BMC Psychology

STUDY PROTOCOL

Open Access

Effectiveness of the Dyadic Coping Intervention of Social Participation (DCISP) for stroke survivors: study protocol for a randomized controlled trial

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Abstract

Background Enhancing social participation is not only the main goal of stroke survivors' community rehabilitation but also a protective factor affecting their physical and emotional health. The current state of stroke survivors' social participation is not encouraging due to the high disability incidence of stroke. Spouses may play a facilitating role in the social participation of patients by providing them with support and assistance. However, there remains a lack of evidence specifically regarding dyadic coping interventions of social participation for stroke survivors, and the intervention strategies are still underdeveloped without clear theoretical frameworks. Therefore, this proposed study aims to develop and evaluate the effectiveness of the Dyadic Coping Intervention of Social Participation (DCISP) for survivors of first-episode homebound stroke.

Methods A single-blind (assessor-blinded), randomized controlled trial will be conducted to verify the effectiveness of DCISP. The randomized controlled trial will be preceded by a feasibility study ($N=20$) of DCISP in stroke survivors. Stroke survivors will be randomly classified (1:1) into either a control ($N=50$) or an experimental group ($N=50$). In addition to routine care, participants in the experimental group will receive six 40 ~ 45 min sessions of guidance, once every two weeks. The primary outcome is social participation of stroke survivors, measured using Impact on Participation and Autonomy Questionnaire (IPA) and Utrecht Scale for Evaluation of Rehabilitation-Participation (USER-P), and the secondary outcomes will be measured by Knowledge Questionnaire for Stroke Patients (SPKQ), Stroke-specific Quality of Life Scale (SS-QOL), Dyadic Coping Inventory (DCI), Modified Rankin Scale (mRS) and Zarit Caregiver Burden Interview (ZBI-22). These will be measured at baseline(T0), during the intervention (T1 = 1 month), and after intervention completion (T2 = 3 months, T3 = 6 months).

Discussion Findings from the study will provide evidence of the effects of DCISP on improving the social participation of first-episode homebound stroke survivors. The results of this study may support the implementation of survivor–spouse dyads care support in stroke survivors and provide a reference for clinical rehabilitation nursing practice, offering new insights into nursing interventions for stroke patients.

Trial registration Chinese Clinical Trial Registry (ChiCTR) ChiCTR2400083072. Registered on 20 July 2023.

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Keywords Stroke, Survivor–Spouse Dyads, Dyadic Coping, Randomized Controlled Trial, Social Participation, Protocol

Background

Stroke is the second leading cause of disability and death worldwide, and it is also the primary cause of death and disability among Chinese adults [1]. China ranks first globally with an overall lifetime risk of stroke at 39.9%. In China, the burden of stroke is increasing due to the accelerated aging and urbanization processes. Stroke patients frequently have varied degrees of functional impairments, such as swallowing, speech, motor, sensory, cognitive, and mental health problems, which have a major impact on their daily lives and hinder their normal social participation [2, 3]. Even in stroke patients without functional impairments, the degree of social participation may drop [4]. Therefore, it is necessary to develop effective rehabilitation interventions, which can reduce the degree of disability, improve social participation and reduce social burden.

Definition of social participation and its importance for stroke survivors

In 2001, the World Health Organization (WHO) introduced the International Classification of Functioning, Disability and Health (ICF), which defines "social participation" as "the individual's involvement in different aspects of real-life social environments [5]." Social participation reflects the rehabilitative outcomes of chronic disease patients in a disabled state, representing their recovery and health status [6]. Several studies had shown a positive correlation between social participation and physical function. Furthermore, social participation can impact the quality of life and emotional state [7, 8], predict life satisfaction among patients, and enhance the well-being of older adults [9]. Therefore, improving social participation is crucial for the rehabilitation of stroke patients.

Research on the needs of stroke patients related to social participation had shown that stroke patients require nurses' assistance in engaging in social activities of interest, managing relationships with spouses, and handling family relationships [10]. Although stroke patients express a desire to join in social activities, their degree of engagement is far from encouraging. Studies have found that post-discharge stroke patients face moderate difficulties in carrying out daily tasks and engaging in social activities [11]. Even patients without physical impairments may experience a decline in their capacity for social participation [4].

