

# Analyzing the trends in intervention studies of rehabilitation nursing: a literature review

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The present study reviewed the literature to determine the trends in rehabilitation nursing intervention programs by systematically analyzing previous studies including rehabilitation nursing interventions, seeking insight to reconstruct future rehabilitation programs, and exploring research directions for future rehabilitation nursing intervention studies. About 94 intervention studies published from the inaugural issue of the *Journal of the Korean Society of Rehabilitation Nursing* to 2022 were analyzed. Among them, 33 studies were published between 2001 and 2005, followed by 25 studies between 2011 and 2015. All studies were authored by nurses. Concerning the types of rehabilitation nursing intervention programs, exercise interventions were more common than educational interventions. The exercise intervention programs im-

proved performance in daily activities and decreased pain. The education intervention programs improved knowledge and increased the implementation of health behaviors. Based on these findings, we intend to ascertain the roles and functions of rehabilitation nurses in the mid-to-long-term and develop a specialized rehabilitation nurse system with expertise and science that meets the current trends of an increasing demand for rehabilitation nursing in various institutions such as rehabilitation hospitals, homes, welfare rehabilitation centers, and long-term care facilities, taking the field of rehabilitation nursing to another level.

**Keywords:** Rehabilitation nursing, Intervention, Nursing program

## INTRODUCTION


Rehabilitation nursing is a branch that focuses on the diagnoses and treatment of people's responses to actual or potential health problems arising from functional impairments and altered lifestyles. The core philosophy of rehabilitation nursing is that individuals with disabilities have the right to become experts in their healthcare (Jesus et al., 2022). Nursing interventions help nurses develop expertise and autonomy in the clinical field. The identification of nursing interventions validates the essence of nursing. It strengthens the nursing profession by systematizing an independent body of knowledge to recognize nursing expertise (Liu, 2020).

Since nursing is based on clinical practice, it is possible to achieve more stable academic development through diversification and implementation of intervention research. Previous studies on rehabilitation nursing were primarily practical studies conducted in clinical and community settings, reflecting the characteristics of

nursing that need to be revitalized in the future (Murray et al., 2016). Additionally, intervention studies are consistent with the characteristics of nursing as an applied science that develops through the linkage and integration of theory and practice, thereby promoting the well-being of individuals and families receiving rehabilitation through health promotion, therapeutic care, and indirect reduction of social costs (Jones et al., 2019).

Additionally, the systematic analysis of literature significantly impacts nursing theory, research, and practice, and enables nurses to discover new facts and apply them in clinical practice (Aveyard and Bradbury-Jones, 2019). Only after analyzing the trends in rehabilitation nursing intervention studies conducted in Korea can the trends in rehabilitation nursing intervention studies conducted abroad be explored.

The Korean Rehabilitation Nursing Association founded the *Korean Journal of Rehabilitation Nursing* to promote the development of clinical practice and rehabilitation nursing. Being the

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only journal in Korea in this field, it has been publishing papers twice a year (June and December) since its inaugural issue in 1998 (So et al., 2009), and has published 49 volumes by 2022. The present study aimed to establish a foundation for academic development in the field of rehabilitation nursing by analyzing the literature related to rehabilitation nursing interventions in Korea published in the *Journal of the Korean Society of Rehabilitation Nursing* from its first issue to 2022 from various aspects and identify the trends in rehabilitation nursing intervention studies. Additionally, this study intended to ascertain the role and function of rehabilitation nurses in the mid-to-long-term and develop a specialized rehabilitation nurse system with expertise and science that meets the current trends of increasing demand for rehabilitation nursing in various institutions such as rehabilitation hospitals, homes, welfare rehabilitation centers, and long-term care facilities, taking the rehabilitation nursing field to another level. Furthermore, this study aimed to present a future research direction and vision to the field of rehabilitation nursing.

This study aimed to determine the trends in rehabilitation nursing intervention programs by systematically analyzing previous studies, seek insights to reconstruct future rehabilitation programs, and explore research directions for future rehabilitation nursing intervention studies.

## MATERIALS AND METHODS

### Research design

This literature review systematically analyzed the content of existing studies on rehabilitation nursing interventions published in the *Journal of the Korean Society of Rehabilitation Nursing*.

### Subject of analysis and data collection

Data were collected in August 2023. Full texts of 94 studies on rehabilitation nursing interventions published in the *Journal of the Korean Society of Rehabilitation Nursing* from the first issue in 1998 to December 2022 were obtained and analyzed using the original journal provision service provided by the Korean Society of Rehabilitation Nursing Homepage (<http://www.kasren.or.kr>).

### Data analysis

Data were analyzed using the IBM SPSS Statistics ver. 21.0 (IBM Co., Armonk, NY, USA). The general characteristics of the studies (the distribution of studies by year, author types, and characteristics of the study participants), research methods (study design and types of intervention program), intervention contents

(educational and exercise interventions), and effectiveness of the intervention were analyzed.

### Ethical considerations

The Institutional Review Board (IRB) of the Cheju Halla University (IRB No. 1044348-20230613-HR-003-01) approved the review exemption for this study.

