Research on the Establishment of a System for Monitoring Service Quality of the Aged Caring Institutions

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Abstract. In the establishment of the aged caring service system, monitoring the service of the aged caring institutions is an important means to improve the service quality and protect the basic rights and interests of the elderly. Based on the three-dimensional theory of quality evaluation, this paper adopts the Rank-Sum-Ratio (RSR) method to construct a preliminary item pool, improves the item pool through the Delphi method, and builds a monitoring index system on the basis of “public basis plus professional norms”, so as to provide suggestions for policy making related to the establishment of a standard system of monitoring service quality and the improvement of service of nursing institutions.

1. Introduction

So far, China has been an aging society for 20 years. With the population aging comes the rapidly growing demand for the aged caring service. So, the nursing institutions become an important way for an aging society to care the elderly. However, China's nursing institutions are spotty, with problems such as unprofessional evaluation, limited assessment content and lack of evaluation standards. So, there is an urgent need to present a unified standard for monitoring the aged caring service quality and improving the service level. "Opinions of the General Office of the State Council on Promoting the Development of Pension Services", clearly pointed out the establishment of a comprehensive system for supervising aged caring services, improving the "double random, one open" working mechanism, and accelerating the promotion of the social credit system in the field of aged caring services [1]. Based on the three-dimensional theory of quality evaluation, this paper adopts the Delphi method and the Rank-Sum-Ratio (RSR) method to comprehensively evaluate the service quality of the aged caring institutions by formulating a scientific evaluation index system, in order to optimize the resource allocation, improve the service quality and offer references for the government to develop relevant pension service standards.

2. Literature Review

Domestic scholars have increasingly enriched the research on nursing institutions. Experts like Guo Hongyan [2, 3] have established an evaluation index system for the service quality of domestic aged caring institutions through referring to experts. The weight of index items on the quality of health management of the elderly is as high as 0.59, but it has not been verified by practice. Zhao Guowei [4] constructed the fuzzy comprehensive model for evaluating the service quality of the aged caring institutions, and verified its practicability. In addition, scholars like Yan Yumeng [5] have designed a service quality evaluation form for the nursing homes integrated with medical care institutions. The form has good reliability and validity, but needs to be further tested in nursing homes of different scales in different provinces and cities. Scholars including Wang Ying [7], by random sampling, distributed questionnaires on the life satisfaction of the elderly in the nursing institutions with beds numbered above 50 in six poverty-stricken counties in Liaoning Province. The results showed that catering, life care, recreation and health care were main factors affecting life satisfaction of the elderly living in institutions. Scholars including Xu Bo [6] conducted a survey on the life quality of the elderly living in aged caring institutions across Nanjing. The survey
found the main factors affecting their life quality were those like self-care ability and illness. Therefore, the evaluation of the aged caring institutions helps strengthen the quality assessment of the health management of the elderly.

In summary, China's research on the system for monitoring the service quality of aged caring institutions is still in the initial stage, and has not yet formed a unified and coordinated standard system for the industry. It is far from meeting real needs of the standardization of the sector. This paper summarizes the related researches on the service quality assessment tools, and aims to provide reference for the establishment of standardized service quality monitoring system for the aged caring institutions in China.

3. Establishment of Monitoring Index System

Based on the "public basis + professional norms", this paper constructs specific evaluation indexes from four dimensions: basic norms, standardized service provision, service process control, service quality evaluation and improvement.

3.1 Construction principles

In the process of constructing the service quality monitoring index system, the principles of science, comprehensiveness, feasibility and comparability are observed.

The science means that the selected indicators should strive to be scientific in concepts, clear in meaning, clearly defined in scope, and objective without the disturbing subjective factors. The comprehensiveness means that the consideration must be given to all aspects of hardware and software in the development of the nursing institutions. We must select all kinds of indicators at all levels as comprehensively and completely as possible to avoid duplication and omission of indicators. The feasibility means that the construction of the indicator system should focus on practical application, and strive to be explanatory, easy to implement and evaluate. The universality means that the design of indicators should not only be closely integrated with the service function of the nursing institutions, but also should be universally applicable to the evaluation standard. And as for the comparability, the selection of evaluation indicators fully draws on and absorbs the experience and achievements of the development of age caring institutions in various regions at home and abroad. While drawing on the strengths of others, it pays special attention to comparing the standardized level of all home institutions.