Limited research on interventions for social participation among stroke survivors

Current research on social participation among stroke survivors primarily included improving patients' physical activity limitations, cognitive impairments, and language difficulties, as well as directing social participation interventions such as group activities, teaching social participation skills, and vocational rehabilitation. Comprehensive rehabilitation interventions were also conducted to enhance patients' social participation. The "Improving Participation After Stroke Self-Management Program" (IPASS), created by Wolf et al. [12], is one instance of a self-management program for stroke survivors. The result showed that among young and middle-aged stroke patients, a 12-week intervention improved the understanding of the relationship between health, participation, environmental support, and personal barriers. It also improved their short-term self-efficacy and made it easier for them to participate in activities, leading to a rise in their level of involvement in social, familial, and community activities. Another self-management intervention involves a 16-week program including aerobic exercise, exercise health education, energy conservation management, and prevention of recurrence showed significant improvement in social participation, with long-term effects observed during follow-up [13]. Mayo combined the Mission possible© program with exercise components, and the result showed a three-hour weekly increase in meaningful activities of patients and improved reintegration into normal life [14]. However, most research in China focuses on the current level of social participation among stroke patients and the influencing factors, and the guidelines do not explicitly present intervention strategies for improving social participation.

Positive dyadic coping can promote survivor–spouse dyads to deal with stress

Most intervention studies in stroke patients have concentrated on patient-centered approaches, ignoring the importance of spouses and families in stroke rehabilitation. Spouses as primary caregivers for stroke patients in homebound rehabilitation have a direct impact on the patient's recovery through their caregiving abilities, coping skills, and attitudes toward the illness [15]. The dyadic coping method utilizes the unique strengths of spouses, encouraging partners to cope with the illness together,

support each other, and help patients feel more confident about their treatment and have a better prognosis [16]. Campbell [17] et al. used a training manual developed by medical psychologists to give intervention providers uniform instruction. The intervention providers conducted a 6-week symptom management skills training program for 12 couples consisting of prostate cancer patients and their spouses. The training sessions occurred once a week for one hour each. The training manual included six sections covering disease information, problem-solving skills, cognitive and behavioral coping skills (such as communication skills, relaxation training, and exercise pacing). The results showed that this intervention improved the patients' quality of life and alleviated the stress, depression, and fatigue experienced by their spouses. However, the role of dyadic coping in social participation among stroke survivors has not been further validated.

Therefore, this study develops a Dyadic Coping Intervention for Social Participation (DCISP), which is an intervention that focuses on social participation and involves the active participation of stroke survivor couples. In the preliminary phase, the research team conducted a literature review and qualitative interviews to learn more about the variables impacting stroke patients' social participation. Three main conclusions were drawn: (1) barriers to participation: self-care limitations, unsatisfactory rehabilitation outcomes, fear of falling, negative emotions, illness stigma, and concerns about burdening others, (2) facilitators of participation: acceptance of the illness, belief in rehabilitation, social support, and perceived benefits of participation, (3) multidimensional needs of patients: psychological care and professional rehabilitation counseling. Based on these findings, modifiable intervention targets were identified. The Information-Motivation-Behavioral Skills (IMB) theory was used as the theoretical framework to develop the DCISP. The intervention included information interventions through health education, motivation interventions through social support and spousal supervision, and skill-based interventions to enhance participation abilities. The intervention was further refined using the Delphi method.

In this study, a feasibility study will be carried out in order to assess acceptability and feasibility indicators, including patient compliance, recruitment rate, and participant feedback. Next, the effectiveness of DCISP will be evaluated through a randomized controlled study. Outcome measures include social participation, stroke knowledge, quality of life level of stroke survivors, caregiver burden of spouses, and dyadic coping of survivor-spouse dyads.

