Knowledge, Attitude, and Practice of Multidisciplinary Rehabilitation among Health Professionals in Kavre, Nepal

Panthee A, Timalsina S

Department of Physiotherapy,

Kathmandu University School of Medical Sciences,

Dhulikhel Hospital, Kathmandu University Hospital,

Dhulikhel, Kavre, Nepal.

Corresponding Author

Anjana Panthee,

Department of Physiotherapy,

Kathmandu University School of Medical Sciences,

Dhulikhel Hospital, Kathmandu University Hospital,

Dhulikhel, Kavre, Nepal.

E-mail: aanzanapanthee@gmail.com

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ABSTRACT

Background

Rehabilitation services are vital in improving the quality of life for people with disabilities in Nepal, where there is a prolonged effect of civil conflict and frequent natural disasters. To refer patients to rehabilitation specialists, health professionals should be equipped with knowledge and should have a positive attitude towards multidisciplinary rehabilitation. However, information on the knowledge, attitude, and practice (KAP) of health professionals in Nepal regarding multidisciplinary rehabilitation is limited.

Objective

To determine the level of knowledge, attitude, and practice of multidisciplinary rehabilitation among health professionals.

Method

A cross-sectional study was conducted across three hospitals in the Kavre district involving 118 various health professionals. A self-administered questionnaire was used to measure knowledge, attitude, and practice. Knowledge scores ranged from 0 to 24 (≤ 8: low, 9-16: moderate, > 16: high) and attitude scores from 0 to 20 (≤ 6: low, 7-14: moderate, > 14: high). Data were analyzed using SPSS version 26, employing descriptive statistics and non-parametric tests.

Result

The mean knowledge score was 17.77 ± 4.91, with 72% of participants demonstrating a high level of knowledge in multidisciplinary rehabilitation. The mean attitude score was 16.22 ± 3.23, with 74% rating high positive attitudes. Regarding practice, 50% of participants referred more than five patients to physiotherapists monthly, while 79.4% did not refer any patients to physiatrists monthly.

Conclusion

Health professionals in the Kavre district exhibit generally high knowledge and positive attitudes towards multidisciplinary rehabilitation. Nonetheless, referral patterns indicate underutilization of physiatrists and speech therapists, suggesting areas for targeted interventions to improve multidisciplinary rehabilitation services accessibility in Nepal.

KEY WORDS

Knowledge, attitudes, practice; Multidisciplinary cooperation; Rehabilitation

INTRODUCTION

Nepal faces a substantial amount of burden of disability, intensified by the history of prolonged civil conflict (1996-2006) and frequent natural disasters, including the devastating earthquake of 2015.[1] Among individuals with disabilities, more than 50% them are within the economically productive age group of 15 to 59 years, and the prevalence of disability is found to be similar in both urban and rural areas of Nepal.[2] This emphasizes a substantial need for rehabilitation services in Nepal. However, the service remains limited and unevenly accessible due to barriers such as inadequate infrastructure, a shortage of specialized rehabilitation professionals, and low awareness about rehabilitation, leading to ineffective service delivery and poor patient outcomes.

Healthcare professionals (HCPs) qualified to work in a hospital and directly involved in delivering health services to patients play a vital role in access to rehabilitation.[3] In Nepal, access to rehabilitation services generally requires referral by medical professionals; hence, their knowledge, attitude, and practice (KAP) toward rehabilitation significantly influence patients receiving appropriate care. On the other hand, a lack of KAP among HCPs leads to delayed or inappropriate referrals, which can adversely affect the outcome and prognosis of the patient. Multidisciplinary rehabilitation is a coordinated intervention involving two or more disciplines, such as physiatrists, speech therapists, occupational therapists, and physiotherapists, working together to manage complex disabilities and their associated needs.[4,5] This approach emphasizes improving functional activities, quality of life, independence, level of activity, and various other outcomes.[6-10]

Lack of knowledge about rehabilitation among HCPs also hinders multidisciplinary rehabilitation services.[11] Therefore, this study aims to evaluate the level of knowledge, attitude, and practice regarding multidisciplinary rehabilitation among healthcare professionals in the Kavre district of Nepal.

METHODS

This was a cross-sectional study conducted was March 2023 to January 2024 to evaluate the knowledge, attitude, and practice (KAP) of multidisciplinary rehabilitation among health professionals working in the Kavre district of Nepal. Ethical clearance was obtained from the Institutional Review Committee of Kathmandu University (Approval number: 92/23, dated June 14, 2023).

