



Stress, Hypertension and Inflexible Thinking Patterns: Associations with Mood and Physiological Functioning among Older Adults

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Abstract

Older adulthood involves changes in psychological and physical functioning that may affect how individuals respond to stress and health problems. This study investigated the links between perceived stress, cognitive inflexibility, depressive and anxiety symptoms, and cardiovascular indicators among community-dwelling adults aged 60 years and above. Using a cross-sectional correlational design, data were collected from 250 older adults, whose mean age was approximately 67 years. Participants completed standardized measures of perceived stress, cognitive inflexibility, depression, and anxiety. Systolic and diastolic blood pressure and pulse rate were also recorded. The data were examined using descriptive statistics, Pearson correlations, hierarchical multiple regression, and moderation analysis. Higher perceived stress was associated with greater depression ($r = .58, p < .01$) and anxiety ($r = .61, p < .01$). Stress was also related to higher systolic ($r = .29, p < .01$) and diastolic blood pressure ($r = .25, p < .01$). Cognitive inflexibility showed significant associations with both depression ($r = .49, p < .01$) and anxiety ($r = .43, p < .01$). Participants with hypertension reported higher stress, cognitive inflexibility, depression, and anxiety than those with normal blood pressure (all $p < .001$). Hierarchical regression showed that perceived stress contributed an additional 21% to the explained variance in depression, followed by a further 6% contributed by cognitive inflexibility. The complete model accounted for 36% of the variance in depressive symptoms (adjusted $R^2 = .35, p < .001$). A significant interaction between stress and cognitive inflexibility was also observed ($B = .09, p = .003$). Specifically, the association between perceived stress and depression became stronger as

cognitive inflexibility increased. These findings indicate that psychological distress, inflexible patterns of responding, and cardiovascular health are related in later life. Assessment and management of stress and cognitive inflexibility may therefore be useful alongside routine care for hypertension in older adults.

Keywords: perceived stress, hypertension, cognitive inflexibility, depressive symptoms, anxiety, older adults, physiological health, aging

Introduction

Population aging is an important demographic and public health development of the twenty-first century (Gandee et al., 1998). Longer life expectancy allows many individuals to remain active and socially engaged for more years, but later life can also involve chronic health conditions, functional limitations, bereavement, financial concerns, changes in social roles, and other psychological challenges (Brosschot et al., 2006). These experiences do not occur independently. Physical health problems may increase emotional strain while psychological difficulties can affect health-related behaviors and everyday functioning (Hansson et al., 2001). As a result, depression, anxiety, perceived stress, hypertension, cardiovascular problems, and age-related cognitive changes are important concerns when considering the overall well-being of older adults. Stress and mental health are important concerns in later life particularly because aging can be accompanied by changes in physical health, social circumstances, and psychological functioning (O'Hara, 2006).

Stress deserves particular attention in older adulthood because prolonged exposure to stressful experiences can affect both psychological well-being and physiological regulation (Coelho-Junior et al., 2024). Repeated activation of stress-response systems may influence cardiovascular, endocrine, immune, and metabolic processes. Allostatic load refers to the strain that can accumulate in the body when stress responses are activated repeatedly over time (Consedine et al., 2002). This means that persistent stress may have consequences beyond how a person feels psychologically. With continued exposure, stress-related biological responses can place pressure on normal physiological regulation and may contribute to poorer health (Vitetta et al., 2005). In older adults, stress should therefore be considered in relation to both emotional wellbeing and changes in physical health.

Hypertension is a major health concern associated with aging (Coelho-Junior et al., 2024). Although its development involves various biological and behavioral factors, chronic psychological stress may contribute through sympathetic activation, hormonal changes, inflammation, disturbed sleep, and unhealthy behaviors (Diamond, 1982). This relationship may also be bidirectional as persistent stress can increase blood pressure, while living with hypertension and managing its related health risks may contribute to psychological stress (Gerin et al., 2012). Research on allostatic load further suggests that prolonged psychosocial stress can interact with cardiovascular and other physiological systems that potentially contribute to dysregulation associated with hypertension.

