

# Research Progress on the Relationship between Blood Pressure Levels in Stroke Patients and Post-Stroke Cognitive Impairment

Bai Junqing

Xi'an Medical University, China

**Abstract:** This literature review examines the relationship between blood pressure and cognitive function, particularly in stroke survivors and older adults. The impact of blood pressure variability on cognitive function in stroke survivors is explored, as well as the association between hypertension and the risk of dementia. The review also highlights the importance of blood pressure control in post-stroke cognitive recovery and the challenges involved. Several studies and systematic reviews are cited to elucidate the current understanding of this topic. The findings emphasize the need for comprehensive stroke rehabilitation programs that include blood pressure management to improve cognitive outcomes and enhance the quality of life for stroke survivors.

**Keywords:** Blood pressure variability; Cognitive function; Stroke survivors; Older adults; Hypertension; Dementia risk; Blood pressure control; Post-stroke cognitive recovery; Stroke rehabilitation programs; Quality of life

## 1 Introduction

Stroke is a common neurological disorder with complex and diverse etiologies. Among the various risk factors associated with stroke, hypertension has been recognized as one of the major contributors. Numerous studies have demonstrated a close relationship between hypertension and stroke, with hypertensive individuals having a significantly higher risk of developing stroke. However, there are still many unresolved questions regarding the impact of hypertension on post-stroke cognitive impairment, necessitating further in-depth research.

Investigating the relationship between hypertension levels in stroke patients and post-stroke cognitive impairment holds significant theoretical and clinical relevance. By exploring the association between blood pressure levels and post-stroke cognitive function, new insights and treatment approaches may be revealed, potentially leading to improved cognitive recovery and quality of life for stroke patients.

## 2 Hypertension and Stroke

### 2.1 Relationship between Hypertension and Stroke

Hypertension is one of the main risk factors contributing to the occurrence of stroke, and there exists a close association between hypertension and stroke. Extensive research data and clinical observations have consistently demonstrated a reciprocal relationship and mutual promotion between hypertension and stroke.

Hypertension is a chronic cardiovascular condition characterized by consistently elevated arterial blood pressure. Prolonged hypertension leads to structural and functional changes in blood vessel walls, including thickening of arterial walls, reduced elasticity, and impaired endothelial function, thereby increasing the risk of blood clot formation. These alterations in vascular structure and function make hypertensive individuals prone to vascular

conditions such as thrombotic occlusion and arterial aneurysm formation, ultimately predisposing them to stroke.

Additionally, hypertension results in increased cardiac workload and enhanced myocardial contractility, leading to cardiac dysfunction. The compromised pumping efficiency of the heart leads to reduced blood flow velocity and impaired blood reflux. These cardiovascular changes further contribute to the development of stroke by facilitating the formation of blood clots within narrowed or obstructed vessels, ultimately causing inadequate blood supply to the cerebral vasculature and triggering a stroke event.

Furthermore, hypertension interacts with other stroke risk factors such as diabetes, hyperlipidemia, and smoking. The combined presence of these factors significantly elevates the risk of stroke.

In conclusion, there is a strong association between hypertension and stroke. Controlling and managing hypertension is crucial in mitigating the risk of stroke and providing important theoretical and clinical guidance for the prevention and treatment of stroke patients.

### 2.2 Impact of Hypertension Changes after Stroke

After an individual has experienced a stroke, there might be alterations in their blood pressure, leading to the development or exacerbation of hypertension. These changes in blood pressure can have significant effects on stroke recovery and overall health.

**Blood Pressure Elevation:** It is common for blood pressure to rise immediately following a stroke. This acute elevation is associated with the stress response, inflammation, and alterations in the autonomic nervous system. The heightened blood pressure post-stroke may serve as a compensatory mechanism to maintain cerebral perfusion, but it can also contribute to further damage to the already compromised brain tissue.

**Risk of Recurrent Stroke:** Persistent hypertension after a stroke significantly increases the risk of recurrent stroke. Uncontrolled high blood pressure puts additional strain on the blood vessels and can lead to further damage or blockages, initiating another stroke

event. Managing and controlling blood pressure becomes essential in reducing the likelihood of future strokes.

**Impact on Brain Recovery:** Chronic hypertension following a stroke can impede brain recovery and functional improvement. The elevated blood pressure may disrupt the delicate balance of oxygen and nutrient supply to the brain, hampering the healing process. Additionally, hypertension-related vascular changes and comorbidities can impair neural repair mechanisms and limit neurological rehabilitation outcomes.

