International Journal of General Practice Nursing

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Cristina Lavareda Baixinho

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International Journal of General Practice Nursing

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Level 10
50 Clarence Street
Sydney NSW 2000
Website: www.bbwpublisher.com
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2024, Volume 2, Issue 1

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International Journal of General Practice Nursing, 2024, Volume 2, Issue 1
https://ojs.bbwpublisher.com/index.php/IJGPN
ISSN Online: 2981-9423
ISSN Print: 2981-9415

The Experiences of Practical Nurse Students in Promoting the Rehabilitation of the Elderly Through Nursing Care and Its Education – A Secondary Publication

Maria Korvola[1], Sinikka Lotvonen[1], Heidi Siira[1], Helvi Kyngäs[1,2], Kaisa-Mari Saarela[1]*

[1]GeroNursing Center, Research Unit for Nursing and Health Management, University of Oulu, Oulu 90220, Finland
[2]Oulu University Hospital, Oulu 90220, Finland

***Corresponding author:** Maria Korvola, maria.korvola@oulu.fi

Abstract: The significance of rehabilitation-promoting nursing care is emphasized in aging Finland. According to studies, rehabilitation-promoting nursing care enhances the functional capacity of the elderly. The Elderly Services Act obliges municipalities to create a plan to support the elderly population, emphasizing living at home and rehabilitative measures. A large portion of graduated practical nurses will be working with the elderly, so the education of practical nurses must meet the needs of the workforce. The study aimed to produce new information on the implementation of rehabilitation-promoting nursing care in the elderly services system and on the education of rehabilitation-promoting nursing care for the elderly in vocational institutions. The research data was collected in the fall of 2020 through individual theme interviews with practical nurse students (n = 8). The data was analyzed using inductive content analysis. The experiences of practical nurse students regarding rehabilitation-promoting nursing care for the elderly were related to nurses' time management, organizational practices, nurses' competence, nurses' attitudes, nurses' methods of operation, organizational development, implementation and development of practical teaching, factors affecting the use of aids, and the technology of aids in the future. In conclusion, it can be stated that the content of education and practical work life do not align. It is essential to increase competence in rehabilitation-promoting nursing care and develop organizational practices.

Keywords: Rehabilitation-promoting nursing care; Practical nurse education; Organizational practices; Elderly population support

Online publication: February 26, 2024

1. Introduction

According to the World Health Organization (WHO), the number of people aged over 60 in the world is expected to double between 2000 and 2050. By 2050, more than one-fifth of the population will be over 60 years old [1]. The number of elderly people is also increasing in Finland. In 2018, approximately 20 percent of our population was aged 65 and over, and by 2030, their proportion will increase to around 26 percent, or 1.5 million. By 2030, in a

large part of the municipalities, at least one-fourth of the residents will be 75 years old or older [2].

As the population ages, it is expected that there will be a significant increase in the need for elderly services [3]. In Finland, the promotion of the functional capacity and well-being, health, and independent functioning of the elderly is regulated by the Elderly Services Act [4], and in the quality recommendation for ensuring good aging and improving services for the period 2020–2023 [2]. In elderly services, the largest professional group is comprised of practical nurses [5]. In the work of a practical nurse, the goal of rehabilitation-promoting nursing care is to maintain and promote functional capacity [6]. Education enhances the understanding of rehabilitation-promoting nursing care among healthcare personnel [7].

The WHO's "Healthy Aging" program, to be implemented between 2015 and 2030, defines healthy aging as a process that develops and maintains functional capacity, enabling the well-being and independence of the elderly to be preserved [1]. Functional capacity refers to a person's ability to cope with everyday life. It can be examined from physical (e.g., walking, managing household chores), psychological (e.g., cognition, mood), and social (loneliness, social isolation) perspectives. [8]. In addition to the aforementioned perspectives, Klemola specifically mentioned cognitive functional capacity, which refers to a person's ability to process information and regulate and adapt their behavior according to the demands of their immediate environment [9]. Physical functional capacity often remains relatively good until the age of 75, and real problems associated with aging tend to emerge around the ages of 75–85 [10].

Factors associated with the risk of decreased functional capacity include cognitive impairment, limited social contacts, and the individual's perceived poor health [11]. Aging and degenerative chronic diseases may lead to gradual deterioration of functional capacity, initially manifesting as limitations in advanced activities of daily living (AADL), such as organizing events or societal participation. Subsequently, difficulties may arise in handling instrumental activities of daily living (IADL), such as household chores and grocery shopping. Eventually, frailty hinders even basic activities of daily living (BADL), such as walking and dressing. Various typical elderly diseases, such as memory and musculoskeletal disorders, also impair functional capacity [8]. However, individual differences in the onset and pace of changes can be significant. Chronological age poorly reflects an individual's health and functional capacity. Aging is also experientially individualized [10].

Different interventions and programs aimed at maintaining social functional capacity may increase the well-being and health of the elderly, such as life satisfaction. They may also support social roles and activities, as well as functional health and cognition. The effectiveness of interventions or programs targeting the elderly can be measured, for example, by the time spent on activities and by using assessment methods for evaluating quality of life [12]. It is important to support the physical, psychological, and cognitive functional capacity of the elderly to improve their opportunities to seek and participate in social contacts. According to research, social contacts are one of the most important aspects of an elderly person's life [13-15]. The motivation of the elderly to engage in activities aimed at maintaining functional capacity and achieving set goals is greater if they have an active role in setting rehabilitation-promoting nursing care goals and implementing agreed methods [16].

Meaningful and effective rehabilitation-promoting nursing care requires nurses to believe in the possibility of the elderly person's rehabilitation and the effectiveness of activities promoting it, as well as a shared philosophy of action to which both nurses and elderly clients are committed [17,18]. Rehabilitation-promoting nursing care is intensive, time-limited, goal-oriented, comprehensive, and client-centered action in the home and living environment of the elderly [19,20]. It is based on health-oriented, goal-oriented, and multidisciplinary action. Health orientation means focusing on strengths, and goal orientation is evident in measurable goals recorded in care plans, which are regularly evaluated for achievement. The goal is also to support as much independent functioning as possible and thereby promote self-esteem and self-determination [17].

Studies show that the elderly utilize health services extensively [21]. Rehabilitation-promoting activities enhance the clinical quality of care [17], and they have been proven to be cost-effective [22]. Successful rehabilitation-promoting nursing care requires individual assessment of functional capacity and goal-setting based on it, suitable individual implementation methods, as well as monitoring, evaluation, and setting of new goals in an upward trajectory. Additionally, effective and impactful rehabilitation-promoting nursing care requires nurses to possess excellent communication skills, which enable them to encourage elderly clients to actively participate, identify their resources, and set goals [20].

Practical nurses play a key role in implementing rehabilitation-promoting nursing care for the elderly, as one of the eight competence areas of the Vocational Qualification in Social and Health Care (practical nurse) is "care and rehabilitation of the elderly" [23]. Nurses have a significant role in rehabilitation-promoting nursing care for the elderly [18,24,25]. As part of a multidisciplinary team, nursing staff members assess the elderly person's functional capacity, implement a plan developed to maintain and promote functional capacity, and monitor progress [21]. According to the description of the Vocational Qualification in Social and Health Care [22], the competence of a practical nurse is defined as follows: "They can plan, implement, and evaluate care and support work that promotes the health, well-being, functional capacity, growth, and participation of clients or patients in various social and healthcare or educational settings. They can provide client-oriented guidance, utilize a wide range of welfare technology, and develop their professional competence in lifelong learning."

The job description of a practical nurse mainly includes basic care, assisting clients in daily activities, and administering medication [26]. According to a study by Kariniemi *et al.* [27], nurses' workload in home care can affect their ability to engage clients and implement a rehabilitative approach to care. Engagement is important, as it has been found to enhance the elderly person's belief in their abilities and life. Elderly home care clients have resilience and the ability to participate more in daily activities when guided and supported by nurses [13]. According to middle managers, adequate staffing is necessary to implement rehabilitation-promoting activities. Middle managers consider the expertise and professionalism of staff, commitment, low turnover, and securing substitutes to be more important than the number of staff [17].

A functional work community is characterized by having a common purpose and goals, which are known to the staff and guide the core mission [18,25]. Interprofessional collaboration is essential in developing rehabilitation-promoting nursing care, as it strengthens the expertise and professional self-esteem of different professional groups [18,28]. Rehabilitation-promoting nursing care reduces the physical strain on nurses [24].

The functionality of the work environment requires appropriate tools. Ergonomic work practices are important from both the client's and the nurse's perspective [25]. A functional work environment and opportunities for professional development increase job satisfaction [29]. Employees find rehabilitation-promoting nursing care rewarding when they realize they can enhance the functional capacity of the elderly through their actions [30]. Rehabilitation-promoting activities increase commitment to work and facilitate the recruitment of substitutes [17].

Previous research has examined the experiences of graduated, working nurses in rehabilitation-promoting nursing care for the elderly [31-33]. However, there is a lack of research on students' perceptions and experiences related to rehabilitation-promoting nursing care, i.e., future professionals. Only Karhapää has investigated nursing students' perceptions of rehabilitation-promoting nursing care [24]. The topic under investigation is timely, as the number of elderly individuals increases, prompting consideration of how to effectively support and promote the functional capacity and health of the elderly to ensure independent and successful aging. Practical nurses play a significant role in supporting and maintaining the functional capacity of the elderly [18,24,25]. Educational institutions and internship placements provide practical nurses with the skills for rehabilitation-

promoting nursing care, making them key stakeholders in ensuring the competence of future professionals in rehabilitation-promoting nursing care.

2. Purpose, objective, and research questions

The purpose of the study was to describe practical nursing students' experiences of rehabilitation-promoting nursing care for the elderly and its education. The objective was to produce new knowledge about the implementation of rehabilitation-promoting nursing care in the elderly services system and the education of rehabilitation-promoting nursing care for the elderly in vocational institutions. The results can be utilized in the development of rehabilitation-promoting nursing care for the elderly in practical work life and the planning of educational content.

The research questions were as follows:

(1) What experiences do practical nursing students have regarding the implementation of rehabilitation-promoting nursing care for the elderly?

(2) What experiences do practical nursing students have regarding the education of rehabilitation-promoting nursing care for the elderly?

3. Data and methods

3.1. Participants and data collection

The research data was collected in the fall of 2020 through thematic interviews with practical nursing students (n = 8) from a vocational institution. The criteria for participation in the study were that the practical nursing students had completed at least one practical training related to elderly care. The liaison persons for the research were the practical nursing teachers. Initially, invitations for interviews were sent via email through the teachers to four different student groups, out of which two participants agreed to participate in the study. Subsequently, the research invitation was modified to include a gift card draw among participants. The invitation was then sent to seven different student groups, resulting in four students expressing willingness to participate in the interview. Additionally, two interviewees were found through the researcher's contacts. In total, eight practical nursing students, seven females, and one male, participated in the interviews. Among the interviewees, five were specializing in the field of nursing and caring, and three in elderly care and rehabilitation.