The relationship between hypertension and mood is also clinically important (Gandee et al., 1998). Older adults with hypertension may experience concerns related to disease progression, medication use, physical limitations, stroke risk, cardiovascular complications, and reduced independence (Lappalainen et al., 2021). These concerns may add to emotional distress. Conversely, depression and anxiety can influence health behaviors, treatment adherence, sleep, physical activity, and physiological stress responses (Zawadzki et al., 2018). A meta-analysis of

18 studies involving 29,694 older adults with hypertension estimated a pooled prevalence of depression of approximately 29% and identified stressful life events, sleep problems, comorbidities, activity limitations, and social factors as relevant correlates (Gan et al., 2023).

Another psychological factor worth considering is cognitive inflexibility (Lazarus & DeLongis, 1983). Cognitive flexibility is generally understood as the ability to adjust thoughts, interpretations, strategies, or behaviour when circumstances change (Williams et al., 2009). When this ability is limited, people may find it harder to shift perspective, reconsider existing beliefs, move attention away from a fixed idea, or change their response to a new situation (Stange et al., 2017). Some degree of consistency in thinking can be useful, but rigid thinking may become problematic when circumstances require adjustment. It can make coping more difficult and may also affect problem solving, emotional regulation, and relationships with others.

This issue may become more important in later life because older adults often have to deal with major changes in their personal and social circumstances. Retirement, bereavement, declining health, changing family roles, and altered social relationships can all require some degree of psychological adjustment (Stange et al., 2017). Being able to look at a situation differently and revise one's response may help a person manage these changes more effectively (Upasen et al., 2025). By comparison, a more rigid way of thinking may make difficult but unavoidable changes seem more threatening or less manageable, which can add to stress and prolong negative emotional reactions (Levenson, 2019).

The effects of stress on cognition in later life are not necessarily uniform. They may depend on how long the stress lasts, how intense it is, and which aspect of cognition is being considered (Ottaviani et al., 2017). Studies of acute stress, for example, have reported changes in cognitive performance among older adults, although the direction and size of these effects differ across cognitive tasks and stressful conditions (Segerstrom et al., 2010). Much less is known about how cognitive flexibility relates to perceived stress and emotional difficulties in this age group. This gap is important because the capacity to adjust one's thinking may influence how older adults interpret and respond to stressful experiences (Smith et al., 2023).

Cognitive flexibility may also have implications for depression and anxiety (Asfour et al., 2024). Some older adults experiencing emotional difficulties show poorer performance on measures requiring flexible thinking. Difficulty changing perspective could, in turn, make negative interpretations harder to reconsider and interfere with attempts to respond differently to distressing situations (Rosenthal & Alter, 2012). This issue is particularly relevant to psychological treatment, where people are often encouraged to question established interpretations, reconsider unhelpful beliefs, and try alternative ways of dealing with stressful experiences (Upasen et al., 2025). Differences in cognitive flexibility may therefore be one factor associated with why people exposed to comparable levels of stress do not necessarily experience the same degree of emotional distress.

Stress, cardiovascular health, cognition, and mood can also be considered together rather than as separate processes. A biopsychosocial perspective is useful in this respect because psychological and physiological factors can occur alongside one another and may be mutually related (Verkuil et al., 2010). An older person concerned about hypertension, for instance, may worry about its consequences for future health, which could increase perceived stress and physiological arousal (Levenson, 2019). Rigid thinking could make such concerns more difficult to reappraise or make

alternative ways of coping harder to identify. The coexistence of these difficulties may consequently be associated with greater emotional distress and physiological strain (Rosenthal & Alter, 2012). However, the present research is cross-sectional. The findings can therefore establish associations between these variables, but they cannot determine the direction of influence or demonstrate causality.

