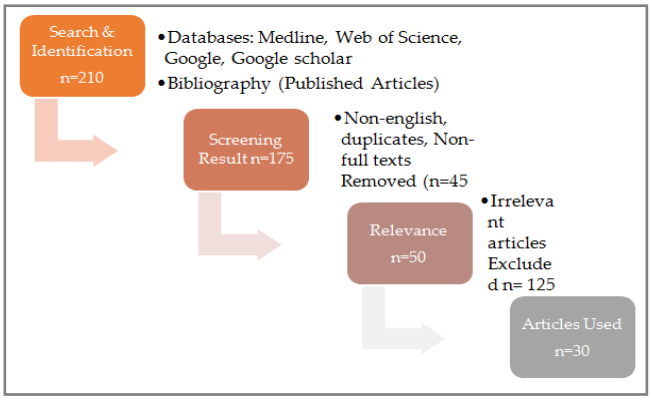

Figure: Search strategy.

DISCUSSION

The COVID-19 pandemic is a challenge for rehabilitation professionals[13], on a scale never encountered before. Rehabilitation is necessary in all phases of COVID-19 disease for reduction of complications. This can be done by using an interdisciplinary team rehab commencing from the acute phase, provision of education for self-care to patient and/or family members, and provision of such rehabilitation on outdoor basis. With the need of social distancing and a distance of 2 meter 14, the Protocols extend to residential settings through person to person therapy or by using telehealth/telemedicine[15]. In the developed countries rehabilitation has already been initiated following COVID-19 pandemic[15].

The present situation demands allied medical professionals to use personal protective equipment[8]. Compounding matters is that the

medical, nursing and allied health professionals such as rehabilitation professionals attending to patients are not supplied adequate protective gear and are reluctant to expose themselves as fatalities amongst caregivers are exponentially increasing. Donning PPE's is uncomfortable especially when worn with a proper N95 mask requiring increased effort of breathing[16]. The senior medical personnel are secure behind glass doors it seems. The unfortunate continue to be the frontline soldiers of the health profession including speech and language therapists responsible for speech and swallowing therapies. Rehabilitation professionals are exposed to health hazards as they work in close proximity for long durations and treat swallowing disorders in patients emerging from acute and critical care surroundings[16]. Studies of patients in USA who were severely afflicted with COVID-19 patients and survived and had to undergo prolonged rehabilitation managed by speech and language professionals which is not the typical protocol being practiced in Pakistan[17].

Prolonged endotracheal intubation is a common cause of dysphagia with one third of cases suffering from swallowing disorders even after being discharged from hospital and recovery being slower the longer the intensive care unit stay[18]. Research indicates that patients recovering from COVID-19 manifest certain risks associated with impact of intubation and mechanical ventilation through an artificial airway .The transition of such patients from acute settings to post-acute spectrum providers confronts rehabilitation professionals[19], which may also require neuro-rehabilitation strategies[20].

The COVID-19 pandemic has distorted the manner in which hospitals are being managed as the priority now is to facilitate the extension of critical health care of acutely sick individuals. Partly in order to reduce exposure of health care professionals virtual services has witnessed transformational changes for general practice as well as for hospital outpatient services. Treatment protocols of frail patients suffering from a certain degree of disability require constant and regular treatment from rehabilitation professionals. COVID-19 rehabilitation is an off shoot of conventional rehab, however with double the demand[21]. A national rehabilitative strategy to cater to CVOID-19 cases is still awaited with the health policy makers indulging in endless briefings and optics.

A surge of COVID-19 patients is being witnessed in Pakistan and there is a expectation of an upper trajectory as well. The health authorities and policy makers should be exhorted to devise rehabilitative policies on priority both for acute cases and cases in isolation where pulmonary rehabilitation is essentially required[22] as well as to establish dedicated post-acute care facilities in health jurisdictions exclusively specializing in rehabilitative care of patients recuperating from COVID-19[23]. As COVID-19 is particularly manifested in elderly and vulnerable segment of society medical complications arise accompanied in most cases by disability. Such clinical complications can be evaluated, assessed, managed through timely intervention by a stroke interdisciplinary team comprising of relevant health and rehabilitative professionals including speech and language therapists. With dearth of professionals and fear of spread of disease, tele-medicine clinics comprising of these professio-nals can increase the service provided at homes as well as in hospital facility[24].

To deal with the COVID-19 emergency and protect healthcare professionals, Nagesh & Chakraborty recommended provision of testing kids on priority for frontline health care workers and provision of PPE's for protection to all such workers and introducing innovations in isolation and quarantine spaces. Hospital infection control committees for monitoring and control of infections should be established and innovative strategies for training and protocols in local languages be devised[25]. However, this is not possible without the involvement of policy makers, health administrators, medical and allied health professionals and community reinforcing how crucial it is to have a National Rehabilitation Framework in place.

