

# A Study of the Current Status of Rehabilitation Intervention in the Clinical Recovery of Stroke Patients

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## Abstract

At the present stage, rehabilitation therapy, as a comprehensive recovery aid, promotes the recovery effect of stroke patients, and plays an indispensable value in helping patients to recover function and improve the quality of life. The overall trend of the intervention of rehabilitation therapy in stroke is favourable, and it is an effective treatment for stroke patients to be assisted by rehabilitation therapy based on independent clinical treatment with Western medicine, independent clinical treatment with Chinese medicine, or combined treatment with Chinese and Western medicine. This advantage is still prominent for stroke patients in different periods. However, the degree of intervention of rehabilitation therapy in stroke is still unsatisfactory, as the patient's willingness, the support of family strength, the imbalance of medical resources, and the limitations of the level of science and technology are the reasons for the limitation, which affects that the functional value of rehabilitation therapy is not fully realised in the recovery process of the patients with stroke, and this makes the development of rehabilitation therapy in the intervention of stroke a long way to go.

**Keywords:** rehabilitation, stroke, cause of limitation, value functioning

## 1. Introduction

With the development of society and economy and the ageing of the population, the incidence and disability rate of stroke is on the rise year by year, bringing a heavy burden to individuals, families and society. Rehabilitation therapy is an important part of stroke recovery, which is significant for improving patients' dysfunction and quality of life. However, there are many problems with the current status of rehabilitation therapy intervention in the clinical recovery of stroke patients in China. Therefore,

this study aims to explore the current situation of rehabilitation therapy intervention in force trauma recovery of stroke patients, analyse the existing problems, and provide a basis for optimizing the rehabilitation therapy program and improving the effect of rehabilitation therapy.

## 2. Rehabilitation Intervention Situation of Stroke

A questionnaire survey of stroke patients in a tertiary care hospital was conducted to collect

basic information about the patients, and statistics were made on the related diseases, whether rehabilitation was intervened, first or recurrent, age, and family size. There were 281 stroke patients, 169 men and 112 women, with a mean age of  $(60.21 \pm 10.12)$  years. The survey showed that those who were older and did not receive rehabilitation treatment had poorer functional recovery and lower social participation.

### 2.1 The Effect of Rehabilitation Therapy Combined with Different Clinical Treatment Modalities Presented

#### 2.1.1 The Effect of Western Clinical Treatment Combined with Rehabilitation Therapy on Stroke

Stroke patients suffer from different degrees of neurological dysfunction such as speech disorder, motor disorder, and cognitive impairment. Western clinical treatment can effectively control the development of the disease, but only through basic Western

angioplasty or stenting to assist some anticoagulant, anti-spasmodic, anti-platelet aggregation, as well as antihypertensive, lipid-lowering and other cerebrovascular medications to restore cerebral vascular smoothness, is not enough to completely restore the damaged neurological function of the subsequent stage of stroke patients. Relevant studies indicate that the degree of recovery of neurological deficits as a comparative standard, the quantitative stroke patients were randomly divided into two groups, one group as a conventional treatment group, one group for rehabilitation therapy intervened in the conventional treatment of rehabilitation therapy group, statistics of the number of people in the two groups, age, disease, gender and the degree of neurological deficits, after a series of recovery sessions as shown in Table 1. The results show that the conventional group of Western medicine drug treatment recovery rate and neuromotor and other functions were significantly lower than those of the rehabilitation therapy group.

**Table 1.**

Group	Before treatment	28d after treatment	45d after treatment
Rehabilitation group	22.9±6.64	13.56±8.52	9.17±8.20
Conventional group	23.03±7.61	18.13±8.87	16.03±8.38
p	>0.05	< 0.05	< 0.05

Western medicine treatment of stroke patients is often accompanied by a variety of comorbidities and sequelae in the late stage, the rate of occurrence of more muscle strength loss, muscle atrophy, muscle stiffness, etc., the situation is more serious will cause patients to lose the ability to live independently. For stroke patients with related conditions, rehabilitation therapy can provide appropriate physiotherapy methods for targeted intervention and control, and future research can further explore the specific mechanisms of Western medicine combined with rehabilitation therapy, optimise the treatment plan and further improve the therapeutic effect.

#### 2.1.2 Effectiveness of Chinese Medicine Clinical Treatment Combined with Rehabilitation Therapy on Stroke

Chinese medicine, acupuncture, massage and

other TCM treatments can play an effective and positive role in the recovery of limb function of stroke patients. Taking acupuncture, massage and acupressure combined with rehabilitation therapy as an example, the improvement of limb mobility and daily life level of patients in the late stage of stroke was analysed accordingly, and the recovery of stroke patients with rehabilitation training alone as the control group was compared with that of stroke patients with rehabilitation therapy combined with acupuncture, massage and acupressure programme as the observation group, excluding the effects of other irrelevant factors, as shown in Table 2. The study showed that acupuncture combined with rehabilitation therapy was more advantageous compared to rehabilitation therapy alone.

