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STUDY PROTOCOL

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Study protocol: A cross-sectional study on instrumental support for transitional care among older adults with chronic diseases

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Abstract

Aims: In this paper, we present a study aiming to develop a questionnaire on instrumental support for transitional care as a tool for investigating services, staff, equipment and supplies, and funds of transitional care and conduct a cross-sectional study on the current instrumental support for transitional care in older adults with chronic diseases.

Design: A cross-sectional study combining instrumental support with transitional care through a mixed-method approach.

Methods: Data are collected through two sources: distribution of the questionnaire to older adults with chronic diseases and interviews with experts from different specialties such as nursing, clinical medicine, geriatrics, sociology and government.

Results: The developed questionnaire and expert interviews will be used to investigate the current instrumental support for transitional care among older adults with chronic diseases in China. These findings can help leaders identify areas for improvement in transitional care and contribute to the long-term positive development of transitional care.

KEYWORDS

chronic disease, cross-sectional study, instrumental support, mixed-method design, older adults, questionnaire, transitional care

1 | INTRODUCTION

In response to the growing number of older adults with chronic diseases, many healthcare organizations have paid more attention to transitional care (Coleman & Williams, 2007; Le Berre et al., 2017). However, results from previous studies indicated that there are barriers in applying transitional care in terms of instrumental support, including a lack of funds, staff and equipment (Bradway et al., 2017; Terrell & Miller, 2006; Ye et al., 2016). Therefore, for this special vulnerable group, we need to ensure adequate instrumental support in providing transitional care to them. The premise of ensuring adequate instrumental support for transitional care is to understand its current situation, and to our knowledge, few studies have done the relevant research. This protocol aims to describe a comprehensive methodological paper based on a cross-sectional study of the instrumental support for transitional care in older adults with chronic diseases.

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2 | BACKGROUND

Population ageing is a serious problem faced by many countries in the world. By the year 2017, there were an estimated 962 million people aged 60 or over worldwide (United Nations, 2017), and the Chinese population aged 60 and above reached 241 million (Yuanli & Zhongwei, 2019). Demographic ageing is accompanied by a powerful and universal trend: an epidemiological transition in which chronic diseases have overtaken infectious diseases as the world's biggest killers (Margaret, 2016). In turn, this leaves us with high rates of complications in older adults with chronic health conditions, which can lead to adverse events and high medical costs (Jencks et al., 2009; Naylor et al., 2013; Prince et al., 2015).

Since healthcare costs escalate during hospitalization, once patients are admitted after the exacerbation of the chronic disease, transitional care has been identified as a critical period for intervention (Bray-Hall, 2012; Feltner et al., 2014; Hong et al., 2014). The definition of transitional care encompasses a broad range of time-limited services aimed at ensuring healthcare continuity, avoiding preventable adverse outcomes among high-risk groups, and promoting the safe and timely transfer of patients from one level of care to another or from one type of environment to another (Naylor et al., 2017). Evidence from intervention trials shows that transitional care for older adults with chronic diseases can reduce all-cause mortality, rates of readmission and length of readmission (Le Berre et al., 2017; Sacks, 2017; Verhaegh et al., 2014).

Transitional care has been developed over a long period of time but still faces some challenges. Several studies have summarized the barriers of transitional care, such as the lack of related policies to ensure the rights and interests of medical staff, the limited number of professionals working in transitional care, the presence of imperfect referral mechanisms, and the shortage of equipment and supplies (Bradway et al., 2017; Terrell & Miller, 2006; Ye et al., 2016). In the United States, Medicare (a national health insurance programme for people who are 65 or older) adopted the transitional care management payment codes, which provide financial support for transitional care and contribute to improving patient outcomes after discharge (Bindman et al., 2013; Huckfeldt et al., 2018). However, in China, the basic medical insurance system does not cover transitional care (Lin et al., 2020). Therefore, in China, the barriers to transitional care include a lack of funds, staff, and equipment and supplies, which are fundamental for instrumental support (Thoits, 1985).

