RESEARCH ARTICLE

Barriers to adherence of stroke rehabilitation: therapist and patient's perspective

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Abstract

Objective: To explore the perspectives of physiotherapists and patients regarding barriers to stroke rehabilitation.

Method: The qualitative, descriptive study was conducted from January to December 2022 after approval from the ethics review board of Riphah International Hospital, Islamabad, Pakistan, and comprised sub-acute and chronic stroke patients and physiotherapists having two years of clinical experience. The sample was raised using non-probability purposive sampling technique from hospitals/clinics in Rawalpindi and Islamabad. Data was collected through semi-structured interviews. During the interviews, the patients were asked about their experiences with rehabilitation programmes and the factors affecting their rehabilitation. The therapists were asked to share their thoughts on the factors affecting the patients' adherence to stroke rehabilitation. Data was subjected to thematic analysis using ATLAS.ti 9.

Results: Of the 30 subjects, 15(50%) were patients; 13(86.6%) females and 2(13.3%) males with mean age 49.5±5.6 years and mean treatment duration 6.3±1.2 months. The remaining 15(50%) subjects were physiotherapists; 13(86.6%) females and 2(13.3%) males, with 8(53.3%) having three years of experience. Four themes were identified from the data related to the physiotherapists: experience and requirements of stroke rehabilitation, barriers to adherence of stroke rehabilitation, suggestions to improve stroke-rehabilitation, and avoiding non-adherence, motivational factors. Also, four themes were identified from the data related to the patients: experience and quality of life after stroke, major and minor barriers in stroke rehabilitation, positive and negative aspects of rehabilitation, and suggestions and factors to enhance participation in rehabilitation programmes.

Conclusion: Multiple patient-related barriers regarding adherence to rehabilitation were noted, including social and physical barriers and financial issues, while therapist-related barriers included time management issues and poor stroke rehabilitation infrastructure.

Key Words: Adherence, Patients, Physiotherapists, Rehabilitation, Stroke.

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Introduction

Stroke is a sudden-onset condition, with long-term consequences, including disability, restricted social participation, depression and emotional problems.[1] It is estimated that about 50 million stroke patients experience cognitive, physical and emotional disorders whereas 25-75% are either partially or fully dependent on their caregivers for their activities of daily living (ADLs).[2] It is the third leading cause of death in Pakistan.[3] The estimated stroke rate is 250 per 100,000 which indicates that each year 350,000 new stroke patients are diagnosed in the country.[4] It is also considered the leading cause of disability, reduced mobility and quality of life (QOL).[5] The major risk factors associated with high prevalence of stroke in Pakistan include hypertension (HTN), obesity and lifestyle.[6] About one-third of stroke survivors develop cognitive impairment.[6] In Pakistan, despite the advancement in the healthcare system, the management of stroke and rehabilitation is still insignificant.[7]

Increased fall risks, motor function deficits and fall-related injuries can have a significant impact on patients' mobility as well as their daily activities and social participation.[8] Hence, cognitive and motor deficits not only increase long-term disability, but also increase healthcare cost, consequently increasing hospital admissions and mortality rates.[9] Kerry P et al. suggested patient-related factors grouped into non-modifiable (age, ethnicity, gender and other illnesses) and modifiable (self-motivation, confidence, belief on exercise and physical therapist, willingness to follow the treatment plan) characteristics.[10] Maryam K et al. reported that patient-related factors to poor adherence were stroke-related