Methods

Study aims

This study wants to assess the feasibility and effectiveness of the Dyadic Coping Intervention for Social Participation (DCISP) among survivor–spouse dyads. The intervention aims to assist stroke patients and their spouses in effectively managing the condition by enhancing social participation, improving quality of life, and promoting dyadic coping strategies. The study will evaluate the following aspects of the DCISP: (1) Feasibility; (2) The effectiveness of enhancing social participation level among stroke survivors; (3) The effectiveness of improving stroke knowledge, quality of life, caregiver burden, and dyadic coping within the stroke survivor-spouse dyads.

Study design and setting

A single-blind (assessor-blinded), randomized controlled trial will be conducted to verify the effectiveness of DCISP. The randomized controlled trial will be preceded by a feasibility study. This study had received ethical approval from the Institutional Review Board of Shanghai University of Traditional Chinese Medicine (approval number: 2023–1-13–07). We registered the trial in Chinese Clinical Trial Registry on July 20, 2023 (register number: ChiCTR2400083072). This protocol was written in accordance with the Consolidated Standard of Reporting Trials (CONSORT), and followed recommendations from the Standard Protocol Items: Recommendations for Interventional Trials (SPIRIT 2013) [18] (Supplementary file 1).

The patients will be recruited within three tertiary hospitals in Shanghai. To attract participants, researchers will post posters in hospital departments. Patient recruitment was commenced on August 1, 2023, and is expected to continue until August 1, 2025. Participants will be randomly assigned to the experimental group and the control group in a 1:1 allocation ratio. The study will be conducted at three tertiary hospitals in Shanghai. Data will be collected at baseline and 1-month, 3-month and 6-month follow-up. The study design is presented in Fig. 1.

Study participants

Participants will be first-episode homebound stroke survivors and their spouses. Participants meeting the inclusion criteria are referred by nurses. Stroke survivor participant inclusion criteria include people who: (1) meet the fourth national diagnostic criteria for cerebrovascular disease and are confirmed by CT or MRI, (2) must be first-episode homebound stroke patients, (3) discharged for homebound rehabilitation, (4) are

