Effect of CSMS Scale Combined with Narrative Psychological Nursing on Rehabilitation of Hypertensive Patients with Coronary Heart Disease

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ABSTRACT

Objective • This study investigated the impact of combining the Coronary Heart Disease Self-Management Scale (CSMS) with narrative psychological nursing on the rehabilitation of patients with hypertension and coronary heart disease.

Methods • A total of 300 patients with hypertension and coronary heart disease were enrolled in this study at our hospital from June 2021 to June 2022. Random number tables were used to allocate the patients into two groups, with 150 patients in each group. The control group received conventional care, while the observation group received the CSMS scale combined with narrative psychological nursing.

Results • Rehabilitation efficacy, disease self-management ability, Self-Rating Anxiety Scale (SAS), and Self-Rating Depression Scale (SDS) were compared between the two groups. After the intervention, the observation group showed lower systolic blood pressure, diastolic blood pressure, SAS scores, and SDS scores compared to the control group, with statistically significant differences ($P < .05$). Additionally, the CSMS scores in the observation group were significantly higher than those in the control group.

Conclusions • The combination of the CSMS scale and narrative psychological nursing is an effective approach for rehabilitating hypertensive patients with coronary artery disease. It leads to decreased blood pressure, improved emotional well-being, and enhanced self-management abilities. (*Altern Ther Health Med.* 2023;29(6):182-186).

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INTRODUCTION

Hypertension, a prevalent cardiovascular disease, is an independent risk factor for coronary heart disease and various other cardiovascular conditions.[1] These two diseases share similar pathological mechanisms and risk factors, resulting in a high likelihood of comorbidity. The presence of such comorbidities significantly impacts patients' quality of life, economic burden, prognosis, and the challenges associated with clinical management.[2]

During the course of treatment, patients often experience cognitive impairments, intense negative emotions, and a decline in self-management abilities and compliance, all of which can hinder the rehabilitation process.[3] Thus, enhancing patients' self-management behaviors to achieve effective disease control and facilitate rehabilitation is of utmost clinical importance.

The Coronary Heart Disease Self-Management Scale (CSMS) is a reliable and valid tool used to evaluate patients' self-management abilities pertaining to specific diseases.[4] It serves as a valuable instrument for developing disease management programs. On the other hand, narrative psychological care, derived from the field of narrative medicine, utilizes narrative techniques and skills to address patients' psychological well-being and alleviate negative emotions.[3-4]

However, limited clinical reports exist regarding the application of narrative psychological nursing in the context of chronic cardiovascular diseases, necessitating further research to establish its efficacy.[1-3] The process of narrative psychological care involves multiple steps, including the collection of narrative materials from patients, evaluation of the narrative information to identify positive events, editing of narrative practices to incorporate positive messages, and conducting thematic interviews to analyze the root causes of negative emotions and develop personalized psychological care plans.[3-4] The psychological care plan encompasses a range of strategies, including psychological suggestions, guidance, empathy, support, the establishment of a comforting hospital environment, and the implementation of techniques such as music relaxation.[5]

Based on the existing strategies, the present study aims to examine the impact of combining the CSMS scale with narrative psychological care on the rehabilitation outcomes of hypertensive patients with coronary artery disease.

METHODS

Study Design

This study utilized a randomized controlled trial design to investigate the effect of combining the CSMS scale with narrative psychological care on the rehabilitation of hypertensive patients with coronary artery disease.

Study Participants and Selection Criteria

A total of 300 patients diagnosed with hypertension and coronary heart disease, who sought medical care at our hospital between June 2021 and June 2022, were included in this study. The patients were selected using the random number table method and divided into two groups, with 150 cases in each group. Inclusion criteria for the study were as follows: (1) patients who met the diagnostic criteria for hypertension[5]; (2) patients who met the diagnostic criteria for coronary heart disease[6]; (3) patients with normal communication abilities who provided signed informed consent. Exclusion criteria were as follows: (1) patients with comorbidities such as anxiety, depression, or cognitive impairment, among others; (2) patients with additional cardiovascular conditions, including arrhythmia, myocardial infarction, or organ dysfunction; (3) patients with incomplete clinical data.

Method of Conventional Care in the Control Group

The control group received conventional care, which included real-time condition monitoring, medication counseling, health education, and conventional psychological care. The administration of the CSMS scale involves the following steps,

Scale Introduction. The purpose and importance of the CSMS scale are explained to the patients by the nursing staff or researchers. Patients are informed that the scale will help assess their self-management abilities and identify areas for improvement.

Scale Completion. Patients are provided with the CSMS scale questionnaire, which consists of specific items related to self-management abilities, including habits, symptoms, emotional awareness, and first aid management. They are asked to respond to each item based on their experiences and perceptions.