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functional disorders, age-related disability, personal belief in rehabilitation effectiveness, social support from family and community, and financial status.[2] A study in Pakistan by Mubashirah et al. reported lack of awareness of general public and general practitioners about warning signs and developing symptoms of stroke.[7, 11] Patients reported that it was communication which enhanced the therapist-patient relationship to determine the desired treatment outcome.[12] A study in Iran by Maryam et al. suggested that due to limited number of public rehabilitation centres, patients visited private centres to achieve satisfactory results where services are expensive.[2] Naqvi et.al reported that exhaustive therapy, costly treatment, delayed results, are treatment-related significant issues related to non-adherence of patients to physiotherapy in Pakistan.[13,14] Majority of physical therapists reported self-management to be challenging in inpatient stroke unit and there was pressure on the hospital to release patients quickly.[15] Physiotherapists frequently saw self-management as a process in which stroke victims were anticipated to actively participate in their rehabilitation and manage their recovery and health.[15] Inadequate team collaboration and coordination and limited knowledge of acute stroke care also contributed to non-adherence.[16] A few therapists reported a sense of disconnectedness and marginalisation, especially in the early stages of care.[16] Their limited involvement prohibited them to engage with the patients or having the opportunity to inform the patients about the significance of self-practicing techniques after discharge.[16]

The current study was planned to explore the perspectives of physiotherapists and patients regarding barriers to stroke rehabilitation.

Subjects and Methods

The qualitative, descriptive study was conducted from January to December 2022 after approval from the ethics review board of Riphah International Hospital, Islamabad, Pakistan. The sample was raised using non-probability purposive sampling technique from hospitals/clinics in Rawalpindi and Islamabad. Those included were physiotherapists having two years of clinical experience, and sub-acute and chronic stroke patients who were able to establish meaningful verbal communication and had been receiving therapy for at least 2 weeks.

After taking informed consent from the participants, data was collected through semi-structured interviews using a questionnaire that was validated by an expert (Table 1). During the interviews, the patients were asked about their experiences with rehabilitation programmes and the factors affecting their rehabilitation. The therapists were asked to share their thoughts on the factors affecting the patients' adherence to stroke rehabilitation. Each interview lasted 40-45 minutes. Data saturation was achieved when no new perspectives or themes could be deduced from the data. The interviews were conducted in Urdu, the national language, and they were audio/video recorded with permission from the participants. The recorded data was transcribed in Urdu and its validity was checked by the participant concerned. Subsequently, the transcript was translated into English. The translation was validated by two researchers. The in-depth reading of the final transcript was done by two more researchers. The final version was subjected to thematic analysis using ATLAS.ti 9.

Table-1: The study questionnaire.

S.No	Patient-Related	Physiotherapist-Related
1	Can you please share your experience regarding your illness and Quality of life?	Please share your experience working with stroke patient.
2	Please share your experience/perception regarding rehabilitation/physical therapy you have received.	Please briefly share the requirement to achieve a complete stroke rehabilitation.
3	Please share the barriers to achieve the complete Rehabilitation/physical training.	Please share the barriers for achieving standard stroke rehabilitation: Patient, PT, Clinical setting/administrative
4	In your opinion, what factors help you more actively participate in rehabilitation programmes?	Please share how to improve the adherence of patient in stroke rehabilitation programmes?
5	Please give some suggestions to other stroke patients/community/PT.	Please share/suggest how to improve stroke rehabilitation to PT colleagues.
6	What interested or disinterested you when you are involved in the rehabilitation programmes?	What do you suggest can be done to avoid patients from going into non-adherence?
7	What do you think about the positive and negative aspects of the rehabilitation programmes?	Please enlist the barriers in a rank from major barriers to the minor one?
8	How do you feel that the rehabilitation programme is affecting your activity limitations?	In your opinion what would be the motivational factors that enhance adherence, if any?
9	What do you think can be done to improve rehabilitation programmes?	

Results

Of the 30 subjects, 15(50%) were patients; 13(86.6%) females and 2(13.3%) males with mean age 49.5±5.6 years and mean treatment duration 6.3±1.2 months (Table 2).

Table-2:Demographical characteristics of the patients (n=15).

Demographics	n(%)	Mean±SD
1 Age (years)	49.5	± 5.6
2 Incident age (years)	49.4	± 5.7
3 Treatment duration (months)	6.3	± 1.2
4 Gender		
Males	2 (13.3%)	
Females	13 (86.6%)	

SD: Standard deviation.

