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ORIGINAL RESEARCH

The Intervention of Medical Social Workers: Humanistic Care of Cardiovascular Disease Patients

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Aim: To explore the implementation pathway and effectiveness of medical social workers and nurses in humanistic care nursing and to evaluate the impact of this collaborative model on patient satisfaction and healthcare resource utilization efficiency in cardiovascular wards.

Methods: This study adopted a quasi-experimental pre- and post-test design to implement humanistic care intervention in the cardiovascular ward of a tertiary care hospital in Zhuhai, China, from September to November 2023. A collaborative team consisting of two medical social workers and four charge nurses, based on the three-stage service process of "pre-hospital assessment-hospital care-discharge follow-up", systematically provided four core humanistic care services of "case management, group support, humanistic environment creation, and social resource connection". Researchers used the Chinese version of the Patient Satisfaction with Nursing Care Questionnaire (PSNCQQ) to assess 36 inpatients in pairs, and they collected operational indicators such as average hospitalization days, the ward bed occupancy rate, and number of admissions for comprehensive assessment.

Results: Patient satisfaction scores improved from 89.72 (94.44% satisfaction rate) before the intervention to 94.17 (99.12% satisfaction rate) after the intervention, and the paired-samples *t*-test showed that the difference was statistically significant ($t = 5.01$, $p < 0.001$). During the same period, the bed occupancy rate increased from 65.40% to 80.61%, the number of inpatient admissions increased by 27.39%, from 157 to 200, and the average length of hospitalization decreased from 6.07 to 5.76 days. During the intervention period, researchers conducted 27 group activities, covering 328 participant attendances. We provided case management services to 18 patients, serving 54 service sessions, and completed 12 screenings for potential doctor-patient conflicts, covering 480 participant attendances.

Conclusion: Humanistic care nursing carried out by medical and social collaboration can effectively improve patient satisfaction, optimize resource allocation, and fill the gap in social support and psychological care in traditional nursing, which has good clinical promotion value.

Keywords: medical social work, medical social worker, cardiovascular disease, humanistic care nursing

Background

Cardiovascular disease (CVD), including coronary heart disease, stroke, and myocardial infarction, is the leading cause of death and disability worldwide and a significant component of the global disease burden.[1] According to statistics from the 2021 Global Burden of Disease Study, there were 612 million cases of CVD worldwide, accounting for 26.8% of all deaths. From 1990 to 2021, the age-standardized prevalence of CVD increased by 0.88%, reaching 7179 cases per 100,000 people.[2] As the prevalence of CVD continues to rise, healthcare systems have increasingly recognized that medical treatment alone is insufficient to meet patients' comprehensive needs. An integrated care model incorporating psychological, emotional, and social support systems has become key to improving care quality.[3]

The Limitations of the Traditional Medical Model and the Necessity of Holistic Care

The "medical model" has long been widely adopted in traditional nursing practice, focusing on diagnosing and treating diseases. However, this disease-centered model is no longer sufficient to meet the modern demand for comprehensive patient

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care in healthcare. Research indicates that relying solely on the medical model fails to help patients recover their health and may lead to adverse outcomes such as delayed diagnosis, prolonged hospital stays, increased treatment costs, and even more severe threats to patients' health.[4] In countries such as the United Kingdom, Australia, and Iran, clinical nursing environments often suffer from inadequate care conditions, with patients' emotional support, social relationships, cultural backgrounds, and other needs frequently overlooked. Patients' dignity and autonomy are also not given the respect they deserve.[5]

This phenomenon is not the result of individual healthcare professionals' negligence but rather the combined effect of a series of systemic factors. Specifically, insufficient nursing time, poor professional collaboration, incomplete nursing records, lack of clinical guidance, strained medical resources, weak management mechanisms, limited knowledge reserves among nurses, lack of work motivation,[6] and misunderstandings of the "holistic nursing" concept are all key factors hindering nurses from providing truly "patient-centered" care services.[7] These issues suggest that the traditional medical model has significant shortcomings in addressing patients' diverse and holistic needs, necessitating reflection and transformation at both conceptual and practical levels and introducing a more integrated and humanistic care model.

The Collaborative Value of Medical Social Workers in Cardiovascular Care

Modern healthcare increasingly recognizes that patients are not merely carriers of disease but complex individuals within social networks, necessitating interdisciplinary collaboration between nursing and social work professions to provide more comprehensive humanistic care services.[8] Interdisciplinary teams, particularly those involving medical social workers (MSWs) and nursing teams, have effectively improved patient health outcomes and quality of life.[9] MSWs have become an important part of cardiovascular ward medical teams in countries such as the United States and the United Kingdom. They can provide services such as psychological counseling, resource linkage, and patient health education, alleviate patients' negative emotions, and reduce the psychological stress caused by the disease.[10] MSWs provide individualized, client-centered support services focusing on patients' psychosocial needs, while nurses are primarily responsible for routine clinical care. Their collaboration promotes patients' physical and mental health, enhances treatment adherence, and improves satisfaction with nursing services.[11]

Medical social work (MSW) is increasingly becoming indispensable to global healthcare systems. MSWs collaborate closely with patients and their families to help patients better cope with illness's social, emotional, and psychological challenges.[12] MSW intervention effectively addresses the limitations of the traditional biomedical model, enhances the humanistic care aspect of services, and promotes implementing the "whole person" healthcare philosophy.[13] By providing multidimensional services such as psychological support, social resource linkage, and crisis intervention, MSWs help patients and their families reduce stress, promote treatment adherence, and better manage their illnesses.[10,11] MSWs' work addresses patients' emotional needs and plays a crucial role in their social support networks, helping to resolve social, economic, and emotional challenges.[14] This multidimensional support system helps improve doctor-patient relationships, enhance the effectiveness of medical services, and better meet patients' comprehensive needs during treatment. However, previous studies in China have paid less attention to the critical role of MSWs in cardiovascular wards, particularly their collaborative work with nurses to provide humanistic care.