Guided Interaction. The nursing staff or researchers interact face-to-face with patients on a one-to-one basis. They guide patients in completing the CSMS scale by explaining the meaning of each item and ensuring patients understand the questions accurately. Patients are encouraged to provide comprehensive and honest responses.

Assessment of Weaknesses. After patients complete the CSMS scale, the nursing staff or researchers carefully review the responses and identify areas of weakness in patients' self-

management abilities. This assessment helps in understanding the specific aspects that require improvement or intervention. The administration of the CSMS scale involves a personalized approach, as the scale aims to comprehensively assess individual patients' self-management abilities. It is administered by healthcare professionals, such as nursing staff or researchers, who directly interact with patients to ensure accurate completion and interpretation of the scale.

CSMS Scale Combined with Narrative Psychological Care in the Observation Group

The observation group received the CSMS scale combined with narrative psychological care, which involved the following procedures.

Narrative Material Collection. One-on-one communication between the nursing staff and patients was conducted to gather information about the patient's family environment, interests, and health behaviors. The nursing staff responded positively to the patient's expressions. The nursing staff maintained a positive and supportive attitude while using the CSMS scale to assess the patient's self-management abilities, including identifying areas of weakness such as unhealthy habits, symptoms, emotional awareness, and first aid management.

Evaluation of Narrative Information. Disease-related positive events were identified based on the patient's narrative, and further discussions were held with the patients to guide them in recognizing positive influences, transforming their emotional attitudes, and addressing negative habits.

Narrative Event Editing. Caregivers explored factors related to the patient's perception of adverse events and developed edited narrative practices with positive messages to help patients overcome their difficulties.

Thematic Interview. Based on the patient's information, the nursing staff and psychological intervention personnel analyzed the underlying causes of negative emotions and developed personalized psychological care plans. It included strategies such as psychological suggestion, guidance, empathy, support, creating a comforting hospital environment, and implementing techniques like music relaxation. Additionally, health education was enhanced through lectures that utilized visual aids, multimedia videos, and other resources, covering topics such as coronary heart disease, self-care behaviors for rehabilitation, first aid methods, and preventive measures for adverse events.

Development of a Personalized Psychological Care Plan

Based on the information obtained from the patients, the nursing staff and psychological intervention personnel conducted a thorough analysis of the underlying causes of the patient's negative emotions. Subsequently, a personalized psychological care plan was developed to address their individual needs. The plan incorporated various strategies, including psychological suggestion, guidance, empathy through storytelling, emotional support, positive meditation, and creating a warm and comfortable hospitalization

environment. Additionally, musical relaxation techniques were employed to regulate patients' psychological well-being.

Furthermore, the level of health education provided to the patients was enhanced. Interactive health education lectures were conducted, utilizing a combination of visual aids such as graphics, text, and multimedia videos. The education sessions covered various topics, including comprehensive knowledge related to coronary heart disease, self-care behaviors for post-operative rehabilitation, first aid methods, and preventive measures for adverse risk events.

Observation Indexes

Rehabilitation Efficacy. The systolic and diastolic blood pressure levels were monitored before and after a 2-month intervention period.

Disease Self-Management Ability. The CSMS scale was utilized to assess seven dimensions of self-management before and after the 2-month intervention. These dimensions included bad habits (4 items), symptoms (4 items), emotional cognition (4 items), first aid management (3 items), disease knowledge (5 items), daily life (4 items), and treatment adherence (3 items). The scale consisted of 27 items, which were scored on a 5-point scale (ranging from 1 to 5). The total score range was 27 to 135, with higher scores indicating higher disease self-management ability.

Assessment Of Negative Emotions. Negative emotions were assessed before and after a 2-month intervention using the Self-rating Anxiety Scale (SAS) and Self-Rating Depression Scale (SDS). The SAS was utilized to measure anxiety levels, while the SDS was used to assess depression levels. Each item on the scales was scored on a 5-point scale (ranging from 0 to 4) and then converted into a percentage system. Higher scores indicated greater severity of anxiety and depression.

Statistical Analysis

The data were analyzed using IBM SPSS Statistics version 23.0 software (IBM, Armonk, NY, USA). Continuous variables with a normal distribution were presented as mean ± standard deviation ($\bar{x} \pm s$), and independent or paired sample t-tests were used to compare between or within two groups, respectively. The chi-square test was employed to analyze categorical data, which were expressed as percentages (%). The rank sum test was utilized for the rank series. A P value of less than .05 was considered statistically significant.