The data collection method utilized was thematic interviews, a semi-structured form of interview which is a hybrid between a structured and open-ended interview [34]. The themes included rehabilitation-promoting nursing care, education on rehabilitation-promoting nursing care for the elderly, rehabilitation-promoting nursing care in elderly care, and the future. These themes and their specific questions aimed to gather information about the contents of the themes. Questions and their corresponding answers provided understanding, often leading to new topics of discussion. The interview responses were part of a whole, from which a holistic understanding of the research subject was built during the analysis phase [35].

The interviews were conducted individually via the Microsoft Teams communication and collaboration platform due to the prevailing COVID-19 situation at the time of data collection. The duration of the interviews ranged from 11 to 37 minutes, and they were recorded and transcribed verbatim for data analysis purposes. In total, 32 pages of transcribed data were collected (Times New Roman 12, single-spaced).

3.2. Data analysis

The data were analyzed using inductive content analysis [36,37]. Initially, the researcher read the data multiple

times to become familiar with it [38,39]. The research approach was inductive, as it moved from specific observations to general meanings [34].

The data-driven content analysis was conducted in three steps: (1) data reduction, (2) data clustering, and (3) abstraction or creation of theoretical concepts [37,40]. Sentences from the transcribed data that corresponded to the research questions were extracted. These sentences were condensed and shortened. Similar condensed expressions were grouped into 26 subcategories, and they were named to reflect the same content. Subsequently, the subcategories were further combined into 10 categories (See **Table 1**).

Table 1. Example of the progression of data analysis

Original expression	Summarized expression	Subcategory	Category
"It is something that isn't said out loud, but they notice it. If they start to be like already going to the door and looking at the clock and stuff."	Patients notice nurses' busyness	Visibility of nurses' busyness	Nurses' time management
"They notice right away if it is too busy."			
"Well, patients also see that nurses are busy, so then maybe they don't necessarily say that they would like more rehabilitation of someone to talk to, so maybe that."	Patients are unable to express their wishes due to nurses' busyness	Failure to hear patients' wishes	

4. Results

4.1. Background information of interviewees

The participating vocational nursing students ranged in age from 18 to 47 years old. The interviewees' experience with the phenomenon under investigation varied from one elderly care-related internship to four internships. All interviewees had completed at least one internship in an enhanced service housing unit, and some had also interned in home care. Additionally, all interviewees had work experience related to elderly care, mainly from enhanced service housing units. All vocational nursing students had received education on promoting rehabilitation in elderly care as part of their studies.

The experiences of vocational nursing students regarding rehabilitation-promoting nursing care for the elderly were related to nurses' time management, organizational practices, nurses' competence, nurses' attitudes, nurses' methods of operation, organizational development, implementation and development of practical teaching, factors affecting the use of aids, and the technology of aids in the future (**Table 2**).

Table 2. Vocational nursing students' experiences of geriatric rehabilitative nursing and its education

Subcategory	Category
Visibility of nurses' busyness Failure to hear patients' wishes	Nurses' time management
Inadequate nursing staffing Poor management and planning of nursing resources Lack of support from superiors Role of physiotherapists	Organizational functioning
Nurses' lack of competence Nurses become oblivious to their work	Nurses' expertise
Rehabilitative nursing is not motivating Rehabilitative nursing is not perceived as meaningful Internalizing new practices is challenging Workplace routines guide nurses' work	Nurses' attitudes

Table 2 (Continued)

Subcategory	Category
Nursing work is perceived as meaningful and rewarding Motivated & calm nurses facilitate the implementation of rehabilitative nursing Lightening of nursing workload	Nurses' ways of working
Increasing education and knowledge Significant role of superiors	Development of organizational functioning
Transferability of practical education to the workplace Organization of practical education Development of education	Implementation and development of practical education
Limited number of assistive devices Nurses have not been adequately trained	Factors compromising the use of assistive devices
Quality teaching on assistive devices	Factors enhancing the use of assistive devices
Incorporating assistive devices into everyday life Understanding the benefits of technology New innovative assistive device products	Assistive device technology in the future

4.2. Nurses' time management

According to the interviewed vocational nursing students, the elderly noticed the nurses' busyness and felt that they couldn't express their wishes regarding their care, and their wishes were left unaddressed by the nurses.

"Well, patients can see that nurses are busy, so they might not necessarily say that they want more rehabilitation or someone to talk to, so maybe that's it." (H3)

4.3. Organization's operation

Vocational nursing students felt that the current nurse-to-patient ratio in workplaces is inadequate. They believed that the nursing staff did not have enough time to implement rehabilitation-promoting nursing care. Additionally, they felt that there is not enough attention given to evaluating the adequacy of resources, and the number of nurses is not planned according to the needs of the clients.

"At least this nurse-to-patient ratio thing is one of those. When it's just right, you'd analyze how much time is spent on caring for each person and stuff like that." (H5)

Supervisors were hoped to be more interested in implementing rehabilitation-promoting nursing care in workplaces. They were also expected to encourage nurses to engage in activities that promote client rehabilitation.

The role of physiotherapists in the organization was considered important. Due to the prevailing coronavirus pandemic, the visits of physiotherapists to the unit have decreased. However, vocational nursing students still felt a great need for the expertise of physiotherapists in elderly services.

"And hopefully, there will be more like industry experts working in the company, like physiotherapists and others, who can do their own thing." (H5)

4.4. Nurses' competence

According to vocational nursing students, there were deficiencies in nurses' competence in promoting rehabilitation nursing care. Particularly highlighted was the lack of competence among older and long-serving nurses.

"So when there are older employees, they may not have that up-to-date training or some new information, so they may have fallen behind a bit somehow." (H4)

Additionally, students felt that nurses did not notice changes in clients' individual needs but easily became blinded to their work.

4.5. Nurses' attitudes

Vocational nursing students felt that nurses were not sufficiently motivated for rehabilitation nursing care. The purpose and benefits of the activity were downplayed, and it was not perceived as meaningful. According to vocational nursing students, internalizing new methods and learning new things was difficult for nurses.

"Well, maybe it's sometimes worked differently or like their whole life they've done things a certain way, and then all of a sudden there's completely new information and skills, so it's probably a shock to them or something, that they should learn something new." (H4)

Also, workplace routines seemed to overly guide nurses' work, and work was done in a manner that was employee-centered.

"But in that style, there's a list of tasks, and the sooner you finish the list, the better, without considering whether it's a good thing for that elderly person or not." (H5)

4.6. Nurses' practices

According to vocational nursing students, nurses felt their work was meaningful and fulfilling when the client's functional capacity improved through the application of rehabilitation nursing care principles. Vocational nursing students felt that as a result of rehabilitation nursing care, both the client and the nurse felt good and satisfied. This also increased the nurse's well-being at work.

The nurse's actions also mattered in promoting rehabilitation. A motivated and calm nurse facilitated the implementation of rehabilitation activities by giving the client time to act as independently as possible.

"It depends a lot on the nurse because some nurses have this ability where, yeah, they're not in a rush anywhere, they can wait for the client to do things themselves, and they are calm operators." (H5)

The ergonomic and resource-oriented approach of nurses alleviated the physical strain of the job.

"On the physical side, then, yeah, you get off easier yourself when you use kinesthetics, so there's not as much physical strain involved." (H6)

4.7. Organizational development

According to vocational nursing students, workplaces should invest more in training and increasing knowledge. Various expert lectures on the concrete benefits of rehabilitation nursing care and good orientation on the use of new assistive devices would increase nurses' interest in rehabilitation nursing care.

"Well, people should open their eyes, sort of educate themselves, and take their head out of the sand." (H2)

"And in my opinion, there should be some kind of course at the workplace if new devices come in." (H8)

Students emphasized the importance of supervisors: they should set an example by participating and creating a positive culture and atmosphere for rehabilitation nursing care in their organization.

4.8. Implementation and development of practical teaching

Advanced vocational nursing students felt that practical teaching was highly transferable to the workplace. They found practical teaching to be beneficial and useful.

"Well, we've practiced things practically in school, so they've been quite good, and they've been at least somewhat helpful in the workplace too." (H4)

"When you've had to hang in that lift yourself, then you get an experience of what it is. That's really nice when it's hands-on." (H2)

There were difficulties in organizing practical teaching due to the pandemic, as visits to nursing homes, for example, had to be canceled due to remote learning.

Vocational nursing students perceived rehabilitation nursing care mainly as activities that support the physical functional ability and independence of the elderly.

"...maintain the good condition of the elderly or the elderly person so that they can walk and do things independently, and that can be promoted in many ways, such as walking and so on." (H3)

"...when we're with the elderly person, we try to ensure that the elderly person does as much as possible themselves." (H7)

Students felt they needed more information on supporting the psychological well-being of the elderly.

"...could have done more with the mental side of things, like going through practical exercises in such situations, if the customer behaves like this and this, and if there's grief and confusion, how to act in those situations, that side of it." (H6)

In addition, they wished for more instruction on encountering dementia patients before starting work placements.

4.9. Factors undermining the use of assistive devices

According to the students, there were only a few assistive devices available in workplaces. There should be an adequate number of assistive devices in relation to the number of caregivers. Additionally, students felt that caregivers have not been adequately trained in the use of assistive devices, and therefore they do not know how to use them or they are used sparingly.

"Well, many could theoretically learn to use all these assistive devices a little better, for example. That would be progress." (H8)

4.10. Factors enhancing the use of assistive devices

The nursing assistant students found the instruction related to assistive devices to be sufficient and beneficial.

"Well, there has been a lot of emphasis on assistive devices, making it easier so that you don't immediately resort to, 'Well, let's just use a hoist for everything.' With a hoist, everything gets done." (H2)

4.11. Assistive device technology in the future

It was believed that assistive devices would increasingly become part of the client's everyday life and support their functional capacity in the future. The use of technology as part of rehabilitative nursing care was believed to bring more benefits than drawbacks. This positive attitude helps in understanding the benefits of technology and accepting it as part of one's work.

"...but I think they're also coming to the healthcare field and home care with these remote care things, so I guess they're more beneficial and useful than having nothing at all." (H6)

Nursing assistant students also believed that in the future, the number of different assistive devices would increase, and more innovative assistive devices would be developed for clients' use.

"But I think there will just be more and more different kinds of assistive devices added, just like there are now." (H8)

5. Discussion

5.1. Examination of results

The study described nursing assistant students' experiences of rehabilitative nursing care for the elderly and its

training. According to the results, factors such as the limited number of nurses and assistive devices undermine the implementation of rehabilitative nursing care in workplaces. Additionally, Swobodan and colleagues found that organizational factors, such as lack of time and shortage of staff and assistive devices, hindered the optimal implementation of rehabilitative nursing care [41].

It is noteworthy that deficiencies were identified in the rehabilitative nursing care skills of older and long-serving nurses. Nursing assistant students believe that workplaces need more continuing education and up-to-date information on rehabilitative nursing care. Continuing education is crucial for the implementation of rehabilitative nursing care models [42]. Education would enhance nurses' skills and could change their attitudes to be more positive as they understand the benefits and possibilities of rehabilitative nursing care. This view is supported by Rooijackers and colleagues' findings that the rehabilitative "Stay Active at Home" program positively affected the knowledge, attitudes, and skills of home care staff [43]. In the mentioned program, staff received support from both colleagues and team leaders to implement rehabilitative nursing care.