The Practice and Research Significance of Humanistic Care in the Chinese Context

In China, CVD has become a significant public health issue. With the acceleration of economic development and population aging, the incidence of CVD has been increasing annually, with an estimated 330 million cases by 2024.[15] CVD is not only highly prevalent but also has high recurrence rates, accompanied by high mortality, disability rates, and medical burdens, severely impacting the health of middle-aged and elderly individuals and posing a significant threat to the health of China's population.[15,16] Although traditional treatment models remain dominant in Chinese hospitals, the growing societal emphasis on patient-centered care has driven collaboration between MSWs and nursing teams to become a key force in advancing comprehensive care.

In this context, patients' demand for higher-quality healthcare services continues to grow, and traditional nursing models struggle to meet the increasingly diverse needs of patients and healthcare providers.[17,18] China's healthcare system increasingly recognizes the importance of transitioning from a single biomedical model to a more collaborative, patient-centered one, particularly by integrating patients and their families more deeply into treatment planning.[19] The National Health and Family

Planning Commission explicitly stated in its "High-Quality Nursing Service Demonstration Project" that humanistic care should be integrated into nursing services, humanistic care awareness should be strengthened, communication between nurses and patients should be enhanced, and nursing quality should be improved.[20] Humanistic care is a core element of nursing work, an important standard for measuring nursing quality, and a fundamental duty that nurses must fulfill.[21] Research indicates that nursing care emphasizing humanistic care can effectively improve nursing quality, enhance patient outcomes, and promote harmonious doctor-patient relationships.[22,23] Additionally, the role of MSW in humanistic care is increasingly recognized, as it can effectively enhance patient satisfaction, improve treatment adherence, and promote nursing coordination, thereby contributing to hospital brand development and high-quality growth.[24,25]

This study aims to explore the practice of MSWs and nurses collaborating to implement humanistic care in cardiovascular wards, analyze the implementation process and outcomes, and propose optimization recommendations to provide valuable references for nursing practice and research in related fields.

Materials and Methods

General Information

The disease types in our department are mainly coronary heart disease, hypertension, heart failure, and arrhythmia-based CVD, with 42 authorized beds in the ward. There are 13 nurses, all female, aged 24–39 years old, average 30 years old; among them, there are 4 nurse-in-charge, 7 senior nurses, and 2 registered nurses; there are 7 individuals with less than 10 years of work; and 6 individuals with more than 10 years of work. There were 5 doctors aged between 25 and 61 years, with a mean age of 38 years. Among them were a chief physician, an associate chief physician, an attending physician, and 2 resident physicians. And 2 MSWs.

Methods

Study Design

This study employed a paired-sample pre-post design within a quasi-experimental framework to assess the effect of MSWs collaborating with nurses on the implementation of humanistic nursing interventions in cardiovascular wards. The study did not have a randomized control group. Instead, the same group of eligible patients was measured before and after the intervention, and a paired-sample *t*-test was used to analyze the effect of the intervention.

The intervention period is from September to November 2023 and lasts for three months. To control for sample bias, we included only patients who completed the entire admission-to-discharge process and provided complete pre- and post-intervention assessment data throughout the intervention period. Considering some patients were discharged early or had incomplete data, we ultimately included 36 hospitalized patients who completed the paired assessment.

Study Participants and Sample Size

This study was conducted from September to November 2023 in the cardiovascular medicine ward of a tertiary hospital in Guangdong, China. The ward has 42 beds and mainly admits CVD patients with coronary heart disease, hypertension, arrhythmia, and heart failure.

The study participants comprised 36 hospitalized patients who received collaborative humanistic care nursing interventions from MSWs and nurses during the intervention period and completed pre- and post-intervention nursing care questionnaires. The study used purposive sampling to include only those patients who completed the full range of services during the intervention period and could provide complete pre- and post-intervention assessment data to ensure the accuracy of the statistical analysis.

Inclusion criteria included:

a. Patients diagnosed with CVD (such as coronary heart disease, hypertension, arrhythmia, heart failure);
b. Age ≥18 years;
c. Hospitalization time is not less than 48 hours;
d. Patients have basic communication skills and are able to understand and cooperate to complete the questionnaire;

Exclusion criteria:

e. Patients with severe mental disorders or cognitive dysfunction;
f. People who cannot effectively cooperate with intervention (such as long-term bed rest, unable to participate in activities);
g. Patients with critical conditions need to be transferred to the ICU for treatment;
h. Patients with less than 48 hours of hospitalization.

Finally, we identified 36 patients who met the above criteria, completed the paired pre- and post-intervention assessments, and used these data for statistical analysis.