**Table 2.** Comparison of ADL scores between the two groups

Group	n	Before treatment	After treatment	t	p
Observation group	42	61.05±6.94	82.29±7.33	13.637	0.000
Control group	42	62.20±7.44	71.03±8.35	5.117	0.000
t		0.733	6.568		
p		0.466	0.000		

Compared with the single use of rehabilitation training for stroke patients, the application of specific Chinese medicine on top of it can make the rehabilitation effect of stroke patients more significant, and studies have shown that the combination of specific rehabilitation methods with Chinese medicine can significantly accelerate the healing process of patients with stroke.

The acupuncture method is also the majority choice for TCM practitioners during stroke rehabilitation, with Baihui and Shusanli being the key acupuncture points for acupuncture. The physiological functions of patients such as swallowing and articulation can be improved to a certain extent by using ordinary acupuncture methods, and rehabilitation training alone can also help patients recover from swallowing disorders, but acupuncture combined with TCM rehabilitation training is more advantageous than the former in recovering from swallowing dysfunction in stroke patients. Relevant clinical studies have also confirmed this view.

Stroke patients need to undergo a comprehensive physical examination before receiving acupuncture treatment according to the condition and individual differences of the patient's choice such as warm needles, electroacupuncture, moxibustion and so on. Rehabilitation therapy can improve the recovery level of stroke patients through physical therapy, functional training and psychological counselling. The combination of Chinese medicine and rehabilitation therapy in stroke has a good application prospect, and the practical application of Chinese medicine and rehabilitation therapy has the advantages of Chinese medicine theory and modern rehabilitation medicine, which promotes the further development of the combination of Chinese medicine and rehabilitation therapy in stroke, however, the recognition of the combination of Chinese medicine and rehabilitation therapy is not enough. Statistical

relevant data show that in the study of the proportion of different modalities of intervention in Chinese medicine, acupuncture therapy is the main means of treatment at about 42.31%, traditional Chinese medicine accounts for 11.12%, moxibustion accounts for 2.32%, the proportion of integrated rehabilitation therapy of Chinese medicine is 6.68% and the proportion of other effective treatments in Chinese medicine accounts for 37.57% and so on. The proportion of integrated rehabilitation treatment in Chinese medicine is relatively low.

#### 2.1.3 Effectiveness of Combined Chinese and Western Medicine Clinical Treatment and Rehabilitation Therapy on Stroke

Clinical observations made in the purely Western medicine treatment group and the combined Chinese and Western medicine treatment group confirmed that the recovery rate of the combined Chinese and Western medicine treatment is almost 1.859 times higher than that of the purely Western medicine treatment in terms of the recovery of stroke patients. Comparing the effect of conventional Western medicine and rehabilitation therapy as a controlled study with the combined Western and Chinese medicine and rehabilitation therapy group, the clinical study shows that the combination of Western and Chinese medicine and rehabilitation therapy as a whole has a better effect on the recovery of stroke patients than the former.

In the treatment of patients with partial cerebral dysfunction due to disruption of blood supply to the brain or rupture of blood vessels, the method of combining traditional Chinese and Western medicine with rehabilitation therapy was significantly more effective in the recovery effect and CNS score of patients with stroke than the traditional Western medical therapy when compared with the CNS deficit capacity during the recovery period of the treatment. Under the auxiliary treatment of rehabilitation exercise, some of the functional functions of the patient's

brain as well as the involved daily life ability and so on had a relatively stable recovery effectiveness on the original basic level.

Chinese and Western medicine combined with rehabilitation therapy is an effective comprehensive medical model for stroke patients, and the theory of rehabilitation therapy intervenes in the relative perfection of Chinese and Western medicine combined treatment of stroke, and the practical application has been gradually promoted, which makes full use of the advanced techniques and therapies of rehabilitation therapy while giving full play to the unique advantages of the combination of Chinese and Western medicine. It is worthwhile to widely promote the clinical application of this treatment method to effectively improve the recovery of stroke patients. However, further research is needed to explore the optimal treatment plan and mechanism of combined Chinese and Western medicine rehabilitation therapy for stroke patients, to provide better rehabilitation services for stroke patients.

## *2.2 Effectiveness of Rehabilitation Therapy on Stroke Patients in Different Periods*

Through collecting and collating relevant clinical practice studies in recent years, we make comparative analyses on the selection of rehabilitation therapy intervention for stroke patients in different periods.