## RESULTS

### Characteristics of the included studies

Table 1 displays the characteristics of the included studies. About 94 intervention studies were published in the *Journal of the Korean Society of Rehabilitation Nursing* between their first issue and 2022; 12 (12.8%) were published in 1998–2000, 33 (35.1%) in 2001–2005, 11 (11.7%) in 2006–2010, 25 (26.6%) in 2011–2015, and 13 (13.8%) in 2016–2022. Regarding study participants, 62 studies (66.0%) included patients, while 32 studies (34.0%) included nonpatients. Considering the sample size, three studies (3.2%) included less than 10 participants, 21 studies (22.4%) had 10–29 participants, 24 studies (25.5%) included 30–39 participants, 24 studies (25.5%) included 40–59 participants, and 22 studies (23.4%) had 60 or more participants. All studies were authored by nurses (100%).

**Table 1.** General characteristics of the included studies (n=94)

Characteristic	No. (%)
Published year	
1998–2000	12 (12.8)
2001–2005	33 (35.1)
2006–2010	11 (11.7)
2011–2015	25 (26.6)
2016–2022	13 (13.8)
Study participants	
Patients	62 (66.0)
Nonpatients	32 (34.0)
Sample size (persons)	
< 10	3 (3.2)
10–29	21 (22.4)
30–39	24 (25.5)
40–59	24 (25.5)
≥ 60	22 (23.4)
Author type	
Nurse	94 (100)
Nonnurses	0 (0)

### Research methods of the included studies

Table 2 shows the research methods and intervention programs used in the selected studies. Regarding the study design, 68 studies (72.3%) used the nonequivalent control group pretest-posttest design, while 26 (27.7%) used the single group pretest-posttest design. Concerning the type of intervention program, 29 studies (30.9%) included educational interventions and 65 studies (69.1%) included exercise interventions.

### Intervention contents of the included studies

Table 3 shows the contents of the 29 educational intervention programs. About 13 studies (44.8%) conducted 1:1 individualized training, eight (27.6%) conducted training using educational materials, guidelines, and booklets, six (20.7%) used team approach training, and two (6.9%) used simulation training.

Table 4 shows the contents of the 65 exercise intervention programs. About 26 studies (40.0%) conducted exercise therapies (walking, yoga, gymnastics, rhythmic movement, Tai chi, etc.), followed by 15 studies (23.1%) with herbal therapies (acupressure,

hand acupuncture, etc.), nine (13.8%) with cognitive therapies (sensory stimulation, memory enhancement, daily living movement training, etc.), eight (12.3%) with massage (lymphatic, aroma, meridians, etc.), four (6.2%) with self-help group programs, and three (4.6%) with other exercise forms (music therapy, gardening activities, and humor programs).

### Effects of the interventions in the included studies

Fig. 1 displays the effects of the educational intervention programs used in the included studies. These rehabilitation nursing education intervention programs led to knowledge improvement (35%), followed by increase in the degree of implementation of health behaviors (21%), decrease in anxiety (17%), improvement of cognitive functioning (14%), maintenance of appropriate positions (10%), and no effect (3%).

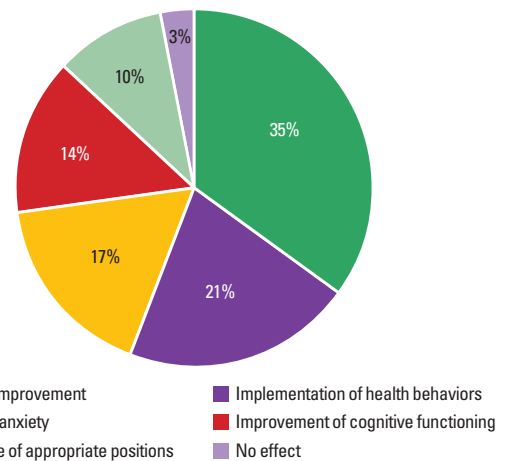


Fig. 1. Analysis of the effects of educational intervention programs.

Table 2. Research methods and types of intervention programs (n=94)

Characteristic	No. (%)
Study design	
Nonequivalent control group pretest-posttest	68 (72.3)
Single group pretest-posttest	26 (27.7)
Types of intervention programs	
Educational Interventions	29 (30.9)
Exercise Interventions	65 (69.1)

Table 3. Analysis of the contents of educational interventions (n=29)

Educational interventions	No. (%)
One-on-one individualized training	13 (44.8)
Education using educational materials, guides, and booklets	8 (27.6)
Team approach	6 (20.7)
Simulation	2 (6.9)

Table 4. Analysis of the contents of exercise interventions (n=65)

Exercise interventions	No. (%)
Exercise therapies (walking, yoga, gymnastics, rhythmic movements, Tai chi, etc.)	26 (40.0)
Korean medicine therapies (acupressure, hand acupuncture, etc.)	15 (23.1)
Cognitive therapies (sensory stimulation, memory enhancement, daily living movement training, etc.)	9 (13.8)
Massage (lymphatic, aromatic, meridians, etc.)	8 (12.3)
Self-help group program	4 (6.2)
Others (music therapy, gardening activities, and humor programs)	3 (4.6)