Intervention Measures

The humanistic care intervention in this study is based on the three-phase pathway of "pre-hospital assessment, inpatient care, discharge, and follow-up". Centered on four core services: "case management, group support, creation of a humanistic environment, and linkage to social resources". Two MSWs and four charge nurses implemented the intervention, following a three-phase pathway consisting of pre-hospital assessment, inpatient care, and discharge follow-up. The intervention period was from September to November 2023, and each participating patient received an average of ≥3 humanistic care services during hospitalization to ensure a basic consistency of intervention intensity. The total number of interventions is not less than 108 times. Interventions are implemented through various methods, including individual interviews, group counseling, and multiple interviews, to enhance the coverage and targeting of services. To ensure the consistency of intervention intensity, the length of each service was controlled between 30–60 minutes, and the team routinely visited 2–3 times per day, adjusting the service plan weekly according to patient changes. The following is the specific intervention content and process (Figure 1).

During Admission

Pre-Hospital Assessment and Adaptation. MSWs and the nurses collaborate to complete the patient's initial assessment of physiological, psychological, and social support 1–2 days before hospital admission. This assessment includes understanding the patient's condition, evaluating anxiety levels, assessing family support, and identifying the use of social resources.[26] At the same time, they communicated with the doctor-in-charge and the nurse-in-charge about the patient's overall condition and background (eg, medical history, disease, treatment, medication, family, economic and social support, and other information), initially assessed the patient's needs, assisted in adapting to the hospitalized environment, relieved initial anxiety, and established an initial service profile.

Admission Care Service. To help patients adapt to the hospital environment and alleviate initial anxiety, MSWs collaborate with nurses to provide systematic introductions to ward facilities, medical insurance reimbursement policies, and admission and discharge procedures, helping patients become familiar with hospital operations and available services. A total of six "First Lesson of Hospital Admission Navigation" activities were conducted, with an average of 12 patients served per session.

Example: The MSW Department and the CVD Department to host an "First Lesson of Hospital Admission Navigation", using interactive formats such as flowcharts, fun Q&A sessions, and a "Question Post-it Wall" to explain the ward environment, medical treatment processes, and medical insurance policies to patients, while addressing common questions on-site. This activity enhanced patients' sense of participation and adaptation efficiency while establishing a foundation of trust for subsequent services.

Subsequently, MSWs collaborated with nurses to conduct "team-based contact interviews" within 48 hours of patient admission. Using a "many-to-one" micro-communication model and a pre-set question list, they helped patients express their expectations and concerns about hospital life, identified challenges in role transitions and environmental adaptation, and provided targeted answers and emotional support. Patients were promptly referred to case management or group services if communication barriers or special needs were identified.