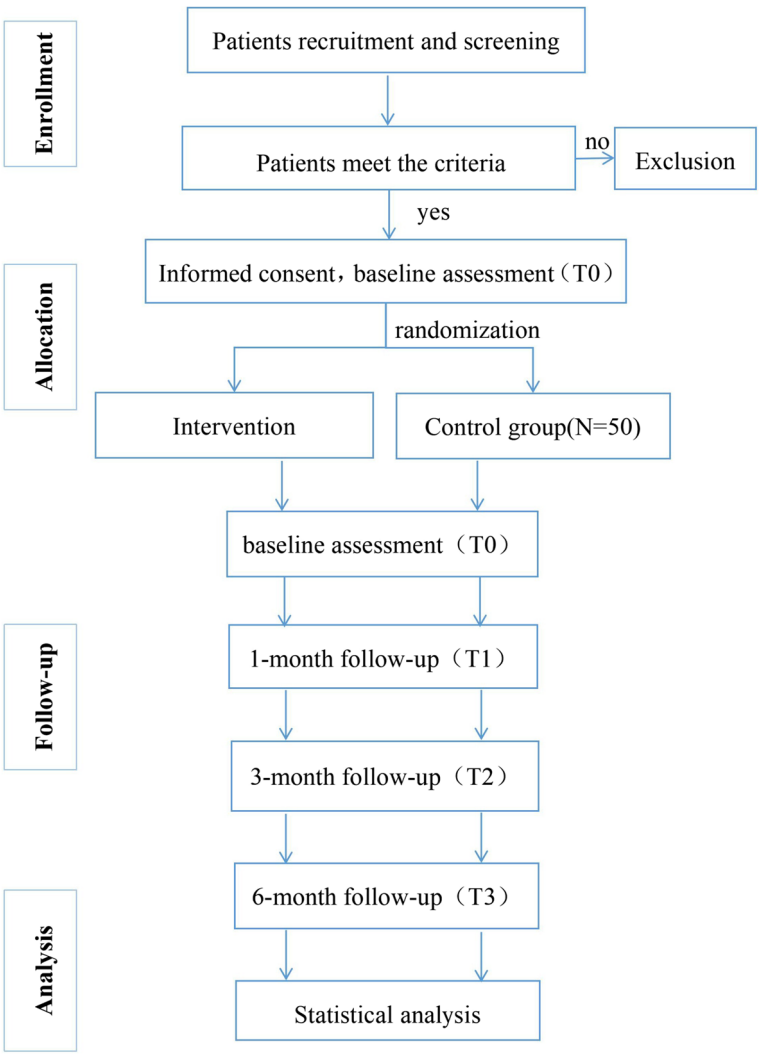

Fig. 1 Flow diagram of the study design

18 years and older, (5) with stable vital signs and clear consciousness after routine treatment, (6) have residual varying degrees of limb dysfunction ($2 \leq mRS < 5$), (6) provide informed consent for this study. Stroke survivor participant exclusion criteria include people who: (1) have a history of mental illness, (2) have severe cognitive impairment ($MMSE < 20$), (3) have significant organ diseases such as heart, liver, kidney, (4) are participating in other clinical trials. Stroke survivor participant shedding criteria include people who: (1) are non-compliance, non-cooperation, and ineffective intervention despite repeated explanations by the researchers, (2) self-withdrawal during the intervention, (3) occurrence of severe complications or worsening of the condition during the intervention requiring emergency measures. Principles of shedding treatment: once a random number is assigned, participants become study subjects and all drop-out samples are intentionally analyzed after the intervention is completed, regardless of the completeness of the intervention afterward. After a participant drops out, the researcher should make effort to contact the participant to inquire about the reasons, record the last intervention time, and complete the assessment tasks that can be accomplished.

Spouse participant inclusion criteria include people who: (1) are the primary family caregiver of the stroke survivor, (2) are 18 years and older, (3) have good understanding and communication skills, (4) provide informed consent for this study. Spouse participant exclusion criteria include people who: (1) have a history of mental

illness, (2) are participating in other clinical trials. Spouse participant shedding criteria include people who: (1) are not serving as the primary caregiver.

Sample size, recruitment strategy, randomization and blinding

According to the relevant study [19], the determined sample size for this feasibility study was 20 cases. The calculation of the sample size for the effectiveness evaluation study was conducted using PASS 15.0 software, using the two independent sample t-test calculation method. The study utilized a 1:1 ratio for the groups, selecting a one-sided test with an alpha level of 0.05 and a power of 80%. Based on the previous study on effective intervention in social participation, the control group IPA score was (1.90 ± 0.61) after the intervention, while the intervention group score was (2.27 ± 0.70). Calculations indicate that N1 = N2 = 40 cases are needed. Considering a 20% dropout rate, the final sample size was determined as N1 = N2 = 50. This study will recruit 100 survivor–spouse dyads.

Randomization personnel will sequentially write numbers from 1 to 100 and generate random numbers and groups using SPSS 22.0 software. Then, these numbers will be placed into opaque envelopes (with the envelope numbers corresponding to the order of numbering). The envelopes will be sealed, and the randomization personnel will keep them secure. After the researchers determine eligible study participants and collect their baseline data, researchers will notify the randomization personnel. Then, randomization personnel will open the envelopes in sequential order according to the numbers on the envelopes and communicate the group assignments to the researchers. The researchers will strictly follow the assigned group indicated on the card inside the envelope and implement the corresponding intervention plan for each group.

It's difficult to blind the participants and researchers in this study. In order to minimize the mutual influence between different groups of participants, the researchers will inform the patients during the recruitment process that this intervention involves randomization. The experiment group will receive an intervention plan aimed at increasing social participation, while the control group will receive the same intervention content after the current intervention period. This approach aimed to obtain the full cooperation of the patients and avoid mutual communication during the intervention period. Assessor, statistician, and other personnel involved in the study will be unaware of the group assignments throughout the entire trial process until unblinding occurs after the completion of the entire study.