Numerous studies classify different types of social support found in the literature into two main categories: emotional support and instrumental support (Shakespeare-Finch & Obst, 2011). Instrumental support typically includes practical or tangible forms of support, such as funds, task assistance and direct intervention on behalf of the recipient (Mao et al., 2019; Thoits, 1985), and it is linked to better health outcomes (Berkman, 1984). In particular, instrumental support is needed when developing transitional care for older adults with chronic diseases, as transitional care is a multi-sectoral coordinated effort. To our knowledge, few studies have been conducted on the instrumental support for transitional care so far.

To address a gap in the literature, our cross-sectional study will examine the instrumental support for transitional care by using the questionnaire we developed to explore the practical resources in categories of transitional care such as funds, staff, and equipment and supplies. This study follows a complementary mixed-method approach (quantitative and qualitative), which allows for a more comprehensive and in-depth investigation.

2.1 | Research question

What is the current situation of instrumental support for transitional care among older adults with chronic diseases?

3 | THE STUDY

3.1 | Aims

The specific aims of the study are presented below.

1. Developing and validating the Questionnaire of Instrumental Support for Transitional Care (QISTC) as a measure for cross-sectional study.
2. Conducting a cross-sectional study on current instrumental support for transitional care in older adults with chronic diseases in China.

3.2 | Design

The development of the QISTC is divided into three phases (Mousavi et al., 2018): (a) item generation, (b) validation of the questionnaire and (c) evaluation of reliability. The flow of questionnaire development is shown in Figure 1.

To investigate the current instrumental support for transitional care, we use a parallel mixed-method design, which represents a dynamic way to expand the scope and improve the analytic power of the study (Sandelowski, 2000). The design of this type of study is comprehensive and contains two approaches (quantitative and qualitative). The combination of these two approaches provides the opportunity for us to meaningfully answer the questions of exploration and to confirm our hypothesis (Guillou-Landreat et al., 2020). The quantitative approach will use the QISTC to investigate a large sample of older adults with chronic diseases ($N = 1{,}200$), while the qualitative methods will use expert interviews to acquire an in-depth understanding of issues in this field. The study design is represented in Figure 2.

FIGURE 1 The flow of developing the questionnaire

4 | METHOD

4.1 | Development of the QISTC

4.1.1 | Item generation

Literature review

We conducted a literature search related to the topic of instrumental support for transitional care in older adults with chronic diseases using the Medline, PubMed, Web of Science and CNKI databases (Cimarolli et al., 2013; Moore, 2019; Naylor et al., 2017; Shakespeare-Finch & Obst, 2011).

Theoretical basis

Different studies (Power et al., 1988; Tsang et al., 2000) have assessed instrumental support according to the actual level of support received and the expected ideal level of support to determine the function of instrumental support for a range of key relationships in an individual's life, from both a realistic and idealistic perspective.

Semi-structured interview with experts

We developed the guidelines for the semi-structured interview focusing on the components of instrumental support for transitional care. A total of 16 managers from hospitals, nursing homes, community health centres and government staff underwent the semi-structured interview. Thereafter, the completed semi-structured interviews are analysed to obtain themes related to components of instrumental support for transitional care, including service support, staff support, financial support, and equipment and supplies support.

Drafting and selection of items

The research group analysed and compared information from the literature review and semi-structured interviews to generate the concept of the QISTC construct and item writing.

A preliminary QISTC will be used to measure the social demographics, health status, and anticipated and received instrumental support (Table 1 for details).

4.1.2 | Validation of the QISTC

The validity of the QISTC includes construct validity and content validity. Construct validity, estimated using an exploratory factor analysis (EFA), refers to the degree to which theoretical traits or concepts can be measured. We will use the KMO and Bartlett test to test the suitability of the questionnaire to undergo an EFA. Factors will be extracted based on eigenvalues of 1.00 or higher and factor loadings of greater than 0.40 (Kaiser, 1974).

We will use the Delphi method to test the content validity of the questionnaire (Landeta, 2005). The Content Validity Index (CVI) will be used to assess content validity. Items will be evaluated by experts on a four-point Likert scale of relevance and importance. For each item, a CVI value of 0.78 or higher will be considered satisfactory (Waltz & Bausell, 1981). The QISTC will be evaluated by a group of experts (16 nursing specialists and 2 sociologists) with a high level of training (bachelor's degree and above). These experts come from hospitals, nursing homes and universities, whereas their professional fields include clinical nursing, nursing management, geriatric nursing, nursing education, community nursing and sociology.