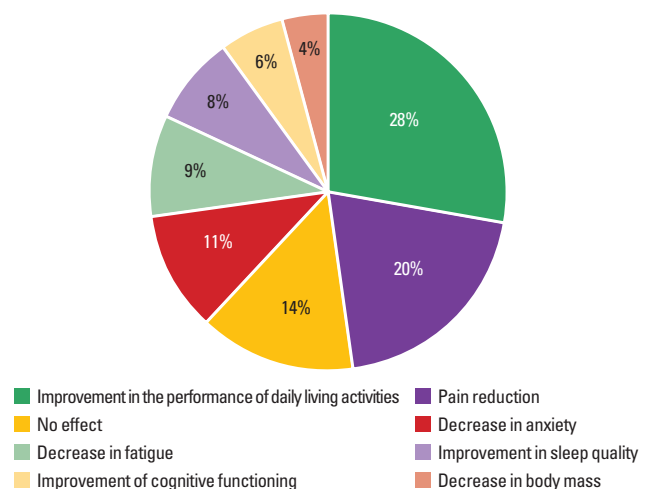


Fig. 2. Analysis of the effects of exercise intervention programs.

Fig. 2 displays the effects of the exercise intervention programs used in the included studies. These rehabilitation nursing exercise intervention programs led to improvement in the performance of daily living activities (28%), followed by pain reduction (20%), no effect (14%), decrease in anxiety (11%), decrease in fatigue (9%), improvement in sleep quality (8%), improvement of cognitive functioning (6%), and decrease in body mass (4%).

## DISCUSSION

The present study analyzed 94 academic papers to determine the trends in rehabilitation nursing intervention programs, seek insights to reconstruct future rehabilitation programs, and explore research directions for future rehabilitation nursing intervention research. The analysis of the included studies focused on the general characteristics (the distribution of the studies by year, author types, and participant characteristics), research methods (study design and types of intervention programs), intervention contents (educational and exercise interventions), and effects of the interventions. Based on the results, this study presents the trends in intervention research concerning rehabilitation nursing and provides recommendations.

First, regarding the publication year of the rehabilitation nursing intervention studies, the highest number of studies (33; 35.1%) were published between 2001 and 2005, followed by 25 studies (26.6%) published between 2011 and 2015. However, it decreased to 13 (13.8%) between 2016 and 2022. This suggests the difficulties in conducting intervention studies due to coronavirus disease 2019 (COVID-19). The COVID-19 pandemic had a profound impact on the research field, leading to delays and difficulties in conducting interventional studies in person (Almarzooq et al., 2020). Therefore, non-face-to-face intervention methods using mobiles, web-based programs, and simulations should be considered in the context of infectious diseases (Zaragoza-García et al., 2021). Accordingly, it is essential to strengthen nurses' competencies to play a new role in nursing education. The nursing community should utilize these opportunities to build a creative team training environment, enhance nurses' competencies, develop complex nursing services, and provide nursing interventions through multidisciplinary cooperation. Particularly, researchers from older and analog generations will require training to enhance their awareness and competencies in digital education.

Second, the types of rehabilitation nursing intervention programs used in 65 studies (69.1%) were exercise interventions, which were much higher than educational interventions used in 29 studies

(30.9%). Concerning the content of exercise interventions, the majority of studies included exercise therapies (walking, yoga, gymnastics, rhythmic movement, Tai chi, etc.), Korean medicine therapies (acupressure, hand acupuncture, etc.) and cognitive therapies (sensory stimulation, memory enhancement, daily life movement training, etc.). The majority of educational interventions included 1:1 individualized education and education using educational materials, guidelines, and booklets. This can be explained by the evidence that exercise interventions are more effective than educational interventions in improving physical fitness and cognitive functioning among nursing participants through nurse-led interventions (Cugusi et al., 2015; Duchesne et al., 2015). Additionally, it can be interpreted that exercise interventions are more effective in large groups and educational interventions are more effective in small groups. Therefore, the contents of various interventions should be actively used in future rehabilitation nursing intervention research. It is crucial to study the development of various programs to improve the physical as well as psychosocial functioning of participants.

Third, exercise interventions were highly effective in improving the performance of daily activities, followed by reducing pain and fatigue. Exercise interventions may have improved the performance of daily activities and reduced pain and fatigue by supplementing upper and lower limb strength, balance, and walking ability through proper body control and various postures (Krebs et al., 1998). Therefore, it is necessary to develop systematic and correct exercise intervention programs in the future. Additionally, educational interventions were highly effective in improving knowledge, followed by improved implementation of health behaviors and reduced anxiety. This suggests that the effect of education, which emphasizes the transfer of theoretical knowledge, may have influenced the improvement of knowledge, implementation of health behaviors, and decrease in anxiety.

Therefore, educational intervention programs with a clear theoretical basis should be implemented. However, some published intervention studies did not demonstrate significant effects. Therefore, we recommend that intervention studies should be thoroughly planned in the research design stage.

## CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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