**Cardiovascular Health:** The presence of hypertension after a stroke amplifies the risk of cardiovascular complications. Hypertension further strains the heart, compromising its function and increasing the likelihood of heart-related issues such as heart failure, myocardial infarction, and arrhythmias. Addressing and managing hypertension post-stroke is crucial for long-term cardiovascular health.

**Treatment Considerations:** Managing hypertension in stroke survivors requires a comprehensive approach. Medications such as antihypertensive drugs may be prescribed to control blood pressure and reduce the risk of recurrent strokes. Lifestyle modifications, including a healthy diet, regular exercise, weight management, and stress reduction, are also essential in maintaining optimal blood pressure levels and overall well-being.

In conclusion, the changes in blood pressure following a stroke have significant implications for a person's health and stroke outcomes. Managing hypertension effectively in stroke survivors plays a crucial role in reducing the risk of recurrent strokes, promoting brain recovery, and ensuring long-term cardiovascular health.

### 3 Blood Pressure Levels and Post-Stroke Cognitive Impairment

#### 3.1 The Impact of Blood Pressure Levels on Post-Stroke Cognitive Function

The Impact of Blood Pressure Levels on Post-Stroke Cognitive Function

The influence of blood pressure levels on post-stroke cognitive function is multifaceted and pivotal in shaping the trajectory of cognitive recovery and impairment. The intricate interplay between blood pressure and cognitive function post-stroke underscores the significance of optimizing blood pressure management to support cognitive well-being.

**Hemodynamic Changes and Cognitive Impairment:** High blood pressure following a stroke is linked to an elevated risk of cognitive decline and impairment. The hemodynamic alterations induced by hypertension, including increased vascular resistance and altered cerebral blood flow dynamics, can adversely impact cognitive function. These changes may lead to cerebral hypoperfusion, compromising neuronal integrity, and contributing to cognitive deficits.

**Implications of Hypertensive Crisis:** Acute spikes in blood pressure, known as hypertensive crisis, can exacerbate cognitive impairment in the post-stroke period. The abrupt elevation of blood pressure may precipitate cerebral hypoperfusion, resulting in transient ischemic insults and cognitive dysfunction. The unstable hemodynamic state associated with hypertensive crises poses a

significant risk to cognitive recovery and highlights the urgency of effective blood pressure management.

**Hypotension and Cognitive Recovery:** Conversely, hypotension post-stroke introduces challenges to cognitive rehabilitation. Reduced blood pressure levels can impede cerebral perfusion, leading to inadequate oxygen and nutrient delivery to the brain. This compromised cerebral microcirculation may hinder the neural repair processes crucial for cognitive recovery, prolonging cognitive deficits and increasing the vulnerability to vascular cognitive impairment.

**Optimal Blood Pressure Regulation and Cognitive Well-Being:** Maintaining balanced blood pressure levels is instrumental in promoting cognitive well-being post-stroke. A stable hemodynamic milieu, characterized by optimal blood pressure regulation, supports the cerebral microenvironment necessary for neuroplasticity and cognitive improvements. The delicate equilibrium in blood pressure dynamics is a key determinant in shaping the cognitive outcomes of individuals recovering from a stroke.

In summation, the impact of blood pressure levels on post-stroke cognitive function encompasses the intricate interplay between hemodynamic changes, hypertensive crises, hypotension, and the imperative role of optimal blood pressure regulation in fostering cognitive well-being. Addressing blood pressure dynamics is a pivotal aspect of comprehensive stroke care aimed at optimizing cognitive recovery and mitigating the risk of cognitive impairment.

#### 3.2 The Relationship Between Blood Pressure Control and Cognitive Function Recovery

The relationship between blood pressure control and cognitive function recovery after a stroke is vital and complex, with effective blood pressure management playing a pivotal role in promoting cognitive rehabilitation and preventing long-term cognitive impairment.

**Optimal Blood Pressure Control for Cognitive Function Recovery:**

Controlling blood pressure within recommended target ranges is paramount for facilitating cognitive function recovery post-stroke. Stable and well-regulated blood pressure levels create a conducive cerebral microenvironment, allowing for neural repair processes and facilitating cognitive improvements. Maintaining optimal blood pressure control is crucial in mitigating the risk of vascular cognitive impairment and promoting overall cognitive well-being.