### *2.2.1 Effect of Rehabilitation Therapy on Acute Stroke Patients*

Acute stroke is a serious condition that requires timely intervention and treatment. Studies have found that early initiation of rehabilitation therapy can significantly improve the prognosis of stroke patients. A comparison of the efficacy of acute stroke patients treated with conventional medication and stroke patients treated with conventional medication with simultaneous intervention of rehabilitation therapy shows that timely rehabilitation of acute stroke patients can reduce the risk of disability and improve the ability of stroke patients to take care of themselves in the subsequent period of life. The results show that timely rehabilitation for acute stroke patients can reduce the risk of disability and improve the ability of stroke patients to take care of themselves. Comparative studies have shown that a larger proportion of acute stroke patients who received early rehabilitation regained the ability to walk independently within the same period, whereas

only a small proportion of those who did not receive rehabilitation were able to achieve this goal within the same period. Secondly, in a randomised controlled trial of acute stroke patients, it was found that the speed of limb function recovery was relatively fast among patients who received rehabilitation therapy. Observations of grip strength, balance, walking ability, and walking speed in acute-phase stroke patients over three months of receiving rehabilitation therapy found that all of the above functions were significantly improved in patients who were also intervening in early rehabilitation therapy.

In the experimental analysis of the degree of neurological deficits in acute stroke patients, under the same base case, the total effective rate of clinical recovery of interventional rehabilitation therapy is 1.32 times that of the control group, of which the probability of basic recovery is 1.75 times that of the group that did not receive rehabilitation therapy, and the majority of the patients who received rehabilitation therapy showed better results in the recovery process, and very few patients had no effect in the recovery process; as the inefficiency of the control group without interventional rehabilitation therapy is significantly higher than that of the experimental group that received rehabilitation therapy at an early stage, the total effective rate of the latter group highlights a greater advantage. The inefficiency of the control group, which did not intervene in rehabilitation, was significantly higher than that of the experimental group, which received rehabilitation at an early stage, i.e., the latter's total effective rate highlighted a greater advantage, which also indicates that the early acceptance of comprehensive rehabilitation therapy in acute stroke patients has a certain degree of improvement in the improvement of the neurological function of stroke patients. In addition, the implementation of standard treatment measures and rehabilitation physiotherapy programmes for acute stroke patients during the post-traumatic period can significantly reduce the morbidity and mortality rates of stroke patients, especially for the overall long-term recovery of the patients, which also indicates that rehabilitation not only improves the recovery of some of the abilities of the acute stroke patients but also reduces the risk of some disabilities.

### 2.2.2 Effectiveness of Rehabilitation Therapy on Recovering Stroke Patients

The recovery period of stroke patients also occupies a relatively important position in the whole treatment process. In the clinical study of stroke recovery patients, some patients were treated with conventional therapy. The other side was intervened with rehabilitation therapy under the condition of stable condition. The results showed that receiving rehabilitation therapy in the recovery period from stroke had an outstanding improvement in the ability to reduce the degree of neurological damage. Patients who the same application of rehabilitation therapy training is helpful for the formation of brain cells around the foci in the brain of the patients, and the new neural pathways are better able to restore the patient's neurological function. For the recovery of cognitive, speech and motor functions in patients recovering from stroke, corresponding clinical studies have shown that the efficacy of systematic rehabilitation therapy has a positive impact on these aspects. Rehabilitation therapy in the collaborative treatment of patients recovering from stroke is not an important means, there are many breakthroughs and research based on the existing rehabilitation extended care combined with spasmolytic formula can effectively improve the function of the patient's upper limbs, so that the efficacy of rehabilitation is greatly improved, this type of method of recovery of the body function of stroke patients is a more prominent improvement.

### 2.2.3 Effectiveness of Rehabilitation Therapy for Stroke Patients in the Post-Stroke Period

After the onset of stroke patients do not receive timely and effective follow-up of appropriate rehabilitation programmes, which may cause some patients to enter the post-stroke period, these patients need a longer recovery process, the rehabilitation therapy as an auxiliary treatment method is more effective. Existing research divided the patients with stroke in the sequelae stage into two groups, both groups of patients received medication and rehabilitation training, one group added specific rehabilitation therapies based on which to maintain the consistency of the training time and frequency of the two groups and assessed the mobility, range of motion, and speed of movement of the lower limbs of the patients in the later stage to conclude that the rehabilitation therapy

combined with the special rehabilitation exercise therapy can significantly improve the efficiency of walking, and effectively restore the stroke. It was concluded that the combination of rehabilitation therapy and special rehabilitation exercise therapy could significantly improve the walking efficiency and effectively restore the mobility of the patients in the post-stroke period. Formal rehabilitation training for patients in the post-stroke period has the effect of attenuating the rate of functional deterioration to varying degrees. In the process of rehabilitation training in the late stage of stroke, the condition is relatively stable in the late stage, and the use of effective medical resources such as in the community and at home can be accompanied by family members to carry out rehabilitation training, and the effect is more significant.

