Qualitative Research on the Current Implementation Status and Barriers of Nurses' Non-Pharmacological Prescription Authority

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Abstract: *Objective*: To systematically review the current implementation status of nurses' non-pharmacological prescription authority and analyze the barriers encountered during its implementation in China, providing countermeasures and references for promoting the standardized implementation of nurses' non-pharmacological prescription authority. *Methods*: A secondary analysis of literature was conducted to systematically search for domestic and international literature related to nurses' non-pharmacological prescription authority. Meta-analysis was performed on eligible literature to evaluate the implementation effects. Simultaneously, semi-structured in-depth interviews were conducted with healthcare workers, patients, and policymakers. Content analysis was used to organize the interview data and extract core issues and barriers. *Results:* A total of 46 international articles were included in the Meta-analysis, which revealed that the implementation of nurses' non-pharmacological prescription authority significantly improved patients' health management outcomes, enhanced healthcare service efficiency, and increased patient satisfaction. *Conclusion:* The implementation of nurses' non-pharmacological prescription authority has demonstrated significant positive effects. However, China faces multiple barriers in its advancement, necessitating efforts in optimizing policy systems, constructing collaborative models, strengthening professional skills training, and improving social awareness to guide the scientific and rational implementation of nurses' non-pharmacological prescription authority.

Keywords: Nurses; Non-pharmacological prescription authority; Implementation status; Barrier factors; Qualitative research

1. Introduction

With the aging population and the increasing number of individuals with chronic conditions, the demand for medical services continues to rise, exacerbating the already strained healthcare resources. The prescription authority of nurses has gradually entered the public spotlight as a potential solution to meet patients' health needs,

enhance medical efficiency, and improve the accessibility of healthcare resources. Nurse prescription authority has been implemented abroad for many years, and the effectiveness of nurse prescriptions has been confirmed through practice. Moreover, the positive impact of nurse prescription authority on healthcare providers, patients, and nurses themselves has gained international recognition. From the perspective of doctors, granting nurses prescription authority helps alleviate their diagnostic and treatment burdens, enabling them to focus on complex and challenging cases, thereby mitigating the shortage of medical resources to a certain extent. For nurses, the prescription authority reasonably utilizes their professional skills, increases their autonomy in clinical work, enhances their professional fulfillment, and reduces the loss of nursing talent at its source. For patients, granting nurses prescription authority facilitates the continuity of medical services, improves their healthcare experience, and reduces their medical costs. Currently, research on the implementation status of non-pharmacological prescription authority for nurses in some developed countries has formed a relatively complete system and set of norms [1]. However, research on this topic in China is still in its infancy, with pilot programs implemented only in a few regions, failing to demonstrate their service effectiveness.

2. Theoretical basis and research status

2.1. Theoretical basis

2.1.1. Role theory

Role theory posits that individuals are required to fulfill corresponding responsibilities in accordance with specific role norms during social interactions [2]. Granting nurses the right to prescribe non-pharmacological treatments represents an expansion and reshaping of the nursing role, demanding a transition from traditional prescriber-followers to health managers.

2.1.2. Collaborative governance theory

Collaborative governance theory suggests that multiple entities can achieve effective management of public affairs through collaborative interactions [3]. The implementation of nurses' right to prescribe non-pharmacological treatments involves various stakeholders, including nurses, doctors, patients, and policymakers, necessitating clear delineation of responsibilities and collaborative efforts among all parties.

2.1.3. Health management theory

Health management theory advocates for a prevention-oriented approach, emphasizing the maintenance and promotion of individual health through comprehensive intervention measures [4]. The fundamental goal of nurses' right to prescribe non-pharmacological treatments is to employ non-pharmacological interventions to provide comprehensive health supervision and management for patients throughout all stages, particularly implementing long-term interventions for patients with chronic diseases.

2.2. Research status

Foreign countries started relatively early in the research and practice of nurses' non-pharmacological prescription rights, and have formed a relatively mature system. Starting from the 1990s, the United States began to explore the system of nurses' prescription rights, and has now achieved comprehensive coverage of non-pharmacological prescription rights. Some states have granted nurses limited pharmacological prescription rights.

The implementation of non-pharmacological prescription rights for nurses in the United States has significantly improved medication adherence and health indicator control among chronic disease patients, while also reducing certain medical expenses [5]. The United Kingdom has clarified the legal status of nurses' non-pharmacological prescription rights through the implementation of the Nursing and Midwifery Council Act, establishing a standardized training and assessment system. British research has focused on the implementation effects of non-pharmacological prescription rights for community nurses, finding that non-pharmacological prescriptions such as health guidance and rehabilitation training prescribed by community nurses can effectively reduce hospitalizations and increase the accessibility of primary healthcare services [6].