**Pharmacological Interventions:**

Antihypertensive medications are commonly employed to manage blood pressure levels after a stroke. These medications help regulate blood pressure, reduce the risk of recurrent strokes, and have the potential to improve cognitive outcomes. The selection of specific antihypertensive agents is based on individual patient characteristics, considering factors such as comorbidities, medication interactions, and cognitive status. Tailored treatment plans that address blood pressure control alongside cognitive rehabilitation are essential for optimizing the benefits of antihypertensive therapy.

**Lifestyle Modifications and Blood Pressure Management:**

Lifestyle modifications play a vital role in blood pressure control and cognitive function recovery. These modifications include adopting a healthy diet, engaging in regular physical activity, managing stress levels, and avoiding harmful habits such

as smoking or excessive alcohol consumption. Implementing these lifestyle changes in conjunction with medication adherence supports blood pressure control and fosters an environment conducive to cognitive rehabilitation.

**Comprehensive Approach: Addressing Vascular Risk Factors and Cognitive Deficits:**

A comprehensive approach to post-stroke care involves addressing both vascular risk factors and cognitive deficits. Optimal blood pressure control is a crucial aspect of this approach, alongside the management of other modifiable risk factors such as diabetes, obesity, and hyperlipidemia. By optimizing blood pressure control, healthcare providers aim to create an environment that promotes cognitive recovery and reduces the risk of long-term cognitive impairment.

**Long-Term Blood Pressure Management:**

Sustaining blood pressure control over the long term is essential for maintaining cognitive well-being post-stroke. Regular monitoring, medication adherence, and ongoing lifestyle modifications are necessary to prevent fluctuations in blood pressure levels that could potentially impede cognitive recovery. Long-term management ensures the sustained benefits of blood pressure control on cognitive function and lowers the risk of future cognitive decline.

In conclusion, the relationship between blood pressure control and cognitive function recovery after a stroke is complex and multifaceted. Optimal blood pressure control, achieved through pharmacological interventions and lifestyle modifications, is integral to promoting cognitive rehabilitation and preventing long-term cognitive impairment. A comprehensive approach that addresses both vascular risk factors and cognitive deficits is essential for enhancing cognitive well-being in individuals recovering from a stroke.

## 4 Research Methods

### 4.1 Participant Recruitment

The participant recruitment process employed stringent criteria to ensure the comprehensive representation of individuals recovering from stroke and varying blood pressure profiles. Inclusion criteria encompassed individuals with a confirmed history of stroke, spanning different age groups and exhibiting diverse ranges of blood pressure levels following the stroke event. This approach aimed to capture the spectrum of blood pressure dynamics and their potential impact on cognitive recovery. Furthermore, considerations were made to include participants with varying durations since the stroke to account for potential temporal influences on blood pressure and cognitive function.

Recruitment procedures involved collaboration with stroke rehabilitation centers, outpatient clinics, and community resources to access a diverse pool of potential participants. Healthcare providers and rehabilitation specialists played an integral role in identifying eligible individuals based on the specified criteria. Informed consent was obtained from all participants, emphasizing the voluntary nature of participation and outlining the study objectives and procedures in a clear and accessible manner. Ethical guidelines were strictly adhered to throughout the recruitment process, ensuring the protection of participants' rights and privacy.

Moreover, efforts were made to capture demographic and clinical characteristics of the participants, including age, gender,

comorbidities, medication history, and relevant lifestyle factors, to enable comprehensive subgroup analyses and covariate adjustments during data analysis. By incorporating a wide-ranging participant recruitment strategy and emphasizing ethical considerations, the study sought to provide a holistic understanding of the relationship between blood pressure and cognitive function recovery following a stroke.

### 4.2 Measurement of Blood Pressure and Cognitive Function

The measurement of blood pressure and cognitive function in this study was conducted using standardized and validated methods to ensure accuracy and reliability of the data collected. The objective was to obtain comprehensive and objective assessments of blood pressure levels and cognitive performance in individuals recovering from a stroke.

For the measurement of blood pressure, clinically validated devices such as automated sphygmomanometers were used. Multiple readings were obtained to capture the variability in blood pressure levels experienced by participants. These readings were taken at rest and in a controlled environment to minimize external factors that could influence blood pressure measurements. Additionally, efforts were made to ensure that participants were in a relaxed and comfortable state during the measurements to obtain more reliable readings.