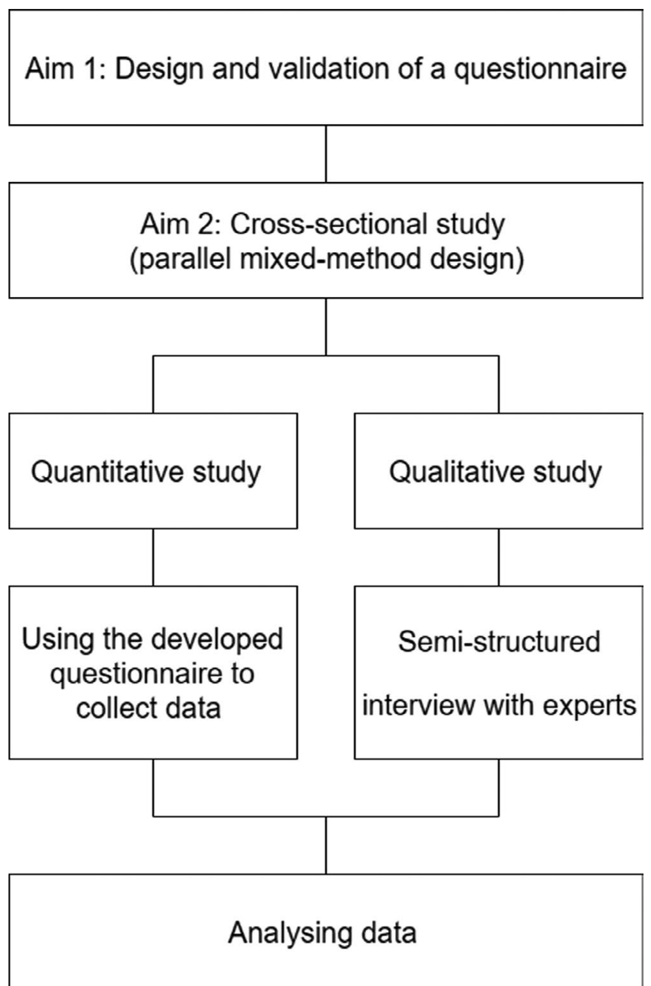

FIGURE 2 Study design

4.1.3 | Evaluation of reliability

The reliability of the questionnaire is estimated using Cronbach's alpha and the test–retest reliability coefficient. Cronbach's alpha will be calculated for each dimension to assess the extent of respondents answering the items consistently. Cronbach's alpha between 0.7–0.8 is considered acceptable and 0.8 or higher optimal (Cronbach, 1951). Additionally, after an interval of 2 weeks, 20 patients will be selected for repeated measurements to calculate the test–retest reliability (Streiner et al., 2016).

4.2 | Quantitative study

4.2.1 | Study population

This study is a national, multicentred and cross-sectional survey involving three cities in China: Nantong (East), Changsha (Middle) and Shenyang (Northeast). Cities were purposively selected to represent diverse geographic areas of the country, where the number of inhabitants is similar (approximately 7.5 million) and the prevalence of chronic diseases is high. The survey will be conducted on a sample of 1,200 participants from six comprehensive public hospitals (one tertiary hospital and one secondary hospital, 400 participants per city).

The participants were recruited to the study via advertisement or WeChat from January 2021–March 2021. Participating hospitals advertised the study by displaying posters and sending messages to their chronic patient WeChat social media groups, inviting patients to contact the study team if they were interested in participating. These participants had received transitional care (e.g. medication coordination and management, telephone follow-up, family visits) within the previous 3 months. The inclusion and exclusion criteria for the study sample were as follows:

Inclusion criteria

1. Age ≥ 60 years old.
2. At least one confirmed chronic disease.
3. Received transitional care within the previous 3 months.
4. Possession of reading and written skills.
5. Agreement with informed consent.

Exclusion criteria

1. Severe cognitive impairment (Mini-Mental State Examination ≤ 9) (Slavin et al., 2007).
2. Patients in intensive care units.