Table 1. Comparison of General Information of Patients with Co-Morbidities In The Two Groups [n, $\bar{x} \pm s$]

Group	Number of Cases	Male/ Female	Age (Years)	Education (Below Primary School/ Secondary School/ College or Above)	Duration of Illness (Years)
Observation Group	150	89/61	61.35 ± 7.42	44/75/31	3.44 ± 0.57
Control Group	150	84/66	61.64 ± 7.31	42/73/35	3.48 ± 0.52
χ^2/t	-	0.341	0.341	0.316	0.635
P value	-	.559	.733	.854	.526

Note: Data presented as mean ± standard deviation ($\bar{x} \pm s$).

Table 2. Comparison of Rehabilitation Efficacy Between The Two Groups ($\bar{x} \pm S$, Mmhg)

Group	Number Of Cases	Systolic Blood Pressure Before Care	Systolic Blood Pressure Aftercare	Diastolic Blood Pressure Pre-Care	Diastolic Blood Pressure Aftercare
Observation Group	150	145.36 ± 10.28	113.64 ± 9.21[a]	97.83 ± 6.78	78.25 ± 5.32[a]
Control Group	150	144.84 ± 10.35	119.47 ± 9.36[a]	97.54 ± 6.63	84.69 ± 5.44[a]
t	-	0.437	5.438	0.375	10.366
P value	-	.663	<.001	.708	<.001

[a]P indicates comparison with pre-care, $P < .05$. Data presented as mean ± standard deviation ($\bar{x} \pm s$).

Table 3. Comparison of Self-Management Ability Between the Two Groups ($\bar{x} \pm s$, points)

Group	Number Of Cases	Before Nursing Care	After Care
Observation Group	150	78.43 ± 8.36	113.25 ± 10.25[a]
Control Group	150	78.54 ± 8.15	96.14 ± 9.48[a]
t	-	0.115	15.009
P value	-	.908	<.001

[a]P indicates comparison with pre-care, $P < .05$.

Table 4. Comparison of Negative Emotion Levels Between the Two Groups ($\bar{x} \pm s$, scores)

Group	Number of Cases	SAS Before Care	SAS Aftercare	SDS Before Care	SDS Aftercare
Observation Group	150	45.47 ± 7.45	36.15 ± 6.31[a]	50.65 ± 7.41	38.23 ± 4.68[a]
Control Group	150	45.56 ± 7.32	39.67 ± 6.73[a]	50.13 ± 7.46	44.27 ± 4.77[a]
t	-	0.106	4.673	0.606	11.070
P value	-	.916	<.001	.545	<.001

[a]P indicates comparison with pre-care, $P < .05$.

Abbreviations: SAS, Self-rating Anxiety Scale; SDS, Self-Rating Depression Scale.

RESULTS

Comparison of General Information of Patients with Co-morbidities in the Two Groups

There were no statistically significant differences in baseline information between the two groups of patients with co-morbidities ($P > .05$). Refer to Table 1 for details.

Comparison of Rehabilitation Efficacy between the Two Groups

There was no statistically significant difference in systolic and diastolic blood pressure between the two groups of patients with co-morbidities before receiving care ($P > .05$). However, after the intervention, both groups showed a reduction in these parameters. Importantly, the observation group demonstrated lower systolic and diastolic blood pressure levels compared to the control group ($P < .05$). For more details, refer to Table 2.

Comparison Of Self-Management Ability Between the Two Groups

There was no statistically significant difference in the CSMS scores between the two groups of co-morbid patients before care ($P > .05$). However, aftercare, the CSMS scores increased in both groups. Importantly, the CSMS scores of co-morbid patients in the observation group were significantly higher than those in the control group ($P < .05$). Please refer to Table 3 for detailed results.

Comparison of Negative Emotion Levels Between the Two Groups

There was no statistically significant difference in the comparison of SAS and SDS scores between the two groups of co-morbid patients before care ($P > .05$). However, aftercare, the negative emotion scores decreased in both groups. Notably, the SAS and SDS scores of co-morbid patients in the observation group were significantly lower than those in the control group ($P < .05$). For detailed results, refer to Table 4.

DISCUSSION

The pathogenesis of hypertension with coronary artery disease is primarily associated with the prolonged hypertensive state, leading to hemodynamic alterations, platelet activation, and atherosclerotic lesions. These factors contribute to hypoxic-ischemic necrosis in the myocardium. Patients with co-morbidities often experience symptoms of anxiety and depression.[1-3]

Anxiety and depression serve as independent predictors of cardiovascular events, exerting a significant and long-lasting influence on patients' physical well-being. Without timely interventions in diagnosis and treatment, these conditions can elevate the risk of unfavorable outcomes.[4-6] It is crucial to promptly utilize simple and effective assessment tools to address negative emotions in patients with co-morbidities. Additionally, providing extra attention and monitoring to these individuals is essential,[7,8]

Self-management has emerged as a novel model for chronic disease management in recent years. It involves collaboration between healthcare professionals and patients to enhance disease knowledge, develop healthcare skills, improve health behaviors, and facilitate disease regression through effective communication and guidance. A study[9] discovered a significant positive correlation between chronic disease resources and patient activation with self-management behaviors ($P < .01$). Furthermore, patient activation was identified as a mediator in the relationship between chronic disease resources and self-management.