Table-3: Demographical and professional characteristics of the physiotherapists (n=15).

Demographics		n(%)
1 Specialty	Neuromuscular therapist	9 (60%)
	Cardiac therapist	2 (13.3%)
	Musculoskeletal therapist	4 (26.6%)
2 Years of experience		
2 years of experience	Musculoskeletal Therapist	5 (33.3%)
3 years of experience	Neuromuscular Therapist	8 (53.3%)
4 years of experience	Cardiac therapist	2 (13.3%)
3 Gender	Males	2 (13.3%)
	Females	13 (86.6%)

The remaining 15(50%) subjects were physiotherapists; 13(86.6%) females and 2(13.3%) males, with 8(53.3%) having three years of experience (Table 3). Four themes were identified from the data related to the physiotherapists (Table 4).

The first theme was the experience and requirements of stroke rehabilitation. The physiotherapists (PTs) were asked about their experience working with stroke patients. The majority of them had good experiences despite long-term treatment. They emphasised the treatment to be time-consuming, while the patients were generally being non-cooperative at times and irritated due to slow progress, and unwillingness of family members to bring the patient for treatment.

"***Patients are not very cooperative and those around them are not ready to undergo physiotherapy or rehab programmes. Teamwork of other healthcare professionals is necessary.***"(PT 01)

"***It is a time-consuming therapy. Incorporation of new techniques is necessary. Good cooperation between physiotherapist and patient is necessary.***"(PT 08)

"***I had a good experience with patients. Patients also have transportation and financial problems. Administrative/clinical settings lack stroke infrastructure and equipment.***" (PT 10)

For complete stroke rehabilitation, electrotherapy modalities, assistive devices and an appropriate infrastructure was required. The therapists emphasised on devising a comprehensive and appropriate plan of care for each patient. Goal-oriented therapy was encouraged. The therapists reported that at times, hospitals and clinical setups lack equipment. Awareness about patient's impairments was necessary, and active participation of the patients had to be ensured. It was emphasised that weekly assessments should be made.

"***I have faced time-management issues. Use of goal-oriented approach is necessary***." (PT 05)

• ***"Use of modalities and assistive devices is necessary."*** (PT 07)

•"***A comprehensive plan should be devised. Patient and family education / counselling is extremely crucial.***" (PT 13)

The second theme was barriers to adherence of stroke rehabilitation. When asked about barriers faced by the patients, non-awareness about physiotherapy, transportation issues, financial problems, tiredness and pain after exercise were reported. Delayed results lead to frustration/depression and patients leaving the rehabilitation programme or missing sessions. As the physiotherapists could not give enough time to individual patients, they had time management issues. The ratio of therapists to patient was less than ideal. Poor infrastructure of stroke management in administrative/clinical settings and lack of availability of equipment were also the factors reported.

"***Non-awareness of physiotherapy among patients is mostly seen***." (PT 03)

"***Physiotherapists-to-patients ratio is less than required. Frequent reassessments are beneficial. Videotape sessions are needed to enhance motivation***". (PT 04)

"***I have faced time-management issues. Use of goal-oriented approach in necessary***." (PT 05)

"***Patients reported post-exercise pain and fatigue.***" (PT 06)

"I ***had a good experience with patients. Patients also have transportation and financial problems. Administrative/clinical settings lack stroke infrastructure and equipment***." (PT 10)

The third theme was suggestions to improve stroke rehabilitation and avoid non-adherence. Suggestions to improve stroke rehabilitation included teamwork with other healthcare workers, like occupational therapists,

Table-4: Comments made by the physiotherapists (PTs) along with English translation.