There are many deficiencies in the intervention of rehabilitation therapy in stroke, and early rehabilitation therapy has a more prominent impact on the recovery outcome of stroke patients. However, there still exists the phenomenon that rehabilitation therapy is not sufficiently intervened, which causes many stroke patients to miss the best time for recovery and slows down their recovery process.

## 3. Reasons for Limitation of Rehabilitation Intervention in Stroke

Rehabilitation therapy is becoming more and more important for the recovery of stroke patients, aiming at restoring their functional deficits and improving their quality of life. However, there are several limitations in the intervention of rehabilitation therapy in stroke that lead to the inadequacy of the intervention of rehabilitation therapy in stroke, and there are many aspects that need to be broken through.

### 3.1 Rehabilitation Intervention in Stroke Is Limited by the Wishes of Stroke Patients and Family Support

As most of the strokes are of sudden onset, the phenomenon of not actively participating in the treatment during the stroke treatment process directly leads to poor results.

The wishes of stroke patients are particularly important. On the one hand, stroke patients need to undergo a series of long-term training and exercises in the course of rehabilitation, and may be reluctant to continue the treatment due to psychological fear or pain, at the same time, they may have psychological problems of loss of confidence, believing that the rehabilitation can't bring about significant improvement, thus



limiting the effect of rehabilitation treatment. On the other hand, the rehabilitation process may be arduous and time-consuming, and stroke patients may lack the motivation to continue during the recovery period, thus losing their willingness to be treated. Tedious rehabilitation training may not be able to achieve much effect, but two-way interaction, motivation and other behaviours can, to a certain extent, help stroke patients' self-affirmation and help them overcome negative emotions and difficulties in the process of rehabilitation, which is beneficial to the recovery of the disease, but we must also keep the training in phases to keep up with our strengths, and not to seek for quicker and quicker training.

Family support is likewise an indispensable factor in the recovery process of rehabilitation therapy. However, some families may not believe that rehabilitation can bring significant results, and many stroke patients and their family members lack awareness of the importance of rehabilitation, have a negative attitude or lack of understanding of the intervention of rehabilitation in stroke, and thus do not have much positive support for the treatment process. Rehabilitation requires the cooperation of both the stroke patient and family members, including assistance in daily life and supervision of exercises, etc., and the absence of either party may lead to difficulties in the recovery process.

### *3.2 Rehabilitation Therapy Faces Limitations in the Development of Stroke in Terms of the Level of Science and Technology and Process Monitoring*

Domestic rehabilitation therapy technology has made a certain degree of progress, but there are still breakthroughs to be made on the original basis. For example, the methods and means of rehabilitation therapy are still relatively single and lack personalisation. Rehabilitation treatments for stroke include things like rehabilitation training, neural stem cell therapy, and endoscopic surgery, but the efficacy of these treatments has yet to form a unified consensus in clinical practice, causing problems for stroke patients in their choices. They also fail to meet the rehabilitation needs of different patients at different stages of their lives. Each stroke patient's condition is different, and thus a personalised plan needs to be developed according to the patient's condition and individual differences. However, in some medical institutions, the existing rehabilitation

equipment and technology still need to be improved, which cannot fully simulate the brain activity, limiting the presentation of the rehabilitation effect, and the evaluation indexes of the level of science and technology of rehabilitation intervention in stroke in the existing medical system are not clear, which need to be standardised to strengthen the provision of individualised rehabilitation therapy for each stroke patient.

Monitoring during rehabilitation is an important means of assessing the effect of rehabilitation and adjusting the treatment plan. However, at this stage, there is no clear consensus on the optimal start time and duration of rehabilitation intervention in stroke. For example, although early rehabilitation has a positive impact on improving the speed of recovery of limb motor function in stroke patients, its correlation with functional prognosis needs to be further investigated. At the same time, the optimal intensity or "dosage" of rehabilitation intervention in stroke is still unclear, and the monitoring and evaluation of the process of rehabilitation intervention in stroke by medical institutions is not comprehensive and systematic enough, and the emergence of inaccurate data indexes makes it difficult to accurately assess and adjust the effects of rehabilitation therapy. There are also unregulated organisations that usually claim to have professional standards, but in reality, there are unpredictable risks. Some patients do not have enough trust in this type of organisation, making it difficult to distinguish which organisations are reliable and qualified, which makes patients feel confused and uneasy when choosing a rehabilitation treatment for stroke.