![Figure 1. Three-dimensional theoretical framework for monitoring the service quality of aged caring institutions.](image-url)
Table 1. Core indicators of the system for monitoring the quality of the aged caring service.

| Primary indicator | Secondary indicators | Tertiary indicator |
|-------------------|----------------------|-------------------|
| 1. Basic Specifications (public Basis) | 1.1 Qualification Standard | Institutional and personnel qualifications |
|                   | 1.2 hardware facilities | Site requirements |
|                   | 1.3 Environmental requirements | Facilities and equipment |
|                   | 1.4 Organization | |
|                   | 1.5 Responsibility and authority | |
|                   | 1.6 Management System | |
|                   | 1.7 Risk prevention | |
| 2. Service Provision Criteria | 2.1 Life Care Service | 2.1.1 Basic requirements |
|                   |                       | 2.1.2 Life care |
|                   |                       | 2.1.3 catering service |
|                   |                       | 2.1.4 sanitation |
|                   |                       | 2.1.5 washing service |
|                   |                       | 2.1.6 Others |
| 2. Service Provision Criteria | 2.2 Medical care services | 2.2.1 Basic requirements |
|                   |                       | 2.2.2 Disease prevention |
|                   |                       | 2.2.3 Diagnosis and treatment of diseases |
|                   |                       | 2.2.4 Others |
| 2. Service Provision Criteria | 2.3 Health rehabilitation services | 2.3.1 Basic requirements |
|                   |                       | 2.3.2 Main content |
|                   |                       | 2.3.3 Special rehabilitation |
| 2. Service Provision Criteria | 2.4 Hospice service | 2.4.1 Basic requirements |
|                   |                       | 2.4.2 Getting along with the patient |
|                   |                       | 2.4.3 Getting along with family members |
|                   |                       | 2.4.4 Others |
| 2. Service Provision Criteria | 2.5 Cultural Life Service | 2.5.1 Basic requirements |
|                   |                       | 2.5.2 Cultural/Psychological Support Services |
|                   |                       | 2.5.3 Leisure and entertainment services |
|                   |                       | 2.5.4 Consulting services |
|                   |                       | 2.5.5 Others |
| 2. Service Provision Criteria | 2.6 Health Management Service | 2.6.1 Basic requirements |
|                   |                       | 2.6.2 Health Assessment |
|                   |                       | 2.6.3 Health Education |
|                   |                       | 2.6.4 Health Management |
| 3. Service Control Process | 3.1 Service File Management | |
|                   | 3.2 Accident Management | |
|                   | 3.3 Service Signing Arrangement | |
|                   | 3.4 Service Content Verification | |
|                   | 3.5 Service Information Publicity | |
| 4. Quality Evaluation and Improvement | 4.1 Service Supervision and Evaluation | |
|                   | 4.2 Customer Satisfaction | |
|                   | 4.3 Service performance evaluation | |
|                   | 4.4 Complaint settling | |
|                   | 4.5 Corrective Action | |
|                   | 4.6 Improvement | |

### 3.2 Construction process

The establishment of the monitoring index system is based on the three-dimensional theory of quality evaluation, combined with the characteristics of the aged caring institutions. This paper has formed a three-dimensional theoretical framework for the evaluation of service quality of the aged caring institutions (shown in Figure 1). Through the Rank-Sum-Ratio (RSR) method, a preliminary item pool of service quality evaluation indicators for the aged caring institutions is constructed. It is recommended that no less than 30 senior experts from the research institutions, civil affairs, health administration, and nursing institutions be selected in the implementation process. These experts
need to conduct at least two rounds of consultations and argumentation. With the importance value of above 3.5, the coefficient of variation below 0.30, combined with the expert's suggestion to screen the indicators, the paper finally forms a service quality monitoring index system with indicators covering the structure-process-result.

3.3 Core indicators of the monitoring index system

According to the "Basic Standards for Service Quality of Aged Caring Institutions" issued by the National Standardization Administration Committee (2017), this paper establishes a service monitoring indicator system for aged caring institutions by combining relevant research results of domestic and foreign scholars, soliciting relevant service quality and recommendations for research on pension services, and conducting field surveys of pension institutions.

