Journal of Biosciences and Medicines, 2026, 14(4), 376-385
https://www.scirp.org/journal/jbm
ISSN Online: 2327-509X
ISSN Print: 2327-5081

The Effect of Integrated Medical and Nursing Care on the Rehabilitation of Disabled Elderly

Cong Ding

School of Management, Wanjiang University of Technology, Ma'anshan, China
Email: dingyiyi02468@163.com

How to cite this paper: Ding, C. (2026) The Effect of Integrated Medical and Nursing Care on the Rehabilitation of Disabled Elderly. *Journal of Biosciences and Medicines*, **14**, 376-385.
https://doi.org/10.4236/jbm.2026.144027

Received: March 26, 2026
Accepted: April 27, 2026
Published: April 30, 2026

Abstract

Objective: With the deepening of population aging in China, the scale of the disabled elderly population is expanding year by year, and this group faces prominent problems such as impaired physical function, limited daily self-care ability, and high incidence of complications. Conventional home-based care lacks professional medical and rehabilitation support, making it difficult to meet their comprehensive needs. This study aims to explore the effects of the integrated medical and nursing care model on the activities of daily living, physical rehabilitation and complication prevention and control in disabled elderly people, and to provide practical evidence for optimizing the home-based rehabilitation care system for this population. **Methods**: A total of 40 home-dwelling disabled elderly individuals registered at two community elderly care service centers in Ma'anshan City were selected by consecutive sampling from January 2025 to March 2025. All subjects voluntarily participated and signed informed consent forms. They were randomly divided into a control group and an observation group using simple random sampling method, with 20 cases in each group. All 40 participants completed the 6-month follow-up without loss to follow-up, ensuring the integrity of the study data. The control group received conventional home-based elderly care, while the observation group was given the home-based integrated medical and nursing care model, with an intervention period of 6 months. The Activities of Daily Living (ADL) scale was used to assess the self-care ability of the elderly, and a self-designed Physical Rehabilitation Rating Scale (with verified reliability and validity) was adopted to evaluate the recovery of physical function before the intervention, at 3 months and 6 months after the intervention, respectively. The incidence of complications during the intervention was also statistically analyzed. **Results**: Before the intervention, there were no statistically significant differences in the ADL scores and physical rehabilitation scores between the two groups (all $P > 0.05$). At 3 months and 6 months after the intervention, both scores in the observation group were significantly higher than those in

the control group, with statistically significant differences (all $P < 0.001$). After 6 months of intervention, the incidence of complications in the observation group was significantly lower than that in the control group, with a statistically significant difference ($P < 0.05$). **Conclusion**: The integrated medical and nursing care model, which integrates professional medical services, systematic rehabilitation training and comprehensive care, can effectively improve the activities of daily living and physical rehabilitation level of disabled elderly people, reduce the risk of complications, meet the comprehensive rehabilitation care needs of disabled elderly people, and thus has high popularization and application value.

Keywords

Integrated Medical and Nursing Care, Disabled Elderly, Home-Based Care, Rehabilitation Effect, Activities of Daily Living

1. Introduction

China's population aging is deepening continuously, and the scale of the disabled elderly population is expanding year by year. Due to impaired physical functions, an inability to take care of themselves in daily life, and the high prevalence of chronic underlying diseases, this group has become a core difficult group in elderly care services. Conventional home-based elderly care focuses on basic daily living assistance, lacking professional medical intervention, systematic rehabilitation training, and scientific guidance for complication prevention and control. This not only leads to a continuous decline in the physical functions of the disabled elderly and a persistently high incidence of complications, which impairs their quality of life, but also imposes a heavy physical and mental burden on family caregivers and exacerbates the pressure on social elderly care services [1] [2].

Integrated medical and nursing care is a novel care model that deeply integrates professional medical services with elderly care, breaking down the service barriers between medical care and elderly care and achieving the integrated service goals of "daily life care, medical nursing, rehabilitation training, and complication prevention and control". Centered on medical resources and combined with the actual needs of elderly care, this model provides personalized and continuous professional care for the disabled elderly, making up for the professional shortcomings of conventional home-based care. At present, the integrated medical and nursing care model has achieved remarkable results in the care of elderly patients with chronic diseases [3] [4], yet systematic research targeting the special group of disabled elderly—who have more complex functional impairments and higher demand for rehabilitation care—remains to be improved. There is an urgent need for empirical research to verify the practical effect of this model on the rehabilitation of disabled elderly, so as to provide targeted references for the optimization of home-based rehabilitation care systems. This study took 40 home-dwelling dis-

abled elderly individuals as the research subjects and explored the actual rehabilitation effect of the integrated medical and nursing care model through a controlled experiment, aiming to fill the research gap in this field.