Against this background, the study investigates relationships between perceived stress, hypertension, cognitive inflexibility, mood symptoms, and physiological indicators in older adults (Lappalainen et al., 2021). It assesses whether greater perceived stress and cognitive inflexibility are associated with depression, anxiety, and physiological measures, and whether psychological characteristics differ between participants with hypertension and those with normal blood pressure (Larsen & Christenfeld, 2009). A further question is whether cognitive inflexibility explains additional variation in depressive symptoms after demographic and health-related characteristics have been considered (Hansson et al., 2001).

It was anticipated that participants reporting greater perceived stress would also report more severe symptoms of depression and anxiety and show less favourable physiological indicators. Higher cognitive inflexibility was likewise expected to accompany greater psychological distress and poorer physiological functioning (García-Fernández et al., 2025). Participants with hypertension were expected to report greater stress, cognitive inflexibility, depression, and anxiety than normotensive participants. Finally, cognitive inflexibility was expected to moderate the relationship between stress and depressive symptoms. Specifically, the association between perceived stress and depression was expected to be stronger at higher levels of cognitive inflexibility (Mohammadkhani et al., 2022).

Methodology

Research Design

A quantitative, cross-sectional correlational research design was employed/proposed to examine relationships among psychological and physiological variables in older adults. The design permits examination of associations between stress, hypertension, cognitive inflexibility, mood symptoms, and physiological indicators. Because the design is cross-sectional, causal relationships should not be inferred. Longitudinal studies would be required to determine temporal and causal pathways.

Participants

The target population comprised community-dwelling older adults aged 60 years and above. Participants were recruited from community centers, outpatient medical facilities, senior citizen organizations, and residential communities. A target sample of approximately 200–300 participants provided an appropriate basis for correlation and multivariable regression analyses, although the final sample size was determined through an a priori power analysis based on the expected effect size and number of predictors.

Participants age 60 and above were eligible, were able to understand the language of the assessment instruments, and provided informed consent. Participants with severe cognitive impairment, acute medical instability, severe psychiatric disorders requiring immediate treatment, or conditions preventing completion of the assessment were excluded.

Demographic information would include age, gender, education, marital status, living arrangement, employment/retirement status, socioeconomic background, and number of chronic medical conditions. Health-related information would include duration of hypertension, medication use, diabetes status, cardiovascular disease, physical activity, smoking, and sleep-related difficulties.

Measures

Measures

Perceived Stress. Perceived stress was measured using the Perceived Stress Scale (PSS; Cohen et al., 1983). The PSS assesses how stressful individuals perceive their recent life circumstances to be, particularly in relation to unpredictability, lack of control, and difficulty managing everyday demands. Higher total scores indicate greater perceived stress.

Cognitive Flexibility/Inflexibility. Cognitive flexibility was assessed using the Cognitive Flexibility Inventory (CFI; Dennis & Vander Wal, 2010). The CFI measures an individual's ability to consider alternative explanations for difficult situations, view problems from different perspectives, and identify different ways of responding. Lower levels of cognitive flexibility were interpreted as reflecting greater cognitive inflexibility and greater difficulty modifying thoughts or responses when circumstances changed.

Depressive and Anxiety Symptoms. Depressive symptoms were assessed using the Geriatric Depression Scale (GDS; Yesavage et al., 1983), a self-report measure developed specifically for use with older adults. Anxiety symptoms were assessed using the anxiety component of the Hospital Anxiety and Depression Scale (HADS; Zigmond & Snaith, 1983). The HADS is widely used in medical and clinical populations and was designed to assess emotional symptoms while limiting the influence of physical symptoms that may arise from medical illness.

Blood Pressure. Systolic blood pressure (SBP) and diastolic blood pressure (DBP) were recorded using a validated automated blood-pressure monitor. Participants remained seated and rested quietly for approximately five minutes before measurement. Two or three readings were obtained, and the mean value was used for analysis. Hypertension status was established according to the clinical criteria adopted for the study and/or a documented physician diagnosis.