Therefore, to enhance patient self-management behaviors, healthcare providers should prioritize the significance of chronic disease resources and patient activation.[9]

Narrative care has been shown to enhance healthcare professionals' empathy towards patients by honing their narrative skills in recognizing, understanding, interpreting, and responding to patients' illness stories and challenges. By employing narrative psychological interventions, healthcare professionals and patients can enhance patient autonomy through improved communication, guided storytelling, exploration of underlying events, and targeted resolution strategies. This care model has demonstrated a notable impact on reducing patients' negative emotions.[10]

This study revealed that the observation group of co-morbid patients demonstrated lower systolic blood pressure, diastolic blood pressure, SAS, and SDS scores compared to the control group after the intervention, while their CSMS scores were higher ($P < .05$). The implementation of the CSMS scale combined with narrative psychological care proved to be more effective in improving these parameters. The level of self-management directly influences patients' adherence to health behaviors. A higher level of self-management corresponds to better health literacy and improved quality of recovery. The CSMS scale serves as a reliable tool for decision-making, enabling the enhancement of self-management levels, improving patients' health literacy and motivating their active participation in treatment.

Narrative psychological care adopts a patient-centered approach, focusing on the patient's interests and incorporating humanistic care alongside medical needs. Caregivers actively listen to the patient's illness story and empathize with their experiences, aiming to minimize unnecessary medical harm and resource wastage.[11] By involving patients in treatment decision-making, their narratives provide valuable insights for clinical decision-making and optimization, ultimately enhancing rehabilitation outcomes.

The CSMS scale plays a crucial role in assessing self-management weaknesses and guiding targeted interventions to strengthen health education. This comprehensive assessment allows healthcare providers to tailor precise intervention strategies based on the identified areas of improvement. Anxiety-depression negative emotions not only affect patients' psychological health but also have a severe impact on their quality of life and physiological status.

While narrative psychological care empowers patients with coronary heart disease, promoting self-management behaviors and fostering a positive perception of disease management.[10-11] By leveraging the results of the CSMS scale assessment results, patients can better understand their condition, have a positive perception of disease management, and effectively manage their negative emotions.

Additionally, narrative psychological care transforms nursing behavior from being passive tools to active and positive engagement, providing empathetic companionship to patients and enhancing their compliance with healthcare regimens. By understanding the patient's narrative, healthcare providers can better address the underlying causes of negative emotions, amplify positive aspects, and reduce overall negative emotions.[12]

Study Limitations and Future Directions

There are some limitations to be considered in this study. Firstly, there might be a sample selection bias as the study could have included patients from a specific region or medical institution, limiting the generalizability of the findings. Future studies could adopt multicenter designs or longitudinal studies with larger and more diverse samples to enhance external validity.

Secondly, the measurement tools used in this study, such as the CSMS scale, self-rated anxiety scale, and self-rated depression scale, relied on patients' self-reports. It introduces a potential risk of recall bias, subjective bias, or inability to reflect the patient's true condition accurately. To enhance measurement objectivity, future studies could consider incorporating objective indicators or utilizing alternative assessment tools for validation.

Furthermore, the study lacked long-term follow-up, focusing only on the short-term impact of the CSMS scale and narrative psychological care on patients' recovery. Long-term follow-up would provide valuable insights into the sustained effects and long-term outcomes of the intervention. Future studies should consider extending follow-up periods to evaluate the effectiveness of the intervention more comprehensively.

CONCLUSION

In conclusion, the combination of the CSMS scale and narrative psychological care proves to be an effective approach for rehabilitating hypertensive patients with coronary artery disease. This intervention demonstrates significant benefits, including the reduction of blood pressure and negative emotions, as well as the improvement of patients' self-management abilities. These findings highlight the importance of implementing this approach in clinical practice to promote optimal patient outcomes. Furthermore, utilising the CSMS scale and narrative psychological care not only addresses the physical aspects of patient's health but also acknowledges the importance of their psychological well-being. By integrating patient-centered care and empowering patients in their self-management journey, healthcare professionals can foster a holistic approach to cardiovascular disease management. The positive outcomes observed in this study emphasize the need for further research and wider implementation of this intervention to enhance patient care and overall quality of life.

AUTHOR'S CONTRIBUTIONS
YH and HT designed the study and performed the experiments; HT collected the data, LD analyzed the data, and YH prepared the manuscript. All authors read and approved the final manuscript.

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