A total of 118 health professionals participated in the study from three different hospitals of Kavre district. The hospitals were selected using envelope method of sampling and all the healthcare professionals of those three hospitals were recruited for the study. However, the occupational therapists were excluded due to their unavailability in the selected hospitals.

Eligible participants included health professionals capable of reading and writing in English and holding at least a bachelor's degree in relevant fields such as Nursing, Medicine, Physiotherapy, Prosthetics and Orthotics, Pharmacy, Radiology, Dietetics, Occupational Therapy, Speech and Language Therapy, and Psychiatry. Health professionals who did not provide informed consent were excluded from the study.

A self-administered questionnaire to evaluate knowledge, attitude and practice toward rehabilitation with an excellent face and content validity and satisfactory test-retest reliability was used. The questionnaire consisted of two parts. The first part is about demographic features, including age, gender, profession, years of experience and level of education. The second part consisted of 35 items categorized into three main domains; knowledge, attitude and practice. The knowledge score ranged from 0 to 24; therefore, score ≤ 8 were considered low, > 16 high, and 8-16 moderate. The attitude score ranged from 0 to 20; hence, score ≤ 6 implied low, > 14 high, and 6-14 moderate.[12] Data were analyzed using SPSS version 26.0. Values were expressed descriptively as mean standard deviation (SD) and frequency (%). Mann - whitney U test, Kruskal wallis tests were used to analyze data. A two-tailed p-value of < 0.05 was considered statistically significant.

RESULTS

The total number of participants enrolled in the study was 118. Among them, most respondents (85%) were from age group 20-39. The proportion of male to female was almost equal with (52.5%) being male. Most of the participants were doctors covering (46.6%) of the study population. About (57.6%) of the participants have working experience of 1-5 years. Also (51.7%) have completed their master's degree (Table 1).

Knowledge

The mean knowledge score was 17.77 ± 4.91 (with the minimum of 1 and maximum of 24). 8 respondents (7%) scored low, 25 respondents (21%) scored moderate and 85 respondents (72%) scored high. Hence most health professionals had high knowledge of multidisciplinary rehabilitation (Table 2). Notable knowledge areas included speech therapy, orthotic and prosthetic prescription, and therapeutic injections. Areas needing improvement included electromyography-nerve conduction velocity and different axial and peripheral joint manipulation techniques.

Attitude

The mean attitude score was 16.22 ± 3.23 with a minimum of six and maximum of 20. One respondent (0.8%) scored low. Thirty respondents (25.3%) scored moderate and 87 respondents (73.7%) scored high in the attitude section of the questionnaire. Hence health professionals had high attitude towards multidisciplinary rehabilitation.

Table 1. Demographic characteristics of Sample (n=118)

Demographics	Category	Frequency (%)
Age range	20-29	23 (19.5)
	30-39	79 (66.9)
	40-49	15 (12.7)
	50-59	1 (0.8)
Gender	Male	62 (52.5)
	Female	56 (47.5)
Years of experience	1-5 years	68 (57.6)
	5-10 years	34 (28.8)
	More than 10 years	16 (13.4)
Profession	Doctor	55 (46.6)
	Nurse	21 (17.8)
	Physiotherapist	6 (5.1)
	Psychiatrist	6 (5.1)
	Pharmacist	4 (3.4)
	Radiologist	10 (8.5)
	Lab technologist	15 (12.7)
	Nutritionist	1 (0.8)
Level of education	Masters	61 (51.7)
	Bachelors	57 (48.3)

Nutritionist: n=1 (0.8%)

Almost all the participants (99.2%) had positive attitude towards speech therapy is beneficial in the treatment of aphasia due to stroke or traumatic brain injury and speech therapy such as stuttering. Sixty-six health professionals (55.9%) chose neurologic disease as the top priority to receive rehabilitative care. Only one health professional (0.8%) chose cancer as top priority to receive rehabilitative care. 64 health professionals (54.2%) ranked respiratory infections and 38 (32.2%) bedsores as the top complication of immobility, which can be prevented by referral to rehabilitation experts. Urinary tract infections, depression and osteoporosis were not ranked as top complication of immobility (Table 3).