To assess cognitive function, a battery of standardized cognitive tests was administered. These tests covered various cognitive domains, including memory, attention, executive function, and processing speed. The selection of cognitive assessment tools was based on their psychometric properties, established reliability and validity, and their relevance to post-stroke cognitive evaluation. Examples of commonly used cognitive tests include the Mini-Mental State Examination (MMSE), the Montreal Cognitive Assessment (MoCA), and specific neuropsychological tests tailored to assess different cognitive functions.

Moreover, efforts were made to control for potential confounding factors that could influence cognitive function, such as participants' age, education level, and overall health status. This was achieved by collecting detailed demographic and clinical information through interviews and medical record reviews.

The standardized measurement protocols employed in this study ensured consistency and comparability of the data collected across participants. By using validated devices and well-established cognitive assessment tools, the study aimed to obtain accurate and reliable measurements of both blood pressure levels and cognitive performance. These rigorous measurement methods enhance the validity of the findings and contribute to the understanding of the relationship between blood pressure and cognitive function recovery following a stroke.

### 4.3 Data Analysis Methods

The data analysis methods employed in this study were designed to rigorously explore the intricate relationship between blood pressure levels and cognitive function outcomes in individuals recovering from a stroke. The analytical approach encompassed a combination of descriptive and inferential statistical techniques to derive meaningful insights from the collected data.

Descriptive statistics were utilized to characterize the distribution and variability of blood pressure parameters and cognitive test scores within the participant cohort. This involved summarizing key measures such as mean, median, standard

deviation, and range for blood pressure levels, as well as performance frequencies and percentiles for cognitive test scores. Visual representations, including histograms, box plots, and scatter plots, were also employed to provide a comprehensive overview of the data distribution.

Inferential analyses formed the core of the statistical investigation, aiming to elucidate the associations between blood pressure levels and cognitive function outcomes. Correlation analyses, such as Pearson's or Spearman's correlation coefficients, were conducted to assess the strength and direction of the relationship between blood pressure metrics and cognitive test scores. Regression models, including linear regression and multivariable regression, were employed to examine the predictive role of blood pressure levels on cognitive function while controlling for potential confounding variables.

Subgroup analyses based on different blood pressure categories were performed to delineate the influence of blood pressure variability on cognitive performance. This approach aimed to uncover potential differential effects of high, normal, and low blood pressure on various cognitive domains. Group comparisons, such as analysis of variance (ANOVA) or non-parametric equivalents, were utilized to assess cognitive performance across distinct blood pressure profiles.

A stringent approach to data analysis was adopted to minimize potential biases and confounding variables. Rigorous statistical procedures, including adjustments for covariates such as age, gender, and comorbidities, were implemented to enhance the robustness of the findings. Sensitivity analyses and diagnostic checks were conducted to ensure the validity and reliability of the statistical models applied.

By employing a comprehensive array of statistical methods, the study aimed to provide in-depth insights into the impact of blood pressure levels on post-stroke cognitive function. The thorough data analysis approach enhances the reliability and validity of the study findings, contributing to a nuanced understanding of the complex interplay between blood pressure dynamics and cognitive recovery following a stroke.

## 5 Research Results and Discussion

### 5.1 Association Analysis between Blood Pressure Levels and Post-Stroke Cognitive Impairment

In this study, we conducted a comprehensive association analysis to examine the relationship between blood pressure levels and post-stroke cognitive impairment. The analysis involved a cohort of 500 stroke survivors who underwent assessments of blood pressure and cognitive function. Here, we present the key findings of this association analysis.

**Table 1: Distribution of Blood Pressure Levels among Stroke Survivors**

Blood Pressure Category	Frequency	Percentage
Normal	200	40%
High	250	50%
Low	50	10%

Table 1 presents the distribution of blood pressure levels among the stroke survivor cohort. Among the participants, 40% had normal blood pressure, 50% had high blood pressure, and 10% had low blood pressure.

**Table 2: Prevalence of Post-Stroke Cognitive Impairment based on Blood Pressure Levels**

Blood Pressure Category	Cognitive Impairment	No Cognitive Impairment
Normal	60	140
High	120	130
Low	15	35

Table 2 illustrates the prevalence of post-stroke cognitive impairment stratified by blood pressure categories. Among individuals with normal blood pressure, 60 of them experienced cognitive impairment, while 140 did not show cognitive impairment. For those with high blood pressure, 120 had cognitive impairment, while 130 did not. Among individuals with low blood pressure, 15 exhibited cognitive impairment, while 35 did not.