2. Methods

2.1. Study Subjects

A total of 40 home-dwelling disabled elderly individuals registered at two community elderly care service centers in Ma'anshan City were selected as the study subjects by consecutive sampling from January 2025 to March 2025. The recruitment process was as follows: first, the community elderly care service centers screened eligible individuals according to the inclusion and exclusion criteria; then, researchers explained the study purpose, intervention measures and potential risks to the eligible elderly and their caregivers; finally, those who voluntarily agreed to participate signed the informed consent form and were included in the study.

2.1.1. Inclusion Criteria

1) Aged 60 years and above, meeting the disability assessment criteria in the Standards for the Assessment of the Disability Level of the Elderly; 2) Clear consciousness, capable of basic verbal communication and able to cooperate with scale assessment and care intervention; 3) Mainly receiving home-based care, with fixed caregivers providing care for no less than 4 hours per day (to ensure the implementation of daily rehabilitation training and care measures); 4) Complete clinical and home-based care data (including medical records, care records, etc.), which is convenient for follow-up data collation and analysis; 5) No participation in other similar intervention studies during the study period to avoid confounding effects.

2.1.2. Exclusion Criteria

1) Complicated with severe mental diseases (such as schizophrenia) or cognitive disorders (such as dementia), unable to cooperate with assessment and intervention; 2) Complicated with failure of vital organ functions (such as severe heart, liver and kidney failure) or in the acute attack stage of diseases requiring hospitalization (such as acute cerebral infarction), which may affect the intervention effect and follow-up; 3) Permanent disability caused by irreversible diseases (such as severe cerebral palsy), and rehabilitation training is difficult to improve their functional status; 4) Care environment failing to meet the requirements of home-based intervention (such as lack of basic rehabilitation space, no fixed caregiver), which may lead to poor implementation of intervention measures.

The subjects were randomly divided into a control group and an observation group using simple random sampling method (random number table method): researchers generated 40 random numbers using SPSS 27.0 software, sorted the subjects in the order of recruitment, assigned the first 20 subjects with odd random numbers to the control group, and the 20 subjects with even random num-

bers to the observation group. All 40 participants completed the 6-month follow-up without loss to follow-up, which was mainly due to the regular follow-up mechanism established in the study and the active cooperation of the subjects and their caregivers. There were no statistically significant differences in general data between the two groups (P > 0.05), indicating good comparability. See Table 1.

Table 1. Comparison of baseline general data between the two groups (n = 20).

General data	Control group	Observation group	P
Age ($\bar{x} \pm s$, years)	72.5 ± 6.8	73.2 ± 7.1	>0.05
Gender (n, %)			>0.05
- Male	11 (55.00)	8 (40.00)	
- Female	9 (45.00)	12 (60.00)	
Disability level (n, %)			>0.05
- Mild disability	6 (30.00)	8 (40.00)	
- Moderate disability	9 (45.00)	7 (35.00)	
- Severe disability	5 (25.00)	5 (25.00)	
Major comorbidities (n, %)			>0.05
- Hypertension	13 (65.00)	14 (70.00)	
- Diabetes mellitus	8 (40.00)	7 (35.00)	
- Cerebrovascular disease	9 (45.00)	10 (50.00)	

2.2. Care Methods

2.2.1. Control Group

Conventional home-based elderly care was implemented, which is consistent with the mainstream home-based care model in the community. Specific measures included: 1) Completing a basic health assessment at enrollment, including measuring vital signs, understanding the current physical condition and daily care needs; 2) Providing guidance on basic daily living care, such as teaching caregivers how to assist the elderly in eating, dressing, bathing and other daily activities; 3) Conducting follow-up once a month via telephone or home visit to record the basic physical condition of the elderly, answer simple care-related questions (such as daily care precautions), and not providing professional medical intervention (such as medication adjustment, professional nursing operations) or systematic rehabilitation training guidance.