As per WHO Framework of Rehabilitation Services meeting held in Geneva, 2017[11], it is grudgingly being recognized that rehabilitation has to be integrated with all tiers of healthcare system. The same has to be realized by our policy makers and National Rehabilitation framework needs to be developed on a fast track basis for present and future needs on the heels of the present contagion of COVID-19. According to Burke *et al* in Ireland, rehabilitation framework for neurologic brain injuries was introduced in 2019, but is faced with challenges including missing services, under-resourcing, no or limited access to services for the poor. It was recommended that priority on political side be initiated for implementation[26]. According to WHO, integrated health services which are people focused is envisioned in a model in which all strata of population have unbiased access to reliable health services meeting their life styles. Such integrated health services need to be coordinated, cover all spheres of care, have required safety element and maintain effectiveness in a timely, efficient and acceptable manner. Additionally in such a model, the caretakers are sufficiently skilled, and motivated with their work covered in a supportive sphere[11]. The five tire strategy which has been proposed by WHO for Rehabilitation framework include: empowerment and engagement of population, to strengthen governance and ensure accountability; to reorient the care model; to coordinate the rehabilitation services in and across the different sectors; and finally to ensure an enabling environment[11]. In order for a service delivery model to effectively address the emerging and constantly evolving demands of population rehabilitation as part of the continuum of health care needs to be dove tailed into each strategy.

In Pakistan disability and rehabilitation were once underemphasized marred with lack of sample manpower[27], with few speech and language therapists reported in 2011[28]. Today Pakistan has an ample availability of speech language pathologists. National Policy on the issue of disability was announced by Pakistan in 2002[12], now it is time to establish a National Rehabilitation Framework This Framework will align it with healthcare system of the country to enhance rehabilitation strategies to avoid disability. With the need of strong leadership to inculcate rehabilitation into public health[29], it is of utmost importance that policy makers and public health educational authorities take cognizance of the rapidly changing situation and ensure a National Rehabilitation Framework in place, using this opportunity for healthcare transformation[30].

CONCLUSION

A National Rehabilitation Framework in Pakistan is the dire need of the hour supported with an integrated rehabilitative and responsive health care system.

CONFLICT OF INTEREST

This study has no conflict of interest to be declared by any author.

REFERENCES

1. Sohrabi C, Alsafi Z, O'Neill N, Khan M, Kerwan A, Al-Jabir A et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). Int J Surg 2020; 76(1): 71-76.
2. Noreen N, Dil S, Niazi SUK, Naveed I, Khan NU, Khan FK, et al.. COVID 19 Pandemic and Pakistan; Limitations and Gaps. Global Biosecurity 2020; 1(4): 63-69.
3. Ranney ML, Griffeth V, Jha AK. Critical supply shortages - The need for ventilators and personal protective equipment during the Covid-19 pandemic. N Engl J Med 2020; 382(1): e41-49.
4. Nicola M, Alsafi Z, Sohrabi C, Kerwan A, Al-Jabir A, Iosifidis C, et al. The Socio-Economic Implications of the coronavirus and COVID-19 Pandemic: A Review. Int J Surg 2020; 16(2): S1743-91.
5. Ladak LA, Hamid MH, Mirza S, Siddiqui NR, Bhutta ZA. A National Survey of Pediatric Intensive Care Units in Pakistan. J Crit Care Med 2014; 2014: 1-4.
6. Ali SMM, Memon MI, Pasha TMU, Gilani SM, Rabbi F, Nasim S, et al. Patterns of admission in intensive care unit of tertiary care hospital. Ann Pakistan Inst Med Sci 2017; 13(4): 261-64.
7. Junaidi I. Twenty Six ventilators made functional at Pims. Dawn 2020. Available from: https://www.dawn.com/news/1560778/26-ventilators-made-functional-at-pims
8. Brugliera L, Spina A, Castellazzi P, Cimino P, Tettamanti A, Houdayer E, et al. Rehabilitation of COVID-19 patients. J Rehab Med 2020; 52(4): jrm00046.
9. Yang LL, Yang T. Pulmonary rehabilitation for patients with coronavirus disease 2019 (COVID-19). Chronic Dis Translational Med 2020; 6(2): 79-86.
10. Kiekens C, Boldrini P, Andreoli A, Avesani R, Gamna F, Grandi M, et al. Rehabilitation and respiratory management in the acute and early post-acute phase. "Instant paper from the field" on rehabilitation answers to the Covid-19 emergency. Eur J Phys Rehabil Med 2020; 10(2): 73-83.