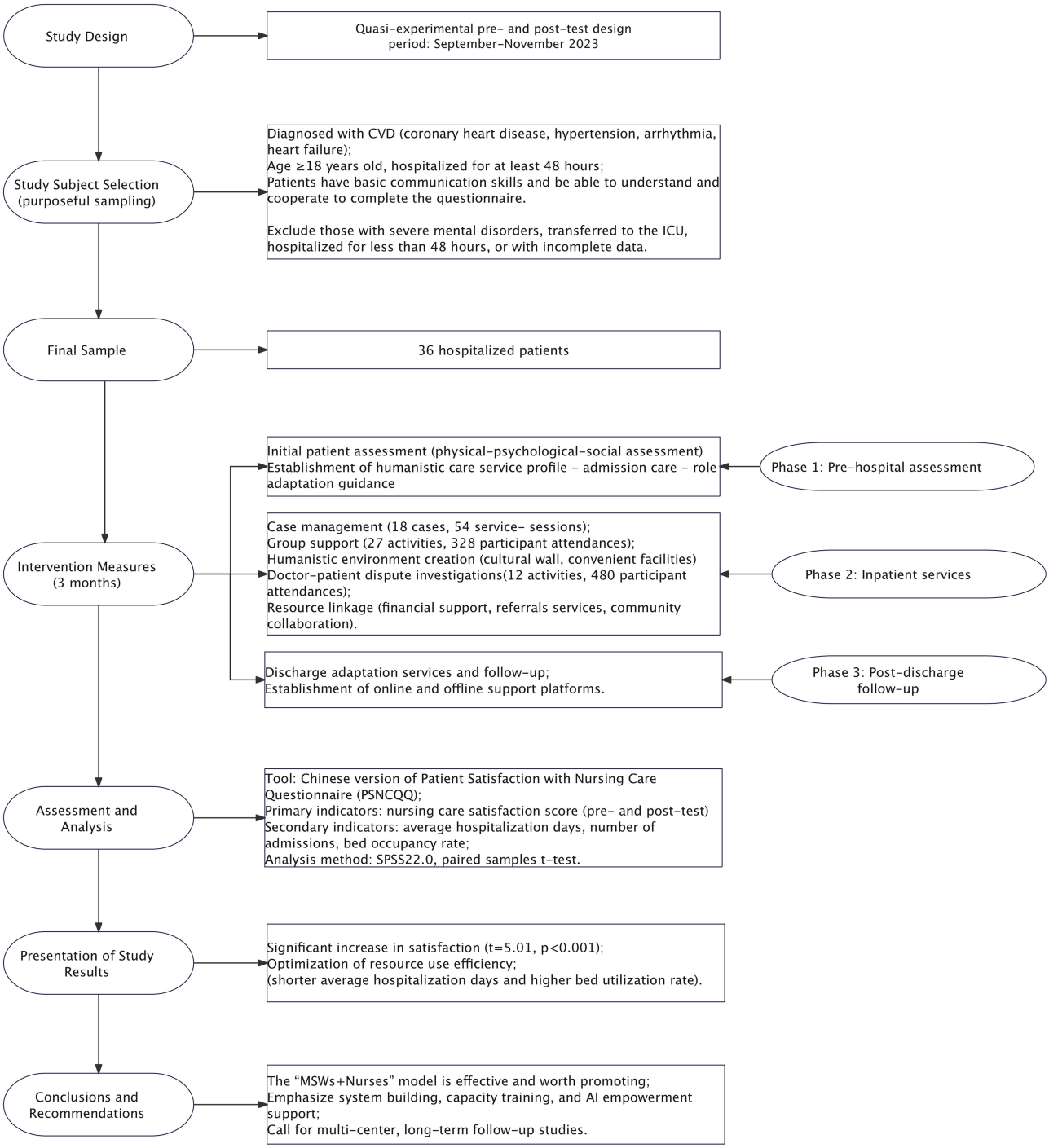

Figure 1 Flowchart of the Humanistic Care Intervention Process.

This admission care model, combining group guidance with individual support, helps patients better understand the hospital environment, feel more in control of their treatment, and build trust, laying a foundation for a positive relationship between patients and healthcare staff.

During Hospitalization

Create a Distinctive Ward Environment and Foster a Culture of Humanistic Care. Focusing on the service concept of "patient-centered", the CVD Department, in collaboration with MSWs and nurses, continues to optimize the ward

environment and spatial layout to create a warm, safe, and respectful inpatient atmosphere, helping patients relax emotionally and feel cared for psychologically.

In terms of the physical environment, the ward is equipped with thematic areas such as the "Humanistic Care Culture Wall", "Wish Wall", and "Reading Corner" to create a warm and positive visual and interactive experience. The hospital provides shared supplies such as daily necessity packages, first aid kits, and umbrellas to meet patients' daily needs and enhance the comfort and convenience of their hospitalization. The hospital's signage system is unified and standardized, and the ward layout is well-organized, which reduces patient inconvenience and confusion when moving around and enhances their sense of control and security in the environment.

Regarding emotional support, the ward has specially designated "healing spaces" and "communication corners" to allow patients to read quietly, adjust themselves, and establish supportive connections with others. These spaces meet patients' psychological adjustment needs and promote emotional communication among peers, creating a positive and mutually supportive atmosphere during hospitalization.

Through continuous spatial improvement and creating a cultural atmosphere, the ward has gradually formed a "warm medical environment", providing all-around humanistic care from physical space to psychological support. This enhances patients' sense of security and belonging and provides strong support for establishing long-term, stable doctor-patient trust relationships and promoting multi-level humanistic care practices.

Case Management Services. Taking the patient as the center, listening to the "patient's inner voice" and responding to the patient's needs for expression, MSWs and nurses integrate and manage the patient's "individual-family-social" needs, provide individualized narrative nursing and case management services, and obtain the patient's disease story to improve the patient's adherence to treatment and promote the patient's understanding of medical behavior, and building a harmonious medical relationship. A total of 18 cases were managed under case management, with an average of 3 service sessions per patient, totaling 54 sessions. Each service lasted about 20–40 minutes.

MSWs and nurses conducted psychosocial assessments for hospitalized patients through daily visits, referral services from professional medical staff, and patient-initiated requests. They identified individuals experiencing emotional distress, psychological pressure, or other difficulties and collected relevant information to assess each patient's problems and needs. MSWs and nurses assessed patients' difficulties by type, severity, and specific needs. Based on this assessment, they formulated detailed intervention plans, service methods, and service periods, and developed personalized case management plans. We base the specific service content on the principles of narrative medicine,[27] in which MSWs, together with doctors, nurses, and other multidisciplinary teams, listen to the patient's story, guide the patient to externalize their problems, help them to dig out the flashbacks, and give them encouragement and support with the help of the relevant techniques of narrative therapy. Narrative letters are also introduced as a tool to reshape the patient's positive narrative and ultimately lead to self-change. In addition, MSWs and nurses also utilize daily ward visits, festive-themed activities, and sympathy and care activities to alleviate the anxiety of patients and their families and to foster a positive relationship between doctors and patients. Patients with severe mental illness are referred to psychiatrists for intervention, if any.

Example: During daily ward visits, the social worker learns that the client, Xiao Li (a pseudonym), is a 65-year-old woman who lives with her husband. Her two children have grown up and live near Xiaoli's home, but they have less time to visit her due to their busy schedules. Her children mainly bear Xiao Li's living expenses. The client usually rests at home, sometimes talking to herself, and has violent tendencies when her mental state is unstable Her family worries that she may hurt others when she goes out, so they do not let her go out. Recently, she was hospitalized for checkups due to dizziness and chest tightness, and her family is very worried about her health.

