

# Understanding Care Needs of Older Adults with Disabilities: A Scoping Review

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**Purpose:** To conduct a scoping review of care needs of older adults with disabilities at home and in the community and provide a comprehensive understanding of the essential needs of older adults with disabilities.

**Methods:** Eight databases were searched for relevant Chinese and English studies (supplemented by retrospective references of the included studies) from the establishment of the database to February 13, 2023. A thematic synthesis approach was used to qualitatively integrate the retrieved studies and identify need-related themes.

**Results:** A total of 6239 studies were retrieved, 2557 were de-weighted and excluded, and 56 were obtained after the double screening. Studies were from 11 countries. Thirty-three studies used a self-prepared survey instrument to investigate needs, and the other research tools commonly used were secondary databases and the Long-Term Care Needs of the Disabled Scale. A total of 78 specific need items were identified and summarized into three need themes based on the ICF framework: physical functioning needs, activity and participation needs, and environment needs.

**Conclusion:** The complex physical and mental health conditions faced by older adults with disabilities result in multifaceted, integrated needs that are difficult to identify and meet. Current research on older adults with disabilities is limited to common care. Future research should focus on the specificities of the older disabled population and understand the diverse care needs of people with disabilities in order to better target care services for this group. Policymakers should formulate more operational and strategic measures based on the actual needs of older adults with disabilities to expand the coverage of services and to pinpoint care services.

**Keywords:** disability, elderly, diverse care, scoping review

## Introduction

Population aging is a worldwide problem. The share of the global population aged 65 and over was 9.8% at the end of 2022, and is projected to grow to 11.8% by 2030 and 16.5% by 2050, ie, one-sixth of the world's population will be over 65 years old by 2050.<sup>1</sup> In China, according to the latest census in 2020, the proportion of Chinese people aged 65 years and above is close to 14%.<sup>2</sup> These data indicate that China has the largest elderly population in the world.

As aging continues to grow, aging with disabilities is emerging as another major challenge globally. The number of people with severe disabilities worldwide is estimated at 1.3 billion, or 16% of the global population.<sup>3</sup> These numbers emphasize the political importance and scale of disability. The Disability Data Report 2023 surveys people with disabilities in 15 countries around the world and shows that the prevalence of disability is much greater among older people than among younger people.<sup>4</sup> The second national sample survey of people with disabilities showed that compared with 1987, there were 23.65 million more older adults with disabilities in China, accounting for 75.5% of the total number of new people with disabilities nationwide.<sup>5</sup> According to the prediction,<sup>6</sup> more than 70% of the disabled population in China in 2050 will be aged 65 years and above.

At the international level, disability includes organ/system impairments, activity limitations and participation restrictions.<sup>7</sup> In China, the types of disabilities are categorized as physical disability, visual disability, speech disability, mental disability, intellectual disability, hearing disability, and activities of daily living (ADL) disability.

A study by Jing and Li showed that 90% of older adults with disabilities currently age at home.<sup>8</sup> The role of the home environment in maintaining and improving the daily functioning of older adults is now widely recognized in research and practice.<sup>9</sup> The rising incidence of disability among the elderly has led to a significant increase in the number of care-dependent older adults in the home and increased pressure on family caregivers. Meanwhile, physical dysfunction and chronic diseases reduce the quality of life of the disabled elderly population, leading to widespread demand for medical and nursing care services. However, current research indicates that the needs of older adults with disabilities are not being met. Oliver's scoping review explains that people with disabilities are at increased risk for serious illness and death due to COVID-19 as a result of healthcare accessibility, fragmentation of services, and inadequate preventive care. Akobirshoev et al's study reports that delays in care and unmet need for care for adults with disabilities in the US due to the COVID-19 pandemic have increased the risk of serious illness and death due to COVID-19 among people with disabilities, significantly threatening the health of people with disabilities. Results from the 2006 China National Study of People with Disabilities found that the percentage of unmet needs for assistance and support among people with disabilities was over 70%.<sup>10</sup> In China, only 35.6% of people with disabilities had received medical services and assistance, 12.5% had ever received assistance and support services, 8.5% had ever received rehabilitation and training services, and only 7.3% had ever received free assistive device support.<sup>10</sup>

Policymakers around the world are concerned about how to manage and care for this expanding vulnerable population. They need detailed information on the care needs of this older population in order to develop relevant care programs. The Convention on the Rights of Persons with Disabilities, published by the United Nations, has made it mandatory for persons with disabilities to participate in the development of relevant legislation and policies.<sup>11</sup> The individual wishes and needs of people with disabilities need to be considered.

In this scoping review, the International Classification of Functioning, Disability and Health (ICF) framework was used. The ICF framework, is an international classification standard for functioning and disability officially promulgated by the World Health Organization (WHO). The standard integrates the medical and social models and constructs a classification of functioning, disability and health-related functions on the individual and societal level dimensions of society in an international, standardized language.<sup>12</sup> It is activity-focused and emphasizes that the domain-specific functional status of individual human beings is the result of the interaction between health status and environmental factors.<sup>13</sup> Based on the ICF framework, the health status of the human body (healthy/abnormal/diseased) can be assessed or evaluated by categorizing body structure and function, activity and participation, functioning, and disability-related environments at the physical, individual, and social levels. In this study, we conducted a scoping review of care needs of older adults with disabilities, and the categorization criteria of the ICF framework helped us to organize and analyze the care needs situation in a more comprehensive manner during the review process. Moreover, the ICF framework is authoritative as one of the important theoretical frameworks in the field of disability.

In summary, the care needs of older adults with disabilities should be taken into account to ensure their quality of life, especially in terms of home and community. The demand for care services here refers to the care services that older adults with disabilities would like caregivers to be able to provide in or from their home environments, and encompasses a range of care service programs, with categories ranging from preventive health care efforts to palliative care, all of which are designed to improve the functional health status and quality of life of older adults with disabilities.

However, current studies on care needs of older adults with disabilities are characterized by small sample sizes and limited inclusion populations, so do not broadly represent the needs of this population. Therefore, we conducted a scoping review of the published studies on the care needs of older adults with disabilities at home and in the community. We aimed to provide a comprehensive understanding of the essential needs of older adults with disabilities in the process of rehabilitation and aging, and to provide a reference that could be used nationally to inform the development of a care system coordinating both home and community institutions and combining medical care and rehabilitation. To the best of our knowledge, this is the first scoping review of the care needs of older adults with disabilities.