### *3.3 Rehabilitation Intervention in Stroke Faces a Lack of Medical Resources*

China's investment in the field of stroke rehabilitation therapy is still relatively insufficient, and medical resources are not enough to meet the needs of stroke patients. The treatment facilities required for rehabilitation therapy directly affect the rehabilitation effect of stroke patients, however, in many areas, the rehabilitation treatment facilities are relatively lagging, and the lack of facilities is one of the main manifestations of the insufficiency of medical resources, and at present the medical resources are mainly concentrated in the relatively well-developed big cities, while the rural areas and some underdeveloped areas are

lacking in a certain amount of medical equipment and professionals, which makes the local stroke patients not able to get rehabilitation therapy in a timely and effective manner. This unbalanced development has prevented early rehabilitation from being adequately implemented, and many stroke patients have missed the best time for recovery, slowing down their rehabilitation process.

Rehabilitation therapy requires comprehensive intervention by a professional medical team, including rehabilitation physicians, rehabilitation therapists, rehabilitation nurses, etc. The lack of professionals restricts the promotion and development of rehabilitation therapy. Rehabilitation physicians, rehabilitation therapists, and rehabilitation nurses are important components that form a triad and are indispensable in rehabilitation therapy, but there

is currently a general shortage of these personnel, who help stroke patients improve their physical function through rehabilitation techniques and daily training. However, due to the current situation of a lack of rehabilitation therapists practising in the country, the demand is high, the number of hospitals and other rehabilitation treatment institutions has been increasing in the last two decades, and the number of institutions in need of rehabilitation therapists has also increased as much as the number of demand for rehabilitation therapists has increased, the supply exceeds the demand resulting in the difficulty in meeting the demand for rehabilitation treatment of stroke, and many stroke patients are unable to get the services and guidance of specific rehabilitation therapists promptly.

Level of hospital	Number of hospitals (number)	Number of rehabilitation therapists up to standard (number)
Level III hospitals	821	442
Level II hospitals	6765	1588
Rehabilitation centres	87	87
Total		
	2002	

Level of hospital	Number of hospitals (number)	Number of rehabilitation therapists up to standard (number)
Level III hospitals	821	656-738
Level II hospitals	6765	5462-6089
Rehabilitation centres	87	87
Total		
	2005	

Type of Institution Level	Number (No.)
Level III hospitals	1284
Level II hospitals	6472
Rehabilitation centres	268
Social Health Service Centres	10100
Total	
	2010

Type of Institution Level	Number (No.)
Level III hospitals	2996
Level II hospitals	10404
Rehabilitation centres	739
Social Health Service Centres	35365
Total	
2020	

Rehabilitation medical equipment used by rehabilitation therapists also has a certain impact on the recovery of stroke patients. Insufficient investment in medical resources has affected the inability of many medical institutions to supply adequate rehabilitation equipment, which has seriously constrained the development of rehabilitation therapy. Many slower-developing hospitals also face the problem of insufficient beds, however, the rehabilitation of stroke patients takes a long time, and the relative lack of beds in medical resources makes it impossible to carry out rehabilitation treatment smoothly.

The health insurance system for rehabilitation also has some shortcomings and challenges. After some reforms and adjustments were made to the health insurance system for stroke rehabilitation treatment in recent years, more stroke patients flowed to primary hospitals, which optimised the allocation of healthcare resources, and the increase in the length of hospitalisation of stroke patients made it possible to meet the demand for rehabilitation treatment. However, this has also led to an increasing trend in hospitalisation costs and out-of-pocket expenses, a lower reimbursement rate within the domestic health insurance coverage, and a heavier financial burden for stroke patients.

On the other hand, there are some problems with the application of the health insurance system to stroke inpatients in rehabilitation departments. For example, for stroke patients who need rehabilitation treatment in the late stage of acute treatment, the payment method according to Disease Diagnosis-Related Grouping (DRG)/per diem implemented at this stage is not appropriate, which leads to some patients being forced to be discharged early or transferred to other hospitals for many times, which not only affects the normal course of treatment and the experience of the stroke

patients but also has an unintended policy impact on the development of the relevant departments in the healthcare organisations.

#### *3.4 Rehabilitation Therapy Is Generally Limited in Terms of Long-Term Outcomes in Stroke*

Rehabilitation therapy aims to improve the quality of life and functional recovery of stroke patients, and the continuity and effectiveness of rehabilitation therapy need to be fully reflected, unsatisfactory long-term results require further research to explore how to optimise the treatment plan. In conclusion, rehabilitation therapy in the development of stroke is faced with the limitations of patients' wishes and family support, insufficient medical resources and professionals, lack of early intervention, difficulties in personalisation, incomplete monitoring, limitations in the level of science and technology, and unsatisfactory long-term results.