First, the hospital stabilized the client's condition through medical resources. Subsequently, MSWs utilized the strengths-based perspective theory to explore the strengths of the client herself and her surroundings, enhance her self-confidence, and improve her ability to manage her mental state. At the same time, MSWs encouraged the client to develop interests that would enrich her daily life. In addition, MSWs applied the Social Support Network Theory to link up with the support resources in the hospital to explain the characteristics of the disease and the management of medication to the family members of the case to help them have a correct understanding of taking care of hypertensive patients. MSWs also organize family support meetings with nurses in the wards for similar diseases to promote doctor-

patient exchanges, enhance patients' knowledge of the disease, share rehabilitation experiences, and further strengthen the support network among patients' families.

Group and Thematic Activities: Building a Warm and Supportive Environment to Promote Psychological Adaptation in Patients. In order to provide patients with warmer services and build a warm ward, MSWs and nurses are oriented to patients' needs, and based on the preliminary questionnaires and interviews, they systematically design and carry out various types of group support activities and thematic humanistic activities to help patients improve their medical adaptability, enhance their level of psychological adjustment, and obtain positive support from peers and the healthcare team.

We organized 21 group and thematic activities during the intervention, serving 256 participant-times of patients and their families. Each activity had 8 to 30 participants and lasted 30 to 60 minutes. We held activities an average of 1–2 times per week and occasionally scheduled them to coincide with ward holiday events.

Firstly, it is important to assist patients in overcoming their medical fear, relieve their tension during the medical process, and promote their mental health and adaptability. MSWs and nurses organized patient relaxation and stress reduction group activities, mainly games and sports, such as puzzle board games, medical health exercises, and Baduanjin (Eight-Section Brocade). During the activities, the patients developed good habits of healthy exercise, felt happy while exercising, and released their stress. At the same time, the concept of narrative medicine is introduced into the humanistic care service of the wards, and through the form of a "patients' story-telling meeting", patients are encouraged to express their own life stories and share their true feelings and life's journey. Secondly, to address cognitive biases and emotional management challenges among CVD patients, MSWs and nurses collaboratively conducted health education and psychological support group activities. These activities aimed to increase patients' and their families' understanding of disease pathogenesis, treatment principles, key nursing priorities, psychological influences, potential comorbidities, corresponding management strategies, and self-care knowledge. These activities help patients understand their condition and cooperate with treatment, alleviating their cognitive bias and increasing emotional support. We incorporated interactive games, emotional puzzles, wishing stickers, and other engaging elements into the activities to enhance patients' participation and the overall experience. It is worth noting that, due to the ward's high mobility and the patients' varied needs, the group activities employed a combination of single supportive and continuous activities to ensure that newly admitted patients could be contacted and involved multiple times. Finally, MSWs and nurses have built a community exchange club with more than 100 patients and their families, exchanging information covering disease, pain, nursing care, diet, nursing care, accompaniment to medical treatment, medical information, encouragement, and support, etc, to help patients form a mutual support network during hospitalization, and to obtain continuous energy support, emotional accompaniment, and information links.

In addition, MSWs and the nursing team regularly organize ward humanistic care activities, including festival celebrations, health lectures, patient-sharing sessions, birthday parties, and more. These events integrate departmental features with patient needs to foster a supportive group atmosphere that promotes cultural identity and social-emotional connection. During major festivals such as Physician's Day and the Mid-Autumn Festival, hospital leaders, medical staff, and MSWs jointly hold celebration events and visit wards to deliver gifts and festive wishes, actively listen to patients' needs, address their emotions, and convey the medical team's warmth and collective care.

This series of group and thematic interventions not only meets the patients' needs for emotional adjustment and health education at the individual level but also creates a hospitalization culture of mutual help, equality, and warmth, which plays a positive role in improving the patient's experience of medical treatment, enhancing satisfaction and promoting the harmony of the doctor-patient relationship.

Coordination of Doctor-Patient Relationship. MSWs and nurses contribute to effective communication between doctors and patients by preventing conflicts and improving mediation mechanisms for resolving disagreements. This promotes better doctor-patient communication, reshapes their relationship, reduces disputes, and fosters harmony. MSWs regularly collaborate with doctors and nurses to conduct departmental checkups and identify high-risk patients in the wards, such as those with outstanding fees, poor compliance, or high expectations. They actively and steadily resolve all kinds of conflicts and disputes in the hospital, maintain the harmony and stability of the hospital, and achieve early discovery, control, and resolution of conflicts and disputes. A total of 12 activities about doctor-patient dispute investigations were

held, reaching 480 participant attendances. This mechanism involves early intervention in risk communication through group education and individual conversation.