Interventions

Control group

To reduce the impact of confounding factors, participants in the control group will continue their existing medication treatment and homebound rehabilitation. Upon discharge, patients will receive health education and be provided with a health education handbook containing information on basic knowledge of stroke, medication guidance, dietary management, exercise management, prevention of risk factors, and social participation. Regular telephone follow-up will be conducted.

Intervention group

The DCISP is added to the control group. The intervention will last for 3 months, with intervention will be conducted every 2 weeks, lasting for 40 ~ 45 min each session. Six-month follow-up will be conducted after the intervention. The intervention includes six intervention themes: (①daily living skills, ②dyadic communication and emotion regulation, ③family roles and indoor participation, ④interpersonal communication and stress management, ⑤outdoor participation, ⑥reintegration: participation in social life), emphasizing the support and assistance of spouses in the patient's recovery process. Each session will involve the participation of survivor–spouse dyads. The patients' problems and objectives will be examined and analyzed before each session, and patients will have health education with an emphasis on the importance of the specific factor, be taught relevant skills, and be encouraged to apply these principles in their daily lives. The researchers will provide patients with self-management manuals and teach them how to record their conditions. They will also conduct psychological conversations with patients and their spouses who are unable to complete tasks on time in order to enhance their compliance. The intervention themes and measures are presented in Table 1. The DCISP intervention will not cause any specific side effects to the patients. A potential reason for discontinuing the intervention could be that patients are unwilling to continue participation in the study.

Outcomes

Feasibility study

The feasibility of the intervention will be assessed by:

Recruitment rate: the percentage of stroke survivors and their spouses who agree to participate in the study out of the total number of recruited stroke survivors and their spouses.

Retention rate: the percentage of stroke survivors who complete the intervention and questionnaire assessments out of the baseline measurement of stroke survivors.

Table 1 Intervention themes and measures

Theme	Intervention
Daily Living Skills	health education including stroke knowledge, daily living skills, walking training instructions
Dyadic Communication and Emotion Regulation	dyadic communication and emotional expression skills, empathy training, emotional regulation skills
Family Roles and Indoor Participation	benefits of assuming a family role, avoiding overprotective spousal behavior, leisure activities available indoors
Interpersonal Communication and Stress Management	understanding the obstacles and facilitators of interpersonal interactions, master the correct mindset and skills of interpersonal interactions, learning positive stress reduction therapy to relieve stress
Outdoor Participation	review of leisure activities and interests before the onset of the disease, improve the patient's ability to travel, strengthen fall prevention awareness
Reintegration: participation in social life	advice according to patient's willingness to return to work, accepting themselves in the face of the disease

Patient compliance: evaluation of stroke survivors' completion of various tasks. The compliance rate is calculated as the percentage of actual task completions by all stroke survivors out of the total number of task completions required, including online and offline interventions.

Feedback from participants: thoughts and perspectives from stroke survivors and spouses about the intervention.

Acceptability of the intervention: eight criteria will be used in the assessment process: clarity of intervention goals, ease of understanding content, interest in the intervention, usefulness of the intervention program, meeting personal needs, satisfaction with the intervention, willingness to continue receiving the intervention, and willingness to recommend the program to others. Acceptability will be calculated by dividing the number of "agree" and "strongly agree" responses by the total number of evaluated items. A Likert 4-point scale will be used (strongly disagree, disagree, agree, strongly agree). Statistical analysis will be conducted using Epidata 3.0 for data entry and SPSS 22.0 software for data analysis.

Effectiveness evaluation study

In addition to demographic variables, scales will be used at baseline (T0), during the intervention (1-month follow-up), and after intervention completion (T2 = 3-month follow-up, T3 = 6-month follow-up) to assess the impact of the intervention on primary outcomes (social participation in first-episode homebound stroke survivors) and secondary outcomes (stroke knowledge and quality of life in first-episode homebound stroke survivors, burden in stroke spouses, and dyadic coping in survivor–spouse dyads).