11. World Health Organization (WHO). WHO Framework of Rehabilitation Services Meeting Report [Internet]. WHO Head quarters, Geneva Switzerland; 29-30 June 2017. Available from: http://ialpasoc.info/wp-content/uploads/2017/10/Meeting-report_WHO-Framework-of-Rehabilitation-Services_June-2017.pdf
12. Ahmed M, Khan AB, Nasem F. Policies for special persons in pakistan analysis of policy implementation. Berkeley J Soci Sci 2011; 1(2): 1-11.
13. Thornton J. COVID-19: the challenge of patient rehabilitation after intensive care. Bio Med J 2020; 369: m1787.
14. Williams N. Social Distancing in the COVID-19 Pandemic. Occup Med 2020: kqaa072.
15. Lew HL, Oh-Park M, Cifu DX. The war on COVID-19 pandemic: role of rehabilitation professionals and hospitals. Am J Phys Med Rehabil 2020; 99(7): 571-72.
16. Koh GCH, Hoenig H. How should the rehabilitation community prepare for 2019-nCoV? Arch Phys Med Rehabil 2020; 101(6): 068-71.
17. Schencker L. Some COVID-19 patients need rehab to walk, talk and problem solve. Chicago tribune. Chicago, Tribune Publishing; 2020. Available from: https://www.msn.com/en-us/health/medical/some-covid-19-patients-need-rehab-to-walk-talk-and-problem-solve/ar-BB13O5kr
18. Brodsky MB, Huang M, Shanholtz C, Mendez-Tellez PA, Palmer JB, Colantuoni E, et al. Recovery from dysphagia symptoms after oral endotracheal intubation in acute respiratory distress syndrome survivors. A 5 Year Longitudinal Study. Ann Am Thorac Soc 2017; 14(3): 376-83.
19. Kinder R. COVID-19 and the impact on swallow. McKnight's Long-Term Care news. 2020. Available from: https://www.mcknights.com/blogs/rehab-realities/COVID-19-and-the-impact-on-swallow/
20. Saqulain G, Mumtaz N. Swallowing difficulties with tracheostomy: a neuro-rehabilitation perspective. J Islamabad Med Dental Coll 2020; 9(1): 57-62.
21. Thornton J. COVID-19: the challenge of patient rehabilitation after intensive care. Br Med J 2020; 369: m1787.
22. Chinese association of rehabilitation medicine; respiratory rehabilitation committee of chinese association of rehabilitation medicine; cardiopulmonary rehabilitation group of chinese society of physical medicine and rehabilitation. [Recommendations for respiratory rehabilitation of coronavirus disease 2019 in adult]. ZhonghuaJie He He Hu Xi ZaZhi 2020; 43(4): 308-14.
23. Grabowski DC, Joynt Maddox KE. Postacute Care Preparedness for COVID-19: Thinking Ahead. J Am Med Assoc 2020; 323(20): 2007-08.
24. Grabowski DC, O'Malley AJ. Use of telemedicine can reduce hospitalizations of nursing home residents and generate savings for Medicare. Health Aff (Millwood) 2014; 33(2): 244-50.
25. Nagesh S, Chakraborty S. Saving the frontline health workforce amidst the COVID-19 crisis: Challenges and recommendations. J Glob Health 2020; 10(1): 010345.
26. Burke S, McGettrick G, Foley K, Manikandan M, Barry S. The 2019 neuro-rehabilitation implementation framework in Ireland: Challenges for implementation and the implications for people with brain injuries. Health Policy 2020; 124(3): 225-30.
27. Qureshi AZ. FCP Straining in the specialty of Physical Medicine and Rehabilitation for physicians in Pakistan: The option less known. J Pak Med Assoc 2016; 66(1): 93-96.
28. Rathore FA, New P, Iftikhar A. A report on disability and rehabilitation medicine in Pakistan: Past, Present, and Future Directions. Arch Physical Med Rehab 2011; 92(1): 161-66.
29. PrvuBettger J, Thoumi A, Marquevich V, De Groote W, Rizzo Battistella L, Imamura M, et al. COVID-19: maintaining essential rehabilitation services across the care continuum. Br Med J Glob Health 2020; 5(5): e002670.
30. Sakel M, Saunders K, chandi J, Maxha S, Faruqui R. Neuro-rehabilitation service during COVID-19 pandemic: Best practices from UK. J Pak Med Assoc 2020; 70(5): 136-40.