During the pre-treatment period, the team conducted medical dispute prevention and doctor-patient conflict screening to address cognitive biases between doctors and patients. MSWs worked with nurses to prevent doctor-patient conflicts by intervening in patients' expectation management and encouraging patients to participate in treatment decision-making to avoid patients' dissatisfaction with healthcare personnel due to the psychological gap at the end of the treatment period.[28] Through group activities, the team improves communication and mutual understanding between patients and healthcare professionals. For example, it popularized knowledge related to subhealth management, chronic disease prevention and treatment, and daily health care in hospitals and communities. It promoted comprehensive knowledge and positive communication between patients and residents about the roles of hospitals, healthcare staffs, and MSWs to effectively prevent doctor-patient conflicts by establishing a trusting relationship[29] —improving doctor-patient communication during the diagnosis and treatment process. Doctors and patients may have friction due to issues such as informed consent to treatment, treatment plan and treatment effect, and communication language and attitude, and failure to deal with them promptly can escalate conflict or even lead to vicious violence. MSWs can facilitate communication between doctors and patients, linking multidisciplinary and multifunctional departments, such as those involving doctor-patient relationships, to work together. This enables them to coordinate communication barriers between doctors and patients due to differences in professional knowledge and treatment preferences and to avoid conflicts over decision-making authority. Communication barriers, avoiding problems such as unclear attribution of decision-making authority, decreased decision-making quality, prolonged decision-making time, and reduced doctor-patient disputes.[30] In the late stage of consultation and treatment, rebuild doctor-patient trust. MSWs collaborate with nurses and community staff to assist patients in handling post-discharge aftercare and community transitions, expressing humanistic care and focusing on the psychological adjustment of both doctors and patients.[31]

Example: To improve the communication skills of healthcare professionals and to emphasize the importance of the doctor-patient relationship, the MSW department, together with the doctor-patient department and the CVD department, carried out a series of activities in the ward, mainly including a "doctor-patient communication drama performance" and a popularization of science. By simulating real communication scenes, the drama helped healthcare staff to experience the patient's perspective in practice and improve their communication skills and empathy. Meanwhile, the popularization of science, which focuses on communication strategies and typical cases, strengthened healthcare staff's understanding of the importance of doctor-patient communication. This series of activities effectively enhanced the communication awareness and ability of the healthcare teams. Further, they promoted the doctor-patient relationship's positive interaction and harmonious development.

Social Resource Links. MSWs and nurses collaborate to assess the financial situation of patients' families and mobilize, coordinate, and integrate resources within and outside the hospital to help patients and their families alleviate the financial pressure caused by their illnesses. For example, patients were assisted in applying for social benefits such as Medicaid and financial assistance, linking resources 12 times and covering 18 families. At the same time, MSWs and nurses also actively help patients by introducing mental health institutions or related departments in the community, such as community health service centers and mental health centers. They also strengthen follow-up links with patients after discharge to ensure that patients can receive help and support from specialized institutions, professionals, and various other social forces as they return to the community. In addition, to enhance the efficiency of resource matching, MSWs have built a community resource database, proactively linking with available resources in the surrounding areas, gradually promoting a two-way referral mechanism between hospitals and the community, and establishing a "medical-community synergy" service model, to help patients better continue the recovery process and achieve the goal of health management. Considering that some patients lack sufficient understanding of community resources and social security policies prior to falling ill, they often find themselves at a disadvantage after the onset of illness due to inadequate coping mechanisms. MSWs have compiled and published a community resource guidebook, which is distributed to patients upon admission or placed in the ward for their convenient reference.

To meet the common and individual needs of patients and their families, MSWs and nurses also actively cultivate a volunteer service team, leveraging the strengths of all parties to provide a comprehensive range of volunteer services

for patients and their families. Forty-five volunteers have been set up in the MSWs department through targeted and social recruitment—volunteers with psychological counseling, photography, painting, and other skills. Volunteer services are provided on a "one-to-one" or "one-to-many" basis, covering medical guidance, companionship and support, doctor-patient communication assistance, and emotional relief to enhance the patients' medical experience and satisfaction.

During Discharge

Discharge Adaptation Service. MSWs and nurses conduct regular follow-ups for discharged patients, which are not only limited to diseases but also include psychological status and living conditions, and record them promptly. We establish effective communication mechanisms for patients and their families, provide communication support platforms, and offer health education through our online system, cardiovascular nursing outpatient clinic, and telephone follow-up visits to facilitate a continuous connection between online and offline nursing services.

Evaluation Indicators and Tools

This study sets the nursing satisfaction score as the main evaluation index and hospitalization management-related data as the secondary index to comprehensively assess the clinical effect of humanistic care intervention.

Main Indicators

We used the Chinese version of the Patient Satisfaction with Nursing Care Questionnaire (PSNCQQ) to assess patient satisfaction. The questionnaire consists of 19 entries, and the assessment covers six aspects: the nursing staff's attitude and communication, nursing technology and professional competence, the timeliness of nursing services, respect and concern for patients, comfort and safety in the nursing process, and the clarity of information obtained by patients. A 5-point Likert scale was used for scoring with a total score of 95, with higher scores indicating higher satisfaction. Based on survey data from 36 hospitalized patients in a medical institution in China, this study assessed the internal consistency reliability of the questionnaire using Cronbach's α coefficient in SPSS 22.0. The result ($\alpha > 0.7$) indicated good reliability of the scale in this sample.[32]

All enrolled patients completed the satisfaction questionnaire assessment once on the second day of admission. We conducted the assessment once the day before discharge, with assistance from a third-party interviewer who had received standardized training to ensure consistency and objectivity.

Secondary Indicators

Average hospitalization days (days): take the number of days in the complete hospitalization period of patients as the statistical unit, reflecting the efficiency of disease course management. Ward bed utilization rate (%): calculated as the ratio of the number of actual patients admitted to the number of authorized beds per day during the intervention period. Rate of change in admissions: Comparing the percentage change in cardiovascular ward admissions between the pre-intervention and intervention periods was used to assess changes in service absorption capacity.