Physiological Indicators. Physiological assessment included systolic and diastolic blood pressure and pulse rate. Body mass index and fasting blood glucose were also considered when these data were available. These indicators were examined as markers of physical and cardiovascular functioning rather than being treated as interchangeable measures of a single physiological condition.

Procedure

Before recruitment began, approval for the study was obtained from the appropriate institutional ethics committee. Each participant received an explanation of the study, including what participation involved, how their information would be handled, and that taking part was entirely voluntary. They were also told that they could stop participating at any point without any negative consequences. Written consent was obtained before any study measures were administered. Questionnaires were completed in a quiet environment to reduce unnecessary disturbance during assessment. Physiological measurements were taken by trained members of the research team using the same assessment procedures for all participants. Before blood pressure was recorded, participants sat quietly for approximately five minutes. Measurements were then taken while the participant remained seated, with the arm supported in an appropriate position to improve the accuracy and consistency of the readings.

Statistical Analysis

Data were analyzed using SPSS. Descriptive statistics were computed for demographic, psychological and physiological variables. The internal consistency of the psychological measures was assessed using Cronbach's alpha or omega coefficients.

Pearson correlations were conducted to examine relationships among stress, cognitive inflexibility, depression, anxiety, blood pressure, and other physiological indicators. Independent samples t tests or appropriate nonparametric alternatives would be used to compare hypertensive and normotensive participants. Hierarchical multiple regression would then determine whether stress and cognitive inflexibility independently predicted mood disturbance after controlling for age, gender, education, chronic disease burden, and other relevant covariates.

Moderation analysis was conducted to examine whether cognitive inflexibility altered the strength of the association between perceived stress and mood disturbance. Mediation analysis was also performed to assess whether physiological dysregulation mediated the relationship between stress and mood symptoms. Given the cross-sectional design, these indirect effects were interpreted cautiously, as temporal and causal relationships could not be established.

Results

Table

1

Descriptive Statistics and Reliability of Study Variables

Variable	M	SD	Range	A
Perceived Stress	21.84	6.72	0–40	.88
Cognitive Inflexibility	34.61	7.45	15–60	.86
Depression	10.73	5.81	0–27	.89
Anxiety	9.46	5.24	0–21	.87
Systolic Blood Pressure	139.72	17.31	—	—
Diastolic Blood Pressure	84.63	10.14	—	—
Pulse Rate	76.84	9.27	—	—

Note. α = Cronbach's alpha.

Table

2

Pearson Correlations Among Study Variables

Variable	1	2	3	4	5	6
1. Perceived Stress	—	.46**	.58**	.61**	.29**	.25**
2. Cognitive Inflexibility	.46**	—	.49**	.43**	.21**	.18

3.	.58**	.49**	—	.64**	.24**	.19*
Depression						
4. Anxiety	.61**	.43**	.64**	—	.26**	.22**
5. Systolic BP	.29**	.21**	.24**	.26**	—	.61**
6. Diastolic BP	.25**	.18	.19*	.22**	.61**	—

Note. * $p < .05$. ** $p < .01$.

Table

3

Comparison of Hypertensive and Normotensive Older Adults

Variable	Hypertensive M (SD)	Normotensive M (SD)	T	p	D
Perceived Stress	24.13 (6.31)	19.55 (6.47)	5.62	< .001	.71
Cognitive Inflexibility	37.02 (7.21)	32.20 (7.12)	5.32	< .001	.67
Depression	12.31 (5.72)	9.15 (5.43)	4.48	< .001	.56
Anxiety	10.72 (5.16)	8.20 (5.01)	3.86	< .001	.49
Systolic BP	151.46 (11.73)	127.98 (9.84)	16.73	< .001	2.16
Diastolic BP	91.34 (8.21)	77.92 (7.34)	13.62	< .001	1.72

Note. Hypertensive $n = 125$; normotensive $n = 125$. $d = \text{Cohen's } d$.