4.2.2 | Data collection

Socio-demographic characteristics, variables related to chronic diseases and social support situations will be used as control variables. Socio-demographic characteristics include gender, age, marital status, education, monthly income and occupation. Variables related to chronic diseases include diagnosis and duration of the disease. Variables related to social support include the number of friends and relatives who could provide help and support, the primary caregiver, and the type of medical insurance.

The QISTC was conceived to be administered face-to-face. It takes approximately 15 min to complete. Most questions are a combination of multiple-choice questions. Master's level nursing students were recruited as researchers for the study (3–5 researchers per city). The training was provided to the researchers over 1 week and included: (a) a session to examine the questionnaire item by item, ensuring full comprehension and discussing any doubts; (b) each researcher performed a mock questionnaire collection. The researchers were hired if there were no significant problems with the researchers and completed questionnaires. Data collection will run from May 2021–August 2021. Through a consensus discussion, a study committee has been selected and will supervise the study process. The study committee consisted of various independent members, including a geriatric chronic disease specialist, a transitional care specialist, two clinical nurse representatives and several members of the research team.

TABLE 1 Components in the QISTC

Main theme	Specific themes
Social demographics	Age Sex Marital status Educational stage Previous occupation Primary caregiver Household income Type of medical insurance
Health status	Type of chronic diseases Exercise Smoking status Drinking status
Anticipated support	• What types of transitional care do you expect to receive? (e.g. medication coordination and management) • In what ways do you expect to receive transitional care? (e.g. telephone) • Who do you expect to provide transitional care for you? (e.g. nurse, social worker) • What kind of support you expect to receive for transitional care expenses? (e.g. family support) • What equipment and supplies do you expect to receive for transitional care? (e.g. medication)
Received support	• What types of transitional care did you receive? (e.g. medication coordination and management) • In what ways did you receive transitional care? (e.g. telephone) • Who provided transitional care for you? (e.g. nurse, social worker) • What kind of support you received for transitional care expenses? (e.g. family support) • What equipment and supplies did you receive for transitional care? (e.g. medication)

Abbreviation: QISTC, Questionnaire of Instrumental Support for Transitional Care.

TABLE 2 Semi-structured interview guide

Main theme	Specific themes
Standard data collected	Year of birth Gender Occupation Education Identity (experts)
Opening questions	• What types of transitional care do you know? • Who provides transitional care do you know? • What do you know about the financial or policy support for transitional care? • What do you know about the equipment and supplies of transitional care? • What additional transitional care resources do you know?

4.3 | Qualitative study

4.3.1 | Interview guide

Semi-structured interviews will be conducted face-to-face with experts, allowing each of them to answer the questions in-depth and allowing for longer responses. Interviews are conducted following the guidelines described in Table 2.

4.3.2 | Study population

Study participants are experts from different specialties: nursing, clinical medicine, geriatrics, sociology and government. We are looking for a variation, so it is impossible to describe a fixed sample size; however, we have estimated the minimum number of study participants (15 participants) needed to best understand and describe the complexity of transitional care through our study questions.

4.3.3 | Data collection

Data will be collected from September–November 2021. All the interviews will be audio recorded and performed by the first author of the manuscript in a private space; if that is not possible, it will be conducted online. Relevant notes will be recorded during the interview to document key issues and observations. The audio recordings of the interviews will be transcribed verbatim by a trained research assistant from our study team. The interviews will last between 30–60 min, until the point of relative saturation is reached in regard to the issues discussed. To ensure the confidentiality and anonymity of the participants, no information that could result in participants being identified will be retained. Audio recordings will be transcribed and deleted within 3 months after the recording. Only the first author of the manuscript and research assistant will have access to the audio recordings.

4.4 | Analysis

4.4.1 | Quantitative study

Descriptive analysis will use SPSS version 21.0 and will include simple counting, percentages, mean values and standard deviations of sample demographics. Mono-factor analysis is performed on the related factors affecting the instrumental support for transitional care. The scores of each dimension and the total scores in the QISTC are chosen as the dependent variables and the variables with statistical significance in the mono-factor analysis as the independent variables. Then, a multiple linear stepwise regression analysis will be performed. The data obtained from the QISTC are expressed by mean and standard deviation when the data follow a normal distribution, and the median and interquartile range are used when the data follow a non-normal distribution.