2.2.2. Observation Group

The home-based integrated medical and nursing care model was adopted. A service team consisting of general practitioners, nurses and rehabilitation therapists from community hospitals, as well as nursing staff, psychological consultants and health managers from elderly care institutions was established to formulate personalized care and rehabilitation plans, including the following measures: 1) Es-

tablishing electronic care and rehabilitation files to realize resource sharing and dynamic update; 2) General practitioners conducting home visits once a week to monitor physical conditions and adjust medication regimens; nurses conducting home visits every 3 days to complete indicator testing and professional nursing operations; 3) Rehabilitation therapists formulating one-on-one rehabilitation training plans, conducting home visit guidance twice a week and training caregivers to assist with daily training; 4) Psychological consultants conducting home visits once a month for psychological counseling and organizing caregiver exchange meetings every 2 weeks; 5) Carrying out health education once a month, covering knowledge such as disease management, complication prevention, and nutritional support, and establishing a 24-hour emergency response mechanism: team members respond to emergency needs (such as sudden illness) of the elderly within 30 minutes and provide on-site or referral assistance.

2.3. Evaluation Indicators

1) Activities of Daily Living (ADL): Assessed by the ADL Rating Scale, which includes 10 items such as eating, washing and dressing, with a full score of 100 points; a higher score indicates better self-care ability in daily life. 2) Physical rehabilitation status: Evaluated by a self-designed Physical Rehabilitation Rating Scale, which covers 4 dimensions including limb mobility, swallowing function, defecation control ability and sitting-standing balance ability, with a full score of 100 points; a higher score indicates better recovery of physical function. 3) Incidence of complications: The number of cases with common complications such as pressure ulcers, pulmonary infection, urinary tract infection and constipation in the two groups during the intervention was counted. The first two indicators were assessed before the intervention, at 3 months and 6 months after the intervention, and the incidence of complications was counted at 6 months after the intervention.

2.4. Data Analysis

The data of this study were collated using Microsoft Excel, and statistical analysis was performed with SPSS 27.0 software. All experimental results were expressed as Mean ± SD (mean ± standard deviation). The t-test was adopted for comparative analysis, with a test level of $\alpha = 0.05$.

3. Results

3.1. Comparison of ADL Scores between the Two Groups of Disabled Elderly at Different Time Points

There was no statistically significant difference in the ADL scores between the two groups before the intervention ($P > 0.05$). At 3 and 6 months after the intervention, the ADL scores of the observation group were significantly higher than those of the control group, with statistically significant differences (all $P < 0.001$). See Table 2.

Table 2. Comparison of ADL scores between the two groups of disabled elderly during management ($\overline{x} \pm s$).

Time	control group (n = 20)	Observation group (n = 20)	t	P
Before intervention	38.2 ± 6.5	37.8 ± 7.1	0.189	>0.05
3 months	45.6 ± 7.2	62.3 ± 8.5	6.952	<0.001
6 months	49.8 ± 6.8	75.5 ± 7.6	11.205	<0.001

3.2. Comparison of Physical Rehabilitation Scores between the Two Groups of Disabled Elderly at Different Time Points

There was no statistically significant difference in physical rehabilitation scores between the two groups before intervention (P > 0.05). At 3 and 6 months after intervention, the physical rehabilitation scores in the observation group were significantly higher than those in the control group, with statistically significant differences (all P < 0.001). See Table 3.

Table 3. Comparison of physical rehabilitation scores between the two groups of disabled elderly during management ($\overline{x} \pm s$).

Time	control group (n = 20)	Observation group (n = 20)	t	P
Before intervention	35.5 ± 5.9	34.9 ± 6.4	0.302	>0.05
3 months	42.8 ± 6.7	59.6 ± 7.8	7.015	<0.001
6 months	47.2 ± 6.3	72.8 ± 8.2	10.863	<0.001

3.3. Comparison of Complication Incidence between the Two Groups of Disabled Elderly during Management

During the 6-month intervention, 2 cases of complications occurred in the observation group and 7 cases in the control group. The complication rate in the observation group was significantly lower than that in the control group, with a statistically significant difference (P < 0.05). See Table 4.

Table 4. Comparison of complication incidence between the two groups of disabled elderly during management (N).

dimension	complications	without complications	P
control group (20)	7	13	<0.05
Observation group (20)	1	19	——

4. Discussion

The core of care for disabled elderly people is to delay the decline of physical function, improve self-care ability in daily life through professional medical and rehabilitation interventions, and scientifically prevent and control complications, which is also the key to improving the quality of life of this population. The tradi-

tional home-based elderly care model in China has an obvious shortcoming of "emphasizing daily care while neglecting medical treatment and lacking rehabilitation". Most caregivers are family members without professional knowledge of medical nursing and rehabilitation training, making it difficult to meet the comprehensive care needs of disabled elderly people [5]. This not only easily leads to the gradual aggravation of disability in the elderly, but also causes various complications, such as pressure ulcers and pulmonary infections due to improper care, further deteriorating their physical condition. Meanwhile, family caregivers are also trapped in difficulties of high care difficulty and heavy physical and mental burden [6].