According to this study, rehabilitative nursing care mainly focuses on the physical rehabilitation of clients. Similar findings were reported by Fox and colleagues in their study: nurses described rehabilitative nursing care as physically challenging, as it was perceived as heavy, difficult, and demanding strength and physical fitness from the nurses [44]. However, it is important to remember the person as a whole in rehabilitative nursing care, which includes not only physical functioning but also social, psychological, and cognitive functioning. The interviewed nursing assistant students expressed the need for broader knowledge of rehabilitative nursing care, for example, from the perspective of supporting the psychological and cognitive functioning of the elderly. According to Östlund and colleagues, professionals working with the elderly should recognize their life history and social contexts: the elderly value individualized and personally meaningful rehabilitation goals based on their existing relationships and broader life context [45].

The nursing assistant students interviewed in the study considered the role of physiotherapists to be important in promoting rehabilitation for the elderly. However, the basis of rehabilitative nursing care is multidisciplinary collaboration, in which nursing assistants play a significant role. The role of nursing in rehabilitation should be strengthened and emphasized, as nursing assistants often have the longest and closest relationship with the client and knowledge of individual factors influencing rehabilitation [46]. Birkeland and colleagues observed in their study that factors positively influencing multidisciplinary collaboration included the diversity and number of professionals involved, the closeness of collaboration, and the amount of time allocated for communication, joint planning, and decision-making [47].

The study revealed that due to the COVID-19 pandemic in spring 2020, visits by physiotherapists to units decreased or ceased altogether. Vaara and colleagues also noted in their study physiotherapists' concerns about rehabilitation for the elderly during the pandemic and the increasing amount of remote rehabilitation [48]. Remote rehabilitation is not suitable for all clients and cannot be compared to rehabilitation that takes place in person. However, the quality recommendation of the Ministry of Social Affairs and Health mentioned that technology should be increasingly utilized in services for the elderly, provided that there is sufficient support, guidance, and counseling for the elderly, their relatives, and the nursing staff during implementation [49]. It is expected that the need for rehabilitation will increase after the exceptional circumstances, as quarantine makes people passive, increases musculoskeletal problems, and weakens functional capacity [48].

To implement rehabilitative nursing care adequately and with a focus on individual client needs, organizations must allocate resources to this end. In the long run, municipalities save money when the hospital costs of the elderly decrease due to rehabilitative nursing care [21,22]. The primary beneficiary of rehabilitative nursing care is the elderly individuals themselves, as maintaining functional capacity enables them to live

healthy, happy, and high-quality lives for as long as possible.

5.2. The ethics and reliability of the study

The study can be considered ethically acceptable, and reliable, and its results credible, as the researcher responsible for the empirical implementation ensured that the research was conducted in accordance with the requirements of good scientific practice [50]. The research permit was obtained from a vocational institution where the interviewees were studying. Additionally, the researcher adhered to general diligence and precision in the research work, as well as in the recording and evaluation of results. The study took into account the basic principles of research involving human subjects, including the voluntary participation of research participants and the opportunity to withdraw from participation at any time without giving a reason [51]. The participants were allowed to receive information about the content of the study and the handling of personal data, and they provided informed consent based on this information. Care was taken in the study to ensure that participants could not be identified, and the results were analyzed anonymously [51].

The reliability of the study was assessed using the criteria of qualitative research, which include credibility, transferability, dependability, authenticity, and confirmability [37,52-54].

The nursing assistant students who participated in the study had received education on rehabilitative nursing care for the elderly and had experience of its implementation in workplaces, which enhances the credibility of the research. The selection criterion for the interviewees was that the students had completed at least one practical internship related to elderly care, to maximize their experience of the phenomenon under study. The researcher collected the data and thoroughly and carefully reviewed it to gain an understanding of the interviewees' perspectives on the phenomenon under study. The credibility of the study is weakened by the small number of participants (n = 8), but according to the researcher's assessment, data saturation occurred sufficiently.

The study results describe the interviewees' perceptions of the phenomenon under study, and similar experiences are likely to be shared by other nursing assistant students. The study's dependability is enhanced by the use of content analysis to obtain a structured and clear description of the phenomenon under study. When considering the authenticity of the study, it is noted that direct quotations from the data demonstrate the connection between the results and the data.

The researcher has a background in gerontology and was aware of their views and experiences of the phenomenon under study but aimed to focus solely on the content of the data. The confirmability of the study was increased by reviewing the results together with the research group during the analysis phase. Additionally, the results were supported by findings from previous studies, which further increased confirmability.

6. Conclusions and future research topics

Based on the results, it can be concluded that there is a disconnect between the content of education and practical work life. It is not sufficient for nursing assistant students to have the latest knowledge of rehabilitative nursing care. Organizational practices should also be up-to-date and receptive to changes for rehabilitative nursing care to be fully realized within the elderly service system. The adequate number of caregivers and assistive devices, motivated and enthusiastic attitudes among caregivers, support from supervisors, and the maintenance of caregivers' skills through continuous further education significantly contribute to its implementation. In nursing assistant education, rehabilitative nursing care should be viewed as a comprehensive concept from the perspective of various aspects of functional capacity. According to the results, the emphasis is currently heavily on supporting physical functional capacity.

Rehabilitative nursing care has been studied relatively little on a national level. In the future, more research is needed on the attitudes of healthcare personnel toward rehabilitative nursing care and the effects of educational interventions on competency in rehabilitative nursing care. Additionally, it is necessary to examine whether the changes brought about by the vocational education reform affect the education and adequacy of rehabilitative nursing care.

Disclosure statement

The authors declare no conflict of interest.

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International Journal of General Practice Nursing, 2024, Volume 2, Issue 1
https://ojs.bbwpublisher.com/index.php/IJGPN
ISSN Online: 2981-9423
ISSN Print: 2981-9415

Chronic Care Model – A Secondary Publication

Luigi Apuzzo[1]*, Maddalena Iodice[2], Margherita Gambella[3], Angelica Scarpa[3], Francesco Burrai[4]

[1]Hospice Carlo Chenis, ASL ROMA 4, Civitavecchia 00053, Italy
[2]UOC Obstetrics and Gynecology, San Paolo Hospital, ASL ROMA 4, Civitavecchia 00053, Italy
[3]Faculty of Medicine and Surgery, University of Sassari, Sassari 07100, Italy
[4]SC Training, Research, and Organizational Change, ATS Sardegna, ASSL di Sassari, Sassari 07100, Italy

***Corresponding author:** Luigi Apuzzo, luigiapuzzo@hotmail.it

Abstract: In recent years, the incidence rate of chronic diseases has shown a steady increase in every industrialized country. The almost logarithmic trend of the number of people living with chronic diseases is constantly on the rise. Each predictive statistical model indicates a strong impact on national health systems at the level of the organization of care and management costs. It is urgent to systematically introduce an evidence-based care model in chronic care management such as the Chronic Care Model. The Chronic Care Model is the reference model for WHO. The Chronic Care Model allows for personalized, holistic, multi-professional assistance, characterized by a strong humanization of care, preventive interventions, and relationships between healthcare professionals, patients, and caregivers as a system of care and assistance. The fundamental roles are social integration and the improvement of the quality of life of patients. The Chronic Care Model involves the use of a computerized system of information flow and telemedicine and trained healthcare professionals. The Chronic Care Model showed an improvement in the quality of life, a reduction in the number of hospitalizations, better adherence to therapies, and a reduction in costs.

Keywords: Chronic Care Management; Chronic Care Model; Chronic diseases; Governance; Integrated care

Online publication: February 26, 2024

1. Introduction

The progressive aging of the population will lead to a doubling of the elderly population by 2050: from the current 11% to 22% of the population. The turning point occurred in 2020 when the number of individuals aged 65 and over surpassed that of individuals aged 5 and under. If, in 2017, in most countries of the world, the ratio for those over 60 was 1:8, by 2030 the ratio will be 1:6 and by 2050 it will be even more pronounced, at 1:5 [1,2]. Within 20 years, the demographic trend will show a four-fold increase in people over 80 compared to the current trend. The Global Burden of Diseases, Injuries, and Risk Factors Study (GBD) in 2017 considered the incidence and prevalence compared to years lived with disability in a period from 1990 to 2017 [3]. The results showed a reduction in mortality rates, an increase in life expectancy, and consequently, an increase in the impact on healthcare systems of chronic conditions such as diabetes, neoplasms, and musculoskeletal and cardiovascular diseases. With the improvement of quality and the increase in life expectancy, chronicity

becomes part of daily life and is characterized by a progressive decline in autonomy, mobility, functional capacity, and social relationships, associated with an increased number of hospitalizations and the use of healthcare, social, and healthcare resources, with an average expenditure for the NHS equal to 70%–80% [4]. ISTAT data estimate that there are 2.6 million people with disabilities (4.8% of the Italian population), while 44.5% of them are over 80 years old [5], and almost 40% of the population suffers from at least one chronic condition (24 million people), half of whom have more than one chronic disease [6]. In Europe, chronic diseases account for 86% of all deaths, with significant healthcare expenditure amounting to around 700 billion Euros (EUR)/year [7]. In Italy, healthcare expenditure is around 66.7 billion EUR/year [6].

2. Chronic Care Model

Today's healthcare often fails to meet the needs of chronic patients. There are strategies to improve outcomes in people with chronic conditions classified into five different areas: (1) use of evidence-based planned care; (2) updating and organizing clinical and care practices; (3) empowering users with chronic conditions; (4) developing skills; (5) organization and utilization of clinical information. The integration of these components for the management, assistance, and treatment of chronic conditions is essential [8]. Patients with one or more chronic conditions have very complex needs and force healthcare systems to think about remodeling that produces personalized clinical care practices to meet the diverse needs of patients and their families [9]. Meetings focused on preventing exacerbations, flare-ups, and complications of the chronic condition are proposed by enhancing patient self-care. Over the years, there has been a complete overhaul of the assistance system for people with chronic conditions, starting from the care model proposed by Wagner in the 1990s: the Chronic Care Model (CCM) [10]. The CCM was developed as a method to improve care in the field of chronic diseases, identifying effective and appropriate components and strategies [11-14]. The CCM shows that the best outcomes are produced by the quality of the patient-healthcare personnel relationship, in those healthcare systems that exhibit these factors: (1) evidence-based processes that modify care; (2) empowerment and self-care enhancement [15]; (3) proactive action oriented towards user needs; (4) development and implementation of evidence-based guidelines, promoting their use and dissemination through operator training; (5) facilitation of the development and management of information systems to provide performance feedback. The CCM includes six components that influence functional and clinical outcomes associated with chronic disease management [14]. The six components are shown in **Table 1**.