## Methods

This scoping review used the preferred reporting items for systematic reviews and the PRISMA-SCR item list for scoping reviews, the framework and principles reported by Arksey and O'Malley,<sup>14</sup> and the enhanced framework provided by Levac as the methodological framework to conduct the scoping review in five steps,<sup>15</sup> including (1) identification of research questions, (2) identification of relevant studies, (3) study selection, (4) data calculation, and (5) collation, aggregation, and reporting of results. Our aim of this scoping review was to understand the content of care needed in the lives of older adults with disabilities, which would include all operations and items within the reach of caregivers.

### Identifying the Research Question

The purpose of the study in this review was to answer the question: what are the essential care needs of older adults with disabilities in the process of rehabilitation and aging. The study population included individuals with a physical disability, a visual disability, a speech disability, a mental disability, an intellectual disability, a hearing disability, or an activities of daily living (ADL) disability.

### Identifying Relevant Studies

At the beginning of the study, five members of the research team conducted a preliminary search on PubMed for the research topics “disability”, “elderly”, and “care needs”, and extracted detailed keywords based on extensive reading of the study. The research team also included several members who were able to extract detailed keywords for the subsequent search strategy. Research team members worked together to discuss and initially develop a search strategy. The research team also included a Professor of Nursing who provided additional comments on the initial search strategy developed by other research members to help refine the search strategy. The final keywords and search strategy were gated and completed by this nursing professor. The final search was conducted with a total of eight national and international databases, including CNKI, WanFang, VIP, and SinoMed in Chinese, and Cochrane, CINAHL, Web of Science, and PubMed in English. The final detailed search strategy for PubMed is presented in [Table 1](#), and the search strategies for the remaining databases are presented in [Supplementary Table 1](#).

### Study Selection

The retrieved studies were imported into Endnote 20 and screened and sorted in three stages: (i) in the first stage, duplicates between databases were removed by the Endnote software; (ii) in the second stage, two research team members independently performed the initial screening of studies based on titles and abstracts, respectively. They were screened based on the inclusion and exclusion criteria developed by the researcher below based on Participants, Concept, and Context, and the type of study. Moreover, the screening was based on the scoring criteria developed by the research team: studies that the research members thought met the inclusion criteria were scored as 1 point, while those that did not meet the inclusion criteria were scored as 0. The scores of the two study members were added together, and studies with a score of 2 were entered into the full-text screening phase. Studies with a score of 0 were removed. Studies with a score of 1 were first discussed by two study members, and those still in disagreement were sent to the third study member who made the final decision; and (iii) in the third stage, which was the full-text screening stage, the screening process was the same as in the second stage.

The inclusion and exclusion criteria for the studies referenced by the study members during the screening process were based on the principles of Participants, Concept, and Context, and the type of study. Therefore, the specific inclusion criteria for this study were: (i) study participants: older adults aged 60 years and older who self-reported having a physical disability, visual disability, speech disability, mental disability, intellectual disability, hearing disability, or ADL disability; (ii) concept: care services needed by older adults with disabilities; (iii) context: home and community; and (iv) study type: survey-type studies, mixed studies, case studies, observational studies. Exclusion criteria were reviews, research proposals, guidelines, opinions, policy documents, duplicate publications; studies not in Chinese or English, and studies for which the full text was not available.

**Table 1** Searching Strategy (Database-PubMed)

Set #	MeSH	Entry Terms	Searching Strategy	Number
1	Health Services Needs and Demand "Craving"[Mesh] "Help-Seeking Behavior"[Mesh]	Demand Care need Service need Social need Health need Nursing need unmet need health priorit Nursing priorit Care priorit requirement desire expectation support	"Care Demand"[Title/Abstract] OR "Health Demand"[Title/Abstract] OR "Nursing Demand"[Title/Abstract] OR "social Demand"[Title/Abstract] OR "Care need"[Title/Abstract] OR "Service need"[Title/Abstract] OR "Social need"[Title/Abstract] OR "Health need"[Title/Abstract] OR "Nursing need"[Title/Abstract] OR "unmet need"[Title/Abstract] OR "health priorit"[Title/Abstract] OR "Nursing priorit"[Title/Abstract] OR "Care priorit"[Title/Abstract] OR "requirement"[Title/Abstract] OR "Care support"[Title/Abstract] OR "Health support"[Title/Abstract] OR "Nursing support"[Title/Abstract] OR "social support"[Title/Abstract] OR "Care requirement"[Title/Abstract] OR "Health requirement"[Title/Abstract] OR "Nursing requirement"[Title/Abstract] OR "social requirement"[Title/Abstract] OR "Health Services Needs and Demand"[MeSH Terms] OR "Craving"[MeSH Terms] OR "Help-Seeking Behavior"[MeSH Terms]	426,388
2	"Aged"[Mesh] OR "Frail Elderly"[Mesh]	Elderly Old Older adults Centenarians Octogenarians Frail Elders	"elderly"[Title/Abstract] OR "old"[Title/Abstract] OR "Centenarians"[Title/Abstract] OR "Octogenarians"[Title/Abstract] OR "Frail Elders"[Title/Abstract] OR "Aged"[MeSH Terms] OR "Frail Elderly"[MeSH Terms] OR "Older adults"[Title/Abstract]	4,098,639

3	<p>“Persons with Mental Disabilities”[Mesh] “Disabled Persons”[Mesh]  “Persons With Hearing Impairments”[Mesh]  “Amputees”[Mesh]  “Visually Impaired Persons”[Mesh]  “Blindness”[Mesh]</p>	<p>“Disabled Person”  “Handicapped”  “People with Disabilities”  “People with Disability”  “Persons with Disabilities”  “Persons with Disability”  “Physically Handicapped”  “Physically Disabled”  “Physically Challenged”  “Intellectual Disability”  “Mentally Retarded”  “Hearing Impaired Persons”  “Hearing Impaired Person”  “Hearing Disabled Persons”  “Hearing Disabled Person”  “Deaf Persons”  “Deaf Person”  “Hard of Hearing Persons”  “Visually Impaired Person”  “Blind Persons”  “Blind Person”  “Deaf-Blind”</p>	<p>(“Disabled Person”[Title/Abstract] OR “Handicapped”[Title/Abstract] OR “People with Disabilities”[Title/Abstract] OR “People with Disability”[Title/Abstract] OR “Persons with Disabilities”[Title/Abstract] OR “Persons with Disability”[Title/Abstract] OR “Physically Handicapped”[Title/Abstract] OR “Physically Disabled”[Title/Abstract] OR “Physically Challenged”[Title/Abstract] OR “Intellectual Disability”[Title/Abstract] OR “Mentally Retarded”[Title/Abstract] OR “Hearing Impaired Persons”[Title/Abstract] OR “Hearing Impaired Person”[Title/Abstract] OR “Hearing Disabled”[Title/Abstract] OR “Deaf Persons”[Title/Abstract] OR “Deaf Person”[Title/Abstract] OR “Hard of Hearing Persons”[Title/Abstract] OR “Visually Impaired Person”[Title/Abstract] OR “Blind Persons”[Title/Abstract] OR “Blind Person”[Title/Abstract] OR “Deaf-Blind”[Title/Abstract]) OR (“Persons with Mental Disabilities”[Mesh] OR “Disabled Persons”[Mesh] OR “Persons With Hearing Impairments”[Mesh] OR “Amputees”[Mesh] OR “Visually Impaired Persons”[Mesh] OR “Blindness”[Mesh])</p>	89,257
4	#1 and #2 and #3			1077

