

Summary

Construction and Application of a Hybrid Self-management Intervention Model for Community-dwelling Older People with Urinary Incontinence

Abstract:

Objectives:

- (1) To investigate the urinary incontinence (UI) related cognition, help-seeking behaviors, caring needs among community-dwelling older people with UI and the caregiving experiences among their main informal carers.
- (2) To explore the perceptions of primary health care professionals on challenges and opportunities in the care of community-dwelling older people with UI.
- (3) To co-design a hybrid self-management intervention model through consultations with older people with UI and the primary care health professionals based on their demands and suggestions.
- (4) To further construct and co-design a hybrid self-management intervention model based on the suggestions from experts through a modified nominal group technique approach. Furthermore, following the previous literature review, we also applied the ‘Capability-Opportunity-Motive’-behaviors (COM-B) change model, the self-efficacy theory and M-Ageing to the construct of a hybrid self-management intervention model. Findings of this part of study informed the final version of hybrid self-management intervention model.
- (5) To evaluate the effect of the hybrid self-management intervention model for community-dwelling older people with UI.

Methods:

(1) The study used the qualitative descriptive study design. Community-dwelling older people with UI and their informal carers were recruited using the purposive sampling among 4 community health service centers in Changsha between April 2021 and October 2021. One-on-one semi-structured interviews (Online or Offline) were conducted to investigate the UI related cognition, help-seeking behaviors, caring needs among community-dwelling older people with UI and the caregiving experiences among their main informal carers. The thematic analysis method was used to organize and analyze the interview data.

(2) The study also used the qualitative descriptive study design. Primary health care (PHC) professionals including nurses and doctors were recruited using the purposive sampling among 4 community health service centers in Changsha between July 2021 and September 2021. Focus groups were conducted to explore the perceptions of primary health care professionals on challenges and opportunities in the care of community-dwelling older people with UI. The thematic analysis method was used to organize and analyze the interview data.

(3) The study used a co-design method to develop the model using the qualitative descriptive study design. Primary health care professionals and community-dwelling older people with UI were recruited using the purposive sampling among the prior qualitative study sites between November 2021 and December 2021. Online One-on-one semi-structured interviews and focus groups were conducted to understand the demands and suggestions of primary health care professionals and community-dwelling older people with UI for the hybrid self-management intervention model. The thematic analysis method was used to organize and analyze the interview data.

(4) In study, The COM-B behavior change model, the self-efficacy theory and M-Ageing informed the findings from above to preliminarily develop a version of a hybrid self-management intervention model. Then a modified nominal group technique design was applied to refine and finalize the preliminary version of a hybrid self-management intervention model developed from the discussions in the expert group meetings between January 2022 and February 2022. Convenience sampling was used to test the feasibility of the intervention model by conducting a pre-experiment in a community health center. Five community-dwelling older people with UI who met the inclusion and exclusion

criteria were invited to the pilot study in March 2022. Minor modifications were made based on feedback from participants in the pre-experiment and a final intervention model was generated.

(5) A quasi-experimental design was used to explore the effects of the hybrid self-management intervention model for community-dwelling older people with UI between April 2022 and October 2022 in Changsha, China. Sixty-six community-dwelling older people with UI were recruited from two community health service centers and randomly divided into experimental and control groups. Community-dwelling older people with UI with mild and moderate severity of UI were recruited to the study. We used the International Consultation on Incontinence Questionnaire Urinary Incontinence Short Form-Chinese (ICQ-SF), professional inquiry and examinations to assess the severity of UI and select participants to the study. The control group used a usual nursing care. In contrast, the experimental group received a hybrid self-management intervention model of care. Data were collected from the two study groups at baseline, 3 months post-initiation of intervention and 3 months after the completion of intervention. The scores of the self-efficacy, severity of UI, UI related attitude and knowledge, anxiety and depression, quality of life and compliance on pelvic floor muscle training (PFMT) were analyzed at baseline, 3 months post-initiation of intervention and 3 months after the completion of intervention. A satisfaction assessment questionnaire was used to understand the satisfaction and suggestions of the experimental group study subjects about the intervention program.

Result:

(1) A total of 50 participants participated in one-on-one semi-structured interviews with 25 community-dwelling older people with UI (2 with low UI severity and 23 with middle UI severity) and 25 informal carers. Three themes were identified from the data: (a) Factors related to the insufficient ‘Capability’ including the misunderstanding of UI, limited and inappropriate UI related self-management strategies, and UI related stigma and other negative attitudes towards UI; (b) Factors related to insufficient ‘Motive’ including the lack of the internal motivation, support for the older people and their informal carers and peer influence; and (c) Factors related to the lack of the ‘Opportunity’ including the lack of UI related specialists, regular UI detection system and government funded care services for UI.