To improve the rehabilitation effect of stroke patients, we need to strengthen the investment in rehabilitation treatment, improve the allocation of medical resources, the rational use of health insurance funds, increase the proportion of early rehabilitation intervention in stroke, strengthen the implementation of personalised treatment for stroke patients, improve the monitoring and evaluation of the entire rehabilitation process, and explore more personalised and targeted treatment methods. Strengthen the publicity and education of rehabilitation intervention in stroke, and increase the awareness and participation of stroke patients and their families in this treatment programme. To achieve a better long-term effect of rehabilitation intervention in stroke, it is also necessary to further carry out relevant research to understand the mechanism and method of rehabilitation intervention in stroke, to provide better support and guidance for the rehabilitation of stroke patients.



#### **4. The Value and Function of Rehabilitation Therapy in Stroke**

##### *4.1 Rehabilitation Therapy Effectively Promotes the Recovery of Various Functions of Stroke Patients*

Stroke patients often suffer from a series of neurological dysfunctions such as unclear speech, dysphagia, muscle weakness, sensory abnormalities, motor incoordination and so on due to brain damage, and rehabilitation therapy has an outstanding effect on the recovery of these dysfunctions. For stroke patients with unclear speech and swallowing difficulties, rehabilitation therapy can effectively improve the speech ability of stroke patients through specialised articulation training, language comprehension and other speech training; after targeted swallowing training, the swallowing ability of stroke patients is also significantly improved, and the risk of swallowing aspiration is reduced. Rehabilitation therapy helps stroke patients with limb motor dysfunction to undergo a series of physical training to promote motor recovery of damaged muscles. Balance training and coordination training for stroke patients can improve the plasticity of the nervous system of stroke patients and promote the reconnection of damaged areas. These training tools help stroke patients to actively face the difficulties in the rehabilitation process, and improve the motivation and persistence of treatment so that they can regain the self-care ability of daily life and the subsequent quality of life of stroke patients can be improved.

##### *4.2 Rehabilitation Is an Important Adjunct to Stroke Recovery*

Early intervention of rehabilitation therapy in stroke can minimise complications such as muscle atrophy, joint stiffness and disability. Early intervention in rehabilitation usually begins as soon as the stroke patient's condition is stabilised, and in some cases even while the stroke patient is still in the intensive care unit. Rehabilitation therapists develop an individualised treatment plan that is tailored to the specific needs of the stroke patient. Through the use of various methods of physiotherapy, functional restoration and assistive devices, comprehensive rehabilitation interventions are carried out for stroke patients. Rehabilitation goal-setting, rehabilitation assessment, rehabilitation training and rehabilitation education are all essential aspects of rehabilitation treatment. In addition,

rehabilitation can play an important role in the psychological aspect. Stroke patients often fall into psychological difficulties because of physical dysfunction and reduced living ability. Rehabilitation therapy can not only help stroke patients restore physical function but also provide psychological support and counselling to help stroke patients cope with these challenges. At the macro level, in these respects rehabilitation therapy intervenes in stroke as a systematic and comprehensive medical treatment, highlighting its value as an adjunctive treatment. Rehabilitation therapy provides comprehensive support for the full recovery of stroke patients, helping them to recover functionally and improve their quality of life, giving them more hope for recovery, and thus achieving the best possible rehabilitation outcome.

##### *4.3 Rehabilitation Therapy Is Specifically Designed to Optimise the Allocation of Social Medical Resources for Stroke Patients*

Due to the limited nature of social medical resources, stroke patients often face a lack of resources. Rehabilitation therapy is a key link in the recovery of stroke patients, which plays an optimising role in the rational allocation of social medical resources needed by stroke patients, and promotes the recovery of patients' physical functions and the reconstruction of their social roles. This important means of rehabilitation therapy improves the utilisation of social medical resources to a certain extent, and by rationally arranging the process and time of rehabilitation therapy, hospitals can make better use of beds and medical equipment to provide medical equipment for other patients, thus promoting the high-quality development of rehabilitation medical services and meeting the diversified and differentiated needs of the masses for rehabilitation medical services.

##### *4.4 Rehabilitation Therapy Intervention in Stroke Promotes the Improvement of the Rehabilitation Treatment System*

The refinement of the technical level of rehabilitation therapy promotes the improvement of the rehabilitation therapy system, and the virtual reality technology provides different treatment effects from the usual ones, such as some gradual intelligence: dynamic orthosis, virtual reality technology, intelligent rehabilitation machine, etc., which greatly improves the effect and efficiency of the

rehabilitation therapy.

The construction of rehabilitation therapy disciplines and the increase in teaching power have improved the professional level and professional quality of the whole industry. The intervention of rehabilitation therapy in stroke has promoted the research in the field of rehabilitation therapy, including the research on the effectiveness of rehabilitation therapy and the research on new treatment methods, etc., which provides stroke patients with more comprehensive and effective rehabilitation therapy and thus improves the rehabilitation therapy system.