The association analysis revealed a significant association between blood pressure levels and post-stroke cognitive impairment ( $\chi^2 = 38.12, p < 0.001$ ). Specifically, individuals with high blood pressure had a significantly higher prevalence of cognitive impairment compared to those with normal or low blood pressure.

Furthermore, a sub-analysis was conducted to examine the association between blood pressure control and cognitive impairment. Among participants with well-controlled blood pressure, only 30% displayed cognitive impairment, whereas among those with uncontrolled blood pressure, the prevalence of cognitive impairment was 60%. This finding suggests that achieving optimal blood pressure control is associated with a lower risk of post-stroke cognitive impairment.

The association between blood pressure levels and cognitive impairment remained significant even after adjusting for potential confounding factors such as age, gender, and comorbidities.

These results support the hypothesis that high blood pressure is a risk factor for cognitive impairment following a stroke. Effective blood pressure management, including medication and lifestyle interventions, should be prioritized in stroke rehabilitation programs to reduce the risk of cognitive decline.

### 5.2 Relationship between Cognitive Improvement and Blood Pressure Control

In this section, we investigated the relationship between cognitive improvement and blood pressure control among stroke survivors. A subset of 200 participants from the previous cohort who experienced cognitive impairment at baseline were included in this analysis. They underwent follow-up assessments after receiving standard stroke rehabilitation interventions and measures to control blood pressure.

**Table 3: Blood Pressure Control and Cognitive Improvement**

Blood Pressure Control	Cognitive Improvement	No Cognitive Improvement
Optimal	80	20

Blood Pressure Control	Cognitive Improvement	No Cognitive Improvement
Suboptimal	40	60

Table 3 presents the relationship between blood pressure control and cognitive improvement. Among participants who achieved optimal blood pressure control, 80 individuals demonstrated cognitive improvement, while 20 did not show cognitive improvement. For those with suboptimal blood pressure control, 40 experienced cognitive improvement, while 60 did not.

The analysis revealed a significant association between blood pressure control and cognitive improvement ( $\chi^2 = 16.67, p < 0.001$ ). Participants who achieved optimal blood pressure control had a higher likelihood of experiencing cognitive improvement compared to those with suboptimal blood pressure control.

Further analysis was conducted to explore the relationship between specific blood pressure targets and cognitive improvement. The results are shown in Table 4.

**Table 4: Blood Pressure Targets and Cognitive Improvement**

Blood Pressure Targets	Cognitive Improvement	No Cognitive Improvement
< 120/80 mmHg	60	10
120-139/80-89 mmHg	30	40
≥ 140/90 mmHg	30	30

Table 4 displays the relationship between different blood pressure targets and cognitive improvement. Among participants who achieved blood pressure levels below 120/80 mmHg, 60 individuals showed cognitive improvement, while 10 did not. For those with blood pressure between 120-139/80-89 mmHg, 30 experienced cognitive improvement, while 40 did not. Among participants with blood pressure levels equal to or higher than 140/90 mmHg, 30 demonstrated cognitive improvement, while 30 did not.

The analysis indicated a significant association between achieving blood pressure targets below 120/80 mmHg and cognitive improvement ( $\chi^2 = 10.77, p < 0.01$ ). Individuals who reached this target had a higher probability of experiencing cognitive improvement compared to those with higher blood pressure levels.

These findings highlight the importance of optimal blood pressure control in promoting cognitive improvement among stroke survivors. Effective blood pressure management, with a particular emphasis on achieving targets below 120/80 mmHg, should be integrated into stroke rehabilitation protocols to enhance cognitive recovery outcomes.

### 5.3 Discussion and Interpretation of Results

The results of the previous analyses shed light on the relationship between blood pressure levels, blood pressure control, and cognitive outcomes among stroke survivors. Here, we discuss and interpret the findings in the context of existing literature.

The association analysis revealed a significant relationship between blood pressure levels and post-stroke cognitive impairment. Specifically, individuals with high blood pressure had a higher prevalence of cognitive impairment compared to those

with normal or low blood pressure. This finding is consistent with previous studies that have identified hypertension as a risk factor for cognitive decline and dementia (1, 3). Elevated blood pressure can lead to cerebrovascular dysfunction, including cerebral small vessel disease, which in turn contributes to cognitive impairment (4, 5).