Primary outcomes for survivors of first-episode homebound stroke

Impact on Participation and Autonomy Questionnaire, IPA

The Chinese version of Impact on Participation and Autonomy Questionnaire (IPA) will be used to measure autonomous participation level of survivors of first-episode homebound stroke [20]. The IPA consists of 25 items that measure four domains of autonomous participation: social life, outdoor life, indoor life and family roles. Each item is scored on a 5-point Likert scale. Higher scores indicate a greater level of autonomous participation. The IPA has high internal consistency reliability (Cronbach's α coefficient is 0.959).

Utrecht Scale for Evaluation of Rehabilitation-Participation, USER-P

The Chinese version of Utrecht Scale for Evaluation of Rehabilitation-Participation (USER-P) will be used to measure participation level of survivors of first-episode homebound stroke [21]. The USER-P consists of 32 items that measure three domains: participation frequency, participation limits, participation satisfaction. Higher scores indicate a higher level of participation frequency, participation satisfaction and fewer participation limits. The USER-P has high internal consistency reliability (Cronbach's α coefficient is 0.704 to 0.861).

Secondary outcomes for survivors of first-episode homebound stroke

Knowledge Questionnaire for Stroke Patients, SPKQ

The Chinese version of Knowledge Questionnaire for Stroke Patients (SPKQ) will be used to measure disease knowledge of survivors of first-episode homebound stroke [22]. The SPKQ consists of 27 items that measure four domains of disease knowledge: recurrence-related knowledge, physical activity-related knowledge, stroke elementary-related knowledge and risk factors-related knowledge. Higher scores indicate higher knowledge. The SPKQ has high internal consistency reliability (Cronbach's α coefficient is 0.85).

Stroke-Specific Quality of Life, SS-QOL

The Chinese version of Stroke-Specific Quality of Life (SS-QOL) will be used to measure quality of life of stroke patients [23]. The SS-QOL consists of 49 items that measure Twelve domains of life quality: energy, family roles, language, vision, mood, personality, self-care, social roles, thinking, upper extremity function, vision and work/productive. Each item is scored on a 5-point Likert scale. Higher scores indicate a greater level of life quality. The SS-QOL has high internal consistency reliability (Cronbach's α coefficient is 0.76).

Modified Rankin Scale, mRS

The Chinese version of Modified Rankin Scale (mRS) will be used to measure independence ability and functional recovery in stroke patients [24].The mRS has 6 levels, and higher level indicates the severity of disabilities after stroke.

Outcomes for stroke spouses

Zarit Caregiver burden interview, ZBI-22

The Chinese version of Zarit Caregiver burden interview (ZBI-22) will be used to measure spouses' burden [25]. It consists of 22 items and the total score ranges from 0 to 88 with higher scores indicating higher burden. It is an effective tool to evaluate the caregiver burden of home-bound patients' caregivers. The ZBI-22 has high internal consistency reliability (Cronbach's α coefficient is 0.89).

Outcomes for survivor–spouse dyads

Dyadic Coping Inventory, DCI

The Chinese version of Dyadic Coping Inventory (DCI) will be used to measure dyadic copings of survivor–spouse dyads [26]. It assesses the quality of stress communication and support given by survivors and spouses in intimate relationships. It consists of 37 items, with a total score ranging from 35 to 175. The DCI has high internal consistency reliability (Cronbach's α coefficient is 0.83 to 0.89).

Demographic and Disease Characteristics Questionnaire will be collected in the study includes age, gender, education level, marital status, occupation, economic status, and healthcare payment methods of the participants. It also includes information related to disease diagnosis, primary caregivers, main symptoms, and exercise habits. The study schedule of enrolment, interventions and assessments are presented in Table 2.