## Charting the Data

A data form was developed for data extraction. Two study members performed repeated independent readings of eligible full-text studies and extracted relevant variables to complete the data form. Relevant variables entered included the author, year of publication, country, study type, participants (age, condition under investigation, characteristics, and number of cases), data source, research tools, and sampling method. All the final included studies were imported in full as a PDF into NVivo software for collation and annotation.

## Collating, Summarizing, and Reporting Results

This phase of reporting was conducted using two methods. The reporting of study characteristics and digitized results was conducted using descriptive analysis. The synthesis of qualitative themes was based on the thematic synthesis approach described by Thomas and Harden,<sup>16</sup> in which the full text of the acquired literature was coded freely line by line, and then the “free codes” were organized from a holistic perspective, looking for similarities and differences between the codes and categorizing them, and then the extracted data were systematically organized and summarized to construct “descriptive” themes, using the ICF theoretical framework. The ICF theoretical framework is used to systematically organize and summarize the extracted data, so that the themes obtained by free coding correspond to the codes and themes of the ICF theoretical framework, forming the final demand themes of this study. Finally, members of the study “analyzed” the current status and development of the themes based on the resulting descriptive themes. This study linked need themes of this study with the coding of ICF theory to complete the final collation of the data. ICF, a member of the WHO Family of International Classifications (WHO-FIC), is a theoretical framework and classification system based on the effects of disability on human structure and function, mobility, and participation. It takes dysfunction as the starting point and integrates major biological, psychological, social, and environmental elements. Previous studies have shown that ICF is a valuable tool for collecting and analyzing population health information from across the world and is a useful tool for collecting and analyzing data. Also, a review by Alford has shown the rationality and comprehensiveness of an inductive approach incorporating ICF in the analysis of information.<sup>17</sup> Therefore, the application of this theory fits with the present study.

## Result

### Results of Study Screening

A total of 6239 studies were retrieved by computer, 2557 were de-duplicated and excluded by Endnote software, and 2370 studies were screened out by assessing the relevance of titles and abstracts to the subject according to the nadir criteria. After we obtained the full text of the remaining studies and applied the inclusion criteria, 131 studies were excluded. Thus, the scoping review contained 56 studies.

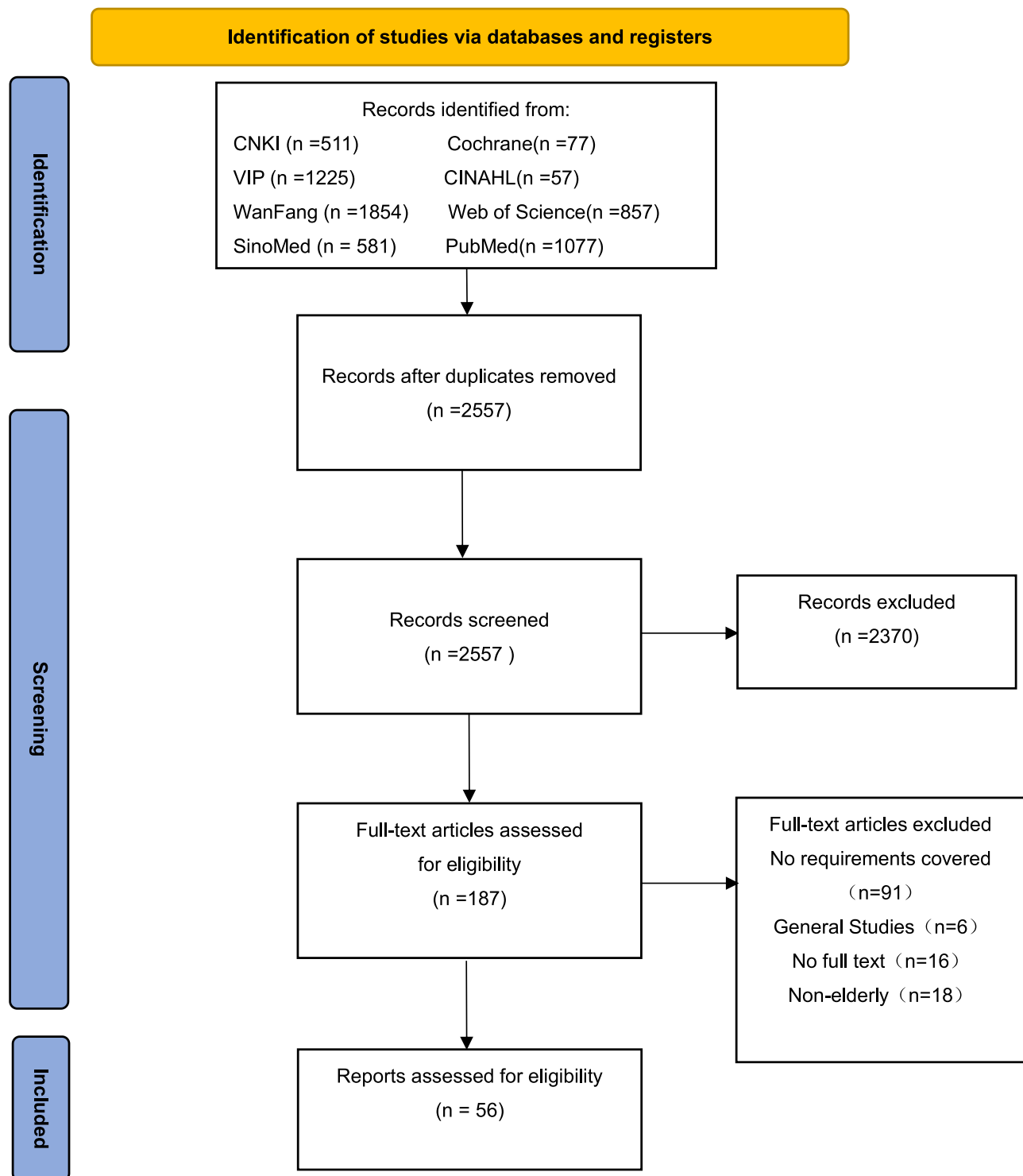
The search process is shown in [Figure 1](#). The basic characteristics of the included studies are shown in [Supplementary Table 2](#).