Table 1. Components of the Chronic Care Model

Component	Interventions
Healthcare system	Organizing healthcare delivery by providing leadership that ensures resources and removes barriers to care
Self-management support	Facilitating skills-based learning and patient empowerment
Decision support	Providing guidance for evidence-based care implementation
Delivery system design	Coordinating care processes
Clinical information systems	Monitoring progress through outcome feedback to patients and healthcare providers
Community resources and policies	Supporting care using community-based resources and public health policies

These components of the CCM create more effective healthcare systems that support healthcare professionals' decision-making processes, connect healthcare systems to community resources and policies,

and provide comprehensive self-management support services for patients, with outcome monitoring through complex computer systems. The CCM model is proactive in intercepting healthcare and treatment needs [16], where the patient plays a role in managing their own psycho-physical condition [14]. CCM care is directed towards individuals, groups, and communities, through a network of services that, to be effective and measurable, must have (1) safety; (2) effectiveness; (3) timely response; (4) problem-solving capacity; (5) resource consumption; (6) patient-centeredness; (7) equity in service delivery [17]. The CCM organizes care in terms of continuity of care, relationship, organization, and information, preventing short-term hospital readmissions in the elderly with chronic diseases [18], with a lower workload for healthcare professionals and facilities, less stress for patients and their families, and lower healthcare costs [19], with the user's perception of being accompanied in a unique and continuous process, which also positively impacts better compliance with prescribed therapeutic adherence agreed upon with the healthcare team [20]. The CCM uses humanization of care, incorporating the perspective defined as "patient experience," meaning feeling accompanied in a unique and continuous process, which also positively impacts better compliance with agreed therapeutic adherence with the healthcare team [21]. An important aspect of public health is the field of prevention, and the CCM programs interventions through dynamic computer systems, involving financial and economic structures of health policy for investment and expansion of territorial services [22,23]. The conclusions of meta-analysis authors focusing on patients with type 2 diabetes mellitus indicate generally positive results with CCM, with more promising results obtained in studies with limited follow-up (< 1 year) and with programs that include more than two components of the CCM [23]. Other authors show how the chronic disease management approach with CCM in patients with heart failure significantly reduces mortality, with positive effects on quality of life and reduction of hospital stay duration [23]. In a recent systematic review [24], results show better outcomes in terms of blood pressure management and mortality in systems organized with Nurse-Led Care and Pharmacist Care; these models are included in the CCM, along with patient engagement [25]. The CCM has been adopted by the World Health Organization (WHO) as a guidance document based on evidence of effectiveness in improving the four basic elements necessary for the delivery of high-quality chronic care, such as self-management support, organization system design, clinical information and informatization systems, and decision support.

3. Expanded Chronic Care Model

An evolution of the CCM is the Expanded Chronic Care Model (ECCM). The ECCM is a modified and expanded model of the CCM, which began to be discussed in the 2000s by a group of Canadian researchers [24]. The ECCM also extends to the social inclusion of individuals with chronic conditions, aiming to create social environments capable of ensuring safe, stimulating, enjoyable, and satisfying living conditions. Health improvement and well-being are contributed to by disease self-management and the ability to spend leisure time pleasantly through recreational activities classified as essential for maintaining psycho-physical health [26-31]. Some authors provide recommendations for improving the social inclusion of people with disabilities [32], enabling these groups to access recreational services and benefit from them.

4. Chronic Care Management

Modern chronic disease management entails several key components: (1) collaborative partnerships; (2) evidence-based interventions; (3) outcome measurements and intervention evaluations; (4) communication of outcome information among team members and between healthcare team and patient; (5) self-care and patient empowerment. Patient involvement as partners enables improvement in patient-centered outcomes [33]. Alongside

Chronic Care Management, other models have been developed, including case management, integrated care, care coordination [34,35], and disease management.

5. Chronicity at the international level

During the United Nations meeting on chronic diseases in September 2011, world leaders committed to adopting common actions for the prevention of these diseases, recognizing their global impact as one of the major challenges for social and economic development in the twenty-first century. All governments were therefore asked to develop multi-sectoral plans for the prevention and control of chronic diseases, with declared national objectives and interventions. In August 2020, the World Health Assembly designated the years 2020–2030 as the Decade of Healthy Ageing [24,26,36,37]. The European project resulting from the agreements and provisions given by the United Nations is called Good Practice for Chronic Disease Join Action (CHRODIS-JA), aiming to counteract chronic diseases and ensure better aging through the use of a web platform accessible to health professionals, policymakers, and citizens. The system mainly addresses major chronic diseases such as diabetes, cardiovascular diseases, and stroke [38].

6. Application of the CCM in the field of chronic kidney disease

As seen, the CCM model is characterized by several factors, which can be divided into two aspects: (1) an informed and aware patient; (2) proactive teams that intervene early in intercepting people with renal damage in the initial stages, as highlighted in the Ministry of Health's Government Program [39-41]. In this document, the key points are, on one hand, prevention, encouraging citizens to adopt a more responsible and aware behavior through health education, and, on the other hand, the training of general practitioners (GPs), pediatricians, specialists, and healthcare personnel, to early identify individuals at increased risk for chronic kidney disease, directing them towards integrated care pathways. The Guidelines of the Federation of Associations of Hospital Internists Directors (FADOI) 2015 recommend screening interventions in certain patients with suspected kidney disease (e.g., obese individuals, those with diabetic disease, etc.), as well as informing and involving the patient and their caregivers in all stages of the disease care process [42].

7. Interventions on healthcare providers and patients

Educational interventions can lead to improvements in the quality of life of patients, as highlighted by Garcia Montes *et al*. in 2020 [43], who showed a correlation between active coping strategies and life satisfaction in both hemodialysis patients and kidney transplant recipients. Multiprofessional strategies with motivational interviews and the identification of non-compliant patients are essential in managing such patients and in therapy adherence. It is important to work on the communication setup between users and healthcare providers. One of the techniques supported by the literature is the use of the teach-back method, which involves constant patient feedback on practices and actions to follow, to maximize their understanding of the disease and promote knowledge, adherence, self-efficacy, and self-care skills [44]. Other proactive interventions may include the use of integrated electronic tools such as Electronic Health Records (EHRs) in the care and management of follow-up in patients with chronic kidney disease. The study conducted by Sequist *et al*. in 2018 highlights that the use of these tools improves patient engagement in therapy for chronic kidney disease [45]. These data show how a combined program of electronic tools along with increased involvement of healthcare providers and patients can improve certain areas of chronic kidney disease care.

8. Conclusions

In recent years, the incidence rate of chronic diseases has shown a steady increase in every industrialized country, and chronic kidney disease is no exception. Today, predictive statistical models indicate a strong impact on national healthcare systems in terms of care organization and management costs. Due to these data, it is necessary to introduce the CCM care model, considered by the WHO as the reference model for managing chronic diseases. It is based on scientifically validated interventions and involves the use of an information flow computerized system, all conducted by adequately trained healthcare professionals. Staff training is aimed at improving teamwork skills, including caregivers in the care plan for chronic patients, and intercepting, preventing, and meeting the needs of the individual and the community. All this allows for the delivery of personalized, holistic, and multi-professional care, characterized by a strong humanization of care and prevention interventions, and relationship building among healthcare professionals, patients, and caregivers as a care and assistance system, resulting in improved patient outcomes and quality of life. The application of the CCM can therefore be considered a priority model to be implemented in the healthcare systems of every country. The CCM can be considered a proactive healthcare model that anticipates the necessary interventions to prevent the worsening of the disease and thus represents a priority model to be implemented in the healthcare systems of every country [46].

Disclosure statement

The authors declare no conflict of interest.

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International Journal of General Practice Nursing, 2024, Volume 2, Issue 1
https://ojs.bbwpublisher.com/index.php/IJGPN
ISSN Online: 2981-9423
ISSN Print: 2981-9415

The Application Effect of Oral Care Combined with Psychological Intervention on Improving Patients' Oral Hygiene and Negative Emotions

Jianli Zheng*

Hospital of Stomatology, Xi'an Jiaotong University, Xi'an 710004, China

***Corresponding author:** Jianli Zheng, 1185865165@qq.com

Abstract: *Objective:* To explore the application effect of oral care combined with psychological intervention on improving patients' oral hygiene and alleviating negative emotions. *Methods:* A total of 78 patients admitted to the hospital between January and December 2023 were recruited and divided into two groups using a random number table method, each group consists of 39 cases. The control group received routine care, while the study group received oral care combined with psychological intervention. Oral health scores and the patients' negative emotional states were compared between the two groups. *Results:* The oral health score of the study group (35.66 ± 5.69) was significantly better than that of the control group (26.36 ± 6.21; $P < 0.05$). Additionally, the depressed mood and anxiety scores of the study group (27.69 ± 6.12 and 26.36 ± 6.21, respectively) were significantly lower than those of the control group (36.23 ± 5.98 and 35.66 ± 5.69, respectively; $P < 0.05$). *Conclusion:* Clinical research combining routine care, psychological intervention, and oral care has revealed that the combined approach significantly enhances patients' treatment adherence, alleviates negative emotions, and improves their quality of life.

Keywords: Oral care; Psychological intervention; Oral hygiene; Negative emotion

Online publication: February 26, 2024

1. Introduction

The oral cavity serves as a vital organ in the human body, crucial for normal digestion, respiration, circulation, and other essential physiological functions. Maintaining oral hygiene is paramount for the prevention of oral diseases. Effective oral care can uphold oral hygiene, diminish the likelihood of bacterial infections, and thwart various oral ailments. Additionally, oral care aids in alleviating patients' psychological stress, enhancing treatment adherence, and expediting recovery from illnesses [1,2].

In clinical nursing, hospitals endeavor to enhance patients' oral hygiene and psychological well-being while mitigating negative emotions stemming from illnesses [3,4]. To achieve this, hospitals integrate oral care with psychological intervention alongside routine care. This combined approach not only improves oral hygiene and averts oral diseases but also assists patients in adjusting their mental state, alleviating negative emotions

such as anxiety and depression, thereby enhancing the therapeutic outcomes. Previous research indicates that combined oral care significantly enhances patients' compliance with treatment, reduces psychological stress, and ameliorates negative emotions [5,6].

Although scholars worldwide have made considerable progress in oral care and psychological intervention, studies on their integrated application remain limited. Particularly, research comprehensively examining the joint effects on enhancing patients' oral hygiene and ameliorating negative emotions is scarce. This clinical study, combining routine care with psychological intervention and oral care, aims to compare and observe the treatment effects of the approach. Given the significance of oral health in national healthcare, preventing and treating oral diseases holds immense importance. The findings of this study are anticipated to offer novel insights and methods for oral disease prevention and treatment, thereby fostering the sustained advancement of oral health initiatives.

2. Materials and methods

2.1. General information

A total of 78 patients admitted to the hospital between January and December 2023 were recruited and divided into two groups using a random number table method, each group consists of 39 cases. Among them, 42 were males and 36 were females, aged between 14 and 75 years, with an average of 53.61 ± 14.12 years. All patients underwent examination and were diagnosed with oral diseases, presenting active bleeding. Upon admission to the hospital, they received conventional treatment. Inclusion criteria comprised patients with a clear understanding of the study's purpose, methods, possible risks, and benefits, who voluntarily signed an informed consent form to participate. Additionally, patients required a clear need to improve oral hygiene, such as poor oral hygiene, oral odor, or plaque presence, and demonstrated a certain level of psychological tolerance, willing to accept interventions like psychological counseling or cognitive-behavioral therapy. Patients were excluded if they faced language barriers, hearing or vision impairments hindering effective communication with researchers, suffered from serious oral diseases (e.g., periodontal disease, dental caries), suffered from severe psychiatric-psychological disorders (e.g., schizophrenia, depression), had significantly deteriorated oral hygiene affecting their basic quality of life, refused psychological interventions, or were concurrently participating in other research projects, posing potential interfering factors.