Research on nurses' non-pharmacological prescription rights in China began in the early 21st century, with early studies mostly focusing on introducing and learning from foreign experiences. With the implementation of the Healthy China strategy, some regions in China have started pilot programs for nurses' non-pharmacological prescription rights, granting nurses the authority to prescribe non-pharmacological interventions such as health guidance and rehabilitation. Existing domestic research primarily investigates the implementation status in pilot regions, finding that the implementation of nurses' non-pharmacological prescription rights is widely recognized by patients and can significantly enhance patients' health awareness and self-management abilities [7]. Studies also indicate that the implementation of non-pharmacological prescription rights for nurses in China faces numerous challenges, such as the lack of a unified legal protection system, substandard professional training for nurses, inadequate medical collaboration mechanisms, and social misconceptions [8,9].

3. Research methodology

3.1. Secondary literature analysis and meta-analysis

3.1.1. Literature search strategy

A systematic search was conducted across databases including PubMed, Web of Science, CNKI (China National Knowledge Infrastructure), Wanfang Data Knowledge Service Platform, and VIP (Chinese Scientific Journal Database), covering the period from the inception of each database to December 2024. The search terms encompassed key concepts such as nurses, non-pharmacological prescription rights, health guidance, rehabilitation prescriptions, and implementation effects, with adjustments made to the Chinese and English search terms based on the specific characteristics of each database.

3.1.2. Literature screening and data extraction

Two researchers independently performed literature screening and data extraction. In cases of disagreement, a third-party consultation was employed to resolve differences. The extracted information included basic literature details, study subjects, total sample size, intervention protocols, evaluation metrics, and implementation outcomes.

3.1.3. Quality assessment and meta-analysis

The study employed the quality assessment tool from the Joanna Briggs Institute (JBI) Evidence-Based Nursing Center to evaluate the quality of the included literature. Meta-analysis was conducted using Rev Man 5.4 software, and heterogeneity among studies was assessed using the I^2 test. If I^2 exceeded 50%, a random-effects model was adopted, and the sources of heterogeneity were analyzed simultaneously.

3.2. Semi-structured in-depth interviews

3.2.1. Interviewees

Healthcare professionals, patients, and policymakers were selected as interviewees using purposive sampling methods. The sample size was determined based on the principle of information saturation, ultimately recruiting 32 interviewees, including 18 healthcare workers, 8 patients, and 6 policymakers.

3.2.2. Interview outline

Based on the research objectives and the results collated from relevant literature, a semi-structured interview outline was prepared. The outline for healthcare workers included questions on their awareness of nurses' non-pharmacological prescription rights, issues encountered during implementation, self-assessment of professional competence, and collaboration with other entities. For patients, the outline covered their understanding of nurses' non-pharmacological prescription rights, willingness to accept, service experience, and concerns. The outline for policymakers addressed the progress of policy formulation regarding nurses' non-pharmacological prescription rights, challenges encountered during implementation, and factors hindering policy advancement.

3.2.3. Data analysis

The interview data was organized and analyzed using content analysis methodology. Subsequently, core categories and themes were extracted, the logical connections between various themes were clarified, and ultimately, the effectiveness of the interviews was established.

4. Results

4.1. Meta-analysis results of the implementation of non-pharmacological prescription rights for international nurses

4.1.1. Literature screening results

Initially, 1,256 pieces of literature were retrieved, and ultimately, 46 pieces were included in the meta-analysis, including 24 English articles and 22 Chinese articles. The included literature covered a total of 12 countries, including the United States, the United Kingdom, Australia, and Canada, with a cumulative sample size of 18,623 cases.

4.1.2. Meta-analysis results of implementation effectiveness

(1) Implementation effectiveness in patient health management

38 pieces of literature were selected to analyze the impact of nurses' non-pharmacological prescription rights on patient health management outcomes. The heterogeneity test indicated an I^2 value of 38%. Using a fixed-effects model, it was found that the effectiveness rate of health indicator control in patients in the group with nurses' non-pharmacological prescription rights was significantly higher than that in the control group (OR = 1.86, 95%CI: 1.52–2.28, $p < 0.001$). This was particularly evident in the control of blood pressure and blood sugar for patients with chronic diseases such as hypertension and diabetes.

(2) Efficiency level of medical services

A total of 26 articles were included to analyze indicators related to medical service efficiency. The heterogeneity test indicated an I^2 value of 42%. Using a fixed-effects model, it was found that granting

nurses non-pharmacological prescription rights could significantly reduce patient waiting times (MD = -15.32, 95% CI: -18.65 to -11.99, $p < 0.001$) and increase the number of patients receiving medical services (OR = 2.13, 95% CI: 1.75 to 2.59, $p < 0.001$).