### Basic Characteristics of the Included Studies

The 56 studies were conducted in 11 countries, including Canada, Germany, Greece, Italy, Poland, the United Kingdom, Sweden, Malaysia, the United States, Japan, and China. One of the studies included data from six European countries: Germany, Greece, Italy, Poland, the UK, and Sweden. Of the studies, 42 were quantitative, 12 were qualitative, 1 was a video observation of 24 hours, and 1 was a mixed study. Study designs included four types, namely 45 cross-sectional studies, 11 retrospective studies, and 1 case study observation. [Figure 2](#) shows the number of studies published per year. The 56 studies were published between 1994 and 2022, with no more than three studies per year until 2015, and the growth rate increased after 2019, especially with a large increase in Chinese studies, and reached a peak of studies in 2020.

### Characteristics of Participants

Two studies explored the needs of older adults with disabilities through the Delphi expert consultation method, and included 15 experts and 10 experts. Forty-eight studies reported the sex of the participants, and in these 48 studies 14,042 participants were male and 18,392 were female. The participants of the 56 studies had a total of seven disability types: ADL disability, psychiatric disability, post-stroke disability, visual disability, speech disability, intellectual disability, and



**Figure 1** Results of the search strategy and the number of papers evaluated.

hearing disability. Multiple quantitative studies (22) used researcher-prepared questionnaires to investigate the care needs of older adults with disabilities, and all qualitative studies used researcher-prepared interview syllabi. In addition, the widely utilized research tools to investigate the needs of older adults with disabilities are secondary databases and the Long-term Care Needs of the Disabled Elderly Scale developed by Cao.<sup>18</sup> The rest of the detailed information can be found in [Table 2](#).

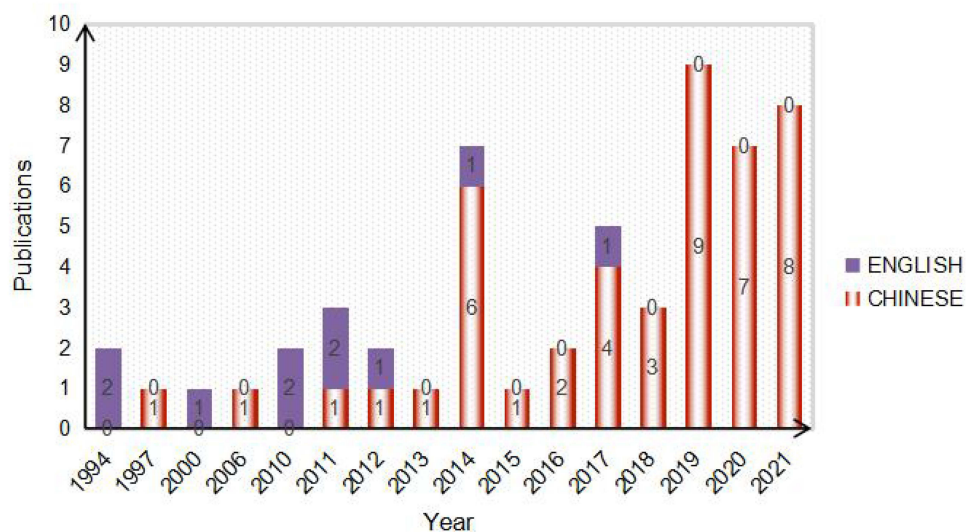


Figure 2 Number of studies published by year.

### Main Findings

Needs topics were established and categorized using and referring to the ICF Checklist Version 2.1a. The final needs topics were divided into three categories: body function needs, activity and participation needs, and environment needs.

Table 2 Characteristics of the Participants Included in the Studies

Characteristics		n	%
Sampling method	Not reported	24	0.429
	Convenient sampling	7	0.125
	Random sampling	5	0.089
	Purpose sampling	5	0.089
	Whole-group sampling	3	0.054
	Stratified random sampling	2	0.036
	Stratified sampling	2	0.036
	Stratified, multi-stage, whole-group probability proportional sampling	1	0.018
	Sampling by probability proportion	1	0.018
	Multi-stage stratified whole-group sampling	1	0.018
	Multi-stage whole-group sampling	1	0.018
	Multi-stage, split, equidistant and intentional combined sampling	1	0.018
	Multi-stage proportional random sampling	1	0.018
	Stratified multi-stage regional sampling method	1	0.018
Stratified proportional sampling method	1	0.018	
Condition under investigation	ADL disability	35	0.625
	All Disability	11	0.196
	Post-stroke disability (physical disability)	3	0.054
	Mental disability	2	0.036
	Sensation disorders (visual or hearing disabilities)	1	0.018
	Visual disability	1	0.018
	Intellectual disability	2	0.036
	Hearing disability	1	0.018

(Continued)



**Table 2** (Continued).

Characteristics	n	%
Research tools		
Self-prepared questionnaire	22	0.393
Secondary data	12	0.214
Self-prepared interview syllabi	10	0.179
Delphi Expert Consultation Questionnaire	3	0.054
Long-term care needs of the elderly with disabilities scale developed by Cao et al (2018)	3	0.054
Questionnaire on the needs of community support services for the disabled elderly	1	0.018
Questionnaire for specialized care needs of stroke patients at home	1	0.018
Barthel index (BI) and Functional Activities Questionnaire (FAQ)	1	0.018
Short musculoskeletal function assessments (SMAF)	1	0.018
Video recording	1	0.018
Self-prepared interview syllabi/self-developed questionnaire	1	0.018

**Abbreviation:** ADL, Activity of Daily Living.

## Body Function Needs

The subject of body function needs contained two main categories ([Table 3](#)): mental function needs and physical function needs. Mental function needs refer to the needs related to psychological problems and neurological functions of the elderly, and physical function needs refer to the needs related to the functions of the major systems of the body's internal organs.