Data collection

Before the intervention, the researchers will receive standardized training and assessment. After the training, the researcher will conduct data collection after obtaining informed consent from the participants (supplementary file 2). General information about the patients will be collected, and pre-intervention and post-intervention evaluations will be conducted using relevant scales. Data will be collected at baseline, 1-month and 3-month follow-up by researchers face-to-face with participants to ensure the completeness and accuracy of the collected data. Intention-to-treat analysis will be conducted to manage missing data. Then the data of 6-month follow-up will be collected by researchers face-to-face with participants or on the phone or the WeChat. The researchers should provide

Table 2 Study schedule of enrolment, interventions and assessments

	baseline assessment (T0)	1-month follow-up (T1)	3-month follow-up (T2)	6-month follow-up (T3)
Stroke survivors				
informed consent	√	—	—	—
Demographic and Disease Characteristics Questionnaire	√	—	—	—
Impact on Participation and Autonomy Questionnaire, IPA	√	√	√	√
Dyadic Coping Inventory, DCI	√	√	√	√
Utrecht Scale for Evaluation of Rehabilitation-Participation, USER-P	√	√	√	√
Knowledge Questionnaire for Stroke Patients, SPKQ	√	√	√	√
Stroke-specific Quality of Life, SS-QOL	√	√	√	√
modified Rankin Scale, mRS	√	√	√	√
spouses				
Demographic and Disease Characteristics Questionnaire	√	—	—	—
Dyadic Coping Inventory, DCI	√	√	√	√
Zarit Caregiver Burden Interview, ZBI-22	√	√	√	√

T0 = baseline, T1 = 1-month follow-up, T2 = 3-month follow-up, T3 = 6-month follow-up

detailed instructions and guidelines to the patients regarding the completion of general information and questionnaires. To ensure the accuracy of the research findings, suggestive language should not be utilized to influence independent thought, judgment, or form completion. Questions or doubts encountered during the completion process should be addressed immediately. All data will be entered using the Epidata software in parallel by two individuals, and any outliers will be verified with the data collector as soon as possible to ensure accurate and error-free statistical analysis.

Data analysis and management

Epidata 3.0 software will be used for data entry, and SPSS 22.0 will be used for data analysis. The trial is designed to test the hypothesis at a 0.05 level of significance.

Baseline Data Comparisons: If continuous variables such as age, social participation level, stroke knowledge, disease severity, dyadic coping scores, caregiver burden have a normal distribution with equal variances, a chi-square test will be used to compare the baseline variables of the experiment and control groups. Otherwise, non-parametric tests will be performed. For categorical variables such as gender, education, occupation, marital status, type of stroke diagnosis, healthcare payment methods, the chi-square test will be performed.

Evaluation of Intervention Effects: An independent samples t-test will be performed on normally distributed data at the same time point between the two groups. For non-normally distributed data, non-parametric tests will be performed. In case of dropouts or missing data, intention-to-treat analysis will be conducted. Additionally, a linear mixed model will be used to compare the experiment and control groups in terms of social participation level, disease knowledge, disease severity, dyadic coping, spouse burden, and other outcome measures over time, considering the differences between the groups and the interaction between time and group.

Safety Analysis: The number and cause of adverse events in both groups will be described and recorded. The occurrence rates of adverse events in the two groups will be compared.

As this is a small, single-blind (assessor-blinded) randomized controlled trial, a data management committee is not being convened. Access to the collected data will only be granted to members of the research group.

Discussion

As one of the final evaluation indicators of the treatment and rehabilitation outcomes of stroke survivors, a lack of social participation has serious adverse impact on the recovery of patients' body functions, physical and mental health, and quality of life [27]. Due to the factors such as shorter average hospital stays and post-acute rehabilitation, the majority of stroke survivors choose to return to their home or communities after the risk period and early rehabilitation treatment [28]. Therefore, patient- and family-centered care and support become particularly important. In family care, the positive dyadic coping strategies between stroke survivors and their spouses can not only strengthen the patient's physical and mental health, improve their quality of life but also enhance the satisfaction in the relationship between stroke survivors and their spouses. Therefore, we can develop more targeted, effective, and cost-efficient intervention plans based on dyadic coping strategies to promote the level of social participation among stroke survivors.