2.2. Methods

The control group received routine care, including environmental cleaning, psychological guidance, and dietary advice. Meanwhile, the study group underwent oral care combined with psychological interventions in addition to routine care, encompassing:

(1) Oral care program: Patients received basic oral cleaning at least twice daily, involving tooth brushing, flossing, and mouthwash. Recommendations included the use of soft-bristled toothbrushes and fluoride toothpaste to minimize tooth and gum irritation. Personalized oral health education covered proper brushing techniques, flossing methods, mouthwash selection, and the importance of regular toothbrush and dental floss replacement. Regular oral examinations were conducted by professional dentists to detect and address oral issues promptly. Patients with oral diseases received necessary professional treatments like dental cleaning, periodontal treatment, or caries repair.

(2) Psychological intervention program: Individual psychological counseling sessions tailored to each patient's needs helped them recognize and manage factors contributing to negative emotions. Patients learned stress and challenge coping strategies by altering negative thinking patterns and behaviors.

Relaxation techniques such as deep breathing and progressive muscle relaxation were taught to alleviate tension and enhance mental resilience in daily life. Mental health education aimed to enhance patients' understanding of negative emotional causes and coping mechanisms, boosting their psychological self-adjustment abilities. Patients were encouraged to maintain social connections with family and friends for additional support and to participate in mutual support groups to share experiences.

(3) Joint intervention strategy: Oral care and psychological interventions were coordinated synergistically to optimize patients' oral hygiene and alleviate negative emotions. Regular assessments of oral hygiene and psychological status guided intervention adjustments to ensure effectiveness. Dentists and psychological counselors collaborated closely to formulate and implement comprehensive intervention plans, ensuring patients received comprehensive and effective treatment.

2.3. Observation indicators

Oral health scores and negative emotions of patients in both groups were compared.

2.4. Statistical analysis

Data were analyzed using SPSS 18.0 software. Categorical data were analyzed using the chi-squared test, with rates expressed as %, while continuous data were analyzed using the *t*-test and expressed as mean ± standard deviation (SD). Differences with $P < 0.05$ were considered statistically significant.

3. Results

3.1. Oral health scores

Table 1 shows that the oral health score of the study group (35.66 ± 5.69) is significantly better than that of the control group (26.36 ± 6.21; $P < 0.05$).

Table 1. Comparison of oral health scores of patients in two groups

	Cases	Oral health score
Control group	39	26.36 ± 6.21
Study group	39	35.66 ± 5.69
t		6.8956
P		< 0.05

3.2. Negative emotional conditions

The scores of depressed mood and anxiety in the study group were 27.69 ± 6.12 and 26.36 ± 6.21, respectively, which were significantly lower than the scores of depressed mood and anxiety in the control group, which were 36.23 ± 5.98 and 35.66 ± 5.69, respectively ($P < 0.05$), as shown in **Table 2**.

Table 2. Comparison of negative emotional conditions between the two groups of patients

	Depression	Anxiety
Study group ($n = 39$)	27.69 ± 6.12	26.36 ± 6.21
Control group ($n = 39$)	36.23 ± 5.98	35.66 ± 5.69
t	6.2329	6.8956
P	< 0.05	< 0.05

4. Discussion

Oral diseases, affecting the oral mucosa and teeth, constitute a class of chronic ailments where clinical treatment should not solely focus on disease management but also address patients' psychological well-being. Oral care emerges as a crucial therapeutic approach, effectively enhancing patients' oral hygiene, averting bacterial infections, and concurrently alleviating psychological stress, thus improving treatment compliance [7]. Moreover, oral care contributes to bolstering the body's immunity and fortifying patients' ability to combat diseases. Clinical studies have highlighted poor treatment compliance among patients with oral diseases, resulting in suboptimal therapeutic outcomes, underscoring the imperative for psychological interventions in clinical nursing [8].

In clinical nursing, oral care represents a fundamental nursing measure primarily aimed at maintaining oral cleanliness, mitigating bacterial proliferation, and preventing oral diseases. Continuous adherence to oral care is pivotal for patients' disease recovery, underscoring its significance in clinical practice. However, challenges such as patients' inadequate treatment compliance and recurrent oral issues often impede optimal patient outcomes [9]. Therefore, joint psychological interventions are clinically essential to enhance treatment compliance. Notably, psychological factors intricately intertwine with oral health, and interventions targeting these factors effectively alleviate patients' psychological distress and negative emotions, thus ameliorating their oral health status. Patients' treatment compliance correlates closely with their psychological factors; hence, psychological interventions, coupled with routine care, effectively enhance treatment compliance. However, it is noteworthy that while the combined oral care method improves treatment compliance, it entails increased examination frequency and associated costs compared to conventional oral care, necessitating judicious utilization based on clinical realities. Furthermore, nurses' subjective initiative and creativity play pivotal roles in executing joint oral care initiatives [10,11]. Therefore, the application of the combined oral care approach should align with specific research contexts.

In this study, the study group exhibited significantly superior oral health scores (35.66 ± 5.69) compared to the control group (26.36 ± 6.21; $P < 0.05$). Similarly, scores for depressed mood and anxiety were significantly lower in the study group (27.69 ± 6.12 and 26.36 ± 6.21, respectively) than in the control group (36.23 ± 5.98 and 35.66 ± 5.69, respectively; $P < 0.05$). These findings underscore the efficacy of combining psychological intervention, routine care, and oral care in enhancing treatment adherence and ameliorating negative emotions. Several factors contribute to these outcomes: (1) Psychological intervention fosters a positive attitude, reducing anxiety; (2) Routine care maintains oral hygiene effectively, diminishing bacterial infection risks; (3) Oral care, being non-invasive, alleviates patient discomfort.

In summary, the clinical integration of routine care, psychological intervention, and oral care significantly enhances treatment compliance, mitigates negative emotions, and improves quality of life, underscoring its positive implications. Future research avenues could explore interdisciplinary collaborations among dentistry, psychology, nursing, and other fields, focusing on personalized oral care and psychological intervention programs tailored to individual patient variances. Moreover, interdisciplinary research teams could devise comprehensive and refined strategies by integrating their respective knowledge and technologies. Exploring emerging technologies such as virtual reality (VR) and augmented reality (AR) for more immersive oral health education experiences holds promise. Continuous research endeavors are anticipated to yield scientific and effective methodologies and tools to enhance patients' oral hygiene and alleviate negative emotions.

Disclosure statement

The author declares no conflict of interest.

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International Journal of General Practice Nursing, 2024, Volume 2, Issue 1
https://ojs.bbwpublisher.com/index.php/IJGPN
ISSN Online: 2981-9423
ISSN Print: 2981-9415

Effectiveness of Nursing Safety Education in Teaching Nursing Technical Operations

Qian Wang[1], Hui Chen[2]*

[1]Department of Emergency Medicine, Shaanxi Provincial People's Hospital, Xi'an 710068, Shaanxi Province, China
[2]Department of Family Medicine, Shaanxi Provincial People's Hospital, Xi'an 710068, Shaanxi Province, China

***Corresponding author:** Hui Chen, 690598556@qq.com

Abstract: *Objective:* To investigate the effect of implementing nursing safety education in the teaching of nursing technical operation. *Methods:* A total of 80 nursing interns in Shaanxi Provincial People's Hospital were randomly selected between January 2023 and December 2023, 40 cases of the implementation of the conventional teaching mode were named as the control group, and 40 cases of the implementation of the nursing safety education mode were named as the seminar group. The degree of nursing teaching acceptance, theoretical knowledge mastery, skill operation performance, and the incidence of nursing adverse events in the two groups after receiving the two different teaching modes were observed and analyzed in depth. *Results:* Compared with the control group, the nursing interns in the seminar group had significantly better teaching effects, superior assessment results, higher nursing teaching recognition, and fewer incidences of nursing adverse events ($P < 0.05$), which fully proved their advantages in teaching practice with research value. *Conclusion:* The interns of nursing specialty can significantly improve the teaching quality of the nursing internship stage by receiving the effective intervention of nursing safety education, which in turn will make the intern nurses more skillful in mastering the nursing technical operation and effectively reduce the occurrence of nursing error events, and it is worth to be applied.

Keywords: Nursing teaching; Nursing safety education; Nursing errors; Application effects

Online publication: May 6, 2024

1. Introduction

Nursing safety, i.e., when nursing care is performed, it must be ensured that the patient does not suffer psychological, physiological structural, or functional damage that is not permitted by laws and regulations. This work is a top priority in hospital operations, and a high degree of clinical attention is always given to the safety of nursing care for hospitalized patients [1]. Therefore, it is particularly important to strengthen nursing safety education. Nursing internship, as a key link in nursing professional education, aims to lay a solid foundation for nursing interns to engage in nursing in the future. During the internship, nursing interns mainly learn and master nursing technical operations as well as the application of theoretical knowledge. Proficiency in nursing technical operations has a direct decisive role in the effect of internship [2,3]. Given this, a study aimed at exploring the practical application value of the nursing safety education model was carried out at the Shaanxi

Provincial People's Hospital.

2. Materials and methods

2.1. General information

Eighty nursing interns were randomly selected from January 2023 to December 2023 for this study. The cultural level was distributed as follows: 45 people with college degrees and 35 people with bachelor's degrees. The 80 nursing interns were divided into two groups: a control group that implemented the conventional teaching model, which consisted of 40 people whose age range was between 18 and 22 years old, with an average age of 20.23 ± 2.34 years; and a seminar group that implemented the nursing safety education model, which also contained 40 people whose age range was between 18 and 23 years old, with an average age of 20.67 ± 2.36 years. After preliminary analysis, the difference between the two groups in terms of research data was not significant ($P > 0.05$), thus allowing for subsequent comparative studies.