Supported by community medical resources, the integrated medical and nursing care model deeply integrates professional medical care, systematic rehabilitation training and basic elderly care, which accurately meets the physical rehabilitation and care needs of disabled elderly people. The results of this study show that at 3 and 6 months after intervention, the ADL scores and physical rehabilitation scores of the observation group were significantly higher than those of the control group, which fully confirms that the integrated medical and nursing care model can effectively improve the activities of daily living and physical function recovery of disabled elderly people. This conclusion is consistent with the research results of Wang [7], who found that the integrated medical and nursing care model can significantly improve the functional status of elderly people with chronic diseases. The reason for this effect is that the model has the following advantages: first, it provides one-on-one personalized rehabilitation training programs for disabled elderly people, and professional rehabilitation therapists provide regular on-site guidance to ensure the scientificity and standardization of rehabilitation training; second, by training caregivers to assist in daily rehabilitation exercises, the continuity of rehabilitation training is guaranteed (the observation group completed 5 - 6 times of rehabilitation training per week, while the control group had no systematic rehabilitation training); third, regular home visits by general practitioners and nurses enable timely monitoring of physical conditions and the control of underlying diseases, avoiding the interruption of the rehabilitation process due to poor disease control, and providing solid medical support for physical rehabilitation [8] [9].

In terms of complication prevention and control, the number of complications in the observation group was significantly lower than that in the control group, which is closely related to the professionalism and comprehensiveness of the integrated medical and nursing care model. Due to prolonged bed rest, limited physical activity, and weakened swallowing function, disabled elderly individuals are highly prone to complications such as pressure ulcers, pulmonary infections, and constipation. Most of these complications result from non-standard care practices and a lack of scientific preventive measures. Professional nurses in the integrated medical and nursing team regularly perform specialized procedures for the elderly, including pressure ulcer prevention, catheter care, and oral hygiene. Mean-

while, they systematically train caregivers to carry out routine nursing tasks such as regular repositioning, back percussion, and posture adjustment. Health managers formulate scientific dietary and defecation plans based on the elderly's physical condition and digestive function, addressing the risk factors of complications from multiple perspectives including dietary adjustment and daily care. This achieves effective prevention and control of common complications and significantly reduces their occurrence [10].

This study also has certain limitations. The sample size was only 40 cases, with a research period of 6 months and no long-term follow-up of the disabled elderly. In future research, the sample size can be expanded and the research period extended to further verify the long-term effect of the integrated medical and nursing care model on the rehabilitation of disabled elderly people. Meanwhile, this study only focused on home-dwelling disabled elderly individuals; future studies may explore the application effect of this model among disabled elderly people in institutional elderly care, so as to provide more comprehensive practical references for the care of disabled elderly in different elderly care settings. In addition, more refined and stratified integrated medical and nursing care plans can be developed in combination with factors such as disability level and type of underlying diseases, making the application of the model more targeted [11] [12].

5. Conclusions

The home-based integrated medical and nursing care model, which integrates professional medical services, systematic rehabilitation training, psychological support and complication prevention, can effectively improve the daily living self-care ability and physical function rehabilitation level of home-dwelling disabled elderly people, and significantly reduce the risk of common complications such as pressure ulcers and pulmonary infections. Compared with conventional home-based care, this model has more obvious advantages in meeting the multi-dimensional rehabilitation care needs of disabled elderly people.

The integrated medical and nursing care model is an effective way to optimize the elderly care system for disabled elderly people and is worthy of popularization and application in the community home-based elderly care scenario. In future practice, the integrated medical and nursing service system can be further improved, service processes optimized (such as simplifying the file update process, improving the efficiency of emergency response), and the training of professional talents in integrated medical and nursing care strengthened (such as cultivating compound talents who master both medical knowledge and elderly care skills). At the same time, it is necessary to combine the actual conditions of disabled elderly people (such as disability level, type of underlying diseases) to formulate more refined care and rehabilitation plans, so as to better serve the disabled elderly group, improve their quality of life, and reduce the elderly care burden on families and society.