This study aims to evaluate the effects of DCISP in improving the social participation of stroke survivors through a feasibility study and an effectiveness evaluation study. With the implementation of the intervention, this study ultimately aims to improve the social participation level, stroke knowledge level, and quality of life of patients receiving the dyadic coping intervention, as well as the burden of spouses and the dyadic coping status of the dyads. The results of this study will provide valuable evidence and reliable information for interventions which aimed at improving the social participation level of stroke survivors based on dyadic coping. The main strengths of this study include: the DCISP is constructed based on qualitative interviews with dyads (patients and their spouses), literature review, and Delphi method, ensuring its reliability and feasibility. Additionally, the DCISP will produce materials such as a stroke self-management manual, a series of rehabilitation micro-videos, and articles on WeChat public accounts to enhance the social participation of stroke patients, help them reintegrate into their families and communities, improve their quality of life, and reduce the burden of the disease on individuals, families, and society. Furthermore, the intervention program includes scenario-based and life-oriented activities and games to promote the social participation of patients, along with personalized guidance based on individual differences. The study also aims to explore the maintenance of the intervention program's effects on dyadic coping and social participation in stroke patients three months after the intervention is discontinued, providing valuable insights into sustainability and long-term potential benefits.

Although we have carefully crafted this protocol, a few main limitations still remain. Due to the limited research sites, recruitment will only take place in three tertiary hospitals in Shanghai, which may result in a sample of stroke patients that lacks broad representativeness.

Moreover, this study is a single-blind randomized controlled trial, making it challenging to blind participants and intervention providers, which could potentially introduce bias in the study results.

In conclusion, this study will provide evidence of the effects of DCISP on improving the social participation of first-episode homebound stroke survivors. The results of this study may support the implementation of survivor–spouse dyads care support in stroke survivors, promote their recovery, and provide a reference for clinical rehabilitation nursing practice, offering new insights into nursing interventions for stroke patients.

Trial status

Protocol version 1, April 15, 2024. The trial protocol was registered on Chinese Clinical Trial Registry (Identifer: ChiCTR2400083072) on July 20, 2023. Patient recruitment and data collection are currently ongoing, the recruitment period started on August 1, 2023 and is expected to be completed on August 1, 2025. The results of this trial will be submitted to a peer-reviewed journal after the completion of data analysis.

Abbreviations

DCISP	Dyadic Coping Intervention of Social Participation
IPA	Impact on Participation and Autonomy Questionnaire
USER-P	Utrecht Scale for Evaluation of Rehabilitation-Participation
SPKQ	Knowledge Questionnaire for Stroke Patients
SS-QOL	Stroke-specific Quality of Life Scale
DCI	Dyadic Coping Inventory
mRS	Modified Rankin Scale
ZBI-22	Zarit Caregiver Burden Interview

Supplementary Information

The online version contains supplementary material available at https://doi.org/10.1186/s40359-024-01994-1.

Supplementary Material 1.

Acknowledgements

Not applicable.

Authors' contributions

YL, XQ conceived the presented idea and designed this study. ZW developed the plan for the statistical analyses. YR looked up research tools. ZW and YL contributed to the reporting of the study protocol. ZW and XQ contributed equally to this protocol

Funding

This study was supported by Foundation of Shanghai Municipal Health Commission (grant number:202240242).The funders do not play a role in the study design, collection, management, analysis, and interpretation of the data or decision to submit the report for publication, including authority over these activities.

Availability of data and materials

The corresponding author has the right to access the data. The survey data will not be disclosed, but any data relevant to the research can be provided upon reasonable request. The research findings will be published in a peer-reviewed journal or presented at a conference.

Data availability

No datasets were generated or analysed during the current study.

Declarations

Ethics approval and consent to participate

This study had received ethical approval from the Institutional Review Board of Shanghai University of Traditional Chinese Medicine (approval number: 2023–1-13–07). Participants are currently being recruited in hospitals, participate voluntarily, and then will voluntarily sign an informed consent form. The identity of the participants will be kept confidential in accordance with the ethical principles of privacy and confidentiality. Participation in this study will not cause any harm to the participants. Any modifications to this protocol will be communicated to the ethics committee.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests

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Received: 4 August 2024 Accepted: 11 September 2024
Published online: 27 September 2024

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