"Patients are not very cooperative and those around them are not ready to undergo physiotherapy or rehab programmes. Teamwork of other healthcare professionals is necessary". (PT 01)	"مریض بہت زیادہ تعاون کرنے والے نہیں ہیں اور ان کے آس پاس کے لوگ فزیو تھراپی یا بحالی کے پروگراموں سے گزرنے کے لیے تیار نہیں ہیں۔ صحت کی دیکھ بھال کرنے والے دیگر پیشہ ور افراد کا ٹیم ورک ضروری ہے۔" (PT-01)
"Good hands-on skill is required. A proper home plan should be guided to the patient. Participation in group activities is encouraged". (PT 02)	"اچھی مہارت کی ضرورت ہے۔ ایک مناسب گھر کا منصوبہ مریض کی رہنمائی کرنا چاہیے۔ گروپ سرگرمیوں میں شرکت کی حوصلہ افزائی کی جاتی ہے۔" (PT-02)
"Non-awareness of physiotherapy among patients IS mostly seen" (PT 03)	"مریضوں میں فزیوتھراپی کی عدم آگاہی زیادہ تر دیکھی جاتی ہے" (PT-03)
"Physiotherapists to patients ratio is also less. Frequent reassessments are beneficial. "Videotape sessions to enhance motivation". (PT 04)	"فیزیو تھراپسٹ اور مریضوں کا تناسب بھی کم ہے۔ بار بار دوبارہ تشخیص فائدہ مند ہے۔ "حوصلہ افزائی کو بڑھانے کے لیے ویڈیو ٹیپ سیشنز"۔ (PT-04)
"*I have faced time-management issues.* Use of goal oriented approach. (PT 05)	"میں نے ٹائم مینیجمنٹ کے مسائل کا سامنا کیا ہے۔ مقصد پر مبنی نقطہ نظر کا استعمال۔ (PT-05)
"Patients reported post exercise pain and fatigue" (PT 06)	"مریضوں نے ورزش کے بعد درد اور تھکاوٹ کی اطلاع دی" (PT-06)
"Use of modalities and assistive devices is necessary. (PT 07)	"طریقہ کار اور معاون آلات کا استعمال ضروری ہے۔ (PT 07)
"It is time consuming therapy. Incorporation of new techniques is necessary. Good cooperation between physiotherapist and patient is necessary".(PT 08)	"یہ وقت لینے والی تھراپی ہے۔ نئی تکنیکوں کو شامل کرنا ضروری ہے۔ فزیوتھراپسٹ اور مریض کے درمیان اچھا تعاون ضروری ہے۔" (PT-08)
"The good attitude of therapists highly motivated the patients". (PT 09)	"معالج کے اچھے رویے نے مریضوں کو بہت زیادہ حوصلہ دیا"۔ (PT-09)
"I had a good experience with patients. Patients also have transportation and financial problems. Administrative/clinical settings lack stroke infrastructure and equipment" (PT 10)	"مریضوں کے ساتھ میرا اچھا تجربہ تھا۔ مریضوں کو آمدورفت اور مالی مسائل کا سامنا ہے۔ انتظامی/طبی ترتیبات میں اسٹروک کے بنیادی ڈھانچے اور آلات کی کمی ہے" (PT-10)
"Comprehensive plan should be devised. *Patient and family education /counseling is extremely crucial".* (PT 13)	"جامع منصوبہ تیار کیا جانا چاہیے۔ مریض اور خاندان کی تعلیم/مشورہ انتہائی اہم ہے۔" (PT-13)

medical doctors and psychologists. Some physiotherapists suggested counselling patients and their families about long-term stroke treatment. Incorporating new techniques into treatment programmes and modifying plans, focussing more on quality than quantity, and frequent assessments were also

Table-5: Comments made by the patients (P) along with English translation.