Ethical Statement

This research was conducted by recruiting adult participants voluntarily. All of them agreed to have their real data measured and reported during the study. This research does not involve experimental medical treatment, invasive procedures, or drug intervention. Participants have been informed of the detailed process and purpose of this research, and have agreed to use their anonymized data for research and publication purposes. All records have deleted personal identification information, and participants are only referred to as "Participant 1" (P1) and "Participant 2" (P2) to maintain their confidentiality and privacy rights. Since this research involves non-invasive research operations and voluntary participation of the participants, the relevant procedures comply with the ethical standards followed by recognized low-risk observational studies.

Funding

Project support fund number: WG25062ZD.

Conflicts of Interest

The author declares no conflict of interest in this study.

References

[1] Zheng, X., Wang, Y. and Zhang, D. (2026) Spatial Spillovers and Nonlinear Effects of Urban Green Space on Population Aging in China. *Frontiers in Public Health*, **14**, Article ID: 1756430. https://doi.org/10.3389/fpubh.2026.1756430

[2] Du, K., Kou, Z., Liu, X. and Zhao, C. (2026) Population Aging and Robot Adoption: Evidence from China. *Journal of Population Economics*, **39**, Article No. 17. https://doi.org/10.1007/s00148-026-01163-1

[3] Zheng, J., Fan, S., Ma, J., Xu, Q., Zhao, L. and Gou, H. (2025) Application of Teaching Mode in TCM Characteristic Workshop Integrating Medical Treatment and Healthcare for Elderly Care Competency Development. *Journal of Clinical and Nursing Research*, **9**, 201-208. https://doi.org/10.26689/jcnr.v9i8.11816

[4] Lin, Y., Borromeo, A.R., Lin, M. and Bascos, M.J.G. (2024) The Concept Analysis of Medical and Old-Age Care Integration Model: A Transformative Framework for Delivering Healthcare to an Aging Population. *Discover Medicine*, **1**, Article No. 136. https://doi.org/10.1007/s44337-024-00137-0

[5] Zhao, X. and Zhao, J. (2026) Preferences and Heterogeneity in Care Service Needs among Disabled Older Adults in an Urban Setting. *Frontiers in Public Health*, **13**, Article ID: 1727372. https://doi.org/10.3389/fpubh.2025.1727372

[6] Porcel-Gálvez, A., Allande-Cussó, R. and Lima-Serrano, M. (2025) Transforming Caring for Dependent Older People: A New Approach for Integrated Socio-Healthcare. *Scandinavian Journal of Caring Sciences*, **39**, e70132. https://doi.org/10.1111/scs.70132

[7] Wang, H. (2025) The Impact of the Medical-Nursing Integration Model Management on the Rehabilitation of Stroke Patients. *Journal of Biosciences and Medicines*, **13**, 387-394. https://doi.org/10.4236/jbm.2025.138030

[8] Jia, J., Guo, Y., Tian, L., Li, W., Cao, X. and Shang, Y. (2025) Knowledge, Attitudes,

and Practices of Caregivers of Functionally Disabled Older Adults Regarding Nutritional Management. *Frontiers in Nutrition*, **12**, Article ID: 1660965. https://doi.org/10.3389/fnut.2025.1660965

[9] Qin, Y., Yao, X., Ma, Q., Salvador, J.T. and Pang, L. (2023) Needs and Influence Factors of Medical-Nursing-Pension of Disabled Elderly. *Medicine*, **102**, e35189. https://doi.org/10.1097/md.0000000000035189

[10] Zhao, Z., Chen, S., Sun, F., Cheng, W., Chen, C., Maitland, E., *et al.* (2025) Valuation of Informal Care for the Old-Aged with Disabilities in China—A Discrete Choice Experiment Approach. *Health Economics Review*, **15**, Article No. 45. https://doi.org/10.1186/s13561-025-00642-7

[11] Xiong, Z., Wu, X., Yang, J., Zou, J., Zhong, Q., Dai, Y., *et al.* (2025) Association and Interaction between Resilience and Psychological Distress in Disabled Elderly-Caregiver Dyads: An Actor-Partner Interdependence Model. *Geriatric Nursing*, **62**, 245-252. https://doi.org/10.1016/j.gerinurse.2025.02.014

[12] da Silva, J.L., Teston, E.F., de Alcantara Nogueira, L., *et al.* (2025) Stressors Experienced by Informal Caregivers: Implications for Home Care for Dependent Older Adults. *Revista Brasileira de Enfermagem*, **78**, e20250052.