2.2. Methods

A standard teaching model was implemented for 40 nursing interns in the control group. Upon joining the unit, the nursing interns will be assigned by the head nurse to undertake the nursing interns' admission education and subsequently assigned to a senior nurse practitioner for professional guidance. During this period, nursing interns are required to closely follow the lead instructor and participate in nursing rounds and learning activities. The nursing staff of the seminar group received the nursing safety education model on this basis, with the following specific contents:

(1) Setting teaching objectives and processes: Planning the teaching contents and objectives according to the specific characteristics of the nursing work in the department and improving the professional skills and practical abilities of the nursing interns by organizing them to participate in the teaching of simulated nursing operations. To ensure the quality of teaching, the teaching objectives are evaluated in real time according to the feedback results of the simulation operation, and necessary adjustments are made accordingly. To facilitate the learning of nursing interns, the teaching process and scoring criteria are organized into a booklet and distributed to each nursing intern, who is required to preview and master the relevant knowledge in advance [4];

(2) Improve the awareness of safe nursing care among nursing interns: While being committed to providing quality teaching, the importance of nursing safety was emphasized. When a new nursing trainee participates in practice activities for the first time, it is the responsibility of the lead teacher to elaborate on the potential risk factors, closely observe his/her operation process, and provide necessary guidance and advice. After the operation is completed, the instructor should give timely feedback to the nursing interns, clearly pointing out where they need to improve;

(3) Develop a personalized teaching mode: The instructor should have a comprehensive understanding of the actual ability level of each nursing intern, and accordingly develop a personalized nursing safety teaching program. The program should clearly explain the process and methods of crisis management to ensure that nursing interns can quickly and correctly respond when facing emergencies [5]. In addition to collective teaching, the lead teacher should also provide individual guidance for the characteristics of each nursing intern, combining case teaching and intuitive teaching methods to enable nursing interns to deeply understand the importance of nursing safety, thereby strengthening their understanding and mastery of nursing safety [6];

(4) Nursing interns' summarization and exchanges: The form of group teaching is used to conduct an

in-depth exploration of common safety hazards, and systematically summarize the corresponding emergency treatment measures. At the same time, extensive review of relevant information to ensure the effective avoidance of potential nursing risks [7]. To ensure the legality and rationality of nursing operations, each nursing intern is issued with a legal knowledge manual to provide clear guidelines for the protection of their own rights and the rights of patients in actual work. In addition, we will pay special attention to combining routine operation skills with nursing principles, emphasizing the critical importance of isolation and protection, aseptic operation, and standard preventive operation [8];

(5) Practical operation: A series of practical operations are organized for the nursing interns, and the instructor conducts close observation and comprehensive assessment of the operation process of the nursing interns. In the process of observation, the errors of nursing interns were found in time, and necessary guidance and correction were given. At the end of each stage of training, a corresponding assessment mechanism is set up, and nursing interns who pass the assessment are eligible to enter the next stage of training, nursing interns who fail to meet the standards will be provided with the opportunity for retraining [9].

2.3. Observation indexes

After the end of teaching, the two groups of nursing interns were compared in terms of their comprehensive ability assessment scores (theoretical knowledge, specialty care, basic care, and comprehensive nursing skills, with scoring using a percentage system), nursing teaching recognition (whether they improved their independent learning ability, motivation to learn, efficiency in learning, ability to identify problems and problem-solving ability), as well as the incidence of adverse events in nursing (including nursing safety accidents, serious infections in hospitals, poor execution of medical advice, and nursing medication errors). The results of the comparison were presented in a table.

2.4. Statistics analysis

All research data were analyzed using the SPSS 23.0 software. Data were expressed by either mean ± standard deviation (SD) or [*n* (%), and the differences between the two groups were compared using *t* and χ^2 tests. A *P* value of less than 0.05 indicated a statistically significant difference.

3. Results

Table 1 shows that the seminar group exhibited significantly higher comprehensive ability assessment scores as compared to the control group ($P < 0.05$).

Table 1. Comparison of the comprehensive ability assessment scores of nursing interns in the two groups (mean ± SD, points)

Group	Theoretical knowledge	Specialty nursing skills	Basic nursing skills	Comprehensive nursing skills
Control group ($n = 40$)	73.26 ± 2.23	72.09 ± 2.87	71.48 ± 2.27	73.28 ± 2.65
Seminar group ($n = 40$)	85.27 ± 2.27	85.09 ± 2.76	88.04 ± 2.75	89.62 ± 2.27
P	< 0.05	< 0.05	< 0.05	< 0.05

The seminar group appeared to have a significantly lower incidence of adverse nursing events as compared to the control group ($P < 0.05$), as presented in **Table 2**.

Table 2. Comparison of the incidence of adverse events in nursing work between the two groups of nursing interns [*n* (%)]

Group	Nursing safety accidents	Serious nosocomial infections	Failure to carry out medical advice	Nursing medication errors
Control group (*n* = 40)	4 (10.00)	3 (7.50)	7 (17.50)	5 (12.5)
Seminar group (*n* = 40)	0 (0.00)	0 (0.00)	1 (2.50)	0 (0.00)
P	< 0.05	< 0.05	< 0.05	< 0.05

As shown in **Table 3**, the nursing interns in the seminar group have significantly higher nursing teaching recognition than the control group ($P < 0.05$).

Table 3. Comparison of nursing interns' nursing teaching recognition in the two groups [*n* (%)]

Group	Problem-solving skills	Problem-finding skills	Self-directed learning	Learning efficiency	Learning motivation
Control group (*n* = 40)	30 (75.00)	28 (70.00)	26 (65.00)	30 (75.00)	33 (82.50)
Seminar group (*n* = 40)	40 (100.00)	40 (100.00)	40 (100.00)	40 (100.00)	40 (100.00)
P	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05

4. Discussion

Medical safety is the first priority, which is directly related to the life safety of patients and the professional responsibility of healthcare workers. Safe nursing is the basis for guaranteeing that patients receive high-quality, low-risk medical services, and it is also an inevitable requirement for the professional behavior of nursing staff [9,10]. In the traditional way of nursing teaching, there is a certain degree of rigidity, and the teaching content often lacks relevance, which may lead to the inhibition of the learning enthusiasm of nursing interns and is not conducive to their comprehensive and in-depth mastery of nursing knowledge and skills. Given the special nature of nursing work, it is crucial to ensure the safety of nursing care, therefore, it is especially critical to provide nursing interns with adequate nursing safety education during the internship stage [11,12].

The importance of nursing safety education is to cultivate the nursing staff's safety alertness and ensure the safety of the clinical operation process without errors. In teaching practice, instructors personally conduct demonstration teaching to provide nursing interns with intuitive and practical learning opportunities to ensure that nursing interns are able to master standard operating procedures and norms, develop good operating habits, and deeply understand the importance of nursing safety. Nursing safety education is further strengthened by popularizing knowledge of relevant laws and regulations [13,14]. At the same time, the impact of safety during nursing operations on treatment effect is emphasized. By combining the two teaching modes of individualization and centralization, nursing interns can be guided more effectively and their safety awareness can be strengthened, which will help to improve the working ability and professional quality of nursing interns. So that nursing interns can realize standardized and safe operations in clinical practice and provide patients with safer and more effective nursing services [15,16].

In summary, the use of the nursing safety education model for teaching nursing interns shows significant application effects. The model not only effectively improves the quality of teaching in the nursing internship stage, but also enables nursing staff to more skillfully master nursing technical operations. This is not only conducive to improving the overall quality of nursing care but also significantly reduces the occurrence of

nursing errors, which is worthy of clinical promotion and application.

Disclosure statement

The authors declare no conflict of interest.

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International Journal of General Practice Nursing, 2024, Volume 2, Issue 1
https://ojs.bbwpublisher.com/index.php/IJGPN
ISSN Online: 2981-9423
ISSN Print: 2981-9415

Investigating the Effectiveness of Continuous Quality Improvement Methods in Preventing the Phenomenon of Pseudo-Poor Electrocardiogram Procedure by Nurses in an Emergency Care Unit

Chenna Chu*

Shangluo Central Hospital Shaanxi, Shangluo 726000, China

***Corresponding author:** Chenna Chu, 670580025@qq.com

Abstract: *Objective:* To investigate the effect of applying continuous quality improvement methods on preventing the phenomenon of pseudo-poor electrocardiogram (ECG) procedures by nurses in the emergency care unit. *Methods:* The study was conducted in Shangluo Central Hospital Shaanxi from August 2020 to August 2021, and 200 emergency patients who received ECG during this period were selected for the comparative study, and grouped into two groups: the control group was given routine management, while the experimental group was managed by continuous quality improvement. The two groups were compared in terms of pseudo-differences in ECG procedures. *Results:* The patients in the experimental group had a higher rate of qualified ECG readings and procedures, and a lower rate of pseudo-errors and nursing disputes, all of which were significantly different from the control group ($P < 0.05$), which is significant, and the experimental group had a better effect. *Conclusion:* When ECG examination is carried out in the emergency care unit, the application of continuous quality improvement management methods is conducive to improving the quality of ECG examination, reducing the incidence of pseudo-discrepancy, and providing a reliable reference for clinical diagnosis and treatment.

Keywords: Continuous quality improvement; Emergency care unit; Electrocardiogram; Artifact phenomenon

Online publication: May 10, 2024

1. Introduction

Electrocardiography (ECG) is a common examination in the clinic and is generally completed by the technicians in the ECG room. However, the emergency room typically lacks a specialized ECG technician. When emergency patients require an ECG examination, ensuring prompt technician arrival at the scene becomes challenging. Moreover, patients' conditions in the emergency room can change rapidly, potentially leading to delays in patient care. Therefore, it is necessary for nurses to perform ECG procedures to assist in the doctor's diagnosis and treatment [1]. Nevertheless, in terms of practical implementation, there remains a certain degree of inadequacy among nursing staff when conducting routine ECG procedures. This inadequacy can lead to

pseudo-differential phenomena, potentially biasing the doctor's judgment of the patient's condition and posing a serious threat to the patient's life and health. Continuous quality improvement is developed upon total quality management principles, emphasizing comprehensive and ongoing quality management to enhance overall management quality [2]. Based on this, this study explores the effect of giving nursing staff continuous quality management on the incidence of pseudo-differences in ECG examination, taking patients in the emergency care unit of Shangluo Central Hospital Shaanxi as an example.

2. Materials and methods

2.1. General information

A total of 200 patients who received treatment at the emergency department of Shangluo Central Hospital Shaanxi between August 2020 and August 2021 were selected for ECG examination, of which there were 112 males and 88 females, with the oldest of the patients being 89 years old and the youngest being 22 years old, and the mean age was 45.34 ± 3.22) years. The patients were divided into two groups and given different management by the examining nursing staff, named as experimental and control groups. The difference between the two groups was that the nursing staff given the ECG examination received different management, and all other general data were not significantly different ($P > 0.05$), and would not affect the comparative test. The study was carried out after passing the approval of the Ethics Committee of the hospital, and all patients signed the informed consent.

2.2. Methods

The nursing staff of the control group received routine management, and during the examination, the patient's position was arranged, the limb lead was connected to the chest lead, and then the ECG machine was activated, the ECG was traced, and the patient's name, gender, and age, etc. were labeled on the ECG paper with the procedure time.

The nursing staff of the patients in the experimental group received continuous quality improvement management, and in the specific implementation process, it was necessary to first promote the establishment of a continuous quality improvement team, which included the head nurse of the emergency department, nurses in charge of the emergency room and nursing staff, and a full-time staff of the equipment department, in which the head nurse of the emergency department acted as the head of the team. In the specific development of the work, the team members clarified the main factors for the occurrence of ECG pseudo-differentials, established a questionnaire, and clarified that the causes mainly included incomplete procedure management, inaccurate setting of ECG monitor parameters, and patient factors. The analysis of its causes concluded that it was mainly related to the lack of training and learning of nursing staff, deficiencies in their knowledge of safety risks, and the hospital lacked specialized training for nursing staff, which made it difficult for personnel to detect abnormalities promptly, and so on. Finally, according to the actual situation, the implementation of continuous quality improvement was carried out. This included strengthening the stratified management of nursing personnel in the emergency intensive care unit (EICU), promoting the staff of the cardiac electrophysiology department to conduct personnel training and explain the knowledge of ECG procedure technology skills to the nursing personnel in EICU, having the head nurse of the EICU explain the parameter settings of ECG and related theories, and conducting on-site demonstration. The instrument manufacturers were invited to explain the instrument parameters, instrument use performance, and procedure precautions. Key nurses in the EICU were also sent to the intensive care unit (ICU) for further study and instructed other EICU nursing staff after completion. It is essential to ensure that the personnel can correctly read the critical ECG report, and strengthen

the daily maintenance and inspection of the ECG machine. Secondly, the procedure of ECG needs to be revised, and the procedure of the ECG machine should be printed and posted beside the ECG machine, instructing personnel to operate according to the procedure. Moreover, regular quality inspection was organized, and the group conducted quarterly spot checks on the ECG inspection of EICU nurses to clarify their deficiencies and formulated new corrective measures to promote the continuous improvement of quality.