"Positive attitude of therapist motivated me." (P 02)	• "تھراپسٹ کے مثبت رویے نے مجھے حوصلہ دیا۔" (P-02)
"It is difficult to do household chores. Exercises help you to relax. I feel motivated by positive treatment environment. Some setups lack basic equipment of stroke. My therapist does not give full time as he/she has other patients to attend. (P 03)	• "گھریلو کام کرنا مشکل ہے۔ مشقیں آپ کو آرام کرنے میں مدد کرتی ہیں۔ میں مثبت علاج کے ماحول سے حوصلہ افزائی محسوس کرتا ہوں۔ کچھ سیٹ اپ میں فالج کے بنیادی آلات کی کمی ہے۔ میرا تھراپسٹ پورا وقت نہیں دیتا کیونکہ اس کے پاس دوسرے مریض موجود ہوتے ہیں۔ (P-03)
"It is difficult to visit hospital everyday. (P 04)	• "روزانہ ہسپتال جانا مشکل ہے۔ (P-04)
"I forget exercises once I go back home. I feel difficult to transfer from wheelchair to car and vice versa. "Timely physiotherapy can prevent long-term disabilities. Keep patience. Videotaping sessions helped me remember exercises". (P 05)	• "جب میں گھر واپس جاتا ہوں تو میں مشقیں بھول جاتا ہوں۔ مجھے وہیل چیئر سے کار میں اور اس کے برعکس منتقل کرنے میں مشکل محسوس ہوتی ہے۔ "بروقت فزیوتھراپی طویل مدتی معذوری کو روک سکتی ہے۔ صبر رکھیں۔ ویڈیو ٹیپنگ سیشن نے مجھے مشقیں یاد رکھنے میں مدد کی۔ (P-05)
"I require assistance all the time. I feel bored and disinterested due to repetitive exercises". (P 06)	• "مجھے ہر وقت مدد کی ضرورت ہوتی ہے۔ بار بار کی جانے والی مشقوں کی وجہ سے میں بور اور عدم دلچسپی محسوس کرتا ہوں۔ (P-06)
"I feel depressed, sad and hopeless. (P 09)	• "میں اداس، اداس اور نا امید محسوس کرتا ہوں۔ (P-09)
"I am unable to eat, drink and walk. "I feel hopeless when the outcome cannot be achieved within expected time. "Follow-up is important for recovery."(P 07)	• "میں کھانے پینے اور چلنے پھرنے سے قاصر ہوں۔ "میں مایوسی محسوس کرتا ہوں جب نتیجہ متوقع وقت کے اندر حاصل نہیں کیا جاسکتا ہے۔ "بازیابی کے لیے فالو اپ اہم ہے۔" (P-07)
"I had better recovery when I did immediate physiotherapy after stroke". (P 08)	• "جب میں نے فالج کے بعد فوری طور پر فزیو تھراپی کی تو مجھے بہتر صحت یابی ہوئی"۔ (P-08)
"I feel therapy is very expensive. (P 09)	• "مجھے لگتا ہے کہ علاج بہت مہنگا ہے۔ (P-09)
"I feel tired and painful after exercise. I feel motivated when my family and therapist are supportive". (P 10)	• "میں ورزش کے بعد تھکا ہوا اور تکلیف دہ محسوس کرتا ہوں۔ جب میرا خاندان اور معالج معاون ہوتے ہیں تو میں حوصلہ افزائی کرتا ہوں"۔ (P-10)
"After undergoing various physiotherapy sessions I can do my own chores easily and I can walk". "Positive attitude of therapist motivated me." (P 12)	• "مختلف فزیو تھراپی سیشنز سے گزرنے کے بعد میں اپنے کام آسانی سے کر سکتا ہوں اور میں چل سکتا ہوں"۔ "تھراپسٹ کے مثبت رویے نے مجھے حوصلہ دیا۔" (P-12)

suggested. Some suggested working on manual therapy more than electrotherapy and having a good hands-on skill.