(3) Patient satisfaction level

When analyzing patient satisfaction, 32 articles were included. The heterogeneity test showed an I^2 value of 35%. Using a fixed-effects model, it was found that implementing nurses' non-pharmacological prescription rights could significantly improve patient satisfaction (OR = 2.35, 95% CI: 1.98 to 2.79, $p < 0.001$).

4.2. Obstacles to the implementation of nurses' non-pharmacological prescription rights in China

Through coding and analysis of interview data, three core categories of obstacles were identified, as follows.

4.2.1. Inadequate institutional framework

Policy makers and nursing administrators generally reflected that, at the current stage in China, there is a lack of unified legal and policy documents to regulate nurses' non-pharmacological prescription rights. The connotations, scope, implementing entities, and boundaries of authority for nurses' non-pharmacological prescription rights have not been clearly defined, and there is a lack of a comprehensive training, assessment, and supervision system, resulting in a lack of institutional support for the implementation of nurses' non-pharmacological prescription rights.

4.2.2. Insufficient professional competence among nurses

Some nurses believe that their professional knowledge and skills are inadequate to meet the requirements for implementing non-pharmacological prescription rights. In China's nursing education, there is limited coverage of relevant knowledge such as health management, rehabilitation medicine, and psychology. Nurses have not received systematic training related to non-pharmacological prescriptions, resulting in a lack of confidence when prescribing.

4.2.3. Social cognitive biases

Both patients and nurses indicate that the general public has a low level of awareness regarding nurses' non-pharmacological prescription rights. Some patients do not recognize non-pharmacological prescriptions issued by nurses and prefer to follow doctors' guidance. Additionally, media portrayals of nurses' roles are often limited to traditional nursing tasks, failing to enhance societal recognition of nurses' non-pharmacological prescription rights.

5. Countermeasures and suggestions

5.1. Improve the policy and institutional framework to strengthen institutional safeguards

Firstly, accelerate the legislative process. Health administrative departments should collaborate with legislative bodies to formulate legal norms and policy documents related to nurses' non-pharmacological prescription rights, clarifying the concept, scope, implementing entities, boundaries of authority, and legal responsibilities associated with nurses' non-pharmacological prescription rights. This will provide legal safeguards for the advancement of practice and establish a unified catalog of non-pharmacological prescriptions for nurses and operational procedures

to standardize the prescription issuance process.

Second, establish a comprehensive framework for training, assessment, and supervision. Administrative departments should prioritize the establishment of a tiered and categorized training system for non-pharmacological prescriptions for nurses, providing targeted training for nurses at different levels and in various specialized fields. The content should cover multiple areas such as health management, rehabilitation medicine, psychology, and communication skills. A rigorous assessment model should be implemented, linking assessment results to nurses' professional title promotions and performance-based pay distributions. A multi-dimensional supervision system should be constructed to strengthen oversight and control over the prescription and execution of non-pharmacological prescriptions, ensuring their standardization and safety [10].

5.2. Strengthen professional training for nurses and enhance core competencies

First, reform the nursing education system. Higher education institutions should optimize the curriculum for nursing programs, incorporating relevant course content in health management, rehabilitation medicine, psychology, public health, and other fields to enhance nurses' professional capabilities and knowledge related to non-pharmacological prescriptions. Students should be arranged to intern at community health centers, chronic disease management institutions, and other settings to accumulate practical experience in non-pharmacological prescriptions.

Second, improve the continuing education system. Health administrative departments and medical institutions should collaborate to offer continuing education programs related to non-pharmacological prescriptions for nurses, providing convenient and efficient training services through a combination of online and offline methods. Expert scholars and clinical leaders can be invited to conduct special lectures and case-sharing sessions to expand nurses' professional knowledge and practical skills. Nurses should also be encouraged to participate in research projects to enhance their evidence-based practice capabilities and proficiency.

5.3. Strengthen social publicity and guidance to enhance cognitive level

Firstly, increase media publicity efforts. Relevant departments can utilize diverse media channels such as television, newspapers, and the internet to publicize the critical significance, implementation effects, and typical cases of nurses' non-pharmacological prescription rights. This will enhance the public's awareness and approval of nurses' non-pharmacological prescription rights, promote the professional value and role transformation of nurses, and guide the public to establish an appropriate perception of the nurse's role.

Secondly, carry out health science popularization activities. Nurses should actively engage in health science popularization activities, employing various methods such as community lectures, health consultations, and online science popularization to disseminate health management knowledge and the importance of non-pharmacological interventions to the public. This will elevate the public's health literacy level and drive changes in social cognition through practical outcomes.

6. Conclusion

In conclusion, while nurse prescribing rights have demonstrated significant benefits, their implementation in China requires focused efforts to optimize policies, establish collaborative models, enhance professional training, and raise public awareness to ensure their scientific and rational application.

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Disclosure statement

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