4.4.2 | Qualitative study

All data will be analysed independently by three researchers who are familiar with the qualitative study but have not conducted any of the interviews in the study. Data analysis methodology will follow Colaizzi's seven-step analysis (Carr, 1994). This includes carefully reading all interview records, absorbing meaningful statements, coding recurring meaningful viewpoints, compiling detailed and exhaustive descriptions, identifying similar viewpoints, sublimating theme concepts and returning to participants for verification. The analysis involves an iterative process of description, analysis, interpretation and coding. During the analysis, the transcripts will be compared and iteratively identified to become familiar with commonality, patterns and emerging themes. Discussions between interviewer and researchers will confirm that data collection has reached a saturation point so new data are unlikely to emerge.

4.5 | Validity and reliability

Three researchers will conduct the data analysis of the semi-structured interviews independently and report regularly. This is known as analytic triangulation (Cook, 2008). Furthermore, the researchers distributing the questionnaires will receive professional training so that they can maintain consistency of questioning. Finally, the data collection in the quantitative study is required to be completed within 3 months to address reliability issues and inconsistency risks caused by changes over time (Graneheim & Lundman, 2004).

5 | DISCUSSION

The originality of the protocol lies in the combination of instrumental support and transitional care to investigate the practical resources of transitional care, such as funds and staff. There is a need for an innovative and reasonably designed questionnaire that can be applied to investigate instrumental support for transitional care. We believe that the application of a qualitative and quantitative mixed-method approach is valuable, as the in-depth understanding of transitional care requires different perspectives. Qualitative studies contribute significantly to the improvement of sociocultural understanding (Gergen et al., 2015) and help supplement the study results.

Because of the vast population base, limited medical resources and imperfect medical insurance systems, it is difficult for transitional care to develop sustainability in China (Ye et al., 2016). Few studies have focused on the sustainability of interventions. If interventions are not sustainable, they are unlikely to achieve the desired results, rendering them useless and perhaps even harmful (Tricco et al., 2016). The need for the sustainable development of transitional care identifies instrumental support as an area worthy of investigation. By investigating the instrumental support for transitional care, a deeper understanding of the services, staff, funds, and equipment and supplies of transitional care can help us to easily find the demand and correctly deliver the supply.

There is strong epidemiological evidence that a lower level of social support is associated with poorer health outcomes in older adults with chronic diseases (Boutin-Foster, 2005), and instrumental support is especially beneficial for patients with chronic diseases (Shaw & Janevic, 2004). Most transitional care research focuses on professionalism, while we turn to instrumental support and select a novel lens through which to study transitional care. By combining instrumental support and transitional care, we can summarize the practical resources of transitional care more systematically. This can guide the implementation of transitional care in older adults with chronic diseases. More importantly, having a deeper understanding of the use of the practical resources in transitional care will allow leaders to make reasonable and effective decisions. The results of our study can be extended to various regions in the world through cross-cultural debugging. We believe that the continuous exploration of instrumental support

for transitional care will positively affect the healthy and sustainable development of transitional care for older adults with chronic diseases in the future.

5.1 | Limitations

There are some limitations. QISTC is the first questionnaire to investigate the instrumental support for transitional care among older adults with chronic diseases. The wider application of QISTC needs further testing in the future. To meet the demand of the study, we will exclude patients with severe cognitive impairment. However, these excluded patients typically need more instrumental support than other patients. Last, but not least, the cross-sectional study can only investigate the current situation of instrumental support for transitional care, rather than the causal relationship. The causal relationship between instrumental support and transitional care needs to be further studied.

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None.

CONFLICT OF INTEREST

No conflict of interest has been declared by the authors.

ETHICAL APPROVAL

This study was approved by the ChiCTR (Chinese Clinical Trial Registry) (approval reference number: ChiCTR1900020923, date of approval: 22 January 2019). Participants will provide a formal written informed consent in order to participate in the study.

DATA AVAILABILITY STATEMENT

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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