(2) 24 PHC professionals from four community healthcare centers participated one of four focus groups. Four themes were identified from data analysis. They represent participants' perceptions of challenges and opportunities related to their own practices in the community health centers and in the health care system. First, 'There is no effective treatment for older people with UI'. Participants showed misconceptions about UI and had very limited UI management strategies which may or may not align with evidence-based care for older people with UI. Second, 'UI may be improved through timely intervention'. Based on reflection, participants were able to identify various opportunities to improve their practice in active detection and management of UI in older people. Third, 'The government should strengthen the health care system to enable UI care services'. Participants identified barriers for older people with UI to attain incontinence care services in the health care system. In addition, 'UI care services should be free of charge in the health care system'. Participants suggested changes that need to be made in the health care system to achieve universal access to UI care services for older people.

(3) The results of the analysis of the demand for hybrid self-management intervention model among the community-dwelling older people with UI showed that there were various demands for the model including the cause of UI, non-pharmacological and non-surgical treatment, and the exercise standards of the PFMT. They suggested that the intervention duration should be at least 12 weeks, and the frequency of pushing should not exceed three times per week. Moreover, the model should ensure nurse-led and pelvic rehabilitation therapist joint one to one PFMT guide for older people, peer support through the WeChat self-management group, regular feedback through the weekly telephone follow-up and exercise adjustment through PFMT exercise diary and voiding diary to improve participants' compliance with the interventions.

(4) Under the guidance of the COM-B behavior change model, the self-efficacy theory and the M-Ageing, a new model was developed by integrating the results of literature review, needs analysis with older people with UI, primary care health professionals, expert group and pre-experiments. The model conceptualizes three interrelated domains: 1) 'Capability' which indicates the need to improve the knowledge, skills and attitude. This kind of intervention can be delivered using hybrid or offline and online health education and group exercises leading to behavioral changes. 2) 'Motive' which describes the need to improve the motivation for self-management of UI through peer support and

social support for the older people. This kind of intervention can be delivered using WeChat self-management group, family members involvement which leading to behavioral changes. 3) ‘Opportunity’ which describes the need to increase the follow-up assessment for older people with UI and assessment capacity of health facilities. The intervention can be delivered using weekly telephone follow-up and UI management teams.

(5) A total of 66 community-dwelling older people with UI participated in the quasi-experimental trial, 33 in the experimental group and 33 in the control group. The final 63 study subjects completed the study, 33 in the experimental group and 30 in the control group. The difference in baseline data between the two groups of community-dwelling older people with UI before the intervention was not statistically significant ($P > 0.05$). The self-efficacy score, UI related knowledge and attitude score, UI related quality of life score and the compliance to PFMT score of the study subjects in the experimental group were significantly higher than those in the control group at the end of the intervention and three months after the intervention. The severity of UI score was significantly lower than that of the control group, with statistically significant differences ($P < 0.05$). The overall satisfaction of the study subjects in the experimental group with the hybrid self-management intervention model reached 97%. However, the two groups showed no statistically significant differences in anxiety and depression ($P > 0.05$).

Conclusion:

(1) The community-dwelling older people with UI showed misunderstanding of UI, and lacked self-management skills of UI. Moreover, their internal motivation to seek help from health professionals was low. Furthermore, older people and their informal carers received little to no support in the primary care system to assess and manage UI. These situations in the primary care system reduced their opportunities to gain timely diagnosis, treatment and care from the PHC nurses and doctors.

(2) Nurse-led UI care service in primary health care for community-dwelling older people are in high demand but are underdeveloped due to professional and health system factors.

(3) A co-design approach with people with UI and primary care health professionals enabled the development of a preliminary version of the hybrid self-management intervention model to meet their

demands in provide or receive UI care services. These stakeholders were able to detail intervention content.

(4) The co-design with expert group enable the project team to refine and finalize a hybrid self-management intervention model for community-dwelling older people with UI. The use of appropriate theories and frameworks also enabled the project team to strengthen theory-based practice in the development of care model.

(5) The hybrid self-management intervention model has the advantages of convenience and flexibility, comprehensive content coverage better quality control, and it can improve self-efficacy, UI related knowledge and attitude, and reduce the severity of UI, thus enhance their quality of life for community-dwelling older people with UI.

Keywords: Older people with urinary incontinence; Community-dwelling; Hybrid; Self-management; COM-B behavior change model; Co-design