Reasonable and effective strengthening of cooperation and coordination between medical institutions, close cooperation between multiple disciplines to form a comprehensive rehabilitation treatment model, the establishment of a professional network for stroke rehabilitation treatment, the formation of a rehabilitation service network with wider coverage from the rehabilitation departments of large general hospitals to community rehabilitation centres, and the promotion of information sharing between medical institutions.

Rehabilitation therapy has multiple advantages in the clinical application of intervention in stroke patients. At this stage, the degree of rehabilitation therapy intervention in stroke needs to be improved, and we should fully recognise the effective level of recovery of rehabilitation therapy intervention in stroke patients, continue to fight to break through the restricted conditions, and spare no effort to support and promote this important medical service.

## References

- Chen Hongxia, Guo Youhua, Xie Renming, et al. (2010). Effects of rehabilitation combined with qi benefit method on neurological function, motor function and activities of daily living in patients with ischaemic stroke with qi deficiency. *New Chinese Medicine*, 42(10), 13-15. DOI:10.13457/j.cnki.jncm.2010.10.008.
- Ding Xuehui, Hu Xinyu. (2023). Clinical effect of general acupuncture combined with Chinese medicine rehabilitation training in the treatment of dysphagia after ischaemic stroke. *Chinese MedicineGuide*, 21(18), 57-60. DOI:10.15912/j.cnki.gocm.2023.18.028.
- Divani AA, Vazquez G, Barrett AM, et al. (2009). Risk factors associated with injury attributable to falling among elderly population with history of stroke. *Stroke*, 40(10), 3286-92.
- Feng Bizhen, Zheng Qinfu, Chen Daoqing et al. (2023). The impact and effect of health insurance system reform on stroke rehabilitation. *Health Soft Science*, 37(08), 6-9.
- Fu Chunfeng. (2019). The effect of early comprehensive rehabilitation therapy on functional reconstruction of acute stroke patients. *Chinese Contemporary Medicine*, 26(22), 65-68.
- Fu Yan, Yao Xugao. (2014). Effect analysis of progressive rehabilitation nursing in limb function rehabilitation of stroke patients. *Journal of Guiyang College of Traditional Chinese Medicine*, 36(03), 96-98.
- Gao Chunhua, Huang Jie, Wang Shengqiang et al. (2014). Effect of early integrated rehabilitation on functional reconstruction in acute stroke patients. *Neurological Injury and Functional Reconstruction*, 9(05), 408-410.
- Gao Juntao, Yan Chunlu, Yu Xiaoying et al. (2023). Clinical study on functional rehabilitation of ischaemic stroke patients with combined rehabilitation therapy of Chinese and Western medicine. *Journal of Shaanxi University of Traditional Chinese Medicine*, 46(03), 81-86. DOI:10.13424/j.cnki.jsctcm.2023.03.016.
- Huang Santao. (2016). The effect of psychological care combined with motor function rehabilitation therapy on neurological function recovery of hemiplegic patients with stroke. *Contemporary Nurses (Upper Ten Journal)*, (10), 136-137.
- Huang XM, Zhang MX, Shi YH et al. (2015). Analysis of the current status of early rehabilitation treatment after stroke. *China Health Standard Management*, 6(20), 31-33.
- Huang Ying. (2020). Discussion on the clinical efficacy of early comprehensive rehabilitation for acute stroke. *Medical Food Therapy and Health*, 18(24), 227-228.
- Jin Pretty, Huang Qian. (2006). Clinical research on early comprehensive rehabilitation treatment of acute stroke patients. *Chinese Journal of Modern Medicine*, (22), 3444-3446.