**Table 3** Summary of Findings on the Theme of Body Function Needs Based on the ICF Framework

Body Function Needs	ICF Code	Needs	Reference
Mental function needs	b134 Sleep	Sleep guidance	[19–26]
	b152 Emotional functions	Mental health guidance	[20–23,26–45]
	b156 Perceptual functions	Safety guidance for home environment	[19,21,27,28,34,46–48]
Physical function needs	b230 Hearing	Maintenance and care of hearing aids	[34]
	b235 Vestibular (incl. balance functions)	Prevention and management of falls	[19,22,37]
	b280 Pain	Pain management	[19,20,22,28,34]
	b410 Heart	CPR skills guidance	[22]
		Pulse measurement	[22,23,27,28,34]
	b420 Blood pressure	Blood pressure measurement	[22,23,27,28,34,35,37,46,49]
	b440 Respiration (breathing)	Pulmonary sputum evacuation	[20,22,27,34,50]
		Tracheotomy care	[22,27,28]
		Pneumonic pneumonia preventive care	[28]
		Respiratory function exercise instruction	[22]
		Oxygen therapy	[22,27,28,34,46,51]
		Nebulized inhalation	[22,27,28,34]
	b515 Digestive	Gastric tube care, nasal feeding	[26–28,43,52]
		Rationalize meals	[19,22,23,26,27,29,33,34,36,53]
		Nutritional status evaluation and support	[19,21–23,25–28,46,50]
	b525 Defecation	Stool incontinence care	[21,28,52]
		Constipation care (enema)	[21,22,50]
	b555 Endocrine glands (hormonal changes)	Blood glucose measurement	[27,28,34,35,37,46,49]
		Insulin injections	[27]
	b620 Urination functions	Urinary catheter care	[22,27,28,50,52,54]
		Bladder irrigation	[22,51]
		Perineal irrigation	[22,50]
		Urine care	[20,21,34,35]
	b7 Neuromusculoskeletal and movement-related functions	Function training	[19,20,22,23,28,46,48,50]
		Exercise instruction	[21–23,25]

(Continued)

**Table 3** (Continued).

Body Function Needs	ICF Code	Needs	Reference
Other body functions	b8 Functions of the skin and related structures  Any other body functions	Preventing and managing stress injuries	[19–23,26,28,34,35,50–52]
		Bedside instruction	[36,48]
		Ostomy care	[22,23,28,34]
		Foot care	[25]
		Medication change	[27,28,34]
		Wound care	[22–24,28,46,50]
		Care of the inserted line	[22,23,27,28,34,46,48]
		Intravenous infusion	[22,27,34,43,52]
		Intramuscular injection	[22,28,34,43,52]
		Subcutaneous injection	[22,28,34,43]
		Intravenous blood collection	[27,28]
		Traditional Chinese medicine care	[28,36]
		Acupuncture and Tuina	[27]
		Compressing and cupping	[27]

**Note:** Disability and Health framework.

**Abbreviations:** CPR, Cardiac Pulmonary Resuscitation; ICF, WHO International Classification of Functioning.

### Mental Function Needs

The included studies reported 3 needs of mental functions involved in the ICF framework, namely sleep function needs, emotional function needs and perceptual function needs. According to the studies, people with disabilities are prone to negative emotions such as anxiety and depression because of physical inconvenience and impairment, and because of the awareness of the great burden they impose on their families. Older adults with disabilities may experience psychological problems such as anhedonia and self-loathing, making mental health guidance the most important need category among the mental function needs of older adults with disabilities.<sup>19–23,26–45</sup> In addition, eight studies reported the need for sleep guidance in older adults with disabilities.<sup>19–26</sup> For example, a qualitative study by Turcotte of 33 older adults with disabilities indicated that older adults often have difficulty sleeping owing to worry.<sup>25</sup>

### Physical Function Needs

The included studies reported 12 needs of physical functions involved in the ICF framework,<sup>19–29,33–37,41,43,46–53,55</sup> namely, auditory function needs, vestibular and balance function needs, pain function needs, cardiac function needs, blood pressure function needs, respiratory function needs, digestive function needs, defecation function needs, endocrine gland function needs, urinary function needs, neuromusculoskeletal and motor-related function needs, and function needs of the skin and related structures. In addition, some studies have reported needs not explicitly addressed in the ICF framework.<sup>22,23,27,28,34,36,43,46,48,52</sup> In these studies, the care of placed lines and nursing operations involving injections (intravenous infusion, intramuscular injection, subcutaneous injection, and intravenous blood collection) were among the higher needs of older adults with disabilities. Three Chinese trials specifically mentioned care programs in Chinese specialty medicine,<sup>27,28,36</sup> including acupuncture and tuina, and compressing and cupping. A detailed breakdown is shown in Table 3.

### Activity and Participation Requirements

Activity and participation are an overview of the abilities and activity performance of older adults. Activity is the performance of a task or action by an individual, and it represents the individual aspect of functioning. Participation is engagement in the living environment, which represents the social aspect of functioning. This theme encompasses the care needs of older adults that arise during daily activities and social activities, including knowledge acquisition and application needs, travel and socialization needs, and home care needs. A detailed breakdown is shown in Table 4.

**Table 4** Summary of Findings on the Theme of Activity and Participation Needs Based on the ICF Framework

Activity and Participation Needs	ICF Code	Needs	Reference
Knowledge acquisition and application needs	d175 Solving problems	Disease prevention and treatment knowledge guidance	[33,34,36,37,39,43,53,56,57]
		Nursing knowledge and skills guidance	[21,27,29,31,32,47,51,58]
		Home rehabilitation training guidance	[19,21,23,26,27,29,33–35,37,39–41,43,46–48,50,53,55–57,59,60]
		Safety and security guidance	[23,26,34,49]
		Guidance on prevention of infectious diseases	[19,36,46]
		Guidance on the prevention and management of chronic diseases	[19,22,23,26,31,32,36,46]
		Disability prevention and complication-related nursing guidance	[19,46]
Traveling and social needs	d350 Conversation	Assist with phone calls	[25,38,46,50,54,61,62]
		Participate in social, cultural, and recreational activities	[19–23,29,34,35,40,53,60,63,64]
Home care needs	d920 Recreation and leisure	Chatting	[23,25,26,35,38,41,42,53,59,65,66]
	d4 Mobility	Mobility, travel	[22–25,29,31,34–36,38,46,50,53,54,61–64,66–70]
	d510 Washing oneself (bathing, drying, washing hands, etc)	Assisting in bathing	[22–25,28,34–36,39,46,50,52–54,59,61–64,66,67,69,70]
		d520 Caring for body parts (brushing teeth, shaving, grooming, etc.)	Assist in washing up
	d530 Toileting	Oral care	[22,28,34,50]
		Assist in combing hair	[35,38,46,50,52,59,61,62,64,69]
	d540 Dressing	Assist in going to the toilet	[19,22–24,27,36,38,46,51,53,54,59,62,64,69,70]
		Assist in dressing and undressing	[22,23,25,38,46,50,53,61,62,70]
	d550 Eating	Assistance with meals	[22–25,35,38,39,46,51,53,61,62,64,69,70]
		d570 Looking after one's health	Medication
	Physical cooling		[27]
	d620 Acquisition of goods and services (shopping, etc.)	Assistance with shopping	[31,35,38,46,61,62,64,66,67]
		d630 Preparation of meals (cooking, etc.)	Assistance with cooking
d640 Doing housework (cleaning house, washing dishes, laundry, ironing, etc.)	Assistance with household chores		[22,23,25,31,35,39,46,51,59,61,62,64,66–68]
	Assistance with laundry	[22,23,25,35,38,46,53,59,61,62,71]	