Data Processing

We used SPSS 22.0 to process the data. A paired-sample *t*-test was used on the total score of the Human Care Satisfaction Scale to test the statistical significance of the before and after changes. The significance level was set at $p < 0.05$.

Results

Comparison of Pre and Post-Measurement Scores of Humanistic Care Satisfaction (n = 36)

As shown in Table 1, in the pre-intervention period (September 2023), the average score of satisfaction with the care of 36 hospitalized patients was 89.72 ± 5.11 (out of 95), with a satisfaction rate of 94.44%. In the post-intervention period (November 2023), the score improved significantly to 94.17 ± 1.00, and the satisfaction rate reached 99.12%. The paired sample *t*-test result was $t = 5.01$, $p < 0.001$, indicating that the difference in scores before and after the intervention was statistically significant.

Table 1 Comparison of Patient Care Satisfaction Scores and Satisfaction Rate Before and After Intervention (n = 36)

Period	Satisfaction Scores (Mean ± SD) (n=36)	Satisfaction Rating (%)	t	p
Pre-intervention	89.72 ± 5.11	94.44	/	/
Post-intervention	94.17 ± 1.00	99.12	5.01	<0.001

Effectiveness of Medical Resources Utilization

At the same time, the operational efficiency of the hospital improved significantly: compared with September 2023, the number of CVD ward admissions achieved a 27.39% increase after the intervention, and the bed occupancy rate increased from 65.40% to 80.61%, which further enhanced the carrying capacity of the wards and the efficiency of resource utilization. The average hospitalization day decreased from 6.07 to 5.76 days, a reduction of about 5.11% ($p < 0.05$), significantly accelerating bed turnover. Despite the increase in the number of patients, the rate of doctor-patient conflict did not increase significantly, indicating that this humanistic care nursing intervention not only improved service quality but also helped to alleviate doctor-patient tension and provided positive support for building a more harmonious doctor-patient relationship.

Implementation of Service Programs

To promote the normalization of humanistic care work, the department has established diverse activity platforms and continued to implement support projects with unique characteristics. During the intervention period from September to November, a total of 27 group activities were organized, with a total of 328 participant attendances, covering disease awareness, emotion regulation skills, psychological guidance, and holiday-themed exchanges, etc, which enriched the inpatient life of the patients and enhanced their sense of belonging and support. At the same time, MSWs actively intervened in clinical services. They managed 18 cases, providing personalized services, including psychological support, guidance on medical expenses, and coordination of family care, with 54 service sessions. In addition, to mitigate potential risks in doctor-patient communication, the team has conducted 12 investigations into doctor-patient disputes involving 480 participant attendances. This approach has effectively reduced the incidence of disputes and enhanced patients' sense of medical safety and willingness to cooperate through early identification, timely communication, and individualized intervention.

Establish a Multidisciplinary Cooperative Humanistic Care Team in the CVD Department

To ensure the professionalism and continuity of humanistic care interventions, the department has established a multidisciplinary collaborative humanistic care team comprising 4 nurses and 2 MSWs. The team also annually absorbs 2–4 interns and several volunteers to participate in ward services. The team plays its role in admission assessment, process support, and discharge interface, forming a multidisciplinary humanistic support model centered on the linkage of "medical care and community".

Discussion

The results of this study show that the humanistic care intervention implemented by MSWs in collaboration with nurses in CVD wards can significantly increase patients' satisfaction with humanistic care, improve their hospitalization experience, and optimize the efficiency of healthcare resource use at the same time. The difference in satisfaction scores between the paired samples before and after the intervention was statistically significant, indicating the feasibility and effectiveness of this intervention model in clinical nursing practice. At the mechanistic level, the following three key factors mainly contributed to improving the effectiveness of the intervention:

First, the "sense of companionship" and "sense of security" brought about by case support are the primary factors that increase patient satisfaction. In global health care, studies have shown that patients' mental health status has a significant impact on treatment outcomes.[10] Patients feel anxious and helpless in the face of unfamiliar medical environments and disease uncertainty. MSWs help patients clarify the treatment process, understand medical information, and provide emotional accompaniment and comfort through initial visits, psychological counseling, and information explanation, significantly alleviating patients' psychological stress and enhancing their trust in healthcare teams.

Second, the sense of belonging and empathic atmosphere established in group activities played an important role in the intervention effect. Through the narrative group, holiday activities, and health education, patients not only gained health knowledge and support, but also found resonance and strength through sharing and listening. Patients frequently expressed feelings such as "being understood", "having empathy", and "no longer being alone" in the group, indicating that group support is an effective psychological compensation mechanism, which is especially suitable for CVD patients. This indicates that collective support is an effective psychological compensation mechanism, which is particularly suitable for the high-pressure group of CVD hospitalized patients.

Third, constructing cultural space and creating a humanistic environment in the ward, such as the wishing wall, the reading corner, and the convenient goods package, enhanced the patients' sense of participation and respect and improved their overall hospitalization experience. This environmental optimization is reflected at the emotional level and indirectly promotes patients' treatment compliance and care cooperation by reducing anxiety and enhancing comfort.