Practice

A total of 64 respondents (54.2%) chose stroke as top priority in referring patients to rehabilitation that can treat and improve the quality of life. Similarly, the top priority of 35 health professionals (29.7%) to refer patients for electromyography and nerve conduction velocity (EMG-NCV) testing was neuromuscular junction disorders. Almost half of the participants (50%) refer more than five patients to physiotherapists in a month and 89 respondents (79.4%) do not refer any patients to physiatrists in a month. The main goal of 82 (69.5%) health professionals of referring patients for orthoses to rehabilitation specialists was to prevent or treat deformities (Table 4). There was no significant association between age, gender, years of experience, and academic qualification with the referral of patients to physiotherapists, speech therapists, and the goal to refer patients for orthoses. There was an association between profession and the referral of patients to physiotherapists and speech therapists.

Table 2. Result of knowledge section of questionnaire

Questionnaire of Knowledge	Yes n (%)	To some extent n (%)	No n (%)
1. Are you familiar with history taking and physical examination related to Physical Medicine and Rehabilitation?	84(71.2)	29(24.6)	5(4.2)
2. Are you familiar with therapeutic injections in specific joint, soft tissue and peripheral nerves for pain management?	87(73.7)	24(20.3)	7(5.9)
3. Are you familiar with orthotic and prosthetic prescription and checkout?	76(64.4)	24(20.3)	18(15.3)
4. Are you familiar with different types of pathologic gait such as spastic, myopathic and antalgic?	85(72.0)	25(21.2)	8(6.8)
5. Have you ever observed an electromyography- nerve conduction velocity being performed?	31(26.3)	34(28.8)	53(44.9)
6. Are you familiar with different axial and peripheral joint manipulation techniques?	52(44.1)	38(32.2)	28(23.7)
7. Are you familiar with transcutaneous electrical nerve stimulation used to alleviate musculoskeletal and neuropathic pain, according to the gait theory of pain?	60(50.8)	32(27.1)	26(22.0)
8. Did you know that speech therapy is used to treat dysphagia?	105(89.0)	8(6.8)	5(4.2)
9. Did you know that occupational therapy can increase the quality of life in patients with traumatic brain injury?	80(67.8)	33(28.0)	5(4.2)
10. Did you know that nerve conduction velocity test is the gold standard test for the diagnosis of carpal tunnel which is one of the main causes of numbness and tingling in the hand?	44(37.3)	37(31.4)	37(31.4)
11. Did you know that heat therapy modalities such as ultrasound, heating pads and infrared light reduce chronic musculoskeletal pain?	88(74.6)	27(22.9)	3(2.5)
12. Did you know that the cold therapy modalities reduce pain and edema in the acute phase of sports related musculoskeletal injury?	88(74.6)	26(22.0)	4(3.4)

DISCUSSIONS

The present study evaluated the knowledge, attitudes, and practices of health professionals towards multidisciplinary rehabilitation in Nepal. The overall finding of the study showed that health professionals commonly have high knowledge and a positive attitude toward rehabilitation services. Although this finding is reassuring, few of the regional studies showed some disparities. For example, a study conducted in Shiraz, Iran found that general

Table 3. Result of attitude section of questionnaire

Questionnaire of Attitude	True n (%)	False n (%)
1. Speech therapy is beneficial in the treatment of aphasia due to stroke or traumatic brain injury.	117 (99.2)	1 (0.8)
2. Speech therapy is beneficial in the treatment of speech disorders such as stuttering.	117 (99.2)	1 (0.8)
3. Speech therapy improves cognition in patients with stroke or traumatic brain injury.	112 (94.9)	6 (5.1)
4. Biofeedback is beneficial in the treatment of urinary incontinence.	75 (63.6)	43(36.4)
5. Manual chest maneuvers, such as chest vibration and chest percussion, used by physiotherapists, improve respiratory function.	115 (97.5)	3 (2.5)
6. Hydrotherapy reduces musculoskeletal pain.	77 (65.3)	41(34.7)
7. Occupational therapy plays a pivotal role in teaching disabled patients how to perform daily life activities.	105 (89.0)	13(11.0)
8. Cardiac rehabilitation programs held by physiatrists improve the quality of life after cardiac surgery.	83 (70.3)	35(29.7)
9. Ultrasound and fluoroscopy guided interventions reduce musculoskeletal pain.	62 (52.5)	56(47.5)
10. Physical therapy modalities and prescription of drugs and botulinum toxin reduce spasticity in upper motor neuron diseases, such as stroke.	94 (70.7)	24(20.3)
	Priority	**n (%)**
11. Which group is preferred for receiving rehabilitative care? (Prioritize choices based on your preference)	Orthopedic disease	35(29.7)
	Neurologic disease	66(55.9)
	Cancer	1 (0.8)
	Cardiac disease	16(13.6)
	Bedsores	38(32.2)
12. Which complication can be prevented by referring bedridden patients to rehabilitation experts? (Prioritize choices based on your preference)	Bedsores	38(32.2)
	Respiratory infections	64(54.2)
	Urinary tract infections	0
	Muscular atrophy	3(2.5)
	Depression	0
	Osteoporosis	0
	Joint contracture	13(11.0)