**Note:** Disability and Health framework.

**Abbreviation:** ICF, WHO International Classification of Functioning.

## Knowledge Acquisition and Application Needs

The included studies reported 1 need of knowledge acquisition and application involved in the ICF framework, namely solving problems. Older adults under this theme tend to be proactive in their knowledge to solve problems, and the required knowledge takes the form of instruction in disease prevention and treatment and lectures on these topics.<sup>19,21–23,26–29,31–37,39–41,43,45–51,53,55–60</sup> The required knowledge encompasses basic nursing skills, rehabilitation training, safety, and disease prevention. For example, Xu reported deviations in the health status of 316 disabled elderly individuals, some of whom had physical dysfunction and partial limitation of somatic activities.<sup>34</sup> These individuals were, therefore, eager to learn disease-related knowledge and methods of rehabilitation training. Also, according to Shen,<sup>46</sup> as the duration of disability and disease increases and the effects become more severe, the elderly individuals themselves become more aware of disease prevention and they take the initiative to understand and learn about various preventive measures. Several studies reported the problem of in-home safety hazards and the indispensable guidance provided by in-home visiting services to teach disabled elderly individuals about in-home safety precautions.<sup>21,23,26–28,34,46–49</sup> The older adults with disabilities who lacked professional guidance also reported not knowing how to effectively perform rehabilitation exercises, needing to know how to address discomfort

symptoms such as limb weakness and dizziness during rehabilitation exercises, and how to assess and verify the effectiveness of rehabilitation.<sup>19,21,23,26,27,29,33–35,37,39–41,43,46–48,50,53,55–57,59,60</sup>

### Traveling and Social Needs

The included studies reported 3 needs of raveling and social involved in the ICF framework, namely conversation, recreation and leisure, and mobility. Many of the studies revealed that older adults with disabilities were unable to travel independently. The term “travel” refers to outings and trips from the home environment for older adults with disabilities. This is true because older adults with disabilities often have varying degrees of physical limitations, but they still have a need to travel, and this “travel” is limited to small trips, which for many older adults with disabilities still require the assistance of a caregiver in order to get from the home environment to such small trips. The results of this study showed that, older adults reported they still have normal social needs to participate in social activities such as meeting friends, eating out, and attending parties; however, their physical limitations create travel restrictions and require others to assist them from home.<sup>19–23,25,29,34,35,38,40,46,53,59–62,64</sup> Furthermore, older adults with disabilities have mobility needs such as attending medical appointments and other daily activities; however, these older adults requires assistance from carers or health professionals to meet these travel needs.<sup>22–25,29,31,34–36,38,46,50,53,54,61–69</sup> A study by Wang also reported problems occurring for disabled older adults because of memory loss,<sup>21</sup> such as getting lost and wandering, which suggests that unaccompanied travel is a potential threat for older adults with disabilities.

### Home Care Needs

The included studies reported 9 needs of raveling and social involved in the ICF framework, namely washing oneself, caring for body parts, toileting, dressing, eating, looking after one’ s health, acquisition of goods and services, and preparation of meals, doing housework. In-home care is the care services needed by older adults with disabilities within the confines of the home, and it usually involves non-professional care. Thirty studies reported inconveniences for older adults in terms of hygiene and cleanliness, including washing themselves (bathing, drying, hand washing, etc.), washing body parts (brushing teeth, shaving, grooming, etc.), and doing household chores (cleaning the house, washing dishes, washing clothes, ironing, etc.).<sup>19,22–25,27,28,31,34–36,38,39,46,50–54,59,61–64,66–71</sup> Nine studies mentioned the difficulties older people had in taking care of their health in terms of disability co-morbidities.<sup>23,25–27,34,35,46,52,61</sup> Typical problems included taking medication and physically cooling themselves in the case of fever. Moreover, nine studies reported the need of older people to access goods and services,<sup>31,35,38,46,61,62,64,66,67</sup> such as shopping, in their daily life. Although the current development of the Internet has increased accessibility to goods, older adults’ limited learning functions mean that they often rely on others when shopping for supplies or accessing services. Helping seniors access goods and services while ensuring their safety and convenience is exactly what they desperately need. In addition, many severely disabled individuals and older adults with disabilities show poor health status and difficulties even in routine tasks such as dressing for meals and preparing meals.<sup>22–25,31,35,36,38–41,46,50–53,59,61,62,64,66,67,69–71</sup>

### Environment Needs

The environment is a variety of natural factors throughout life that can directly or indirectly affect a person’s life and development, and it can be divided into social, natural, and human environments. In our present study, the need for the environment includes everything from the need for daily objects for the elderly with disabilities, the need for relatives and health personnel, and the need for health service provision. A detailed breakdown is shown in [Table 5](#).

### Needs for Daily Objects

The included studies reported 1 need for daily objects involved in the ICF framework, namely personal use in daily living. Assistive devices are the basic facilities and necessary means to achieve full rehabilitation of disabled people, and their deployment can greatly improve the function of these individuals. Most elderly disabled people are disabled because of aging and full rehabilitation is very unlikely; therefore, elderly disabled people need to compensate for their diminished functions by assistive devices. Three studies reported the needs of older adults in terms of the use of specialist care appliances,<sup>22,23,28</sup> the selection of living aids, and application guidance. In addition, dental health problems

**Table 5** Summary of Findings on the Theme of Environment Needs Based on the ICF Framework

Environment Needs	ICF Code	Needs	Reference
Needs for daily objects	e115 For personal use in daily living	Guidance on the use of specialist care equipment Selection and application of life aids Maintenance and care of dentures	[28] [19,22,23,28,46,54,55] [34]
Needs for relatives and health personnel	e310 Immediate family	Training for people with disabilities and their relatives and friends	[9,41]
	e355 Health professionals	Accompanying treatment Supervision of medical compliance Medication safety management	[31,53,66] [29] [9,19,21–23,27,28,36,37,48,51–53]
Needs for health service provision	e450 Individual attitudes of health professionals	Caregiver attitude	[20]
	e580 Health services, systems, and policies	Assistance in seeking medical treatment	[22,40,43,46,47,66,72]
		Emergency care Regular medical checkups	[22,23,29,33,34,46] [19,22,30,32,34,43,47,49,53,59]