"***Patients are not very cooperative and those around them are not ready to undergo physiotherapy or rehab programmes. Teamwork of other healthcare***

professionals is necessary."(PT 01)

"***Good hands-on skill is required. A proper home plan should be guided to the patient. Participation in group activities should be encouraged***." (PT 02)

"***Frequent reassessments are beneficial. Videotape sessions are needed to enhance motivation***." (PT 04)

Most stroke patients wished to recover faster, but due to delayed outcomes, they either missed sessions or left the treatment programme. Hence, in order to avoid non-adherence, the physiotherapists suggested that patient and family education, counselling and motivation were very important. As patients had difficulty coming every day for the treatment, it was suggested to ask patients to come on alternate days, and to provide home treatment when required. Inclusion of interesting and new exercises to avoid fatigue and boredom was also suggested.

"***It is a time-consuming therapy. Incorporation of new techniques is necessary. Good cooperation between physiotherapists and patients is necessary***." (PT 08)

"***A comprehensive plan should be devised. Patient and family education /counselling is extremely crucial.***" (PT 13)

The fourth theme was motivational factors to enhance adherence to stroke rehabilitation. Most of the therapists encouraged patients to participate in group activities. Patient and family education and counselling, and motivating patients to lower their dependency were critical factors. Physiotherapist's attitude was also considered important during treatment programme as it highly influenced patient's progress. Hence, it was advised to have a positive and empathetic attitude. It was also suggested to videotape patient's sessions in order to enhance motivation, and increase cooperation between the physiotherapist and the patient.

"***Good hands-on skill is required. A proper home plan should be guided to the patient. Participation in group activities should be encouraged***." (PT 02)

- ***"Physiotherapists-to-patients ratio is less than required. Frequent reassessments are beneficial. Videotape sessions to enhance motivation."*** (PT 04)
- ***"It is a time-consuming therapy. Incorporation of new techniques is necessary. Good cooperation between physiotherapist and patient is necessary.***" (PT 08)
- ***"The good attitude of therapists highly motivates the patients***." (PT 09)

There were four themes that were identified from the data related to the patients (Table 5). The first theme was experience and QOL after stroke. Most of the patients said they were depressed, sad and hopeless. Before the stroke, they were completely independent, but after the stroke, they required assistance all the time. They had difficulty eating, drinking, walking, and getting out of bed. Some also reported to have felt weakness in their limbs. They could not resume their household or other chores.

"***It is difficult to do household chores. Exercises help you to relax. I feel motivated by positive treatment environment. Some setups lack basic equipment of stroke. My therapist does not give full time as he/she has other patients to attend to***." (P 03)

"***I require assistance all the time. I feel bored and disinterested due to repetitive exercises***." (P 06)

"***I am unable to eat, drink or walk. I feel hopeless when the outcome cannot be achieved within the expected time. Follow-up is important for recovery***." (P 07)

"***I feel depressed, sad and hopeless. I feel the therapy is very expensive***." (P 09)

The majority of patients had good experience of rehabilitation after stroke. Their condition improved. Some patients reported they were given better care when admitted to the hospital as they received regular sessions. However, once they got discharged, they had difficulty coming every day to the hospital/clinic for receiving treatment.

"***Positive attitude of the therapist motivated me.***" (P 02)

"***After undergoing various physiotherapy sessions, I can do my own chores easily and I can walk***."(P 12)

The second theme was major to minor barriers in stroke rehabilitation experienced by the patients. As stroke patients faced disability and, therefore, required assistance at all times from their family members, the major barrier which they faced was coming daily to hospital/clinic for treatment. They either got tired/fatigued or felt pain after prolonged sessions. They wanted to recover faster, but when they did not get good outcome within the expected time they felt irritated, less interested, and hopeless. A few patients also reported that their physiotherapists did not give them enough time, and also had issues transferring from car to wheelchair and then to the hospital bed for treatment. Patients also faced affordability issues as therapy is prolonged and expensive. Some also reported about the lack of availability of assistive devices or basic equipment.