This system, based on the three-dimensional theory about quality evaluation, divides the monitoring process into three levels consisting of structural indicators, process indicators and outcome indicators. The public link refers to basic norms, including qualification standards, hardware facilities, environmental requirements, etc.; professional norms include service provision standards, service process control, service quality evaluation and improvement. The system is shown in Table 1.

3.4 Application of monitoring index system

The Delphi method was adopted in the application. The larger the expert positive coefficient and the expert opinion authority coefficient, the higher the coordination degree of the expert opinions, the better the consultation effect. Herein, the expert positive coefficient is expressed by the questionnaire recovery rate. The expert opinion authority coefficient is determined by the expert familiarity degree and the average value of the judgment basis. The degree of coordination of the expert opinions is represented by the Kendall synergy coefficient (W). Experts' evaluation of indicators is expressed by importance assignment (x±s), coefficient of variation (CV) and full scale. The weight of indicators is determined by Delphi's subjective weighting method. The count data in the general information of the nursing institutions is described by frequency and percentage, and the measurement data is described by mean and standard deviation. The comprehensive evaluation of service quality is completed by rank sum ratio, including ranking each evaluation index, calculating the weighted rank-to-average ratio (WRSR) value by rank conversion based on the weight of the index, and reducing the WRSR value from small to large range, calculating the downward cumulative frequency, obtaining the probit value. Take the Probit value as the independent variable, WRSR value serves as the dependent variable to fit the linear regression equation to test the statistical significance of the evaluation index by analysis of variance.

4. Revelations and Suggestions

This paper constructs an index system and basic algorithm for service quality monitoring of aged caring institutions, and provides a method for monitoring. It is expected to use relevant modern monitoring methods to help relevant departments to improve the supply structure and quality of age caring services. Relevant revelations and suggestions are as follows:

4.1 Improving laws and regulations related to aged caring services, and refining the monitoring content

The Law on the Protection of the Rights and Interests of the Elderly of the People's Republic of China, newly amended at the end of 2018, is the only law in China that stipulates the basic rights of the elderly. It is recommended to refer to laws and regulations of other countries, formulate the welfare law for the elderly or the law for the promotion of the services, introduce measures for the service quality management, refine the procedures and contents of the service quality monitoring, regulate market order, improve service quality, and guide and promote the scientific and orderly development of the work on caring the aged.
4.2 Conducting the unified assessment of the capacity and needs of the elderly, and accurately meeting the needs of the aged caring services

On the basis of the evaluation, it is recommended to establish a basic pension service demand assessment system on the demand side based on the integration of medical care and nursing service, elderly health checkup and long-term care insurance pilot. The assessment results can be used not only for level classification to provide pension services, subsidy distribution, auxiliary equipment, family renovation for the aged, long-term care insurance, home caregiver training, etc., but also for the accurate allocation of pension-related resources, sharing information about pension, medical care, etc., assisting the government in future decision-making, promoting the orderly connection of social security systems such as social insurance, social welfare, social assistance, and various pension policies.

4.3 Formulating caregiver quality assessment standards and promoting the service quality

It is recommended to adhere to the standards for the classification and assessment of the aged caring institutions. The institutions submits the self-assessment report, and receive regular random inspections and random checks through a combination of open and secret visits, and the implementation of “double random, one public”. These measures are carried out to supervise and urge the caregivers to effectively improve the service quality in accordance with relevant standards, and ultimately, link the grading results with the various preferential policies for subsidies.

4.4 Conducting service satisfaction evaluation of the elderly, and focusing on the protection of the rights and interests of the elderly

Some regions have already explored the satisfaction evaluation of pension service. For example, the “Measures for the Administration of Operational Subsidies of the Aged Agencies in Beijing” clearly stipulates that, from 2019, if the annual satisfaction rate of the service targets is less than 85%, the aged caring institutions will be stripped of qualifications access to operating subsidies. In Jiangsu, the Provincial Bureau of Quality and Technical Supervision began to conduct annual public satisfaction assessment of urban pension services and publish rankings of satisfaction levels in cities. It is recommended to gradually include indicators related to the satisfaction of the aged caring service in the service supervision, and explore the satisfaction assessment of the service targets and family members of the pension institutions and community-level home caregivers. The subsidy policy will be linked with the satisfaction level.

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