Table 4. Result of practice section of questionnaire

Questionnaire of Practice	Priority	n (%)
1. When was your main exposure to rehabilitation specialists?	Medical school curriculum	64 (54.2)
	During Practice	54 (45.8)
2. Are you interested in choosing physical and rehabilitation medicine as your specialty?	Yes	64 (54.2)
	-------	54 (45.8)
3. Referral of patients to a rehabilitation expert can treat and improve the quality of life in which conditions. (Prioritize choices based on your preference)	No	64 (54.2)
	Stroke	18 (15.3)
	Cerebral palsy	2 (1.7)
	Peripheral neuropathy	0
	Osteoporosis	6 (5.1)
	Limb amputation	8 (6.8)
	Cardiac disease	13 (11.0)
	Respiratory disease	5 (4.2)
	Spinal cord lesion	0
	Burns	0
	Multiple sclerosis	0
	Cancer	0
	Dermatologic disease	2 (1.7)
4. For diagnosis of which disease/condition do you refer patients to rehabilitation specialists for electromyography nerve conduction velocity testing? (Prioritize choices based on your preference)	Multiple Sclerosis	9 (7.6)
	Stroke	28 (23.7)
	Motor neuron diseases	15 (12.7)
	Peripheral neuropathy	12 (10.2)
	Myopathies	19 (16.1)
	Neuromuscular junction diseases	35 (29.7)
5. On average, how many patients do you refer to physiatrists in a month?	0	89 (79.4)
	1-5	21 (17.8)
	>5	8 (6.8)
6. On average, how many patients do you refer to speech therapists in a month?	0	73 (61.9)
	1-5	40 (33.9)
	>5	5 (4.2)
7. On average, how many patients do you refer to occupational therapists in a month?	0	65 (55.1)
	1-5	51 (43.2)
	>5	2 (1.7)
8. On average, how many patients do you refer to physiotherapists in a month?	0	14 (11.9)
	1-5	45 (38.1)
	>5	59 (50.0)
9. On average, how many patients do you refer to technical orthopedists in a month?	0	36 (30.5)
	1-5	49 (41.5)
	>5	33 (28.0)
10. What is your goal to refer patients for orthoses to rehabilitation specialists?	Preventing or treating deformities	82 (69.5)
	Increasing limb function	19 (16.1)
	Hindering limb weight-bearing	1 (0.8)
	Pain reduction	13 (11.0)
	Controlling involuntary movements	3 (2.5)
11. After reading and filling out the questionnaires, would you refer patients to rehabilitation experts?	Yes	116(98.3)
	No	2 (1.7)

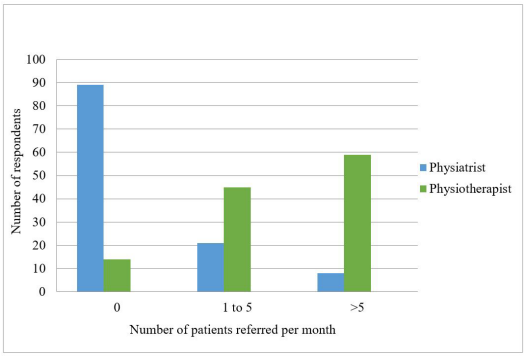

Figure 1. Referral rates of physiotherapists vs. physiatrists

practitioners (GPs) had moderate knowledge and attitude towards rehabilitation.[12] Another study conducted in Hungary, revealed that physicians do not have enough knowledge of rehabilitation required for their clinical practice.[13] Those differences may be influenced by factors such as the educational curriculum, referral patterns, healthcare system differences, and cultural and societal factors.