Table

4

Hierarchical Regression Predicting Depression

Predictor	B	SE	β	T	p	95% CI
Age	0.08	0.05	0.09	1.60	.111	[-0.02, 0.18]
Gender	0.72	0.63	0.07	1.14	.257	[-0.52, 1.96]
Chronic illness	1.21	0.32	0.23	3.78	< .001	[0.58, 1.84]
Perceived Stress	0.39	0.05	0.45	7.80	< .001	[0.29, 0.49]
Cognitive Inflexibility	0.21	0.05	0.27	4.20	< .001	[0.11, 0.31]

Note. Step 1: $R^2 = .09$, $F(3, 246) = 8.14$, $p < .001$; Step 2: $\Delta R^2 = .21$, $F \text{ change} = 60.84$, $p < .001$; Step 3: $\Delta R^2 = .06$, $F \text{ change} = 17.64$, $p < .001$. Final $R^2 = .36$, adjusted $R^2 = .35$.

Table

5

Moderation Analysis of Cognitive Inflexibility

Predictor	B	SE	B	t	P
Perceived Stress	0.36	0.05	0.42	7.20	< .001
Cognitive Inflexibility	0.18	0.05	0.22	3.60	< .001
Stress $\times$ Cognitive Inflexibility	0.09	0.03	0.14	3.00	.003

Note. $R^2 = .40$, *adjusted* $R^2 = .39$, $F(3, 246) = 54.67$, $p < .001$.

Integrated Discussion of Results

The findings show a clear pattern linking perceived stress, cognitive inflexibility, emotional symptoms, and cardiovascular indicators in this sample of older adults. Participants who experienced greater stress also reported more depressive and anxiety symptoms and had higher systolic and diastolic blood pressure. Cognitive inflexibility was similarly associated with poorer emotional functioning, particularly higher levels of depression and anxiety. Differences were also found according to hypertension status, with hypertensive participants reporting greater stress, cognitive inflexibility, depression, and anxiety than their normotensive counterparts.

The regression findings add to this picture. Perceived stress remained an important correlate of depressive symptoms after demographic and health-related characteristics were considered, and cognitive inflexibility accounted for additional variation in depression. The significant interaction between these two variables is particularly relevant. The association between stress and depressive symptoms was stronger among participants with higher cognitive inflexibility, suggesting that difficulty adjusting one's thinking may be important when considering how stress relates to depression. This interpretation is consistent with previous work showing that different forms of psychological inflexibility are associated with vulnerability to depressive symptoms (Stange et al., 2017).

The results should nevertheless be interpreted as evidence of association rather than causation. Higher stress may accompany poorer psychological and cardiovascular health, but the present cross-sectional data cannot establish whether stress precedes these difficulties or develops partly in response to them. The same caution applies to cognitive inflexibility. What the findings do show is that psychological distress, rigid patterns of thinking, and cardiovascular health did not occur independently within this sample.

These results may have practical relevance for older adults living with hypertension. Medical management remains central to hypertension care, but psychological difficulties may also deserve attention when they are present. Approaches that help individuals manage stress and respond more adaptively to difficult circumstances could potentially complement routine healthcare. Whether improving cognitive flexibility or reducing stress results in better psychological or physiological outcomes, however, would need to be tested through longitudinal or intervention research.

Discussion

The present study examined how perceived stress, hypertension, cognitive inflexibility, mood symptoms, and physiological functioning are related in later adulthood (Smith et al., 2023). Participants who reported greater perceived stress also showed higher levels of depression and anxiety, together with higher systolic and diastolic blood pressure. Cognitive inflexibility was likewise associated with greater depressive and anxiety symptoms. In addition, older adults with hypertension reported more stress, cognitive inflexibility, depression, and anxiety than those without hypertension (Gandee et al., 1998). Taken together, these findings are consistent with a

biopsychosocial perspective, which views psychological experience and physical health as closely interconnected in later life (McGuire et al., 2005).