**Note:** Disability and Health framework.

**Abbreviation:** ICF, WHO International Classification of Functioning.

related to age or bed rest should not be neglected, and one study reported on the need for maintenance and care of dentures in older adults.<sup>34</sup>

### Needs for Relatives and Health Personnel

The included studies reported 3 needs for relatives and health personnel involved in the ICF framework, namely immediate family needs, health professionals needs, and individual attitudes of health professional needs. Current research shows that older adults with disabilities prefer to age at home, with relatives and family members as the main ideal targets for elderly care followed by reliance on home care by carers and nurses.<sup>9,41</sup> Family care largely determines the quality of life of older adults, while another part is determined by their own management; however, many older adults report that they often miss medications and have low compliance with treatment.<sup>29</sup> Families of old adults with disabilities are very concerned about whether these individuals comply with medical advice, take treatment correctly, and how to provide adequate care needs; therefore, the training of relatives and friends of old adults is a urgent current need.<sup>41</sup> Furthermore, the frail nature of older adults determines situations in which they can rarely participate independently in their treatment, and older adults with disabilities in three studies expressed a need for companionship in treatment.<sup>31,53,66</sup> Some elderly individuals with disabilities who have experienced being cared for by health workers expressed dissatisfaction with their attitude, preferring carers to speak in whispers, avoid cold and frowning expressions, and be around at all times as a smiling and well-spoken presence.<sup>20</sup> Thirteen studies described many medication safety problems,<sup>9,19,21–23,27,28,36,37,48,51–53</sup> such as taking the wrong medication, taking medication at the wrong time, inappropriate doses, and lack of knowledge about the indications and possible side effects of the medication. Therefore, there is a need for professionals to guide and safeguard older adults' medication practices.

### Needs for Health Service Provision

The included studies reported 1 need for health service provision involved in the ICF framework, namely health services, systems, and policies. More importantly, older adults with disabilities expressed a high level of interest in medical-related care programs. Access to medical care is complex for older adults, and seven studies mentioned the desire of older adults to be assisted in accessing medical care.<sup>22,40,43,46,47,66,72</sup> These individuals need assistance in getting to the hospital because of physical limitations. Furthermore, some countries have inadequate medical care and referral systems, such that older people experience knowledge barriers and require guidance on the various processes of accessing medical care. Changes in physical fitness occur with age, and older adults in ten studies wanted to be informed about their health,<sup>19,22,23,30,34,43,47,49,53,59</sup> expressing the need for regular medical checkups and the desire for regular home assessments and follow-up visits by nurses. Older adults with chronic diseases expressed concerns about the sudden

onset of illness, and older adults with disabilities also expressed concerns about falls, so management of illness episodes at home and emergency care was identified as an important need.<sup>22,23,29,33,34,46,63</sup>

## Discussion

### Main Findings

#### Promote Personalized, Targeted Care

Older adults with disabilities are individuals with unique experiences, needs, and preferences.<sup>73</sup> Various studies have demonstrated the importance of assessing the care needs of older adults with disabilities,<sup>47,74</sup> and our findings demonstrate the diversity of care needs. Therefore, cause-specific and symptom-specific measures are the mainstay and key in the care of older adults with disabilities. There is a need to implement individualized care for old adults with disabilities, and our research provides a basis for the direction of care provision and the direction of policy targeting.

The provision of care services in the future should be focused on highlighting the differences in the somatic functions and care needs of older adults, and a needs assessment form for care service programs for older adults with disabilities can be formulated based on the elements of care needs extracted from this study, and personalized care programs and targeted care services can be recommended and provided accordingly. Policymakers should formulate more operational and strategic measures based on the actual needs of older adults with disabilities to expand the coverage of services and to pinpoint care services; at the same time, information construction should be strengthened, and market vitality should be fully stimulated by means of government purchasing, service outsourcing, and pilot demonstrations, so as to mobilize resources from all of society to participate in personalized care for older adults with disabilities.

#### Major Needs

The complex physical and mental health conditions faced by older adults with disabilities result in multifaceted and comprehensive needs that are difficult to identify and meet. This scoping review identified the care needs of older adults with disabilities. A total of 78 specific need items were identified and combined into three need themes based on the ICF framework: body function needs, activity and participation needs, and environment needs.

#### Body Function Needs

This study identified the importance of body function needs in the care of older adults with disabilities. People with disabilities seem to be more susceptible to a variety of diseases, especially chronic diseases, which make physical functioning worse in old age,<sup>75</sup> including weakening of vestibular, respiratory, digestive, and sensory functions.<sup>19–29,33–37,41,43,46,50–53,55</sup> Approximately 60,000 community-dwelling older adults in the United States have been found to be disabled in previous studies, and these older adults are at a higher risk of hospitalization.<sup>76</sup> Fuchs analyzed a national randomized stratified sample of Israeli Jews and showed that disability-related co-morbidities included diabetes, osteoporosis, stroke, anemia, hip fracture, heart disease, urinary or renal disease, respiratory disease, and Parkinson's disease.<sup>77</sup> This could explain the high need reported in our study for various care operations in older adults with disabilities, such as pulse measurement, nasal feeding, suctioning, and enemas.

#### Activity and Participation Needs

Older adults with disabilities are vulnerable and require support in their daily lives, drawing on the assistance of others to maintain normal living behaviors.<sup>78</sup> This care need is reflected in reports showing that they require assistance with home care such as brushing their teeth, washing their faces, and performing household tasks.<sup>19,22–25,27,28,31,34–36,38,39,46,50–54,59,61–64,66–71</sup> However, current studies show that nearly 50% of patients with disabilities have financial problems and little or no caregiving support.<sup>79</sup> Therefore, caregivers must be trained to provide better quality care to people with disabilities. Furthermore, educated people with disabilities appear to be better able to cope or cope better with their disabilities.<sup>80</sup> This is consistent with our findings, which revealed that the activity and participation needs of older adults with disabilities included knowledge acquisition and application needs. This education makes older adults with disabilities more aware of their physical status and more confident in coping with their disability.<sup>81</sup>

Older adults with disabilities need assistance in getting around and socializing in their daily lives. Many older adults with disabilities are unable to go out alone and need to be accompanied because of physical, visual, and hearing disabilities; individuals with mental or intellectual disabilities might also require assistance to prevent them wandering or

becoming lost.<sup>82,83</sup> Outside the home, discrimination may occur that can cause stress and negative emotions that can have harmful psychological and physical effects and make socialization problematic.<sup>84</sup> Although disability is a protected characteristic of equality legislation, disability discrimination is widespread. In a 2015 demographic survey of 71,826 adults from 27 European countries, 50% of participants reported that disability discrimination was widespread.<sup>85</sup> Therefore, the community should increase its attention on older adults living at home with disabilities. This could consist of a regular series of activities to enrich the social opportunities of these vulnerable individuals and other activities to enhance physical and mental wellbeing, such as health education, Orientation and Mobility training, peer support, and recreational activities of interest.