2.3. Observation indexes

The procedures of ECG and the incidence of nursing disputes in the two groups were compared and analyzed.

2.4. Statistical analysis

Data analysis was conducted using SPSS 20.0 software. The statistical content of data information mainly involves measurement data and count data, which are expressed by mean ± standard deviation (SD) and [*n* (%)], respectively. After the completion of the data statistics, the results need to be verified, and the process mainly applies the *t*-test and the χ^2 test, and the comparison and analysis are completed. The difference between the results of the two groups was considered statistically significant if the *P* value was less than 0.05.

3. Results

Table 1 shows that the experimental group has a higher rate of qualified ECG readings, a higher rate of qualified procedures, a lower incidence of pseudo-discrepancy, and a lower incidence of nursing disputes as compared to the control group ($P < 0.05$).

Table 1. Comparison of ECG pass rate and nursing disputes between the two groups [*n* (%)]

Group	ECG reading pass	Qualified in ECG procedures	Pseudo-poor ECG procedures	Nursing disputes
Control group ($n = 100$)	98 (98.00)	97 (97.00)	3 (3.00)	1 (1.00)
Experimental group ($n = 100$)	85 (85.00)	86 (86.00)	11 (11.00)	6 (6.00)
χ^2	8.607	7.596	5.449	3.294
P	< 0.05	< 0.05	< 0.05	< 0.05

4. Discussion

EICU is an important department in the clinic, and the patient's condition is usually critical and changes rapidly, which requires timely diagnosis and treatment of the patient [3]. Nursing staff are the first observers of the patient's condition changes, their accurate mastery of the ECG procedure method ensures timely judgment of the patient's ECG situation and provides judgment guidance for doctors. However, according to relevant data, EICU nursing staff are still deficient in the use of electrocardiograms, with weak awareness and non-standardized skills, resulting in a high incidence of pseudo-differential electrocardiograms, which is not conducive to clinical diagnosis and treatment [4]. Continuous quality improvement is a comprehensive quality management method that emphasizes more on the management of quality links and quality processes, which can improve the deficiencies in the work, and promote the continuous improvement of service quality, thereby better meeting people's expectations and improving nursing satisfaction. When applying the continuous quality improvement method to the work of nursing staff in EICU, the skills training of nursing staff can be carried out to improve the operating skills and knowledge of ECG monitors and promote the ECG monitoring ability of

nursing staff [5]. At the same time, continuous quality improvement can strengthen the nursing staff's memory of the ECG values and their impression of the ECG, which is more conducive to improving the staff's operating skills. Finally, continuous quality improvement can improve the safety awareness of nursing personnel in EICU, revise the procedure specification of ECG, ensure that nursing personnel implement it according to the protocol, and effectively avoid the occurrence of pseudo-differential phenomenon [6]. Therefore, its clinical application effect is remarkable.

In summary, the application of continuous quality improvement management methods in the work of ECG examination in the emergency care unit has a remarkable effect, which is conducive to improving the quality of ECG examination and reducing the incidence of pseudo-differentials. Hence continuous quality improvement management methods should be widely promoted and utilized.

Disclosure statement

The author declares no conflict of interest.

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International Journal of General Practice Nursing, 2024, Volume 2, Issue 1
https://ojs.bbwpublisher.com/index.php/IJGPN
ISSN Online: 2981-9423
ISSN Print: 2981-9415

An Exploratory Study of the Spiritual Support Care Model for the Elderly with Dementia under the Perspective of Matching Supply and Demand

Ming Fu‡, Ziyu Qiu‡, Shengjun Niu, Yuling Wu, Qi Shao, Yaqing Qian, Shui Yu*
School of Pharmacy, Binzhou Medical University, Yantai 264003, Shandong Province, China
‡These authors contributed equally to this work.

***Corresponding author:** Shui Yu, yushui_0121@163.com

Abstract: China attaches great importance to the issue of population aging, actively addressing it as one of the country's important measures, with the care model for elderly people with dementia being a focus of society. This study explores the spiritual support care model for elderly people with dementia from the perspective of supply-demand matching, aiming to construct more feasible and economical care models and nursing care plans to improve the quality of nursing services and enhance the quality of life of elderly people. At the same time, it enhances the quality of life for the elderly. This study provides a better understanding of the research progress related to the spiritual support care model for medical staff, offering a rich guiding experience for elderly people with dementia in China. It provides a solid theoretical foundation for the application of spiritual support care. In future development, interdisciplinary research models can be promoted to drive innovative development, combining China's profound traditional cultural heritage and adapting to the diversified demands arising from social development, ensuring that every elderly person has support and care and enhancing the spiritual health level of the elderly.

Keywords: Supply and Demand matching; Elderly people with dementia; Spiritual support care

Online publication: May 13, 2024

1. Theoretical foundation

1.1. Matching supply and demand theory

"Supply" refers to the provision of long-term care services for disabled elderly individuals, while "demand" pertains to the disabled elderly's need for care methods and services. Ensuring the alignment of supply and demand in elderly care services involves maintaining a high level of consistency between the available services and the actual needs of the elderly population. This entails ensuring that the services provided precisely match the demands for care, adequately meeting the diverse needs of the elderly demographic [1].

The increasing and varied needs of disabled elderly individuals, coupled with issues on the supply side such as quality, structure, and the scope of services, can lead to imbalances between supply and demand. This

imbalance diminishes the quality of life for rural disabled elderly individuals and impedes the development of a comprehensive rural long-term care service system [2].

The needs of the elderly are characterized by diversity, complexity, and ongoing change, necessitating concerted efforts from families, society, and the state to promote the physical and psychological well-being of disabled elderly individuals. Addressing the health and care needs of the disabled elderly not only alleviates the burden on families but also reduces the time family members spend on caregiving, thereby increasing productivity that can benefit society and the economy. This, in turn, supports the development of social policies and the national economy, as well as the evolution of care models, leading to better alignment between supply and demand.

In conclusion, applying the theory of matching supply and demand to the exploration of care models for demented elderly individuals enables a thorough analysis of various care approaches, facilitating the selection of culturally appropriate models that best suit their needs. This approach aims to fulfill the long-term care requirements of demented elderly individuals to the fullest extent possible and offers insights for crafting long-term care policies tailored to China's specific circumstances.

1.2. Current situation of demented elderly

China's aging population is experiencing rapid growth due to a decreasing fertility rate, propelling the nation into a stage of moderate aging. Data from the seventh population census reveals that China now boasts 260 million individuals aged 60 and above, comprising 18.70% of the total population. Furthermore, there are 190 million people aged 65 and above, accounting for 13.50% of the total population – a figure that continues to rise compared to the sixth population census [3]. Recognizing the significance of population aging, the Party Central Committee and the State Council have emphasized the imperative to proactively address this demographic shift [4].

The Action for a Healthy China (2019–2030) advocates for the principle of health for all and aims to improve health literacy across society [5]. Research indicates that globally, over 55 million people are currently afflicted with dementia, with projections indicating a rise to 74.7 million by 2030. In China, individuals aged 85 and older constitute 45% of this group, with the country expected to account for 22% of the world's dementia cases by 2030 [6,7]. According to the World Health Organization, the prevalence of dementia among those over 65 years old is alarmingly high, reaching 91% in some areas. Within China, approximately 190 million elderly individuals are grappling with chronic diseases, with an estimated 45 million suffering from disabilities and dementia [8]. Consequently, dementia has emerged as a significant health threat affecting the elderly, both domestically and globally.

2. Traditional care models

2.1. Home-based care

The home-based care model is a family-centered approach to providing professional health care and nursing services to elderly individuals and their families. In this model, family members take on caregiving responsibilities in the daily lives of the elderly, reflecting the influence of traditional Chinese culture and ethics, and highlighting the affection and care within families. Elderly individuals living under this traditional home care model often experience a warm family atmosphere, which contributes to their sense of well-being and overall health.

However, with the current decline in China's youth population and the aging of society, coupled with changes in fertility policies altering the demographic structure, pressures on family members – both in terms of work and psychologically – are on the rise. Consequently, the effectiveness of home care for the elderly may

diminish, leading to a decline in the happiness and health of the elderly [9].

Building upon the strengths of the traditional home care model, society should strive to modernize and enhance it, offering more comprehensive and high-quality care services for the elderly. Through active participation from communities and individuals, a robust home care model can be developed, fostering closer relationships between the elderly and their families. This closeness can contribute to increased familial happiness, mitigation of family conflicts, and promotion of social harmony.

Moreover, aligning with the traditional values held by most elderly individuals, residing in a familiar "home" environment enables them to enjoy the warmth of family and spiritual fulfillment, thereby benefiting their physical and mental well-being. This also fosters the development of harmonious communities, cultivates a culture of respect and assistance for the elderly, and enhances social values and ethics.

2.2. Institutional care

Institutional care refers to the provision of professional facilities equipped with specialized resources to deliver long-term nursing and care services to disabled elderly individuals. These facilities encompass medical units at various levels, as well as elderly care institutions such as nursing homes and rehabilitation centers [10]. Additionally, institutional care emphasizes facilitating the integration of disabled elderly individuals into society. Through organizing recreational activities and promoting social interaction, it aims to strengthen their connection with society, alleviate feelings of loneliness, and enhance overall well-being.

Countries like the United States, Japan, and Germany have a longer history of developing institutional care for disabled elderly individuals. The United States initiated aging population programs in 1940, offering long-term care services through community organizations, senior service centers, and other institutions catering to disabled and dementia-affected groups. Japan tailors institutional care to the specific needs of its insured population, focusing on personalized service provision. In Germany, institutional care is categorized into partial and full care, with comprehensive care institutions available when home or partial care cannot meet the insured person's needs [11].

Currently, the adoption of institutional care by disabled and dementia-affected elderly individuals in China remains relatively low. Economic constraints lead some elderly individuals to opt for home care over institutional care [12]. In remote regions, institutional care resources are unevenly distributed, with institutions often lacking professional medical personnel and necessary facilities for specialized elderly care. Ding [13] highlighted the scarcity of elderly care institutions in China, with bed capacities significantly lower than those in developed and some developing countries. Furthermore, due to entrenched traditional beliefs, some elderly individuals perceive home care as more aligned with concepts of "raising children to prevent old age" and "filial piety," thus preferring it over institutional care [14].

Moreover, the higher cost of institutional care compared to home care presents a barrier, with 69.2% of disabled elderly individuals unable to afford long-term care [15]. This financial constraint contributes to the low adoption rate of institutional care in China.