More than half of our study participants were familiar to rehabilitation concepts and specialists during their medical education. This is consistent with the study conducted in Tehran, Iran, where an innovative physical medicine and rehabilitation (PMR) course for undergraduate students was evaluated and found that rehabilitation education for medical students was recommended for broader implementation.[14]

A study conducted in Nepal showed that, rehabilitation services in the country are limited, however they are gradually gaining urgency and recognition. A significant effort is seen to change this limitation through Nepal government's 10 years Disability Management Action Plan (2016) to address rehabilitation needs nationwide.[15] The plan emphases on escalating rehabilitation services and facilities across the nation and working on generation of skilled workforce through training professionals such as physicians and other allied health workers. This is believed to bridge the gap between growing need of rehabilitation and unavailability of the professionals in Nepal. Additionally, systematic history taking and physical examination plays a vital role in accurate diagnosis.[16,17] Consistent with this notion, the findings of our study suggested that most of the health professionals were familiar with history taking and physical examination related to Physical Medicine and Rehabilitation.

The participants of this study showed good knowledge about specific rehabilitation therapies such as, speech therapy is used to treat dysphagia, heat therapy for chronic musculoskeletal pain and cold therapy for acute phase of sports related musculoskeletal injuries. This result is consistent with the established clinical guidelines and evidence. However, it rather distinct with a study conducted among medical residents that reported a

Figure 2. Heat map showing knowledge scores for different items in the questionnaire

stronger knowledge in the area of rehabilitation such as areas related to central nervous system, electrodiagnostic studies and physical therapy modalities.[18,19] These variations may be directed towards the differences in medical and rehabilitation education across countries which usually changes the focus of health care practitioner toward rehabilitation.

The present study found that most of the health care professionals had a positive attitude towards speech therapy being beneficial in the treatment of aphasia due to stroke or traumatic brain injury and speech disorders such as stuttering. This finding is consistent with the evidence from previous studies that have demonstrated the effectiveness of speech therapy in treating these conditions. For instance, a systematic review and meta-analysis conducted by Bhogal et al. found that speech therapy significantly improved language function in patients with aphasia due to stroke.[20] Another study conducted by Yaruss et al. found that stuttering treatment significantly improved speech fluency and communication-related quality of life in adults who stutter.[21] However, despite the recognized benefits, referral rate is significantly low for physiatrists and speech therapists in Nepal. A recent report estimates that Nepal has approximately 1,345 rehabilitation professionals across seven disciplines. Among them almost 90% accounts physiotherapists. There is only one Nepali PMR doctor registered with the Nepal Medical Council (NMC) and practicing in the country. Additionally, there are only 75 speech and hearing individual providers registered with the Nepal Health Professional Council (NHPC) in the entire country.[15] The limited availability of these specialists may be the reason for low referral rates, as there are fewer options for patients to receive specialized care. Additionally, the available rehabilitation services are mainly delivered through the private sector which is less

accessible for common Nepalese patients. This highlights the persistent need to strengthen education and increase the rehabilitation workforce in the country.

Most of the participants of the present study prioritize neurologic disease to receive rehabilitative care. In contrast, a study conducted in Shiraz, Iran, found that general practitioners prioritized cancer as the first priority for rehabilitation.[12] The preference for neurological disease in Nepal could be attributed to the high burden of neurological diseases, such as stroke and traumatic brain injury, in the region. Additionally, the awareness and referral patterns of physicians in Nepal indicate a good understanding of physiotherapy and its benefits.[22]

The major limitation of this study is unavailability of different health professionals like occupational therapist, Prosthetics and orthotics and nutritionist etc. in the selected hospitals which limited the variations in perspectives. Further studies with larger sample sizes selected in multiple cities are required for accurately representing the population of health professionals in Nepal.

CONCLUSION

The study revealed strong knowledge and positive attitudes towards multidisciplinary rehabilitation among Health professionals in Nepal. However, referrals to certain specialists, like physiatrists and speech therapists, remain unpredictably low. The type of profession is seen to have a substantial role in referral patterns, and factors such as age, gender, experience, and academic qualifications had a minimal influence. The results of this study also suggest that there is a need to improve the referral system for rehabilitation services in Nepal and to increase public awareness about the benefits of rehabilitation services.

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