### Environment Needs

At the environment level, this study highlights the needs of older adults in terms of daily use items. This need is specific because people with disabilities often require assistive devices for mobility. Assistive devices are an important part of achieving functional independence and improving quality of life. Previous studies have shown that the availability, accessibility, and affordability of appropriate devices in public health centers will improve the rehabilitation of people with disabilities.<sup>86</sup>

Older adults with disabilities also reported a need for relatives and health personnel. A study by Dodevska and Vassos showed that the role of direct caregivers is critical to the successful achievement of a personally valued lifestyle for people with disabilities.<sup>87</sup> Lack of training and resources for caregivers and lack of attitudinal understanding or sensitivity to disability issues may lead to an inadequate or poor quality of care. Therefore, the qualities and skills that caregivers need to possess should be emphasized in disability care to improve the quality of care.

In addition, our study emphasizes the needs of older adults with disabilities in terms of health services. Older adults with disabilities can experience serious health problems and unexpected emergencies, such as falls, which stresses the need for community caregivers to provide home visits, medical checkups, and emergency care. Therefore, community health services should be given high priority, and efforts should be made to cope with minor illnesses in the community, major illnesses in the hospital, and rehabilitation back to the community so that quality medical resources can be sunk into the community. This will enable elderly individuals with disabilities to access medical resources more easily.<sup>88</sup>

### Future Research Trends and Implications: Care Models are in Need of Innovation and Human Resource Allocation Needs to Be Improved

With the development of the social economy and the gradual realization of the goal of building a moderately prosperous society, the demand of the general public for health and health services is ever increasing. At the same time, the progress of science and technology and the continuous reform of medical and health services have put forward higher requirements on the quantity, quality, and structure of nursing. At present, there is a shortage of talent in the care industry in the market, especially professional caregivers with knowledge of disability care. The shortage of medical resources also limits the care available to elderly individuals with disabilities to personal care. However, our research shows that in addition to medical and health needs, older adults with disabilities often have nutritional needs, safety needs, and social participation needs. From the point of view of the service capacity, manpower and service level of the existing nursing institutions, they are far from being able to meet all the needs of older adults with disabilities. Therefore, how to maximize the satisfaction of the needs of older persons with disabilities in the absence of nursing manpower is a social problem that needs to be solved urgently, and it is also an important direction for the innovation of the current nursing model.

Research has shown that because the “symptoms” and needs of older people with disabilities are highly individualized, targeted, planned and precisely implemented home care services are more reasonable for older people with physical disabilities.<sup>89</sup> At the same time, in order to minimize the waste of nursing and medical resources, it has been argued that the precise implementation of care with known goals is an efficient and effective solution to avoid the waste of resources.<sup>90</sup> Therefore, there is a current need to identify the care needs of older adults with different disabilities and to achieve precise implementation in order to achieve the goal of optimizing care delivery. Our present study reveals the care services needed by the disabled elderly population. The results of this study will help caregivers to develop assessment and survey tools for pre-screening and evaluating what clients perceive to be their priority care items,

which will help caregivers to more accurately select the optimal care items for older adults with disabilities when there is a lack of human resources in the community and when clients' needs are not being met at the same time. This will help the caregivers to choose the best care programs for older adults with disabilities more accurately when there is a lack of community health management and human resources, and when it is difficult to meet the multiple needs of the caregivers at the same time, so that they can provide better home care services for older adults with disabilities.

Moreover, in the current study, the integrated care model being implemented in various countries appears to help address our dilemma in the care of older adults with disabilities. Integrated care usually involves a chain of services provided in the form of multidisciplinary collaboration. Targeted training and development of talent within the team, each with its own role, can largely address the multiple needs of older adults with disabilities at different times.<sup>91</sup> The interfusion of management and care helps to counteract the homogenization of care provision and to establish the interprofessional collaboration needed to improve the quality of care.<sup>92</sup> The well-established team is normally able to serve multiple clients simultaneously within a single institution. This maximizes human resources utilization while serving the diverse needs of the elderly with disabilities. The results of this study inform the direction of training for caregivers in such care teams. Future researchers may consider assigning specific roles to members of the care team based on the specific care service programs needed by older adults with disabilities obtained in this study, to achieve the optimal allocation of human resources by realizing the division of roles to individuals on the basis of teamwork together.

## Limitations

The study had several limitations. First, the quality of the included studies was mixed. In terms of the type of study, only 12 studies used a qualitative approach, one study was a mixed study, and most studies (75%) used surveys. However, the questionnaires used in these survey-based studies were often homemade, with little reporting on the process and rationality of questionnaire development. It is reasonable to question whether these studies are a comprehensive representation of the views of older adults with disabilities. Second, this study did not include gray literature as well as literature in languages other than English and Chinese, which may have limited the number of studies available. However, the search strategy for this study was thorough.

## Conclusion

From a total of 56 studies, 78 specific care needs of older adults with disabilities were identified. The combined findings revealed that older adults with disabilities have diverse needs in body function, activity and participation, and environment. The complex physical and mental health conditions faced by older adults with disabilities result in multifaceted and integrated needs that are difficult to identify and meet. Identifying older adults with disabilities who have unmet health needs and appropriately targeting their care in the context of high nursing human resource loads is a key challenge for care providers globally. Future research should focus on the specificities of the older disabled population and understand the diverse care needs of people with disabilities in order to better target care services for this group. Policymakers should formulate more operational and strategic measures based on the actual needs of older adults with disabilities to expand the coverage of services and to pinpoint care services.

## Ethics Declarations

This review study does not require ethics clearance, as we are taking only secondary data from the available literature.

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## Author Contributions

All authors made a significant contribution to the work reported, whether that is in the conception, study design, execution, acquisition of data, analysis and interpretation, or in all these areas; took part in drafting, revising or critically



reviewing the article; gave final approval of the version to be published; have agreed on the journal to which the article has been submitted; and agree to be accountable for all aspects of the work.

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