Fourth, it is worth noting that in addition to frontline service interventions, this study also emphasized promoting humanistic nursing concepts in education and professional reserve. During the project period, the research team conducted a special training program for medical interns, focusing on narrative care and emotional communication, with more than 30 trainees. After the training, more than 90% of the trainees reported that the program enhanced their understanding of humanistic nursing concepts and their confidence in applying them to clinical work. This exploration provides a talent base for the sustainable promotion of the "MSWs and Nurses" model and also helps the intergenerational transmission of humanistic nursing awareness among future healthcare workers.

Researchers have increasingly emphasized the importance of cross-cultural and cross-regional collaboration from an international comparative perspective, which can provide broader applicability to patient populations from diverse backgrounds. The "MSWs and Nurses" collaboration model is well-established in Europe and the United States, with institutionalized service processes.[33] In addition, healthcare systems in many advanced countries have long implemented interdisciplinary teamwork and institutionalized processes and training to facilitate smooth multidisciplinary collaboration.[14] In contrast, China's "MSWs and nurses" collaboration model is still in the exploratory stage, and there are still problems, such as unclear role boundaries and unstable collaboration processes.[34] However, this study demonstrates that even under resource-limited conditions, interprofessional integration can be achieved through teamwork and institutional support to provide more comprehensive care services for patients. In particular, in China's unique "family-oriented" culture and authoritative healthcare relationships that are highly dependent on healthcare professionals, MSWs can play the roles of "cultural translators", "emotional intermediaries", "resource integrators", "cultural interpreters", and "emotional intermediaries", and "resource integrators" to compensate for the lack of social support for patients in the single biomedical model.

Although this study has achieved preliminary results in improving patient satisfaction and optimizing ward management, the following limitations exist. First, because this study used a quasi-experimental pre-and post-test design without a randomized control group, there are still limitations in the causal inference of intervention effects. Second, sample limitations affect the generalizability of the results. The study population was primarily concentrated in a specific ward or a particular type of group, lacking cross-departmental and cross-hospital validation using large samples. The representativeness and external generalizability of the results were relatively limited, and further validation in different regions, different types of hospitals, or other disease departments is needed. Finally, the intervention period was only 3 months. The assessment indicators mainly focused on short-term changes during hospitalization, and the long-term follow-up of patients after discharge, such as quality of life, disease recurrence rate, and social function recovery, has not yet been observed, so it is not possible to comprehensively assess the continuity and extended effect of the intervention model.

Conclusion

This study verifies the positive effects of the humanistic nursing intervention model of "MSWs and nurses" in enhancing patient satisfaction, improving doctor-patient relationships, and optimizing medical resources in CVD wards. This model not only innovates the service boundary of traditional nursing care centered on somatic treatment but also responds to the real demand for the concept of "whole-person care" in the new era, reflecting the important value of multidisciplinary collaboration in clinical care.

However, the broad application of this model still needs to be further explored and improved. Suggestions for future research:

First, carry out multicenter, long-term follow-up randomized controlled studies to enhance the scientific and universal nature of the evidence;

Second, we should broaden the study population and scope and further analyze the long-term impact of the MSWs and Nurses model on the overall rehabilitation of patients by tracking their health status, recurrence rate of disease, and quality of life over a long period to provide a more solid theoretical basis for the promotion of this model.

In practical, MSWs should regularly station themselves on the clinical frontline, establish a systematic and institutionalized collaborative mechanism, integrate doctors, nurses, and the community seamlessly, and ensure efficient information transmission and smooth collaboration. Establishing special training, clear division of labor, and institutionalized processes can enhance the efficiency and depth of tripartite cooperation, promoting the development of nursing services toward greater specialization, refinement, and personalization. At the same time, doctors, nurses, and MSWs should further optimize the scope and depth of their collaborative services. While treating patients physically, healthcare providers should also pay closer attention to their psychological, family, and social problems—such as offering economic assistance and social welfare counseling—to help address the limitations of the purely biomedical model.[35]

In summary, the "MSWs and nurses" joint intervention model is an important innovation to promote the construction of a humanistic nursing service system. However, it also represents a valuable exploration of China's healthcare services towards personalization, integration, specialization, and precision. It has a broad development prospect and important practical significance in enhancing service quality, promoting patient recovery, and building a harmonious doctor-patient relationship. It is worthy of popularization and application in a broader range of medical environment.

Abbreviations

CVD, cardiovascular disease; MSWs, medical social workers; MSW, medical social work; ICU, intensive care unit; AI, artificial intelligence.

Ethical Statement

This study was approved by the Medical Ethics Committee of the Fifth Affiliated Hospital of Sun Yat-sen University (Approval No.【K50-1】of the Fifth Affiliated Hospital of Sun Yat-sen University, China). The committee granted a waiver of written informed consent, considering the nature of the study. All participants have voluntarily participated in the study after being informed of its purpose and procedures. The study strictly adhered to the ethical guidelines outlined in the Declaration of Helsinki to ensure that the rights, privacy, and well-being of participants were protected throughout the study.

Author Contributions

Hongjuan Deng: conceptualisation, methodology, formal analysis, data curation, writing – original draft, writing – review and editing. Zhiyu Chen: conceptualisation, methodology, writing – original draft, writing – review and editing. Demei Yang: conceptualisation, data collection, writing – review and editing. All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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Disclosure

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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