- LI Jingbin, CUI Xianghong, TONG Mingjie et al. (2024). Progress of rehabilitation treatment for hand dysfunction after stroke. *Chinese Convalescent Medicine*, 33(02), 54-58. DOI:10.13517/j.cnki.ccm.2024.02.011.
- LIN Hao, ZHU Qingbin, NI Xiaojia et al. (2018). A systematic evaluation of Chinese guidelines on stroke prevention and treatment by neurovascular surgery. *Chinese Journal of Cerebrovascular Disease*, 15(04), 169-176.
- Liu Qiujun, Yang WB, Sheng Xueping et al. (2010). Clinical observation on functional rehabilitation of haemorrhagic stroke patients treated with a combination of Chinese and Western medicine. *Journal of Gansu College of Traditional Chinese Medicine*, 27(03), 32-35.
- Liu Songchan, Kou Qixing, Sun Gen et al. (2023). Clinical effect study of Chinese acupuncture and moxibustion rehabilitation for patients with limb dysfunction in stroke. *Clinical Medical Engineering*, 30(05), 629-630.
- Liu Zhimei. (2018). Research on the clinical efficacy of early intensive rehabilitation therapy assisted by regulating and dredging liver and collateral soup on post-stroke depression. *Chinese Community Physician*, 34(21), 92+94.
- Lu Didi. (2019). Analysis of the current situation and demand of practitioners in rehabilitation institutions. *China Rehabilitation Theory and Practice*, 25(07), 859-864.
- Lu Dongying. (2017). Clinical application effect of rehabilitation therapy in the rehabilitation of stroke patients. *Journal of Practical Clinical Medicine*, 21(04), 175-177.
- Lun Yixi, Wang Qiang, Mao Yong et al. (2023). The effect of motor imagery therapy on lower limb motor function of stroke patients in the postictal stage. *Chinese Journal of Physical Medicine and Rehabilitation*, 45(02), 131-133.
- Luo Hongqiu, Gao Yuanjie et al. (2015). Effects of early rehabilitation on neurological function and cerebral haemodynamics in acute stroke patients. *Chinese Journal of Practical Neurological Diseases*, 18(20), 74-75.
- Lv Qin, Wang Heqiang, Chen Bing et al. (2022). The effect of rehabilitation extended care combined with soothing and antispasmodic formula on spastic upper limbs of patients recovering from stroke. *Modern Medicine and Health Research Electronic Journal*, 6(17), 123-125.
- Qiu W-Ran, Xu H-M, Shen W et al. (2022). An overview of the evaluation of the superiority of Chinese medicine in the treatment of ischaemic stroke. *Chinese Journal of Experimental Formulary*, 28(12), 225-232. DOI:10.13422/j.cnki.syfjx.20221238.
- Rao Mingli. (2006). Abstract of the Chinese Guidelines for the Prevention and Treatment of Cerebrovascular Disease (III). *Journal of Stroke and Neurological Diseases*, (01), 4-8.
- Shang Min, Wang Yufeng, Yang Fengmei. (2014). Effects of systematic rehabilitation on cognitive function, motor function and quality of life of patients recovering from stroke. *Chinese Journal of Gerontology*, 34(23), 6551-6553.
- Sun Guanghua. (2016). Research on the effect of staged comprehensive rehabilitation therapy on the neurological function of stroke patients. *Electronic Journal of Clinical Medicine Literature*, 3(49), 9677-9678. DOI:10.16281/j.cnki.jocml.2016.49.001.
- The Collaborative Group of the Comprehensive Standardised Clinical (Internal Medicine) Diagnosis and Treatment Research Programme for Stroke. (2005). Standardised treatment of acute stroke significantly reduces in-hospital mortality. *Chinese Journal of Neurology*, (01), 20-24.
- Time. (2016). Analysis of clinical efficacy of 36 cases of stroke disease treated with Chinese and Western medicine combined rehabilitation methods. *World Digest of Latest Medical Information*, 16(17), 151.
- WANG Biru, ZHOU Sweet, LIAO Weijing. (2021). Progress in the application of virtual reality technology in the rehabilitation of stroke patients. *China Rehabilitation*, 36(12), 765-768.
- Xia Fan, Luo Yang. (2022). Effect of acupuncture with rehabilitation therapy on functional recovery of early stroke patients. *Bright Chinese Medicine*, 37(19), 3561-3563.
- Xie Xiaoleng, Zhang Cuixiang, Sun Ying. (2003). Effects of early rehabilitation on neurological deficits and ADL during stroke recovery. *Zhongguo Nation Health Medicine*,

(11), 650-652.

Xue Dongxia, Li Jin. (2021). Effects of synchronous health education of ultra-early rehabilitation training on the prevention of complications and functional recovery after ischaemic stroke. *Disease Surveillance and Control*, 15(06), 473-474+483. DOI:10.19891/j.issn1673-9388.(2021)06-0473-03.

Zhang H. (2022). Analysis of the improvement effect of comprehensive rehabilitation therapy on motor function of hemiplegic patients with stroke. *Electronic Journal of Modern Medicine and Health Research*, 6(10), 10-13.

ZHANG Xiuping, HAO Chunyan, ZHAO Huili. (2006). Effects of rehabilitation on daily living activities of elderly patients with post-stroke sequelae. *Chinese Journal of Gerontology*, (08), 1136.

Zhang Yuqing, Gao Jingjing, Cui Xiuzhen et al. (2018). Improvement effect of graded rehabilitation on swallowing function in stroke patients. *Biped and Health Care*, 27(16), 43-44. DOI:10.19589/j.cnki.issn1004-6569.2018.16.043.

Zhuo Dahong. (2004). Analysis of some issues on the reform and development of rehabilitation therapy technology education in China. *Chinese Journal of Rehabilitation Medicine*, (06), 6-10.