2.3. Community care

The community, alongside the family, bears the primary responsibility for caring for disabled elderly individuals and serves as a hub for integrating, coordinating, and planning societal resources to maximize their benefits [16]. Community care encompasses a range of support services provided to the elderly within their communities; it is not intended to replace home care but to complement it [17]. Through offering daycare services, medical assistance, rehabilitation care, and psychological support, community care aims to enhance the quality of life

and overall well-being of capable elderly individuals.

In some developed nations, governments provide financial assistance to communities for acquiring medical equipment and hiring professional medical staff, thus bolstering the formation of comprehensive service systems [18]. For instance, in Japan, community care takes the form of "blossoming," which not only offers daycare to disabled elderly individuals but also provides 24-hour home visitation services and other forms of home care, thereby addressing some of the limitations of home-based care [19].

Community care should not only address the daily needs of the elderly but also strengthen familial support networks, facilitate communication between medical institutions and the elderly, and promote the elderly's ability to engage in long-term self-care [20]. With the backing of national policies, community care has emerged as a prominent trend, necessitating the development of robust community care services and the provision of professional medical assistance.

3. Exploration of spiritual supportive care for dementia elderly under the perspective of matching supply and demand

3.1. Feasibility analysis of spiritual supportive care from the perspective of matching supply and demand

China has transitioned into an aging society, and against the backdrop of increasing life expectancy and declining birth rates, the issue of aging is becoming increasingly prominent. It presents challenges on a large scale and is experiencing rapid growth, with concerns related to elderly care and lifestyle emerging as some of the most pressing and realistic issues for the populace. These concerns have garnered extensive attention from the academic community.

Among the key groups requiring care, the elderly with dementia are seeing a rise in demand for assistance. With the emergence of the holistic care concept encompassing "mind, body, society, and spirit," spiritual support has become a focal point in nursing research. Spiritual supportive care entails nursing activities or approaches aimed at helping elderly individuals discover the meaning of life, self-worth, and faith support through attentive companionship, active listening, and respectful engagement tailored to their individual characteristics. This approach, when applied during the nursing process after identifying and evaluating the spiritual disturbances and needs of patients, aims to ensure the physical, psychological, and spiritual comfort of dementia-afflicted elderly individuals.

As the public's nursing needs continue to diversify and demand high-quality care, spiritual supportive care has emerged as a significant avenue to meet these needs [21]. Research indicates that such care can contribute to fostering a positive outlook on life and values, and can help alleviate anxiety and fear in terminally ill patients. Given the unique needs of the dementia-afflicted elderly, there is a growing recognition of the importance of personalized and tailored spiritual support care, emphasizing the significance of aligning "supply and demand" and achieving effective "matching."

An essential prerequisite for the implementation of spiritual supportive care is a thorough understanding of the needs of dementia-afflicted elderly individuals. Additionally, a comprehensive evaluation of this demographic group is necessary to ensure holistic care.

3.2. Construction of a spiritual supportive care model under the perspective of matching supply and demand

Drawing upon the theory of matching supply and demand in spiritual support care for dementia-afflicted elderly individuals is crucial to enhancing the quality of care for this special group. Dementia elderly individuals,

characterized by significant impairments in cognition and memory, require comprehensive spiritual support care that addresses various aspects of their well-being.

The findings of this study highlight several components of spiritual support care for demented older adults, encompassing environmental, self, care of others, and societal aspects. Establishing a conducive living environment for elderly individuals with dementia entails creating spaces that are welcoming, safe, and easily accessible. This includes providing clear signage and navigation aids, minimizing noise and disturbances, and furnishing the environment with comfortable furniture and equipment. Attention to infrastructure elements such as lighting and ventilation is also vital to ensuring the comfort and safety of dementia-afflicted elderly individuals.

Elderly individuals with dementia may encounter challenges in managing their personal hygiene and eating habits. Thus, it is imperative to assist them in establishing stable personal routines, devising daily and long-term plans, and utilizing home facilities conveniently. Additionally, providing necessary aids enables them to maintain autonomy in self-care.

Given that dementia-afflicted elderly individuals often rely on the care and assistance of others, the role of family members, caregivers, and volunteers is paramount. Assisting with daily activities and offering continuous emotional support and companionship are integral to fostering a sense of warmth and security among dementia-afflicted individuals.

Support at the societal and national levels is equally essential for the spiritual care of dementia-afflicted elderly individuals. Society should offer professional training and support to caregivers to help them effectively address the needs of dementia-afflicted individuals. Government departments can establish comprehensive welfare systems to provide financial assistance and medical care, thereby alleviating the burden on caregivers.

3.3. Implementation of spiritual support care model under the view of matching supply and demand

As a special group, the elderly affected by dementia experience cognitive impairment and communication challenges, often facing difficulties such as diminished memory, reduced language abilities, and emotional fluctuations. From a supply-demand matching perspective, it is essential to employ specialized communication techniques when providing care for these individuals. This involves using activities and topics familiar to or loved by the elderly to guide conversations, enhancing interaction and emotional resonance, and facilitating the identification of their specific needs in old age.

Simultaneously, personalized spiritual support care programs should be developed. Through interdisciplinary collaboration and the utilization of modern information network technology and intelligent services, medical, psychological, and social resources can be integrated to create tailored care programs for each elderly person.

Furthermore, there is a need to align service needs with service provisions. Addressing the significant challenge of professional care requires the recruitment and training of skilled caregivers. Forming professional spiritual support care teams is essential to providing specialized medical care, offering health education to the elderly and their families, and conducting regular holistic assessments encompassing the physical, psychological, and spiritual aspects of elderly individuals.

Spiritual supportive care for dementia-afflicted elderly individuals entails holistic care that meets their physical, psychological, emotional, social, and spiritual needs through various means. It involves applying an approach that integrates medical and elderly care to cater to the specific requirements of dementia patients. Collaboration with local social organizations is actively pursued to enhance the skills of healthcare workers, gradually easing the pressure associated with providing comprehensive medical and lifestyle care for

cognitively impaired older individuals. The key to successful implementation lies in collaborative efforts toward "medical integration.

4. Discussion

In the context of profound population aging nationwide, the spiritual support care model is built upon the theory of matching supply and demand. It prioritizes addressing the spiritual distress and individual needs of the elderly, effectively mitigating the increasingly prevalent lack of family social support networks and addressing issues concerning the spiritual health of the elderly. By offering personalized care programs and spiritual services, this model aims to promote the spiritual well-being of the elderly, assist them in rediscovering the meaning of life, confront aging, and bolster the interconnected care provided by families, communities, medical institutions, and governmental bodies. This holistic approach not only aids in rebuilding lives and fostering acceptance of aging but also drives the development of nursing technology and humanistic care, thus alleviating the challenges posed by the nation's deep aging.

The spiritual supportive care model, as studied here, encompasses four key aspects: environmental care, self-care, care for others, and social support. It revolves around creating a tranquil and comfortable environment, empowering the elderly to establish a stable lifestyle with the support of professional caregivers and continuous emotional assistance from external sources, underpinned by relevant state welfare systems. This fosters a cohesive network of care spanning families, communities, healthcare institutions, and government entities. Before constructing this model, researchers conducted a comprehensive review of literature and field studies to understand the daily lifestyles of the elderly and the necessary care encompassing psychological, physiological, spiritual, and familial aspects. They found that collaborative efforts between families, communities, medical institutions, and government entities can effectively fulfill the diverse needs of the elderly. Notably, prioritizing family communication throughout the care process, harnessing the power of family support, and supplementing the professional expertise of social institutions (such as professional spiritual support caregivers, and volunteers) are vital components of this model's construction [22].

Addressing the unique characteristics of the elderly involves emphasizing communication throughout the caregiving process. Effective communication channels between the elderly and staff are established by identifying topics of interest to them. This approach aims to build trust in staff, foster emotional connections, and better understand the spiritual needs of the elderly. It facilitates the collection of information on their spiritual needs and aids in later analysis, summarization, and evaluation of individualized needs. This model is implemented through interdisciplinary cooperation, leveraging the Internet, integrating medical care, social resources, government support, and other resources. It involves organizing training for professional caregivers, recruiting relevant volunteers in the community, establishing professional teams, and enhancing the relevant medical support system. With widespread attention and strong support from national policies and economic assistance, this model ensures a match between supply and demand. By applying theories into practice, it addresses the contradiction between supply and demand faced by the elderly, shifting the concept of family care to one that considers spiritual needs. This ensures that the needs of the elderly are met and helps alleviate multifaceted needs while building their self-confidence, relieving anxiety, and improving their quality of life. Moreover, this model also fosters self-confidence, alleviates anxiety, and enhances the quality of life for the demented elderly, resulting in a win-win situation for families, society, medical institutions, and government. It contributes to the sustainable development of active aging and healthcare.

To address population aging, the government is actively developing the healthcare industry for the elderly

and striving to promote the strategy of successful aging. As the concept of whole-person care gains momentum and the understanding of health deepens, spirituality, often overlooked in successful aging, is receiving increasing attention [23]. This model aims to revolutionize the traditional aging-at-home paradigm by applying holistic care principles to address aging-related challenges. It seeks to alleviate the economic strain of aging investments, establish a comprehensive care system encompassing family, society, and the state, and foster the development of a national service infrastructure. Furthermore, this model will be continually refined based on existing international research and infused with China's rich traditional cultural heritage to meet the evolving needs of society. Its ultimate goal is to provide every elderly person with a sense of security and support, enhance their spiritual well-being, and contribute to the country's aging development.

5. Conclusion

Spiritual support care for the elderly with dementia goes beyond their physical health; it encompasses their mental and spiritual well-being as well. The spiritual support care model, rooted in the concept of matching supply and demand, is tailored to China's national circumstances. It integrates holistic care principles and considers the physiological characteristics of the elderly to address their spiritual needs. However, due to the relatively recent introduction of spiritual supportive care in China and our deep cultural heritage, the care model established in this study still faces certain challenges and requires ongoing refinement in practice and development. In the future, there will be continued exploration and adaptation of the model to align with societal developments. This will involve leveraging emerging technologies from both domestic and international sources. Additionally, efforts will be made to cultivate nursing professionals who can deliver comprehensive care for both physical and mental well-being, integrate humanistic values into the nursing profession, advocate for a transformation in medical service paradigms, and tackle the growing challenge of elderly care in China.

Funding

The 2023 Shandong Province College Students' Innovation and Entrepreneurship Training Program (Project No. S202310440136); Binzhou Medical College Research Initiation Fund (Grant No. 50012304601)

Disclosure statement

The authors declare no conflict of interest.

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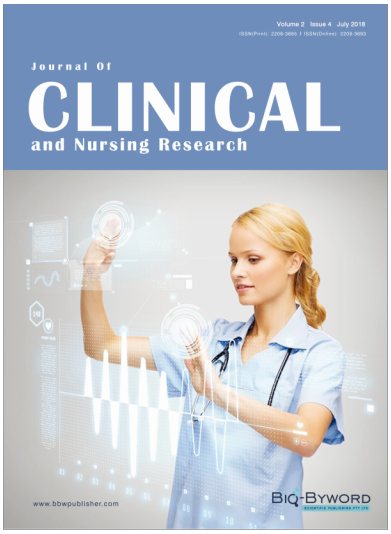

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