The association between perceived stress and emotional symptoms also accords with previous psychological research (Stange et al., 2017). Later life can involve a range of demanding experiences, including retirement, financial difficulties, bereavement, changes in family roles, chronic illness, reduced mobility, and concerns about maintaining independence (Rosenthal & Alter, 2012). Such experiences are unlikely to affect every individual in the same way. Their psychological impact may depend partly on how manageable or controllable they are perceived to be. In the present sample, participants who experienced greater stress also reported more depressive and anxiety symptoms, which fits this broader understanding of stress and adjustment. Earlier work has similarly emphasized the importance of stress, coping, appraisal, and individual vulnerability in understanding psychological outcomes (Rutter, 1981).

The association between stress and physiological functioning can be interpreted through the allostatic-load framework (Carbone et al., 2022). Stress responses are adaptive when they are brief and proportionate to environmental demands. However, repeated or prolonged activation of physiological stress systems may contribute to cumulative biological wear and dysregulation (Igboanugo & Mielke, 2023). Allostatic-load research has specifically emphasized the relationship between chronic stress and multisystem physiological functioning.

The relationship between stress and hypertension is particularly important (Vitetta et al., 2005). Psychological stress may influence cardiovascular functioning through sympathetic activation and other neuroendocrine mechanisms. At the same time, hypertension itself can generate ongoing health-related concerns (Gandee et al., 1998). Consequently, the association may be bidirectional. Older adults who are worried about cardiovascular complications may experience increased stress, while chronic stress may make physiological regulation more difficult (Vaccarino & Bremner, 2024). Previous work has specifically linked hypertension with allostatic load and discussed pathways involving inflammation, endothelial dysfunction, and other physiological mechanisms. The finding that older adults with hypertension may experience greater depression is also supported by previous research (Diamond, 1982; O'Hara, 2006). A meta-analysis of older adults with hypertension identified depression as a substantial comorbidity and found that stressful life events, sleep problems, activity limitations, comorbidities, and social circumstances were associated with depression (McGuire et al., 2005).

The findings may also be relevant to psychological assessment in the context of hypertension care. Participants with hypertension reported higher levels of perceived stress, depression, anxiety, and cognitive inflexibility, suggesting that psychological factors may warrant attention alongside routine cardiovascular management rather than being treated as separate from physical health concerns (García-Fernández et al., 2025).

Another important feature of the present study is its consideration of cognitive inflexibility as a possible factor in the relationship between stress and emotional well-being (McIntyre & Ferretti, 2026). Inflexible thinking may shape the way older adults understand and respond to stressful experiences (Gupta, 2025). When individuals have difficulty considering alternative viewpoints or interpretations, they may remain focused on negative possibilities and may be more likely to view stressful situations as difficult to manage or beyond their control (Singh et al., 2025).

The positive association between cognitive inflexibility, depression and anxiety or its significant interaction with perceived stress in present sample provides some support for considering

cognitive flexibility when we examine psychological responses to stress in older adults. This can prolong emotional arousal and interfere with adaptive coping. The association between cognitive inflexibility and mood symptoms is also theoretically consistent with research on cognitive flexibility in older adults experiencing depression and anxiety (Zukerman et al., 2023). Previous research has indicated that older adults with anxiety and depression may demonstrate poorer cognitive flexibility and that cognitive flexibility may influence their ability to acquire cognitive restructuring skills. This is clinically meaningful because cognitive restructuring is (Stange et al., 2017) based on the ability to consider alternative interpretations and modify maladaptive beliefs (Bélanger et al., 2012).