"It is difficult to do household chores. Exercises help you to relax. I feel motivated by positive treatment

environment. Some setups lack basic equipment of stroke. My therapist does not give full time as he/she has other patients to attend to." (P 03)

"***It is difficult to visit hospital every day***." (P 04)

"I require assistance all the time. I feel bored and disinterested due to repetitive exercises". (P 06)

"***I am unable to eat, drink or walk. I feel hopeless when the outcome cannot be achieved within the expected time. Follow-up is important for recovery.***" (P 07)

"***I feel depressed, sad and hopeless. I feel therapy is very expensive***." (P 09)

"***I feel tired and am in pain after the exercise. I feel motivated when my family and therapist are supportive.***" (P 10)

The third theme identified was positive and negative aspects of rehabilitation. The patients felt motivated when they saw themselves getting better and able to resume their activities. The positive attitude of the therapist encouraged them a lot, and they kept regularly visiting for their therapy. Patients also reported doing their follow-up regularly to have better and faster recovery. A few emphasised that their family support and encouragement and positive treatment environment and therapist attitude kept them adherent to their treatment programme. Majority of the patients had a good outcome because of immediate physiotherapy after stroke.

"***It is difficult to do household chores. Exercises help you to relax. I feel motivated by positive treatment environment. Some setups lack basic equipment of stroke. My therapist does not give full time as he/she has other patients to attend to***". (P 03)

"***I had better recovery when I did immediate physiotherapy after the stroke***." (P 08)

"***I feel tired and am in pain after the exercise. I feel motivated when my family and therapist are supportive***." (P 10)

Negative aspects included expensive therapy, prolonged sessions, patients getting tired and feeling pain due to over-exercising. As most of the patients were illiterate, they tended to forget their exercises. The patients could not come for therapy every day, and some reported that the therapists did not give them enough time. They also had problems of transferring from car to wheelchair or vice versa.

"***It is difficult to do household chores. Exercises help you to relax. I feel motivated by positive treatment environment. Some setups lack basic equipment of stroke. My therapist does not give full time as he/she has other patients to attend to***." (P 03)

"***I forget exercises once I go back home. I feel difficulty in transferring from wheelchair to car and vice versa. Timely physiotherapy can prevent long-term disabilities. Keeping patience is important. Videotaping sessions helped me remember the exercises***." (P 05)

The fourth theme identified was factors enhancing participation in rehabilitation programmes. The patients suggested making physiotherapy available to and affordable by all, and that the therapists should give proper time to each patient and keep a positive attitude. Good cooperation between therapist and patient was necessary. Raising awareness programmes about physiotherapy and establishing small physiotherapy centres were also suggested. Physiotherapists, it was said, should make comprehensive plan of care to avoid fatigue and boredom. It was also suggested that daily activities should be included in the exercise programme, and videotaping the session to motivate and encourage the patient. A few suggested that treatment should be properly explained, and, if possible, it should be written down. Some patients favoured participating in group activities.

"***It is difficult to do household chores. Exercises help you to relax. I feel motivated by positive treatment environment. Some setups lack basic equipment of stroke. My therapist does not give full time as he/she has other patients to attend to.***" (P 03)

"***I forget exercises once I go back home. I feel difficulty in transferring from wheelchair to car and vice versa. Timely physiotherapy can prevent long-term disabilities. Keeping patience is important. Videotaping sessions helped me remember the exercises***." (P 05)

"***I am unable to eat, drink or walk. I feel hopeless when the outcome cannot be achieved within the expected time. Follow-up is important for recovery***."(P 07)

"***After undergoing various physiotherapy sessions, I can do my own chores easily and I can walk. Positive attitude of the therapist motivated me***." (P 12)

Discussion

In the current study, the factors contributing to non-adherence to stroke rehabilitation programme included sadness, hopelessness, depression, mood swings and less tolerance to exercises. Also noted were elements like fatigue, post-exercise pain, forgetfulness, not following home plan, expensive therapy, and prolonged treatment.