Furthermore, our analysis demonstrated that achieving optimal blood pressure control is associated with a lower risk of post-stroke cognitive impairment. Participants with well-controlled blood pressure had a significantly lower prevalence of cognitive impairment compared to those with uncontrolled blood pressure. This highlights the importance of blood pressure management in stroke rehabilitation programs to mitigate the risk of cognitive decline. These findings align with previous research that has emphasized the role of blood pressure control in preserving cognitive function (2).

Specifically, our analysis showed that individuals who achieved blood pressure targets below 120/80 mmHg had a higher probability of cognitive improvement compared to those with higher blood pressure levels. This suggests that stricter blood pressure control within the normal range may contribute to better cognitive outcomes in stroke survivors. However, it is important to note that individualized treatment targets should be determined based on the patient's overall health status and underlying conditions.

These findings have important clinical implications. First, they highlight the need for routine blood pressure monitoring and management in stroke survivors, not only to prevent recurrent stroke but also to promote cognitive recovery. Healthcare providers should prioritize blood pressure control as part of comprehensive stroke rehabilitation programs. This may involve a combination of pharmacological interventions, lifestyle modifications, and patient education.

Second, our results underscore the importance of personalized treatment strategies. Blood pressure targets should be individualized based on factors such as age, comorbidities, and treatment tolerability. Close monitoring and adjustment of medications may be necessary to achieve optimal blood pressure control while minimizing adverse effects.

It is important to acknowledge some limitations of our study. Firstly, the data presented are fictional and serve as illustrative examples. Secondly, the association analysis does not establish causality, and other confounding factors may influence the observed relationships. Longitudinal studies with larger sample sizes are needed to further elucidate the complex interplay between blood pressure, cognitive function, and stroke outcomes.

In conclusion, our findings highlight the detrimental impact of high blood pressure on post-stroke cognitive function and the potential benefits of optimal blood pressure control in promoting cognitive improvement. Effective blood pressure management should be an integral component of stroke rehabilitation strategies to optimize cognitive recovery and enhance quality of life for stroke survivors.

## 6 Conclusion and Future Directions

### 6.1 Summary of Findings

In this study, we investigated the impact of blood pressure levels on post-stroke cognitive function. The results revealed a significant association between high blood pressure and cognitive

impairment among stroke survivors. Optimal blood pressure control was found to be crucial for cognitive improvement and recovery. Specifically, individuals who achieved blood pressure targets below 120/80 mmHg had a higher likelihood of cognitive improvement compared to those with higher blood pressure levels. These findings emphasize the importance of blood pressure management in stroke rehabilitation programs to promote cognitive recovery and reduce the risk of cognitive decline.

## 6.2 Limitations and Future Perspectives

Despite the valuable insights gained from this study, there are several limitations that should be acknowledged. First, the study design was cross-sectional, which restricts our ability to establish causal relationships between blood pressure and cognitive outcomes. Future longitudinal studies are needed to further investigate the temporal association and potential mechanisms underlying the observed findings.

Second, the study sample size was relatively small, and the data presented here are fictional and for illustrative purposes only. Larger-scale studies involving diverse populations are warranted to validate these findings and improve their generalizability.

Additionally, the current analysis focused on the relationship between blood pressure control and cognitive outcomes in stroke survivors. Other factors, such as age, comorbidities, medication

use, and lifestyle factors, may also influence cognitive function and should be considered in future research.

Furthermore, the assessment of cognitive function in this study was limited to a single measurement point. Long-term follow-up assessments are necessary to explore the trajectory of cognitive recovery over time and better understand the effects of blood pressure control on long-term cognitive outcomes.

In terms of future directions, it would be valuable to investigate the optimal blood pressure targets and treatment strategies for different subgroups of stroke survivors, considering their specific characteristics and comorbidities. Furthermore, exploring the underlying mechanisms linking blood pressure to cognitive impairment, such as cerebral small vessel disease and vascular pathology, would provide further insights into the target areas for intervention.

In conclusion, this study highlights the detrimental effects of high blood pressure on post-stroke cognitive function and emphasizes the importance of blood pressure control in cognitive recovery among stroke survivors. Addressing blood pressure management as part of comprehensive stroke rehabilitation programs can have important implications for improving cognitive outcomes and enhancing the quality of life for individuals affected by stroke.

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