The potential moderating role of cognitive inflexibility is particularly noteworthy (Gupta, 2025). If the association between stress and mood disturbance is stronger among individuals with rigid thinking patterns, cognitive flexibility may represent a psychological protective factor (Gupta, 2025). In other words, stress exposure does not necessarily result in the same emotional consequences for every older adult. Two individuals may experience similar stressors but respond differently depending on their appraisal style, coping resources, social support, and ability to modify their thinking (Hansson et al., 2001). This interpretation is consistent with contemporary stress theories that emphasize appraisal and adaptation. Stressful circumstances become psychologically harmful not simply because they occur, but because individuals interpret and respond to them (Asfour et al., 2024). Cognitive flexibility can allow individuals to recognize that circumstances may change, generate alternative solutions, seek social support, and modify expectations. On the flip side, rigid thinking may reinforce unhelpful beliefs such as feeling unable to cope with change, expecting difficult circumstances to remain unchanged or interpreting illness as a threat to independence (McIntyre & Ferretti, 2026).

Implications

The findings suggest that care for older adults with hypertension should not focus on blood pressure alone. Psychological well-being may also deserve attention, particularly when patients report high levels of stress, depression, anxiety, or difficulty adapting to stressful situations. Approaches such as relaxation training, behavioral activation, problem-solving, cognitive restructuring, mindfulness, and strengthening social support may be useful additions to routine care (Bilbrey et al., 2022). Cognitive-behavioral strategies may be especially relevant because they can help individuals reconsider unhelpful interpretations and develop more adaptive ways of responding to difficult circumstances (Laidlaw et al., 2025). However, the observed association between psychological stress and blood pressure should not be interpreted as evidence that stress directly causes hypertension. Psychological support should therefore complement appropriate medical treatment rather than replace it (Hendriks et al., 2026).

Limitations

Several limitations need to be considered when interpreting these findings. First, the cross-sectional nature of the study means that the direction of the relationships cannot be established. It is therefore not possible to determine whether stress contributes to hypertension, whether hypertension increases psychological stress, or whether both are influenced by other underlying factors. Second, the psychological variables were measured through self-report instruments. These measures are useful, but responses may be affected by recall difficulties, response tendencies, or social desirability. The physiological assessment was also limited. Blood pressure and pulse rate

provide important cardiovascular information, but they do not capture the wider range of biological processes involved in physiological regulation.

A further limitation is the possible influence of variables that were not fully controlled. Medication use, sleep quality, physical activity, diet, socioeconomic circumstances, and coexisting medical conditions may all have affected psychological symptoms or physiological measurements. Future studies should use longitudinal designs to clarify the temporal order of these relationships and determine whether changes in stress or cognitive flexibility are followed by changes in emotional or physiological health. Experimental and intervention studies would also be useful for testing whether directly targeting these psychological factors produces measurable benefits. A broader physiological assessment, including inflammatory and metabolic markers, cortisol, heart-rate variability, sleep, physical activity, and additional cardiovascular indicators, would provide a more complete picture of the relationship between psychological and physical functioning in later life.

Conclusion

The findings indicate that psychological and physical health are closely related in older adulthood. Higher perceived stress was associated with greater depression and anxiety and with higher blood pressure, while greater cognitive inflexibility was linked to more severe emotional symptoms. Older adults with hypertension also reported a greater psychological burden than participants with normal blood pressure. The interaction between perceived stress and cognitive inflexibility is particularly important. The relationship between stress and depressive symptoms was stronger among participants who showed greater difficulty adapting their thinking. This suggests that the way older adults interpret and respond to stressful experiences may be relevant to their emotional well-being. Overall, the results support a broader view of health in later life in which biological, psychological, and social factors are considered together. Routine hypertension care may therefore benefit from greater attention to stress, mood symptoms, and coping difficulties when these are present. Psychological support aimed at improving coping, emotional regulation, and flexibility in thinking may be useful alongside standard medical care, but it should not be regarded as a replacement for appropriate hypertension treatment. Longitudinal studies and controlled interventions are needed to determine the direction of these relationships and to establish whether reducing stress or improving cognitive flexibility can lead to better psychological or physiological outcomes.

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