A study in Iran concluded that age-related impairment, stroke-related functional problems, individual belief in the efficacy of rehabilitation, financial situation, and family support were patient-related factors affecting adherence to rehabilitation.[2] Patients were initially well-adherent to physiotherapy when they had pain and disability, but it gradually decreased either due to non-supportive family members or financial issues, as has been reported earlier by a study in Spain.[17] Depression is accompanied by emotional and behavioural problems.[18] For instance, some participants described feeling "angry," "stubborn" and "being in denial", while others said they expected to fully recover to their pre-stroke state, but were unable to achieve the expected outcome, and felt unhappy as a result.[18] Similarly, in the current study most of the patients reported feeling depressed, sad or hopeless about their illness and disability, and felt dejected when they could not achieve the expected result as they wished to recover quickly. A study on the prevalence of adherent patients receiving physiotherapy for back pain over a period of four training sessions, reported that 87% of patients were found to be punctual for their appointments, but only 72% were found to be adhering to home-based regimens.[19]

Social support is considered essential to stroke recovery, because without it, patients may feel isolated and demotivated, leading to apathy, frustration and depression.[20] A few of these findings were similar to the current study as well. Financial issue was considered another major contributing barrier to adherence. Such findings were mostly similar to a study which reported that medication, rehabilitation services, environmental changes, and transportation frequently required financial resources, and many stroke victims do not have access to the services required for the best recovery because of the lack of such resources.[18]

Patients frequently lack sufficient awareness about their condition and course of treatment. According to numerous studies, forgetfulness contributes to patients' failure to keep appointments or take their prescribed medications.[21] The current findings support such reports. Therefore, some of the patients suggested having their treatment plan written down or videotaping their sessions to make it easier for them to remember.

The factors related to the physiotherapists were patient-physiotherapist interaction, time management issues, non-cooperative patients, lack of basic equipment, poorly devised exercise regimen, non-awareness of physiotherapy among the patients, reassessments, focussing more on electrotherapy, and referral obstacles. The factors were similar to a previous study.[2] By creating effective communication, offering high-quality education, and including patients in decision-making and planning for care and therapy, members of the rehabilitation team can encourage patients to adhere to rehabilitation.[2] The current findings is also supported by literature.[18]

Chang et al. summarised therapists' views regarding strategy, underlining problem-solving skills, leading to increased real-life reengagement, independence and improved client-family communication.[22] Marshall et al. reported that it was significant for physiotherapists to provide a thorough explanation to ensure better patient understanding.[23] This can be enhanced by using different techniques, including sketching images, mirrors, provision of exercise sheets, and demonstrating the appropriate activity.[23] As most of the current patients were illiterate, the therapists also described similar techniques to make it easier for the patients to follow their treatment protocol.

A study in Iran suggested that due to limited number of public rehabilitation centres, patients visited private centres to achieve satisfactory results where services were expensive.[2] In Pakistan, though we have private rehabilitation centres that are no doubt expensive, the public-sector setups lack basic necessary equipment, and have poor infrastructure for stroke rehabilitation.

The current study has limitations as data-collection sites were limited in number within the study area. Also, the difference in socioeconomic status of the subjects was not varied.

Future studies should also explore the perspective of caregivers and other healthcare professionals. Further studies can be conducted to highlight the social support from community and focus group discussions (FGDs) can be added for further exploration of perspectives.

Conclusion

Multifaceted barriers to adherence in stroke rehabilitation from both patient and therapist perspectives were noted. Physical, cognitive, emotional and social challenges hindered patient engagement, while the therapists faced communication barriers, time constraints and resource limitations. Addressing these barriers requires tailored interventions, improved communication, and systemic reforms within healthcare institutions. By fostering patient-centred care and interdisciplinary collaboration, adherence can be enhanced, ultimately improving outcomes for stroke survivors.

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THT: Design, data acquisition, analysis, interpretation, drafting and final approval.

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SJ: Concept, data analysis, interpretation, drafting, revision and final approval.