Dovepress
Taylor & Francis Group

R E V I E W

Community Integration of Disability: A Bibliometric and Knowledge-Map Analysis

Shuaiyou Wang [ID][1], Dingding Li [ID][1], Chenjun Liu[1], Xueting Sun [ID][1], Yage Shi [ID][1], Hongru Wang[2], Huimin Zhang [ID][3]

[1]School of Nursing, Xinxiang Medical University, Xinxiang, Henan, People's Republic of China; [2]Nursing of Department, Xinxiang First People's Hospital, Xinxiang, Henan, People's Republic of China; [3]School of Nursing, Ningxia Medical University, Yinchuan, People's Republic of China

Correspondence: Huimin Zhang, School of Nursing, Ningxia Medical University, No.1160 Shengli South Street, Xingqing District, Yinchuan, 750001, People's Republic of China, Email 35290915@qq.com

Background: Community integration (CI) is the ultimate goal of rehabilitation for individuals with disabilities. It plays a significant role in restoring their social functioning and facilitating their reintegration into community and family life. However, no studies have utilized bibliometric methods to explore community integration.

Objective: To conduct a review about community integration of disabilities and to clarify the knowledge, hotspots, and trends through the bibliometric method.

Methods: Studies on community integration from 1990 to 2023 were retrieved from the Web of Science Core Collection (WOSCC). CiteSpace 6.2.R4 and Microsoft Office Excel 2019 were applied. The CiteSpace node types involved in this study include keyword, reference, cited author, cited Journal, and the dual-map overlay of journals. CiteSpace presented the keyword cluster map, keywords timeline view map, keywords bursts map, and overlay map of journals. Microsoft Office Excel 2019 was used to present the trend of annual publications and draw up related tables and figures.

Results: A total of 2239 hits were included. The number of publications related to community integration is increasing gradually. The three most frequent keywords is Brain Injury (571, 13%), Individuals (488, 11%), Quality of Life (434, 10%). Keyword cluster map and timeline map with eight clusters were obtained, and the current strongest citation burst keywords are social participation, substance use, experiences, interventions, and Afghanistan. Willer is the author with the most citations. McColl has the largest centrality in the first ten cited authors. The most cited reference is published by the World Health Organization (WHO). *Archives of Physical Medicine and Rehabilitation* is the journal with the highest co-citation frequency. The overlay map of journals presented four distinct paths: the journals in "psychology education, health" and "neurology, sports, ophthalmology" often cite journals in "health, nursing, medicine" and "psychology, education, social".

Conclusion: Community integration for individuals with disabilities is gradually becoming a hot topic. Research on community integration related to traumatic brain injury (TBI), stroke, children, and spinal cord injuries is current focus of community integration. Future research should explore the experiences and feelings of different groups of disabilities regarding community integration and develop more effective interventions for their community integration. Community integration is complex, and future research on community integration for individuals with disabilities needs to be explored more specifically.

Keywords: community integration, community reintegration, disability, rehabilitation, quality of life, CiteSpace, bibliometric

Introduction

Disability is a public health issue of global concern and a priority for development, as defined by World Health Organization(WHO): Individuals with disabilities are not only those who are born with an impairment for any reason but also those who suffer from a range of functional impairments due to illness, injury or natural aging.[1] According to WHO, there are currently 1.3 billion people with severe disabilities worldwide, which represents 16% of the world's population, or 1 in 6 people.[2,3]

Individuals with disabilities are part of the human condition. Persons with disabilities should be afforded equal rights to engage in all activities, just as individuals without disabilities. However, individuals with disabilities often encounter social barriers, including limited access to healthcare resources, as well as stigmatization, discrimination, and violations of their rights, which is particularly prevalent among those living in low- and middle-income countries, where an estimated 80% of people with disabilities reside.[4]

The community serves as the primary living environment for residents, including individuals with disabilities. Patients who have experienced conditions such as stroke, traumatic brain injury, and spinal cord injury may initially receive specialized treatment in hospitals following their illness. After completing hospital treatment, these survivors eventually returned to their community for a prolonged rehabilitation exercise, and became members of their community and home again. However, these survivors are dissatisfied with their reintegration into the community as "individuals with disabilities".[5,6] For example, concerning community medical resources,[7] psychological factors,[8] engagement in community activities,[9] and the community environment and facilities, which hindered individuals with disabilities from successfully reintegrating into their communities and family life as ordinary members.[10]

Community integration(CI) is a worldwide trend for individuals with disabilities. The Convention on the Rights of Persons with Disabilities(CRPD) mandated state parties to facilitate the equal right of individuals with disabilities to reside in the community, make choices together with others, and ensure their rights and opportunities for full inclusion and participation in society.[11] In 2023, the United Nations(UN) made another significant contribution to advancing the integration of individuals with disabilities into the community.[12] Furthermore, WHO has emphasized that advancing health equity contributes to broader social integration and participation of individuals with disabilities, and that international support for the community integration of persons with disabilities is crucial.[13] Meanwhile, it is essential to assist individuals with disabilities in reintegrating and returning to their communities as functioning members of society. Facilitating the reintegration of individuals with disabilities into their communities and families can create the potential to contribute to additional social wealth and enhance their quality of life. In addition, increased research on the community integration of individuals with disabilities could benefit the future provision of sustainable personalized medicine and health services for them at the community level.[14]

Scholars have different views on the definition of community integration. Willer et al[15–17] argued that community integration should include family integration, social integration, and productive activities, therefore, community integration is the active and extensive community participation of individuals with disabilities. McColl et al[18] expanded the concept of community integration and argues that community integration should include four dimensions: home integration, social support, vocational, and independent living ability. However, it is worth noting that both Willer and McColl focused only on the objective level of community integration for individuals with disabilities and do not consider the subjective level. Wong and Solomon[19] argued that community integration should not be limited to the physical level but should also include the social and psychological dimensions, which further enriched and expanded the concept of community integration by including the subjective level of community integration. Parvaneh and Cocks[20] proposed that community integration should include the seven dimensions: interpersonal relationships, community participation, community belonging, occupation, being at home, reclaiming life, increased risk, and vulnerability, and formed the Community Integration Framework (CIF). In addition, Shaikh et al[21] argued that community integration differs from participation, and the concept of community integration should be clarified further. In summary, according to the views of the above scholars, the essence of community integration is to enable individuals with disabilities to reintegrate into the communities and families that they are familiar with as normal as possible after they have gone through the painful events, enjoy the same rights as ordinary people, and participate in all kinds of community life as ordinary people do.

Publications related to community integration are increasing.[22–24] However, studies have yet to utilize bibliometric methods to analyze and visually present this topic to the best of our knowledge. In addition, our team is focusing on community integration, and we urgently need to conduct a review on community integration to provide direction for our team's subsequent research. Therefore, this study can answer the following questions: What is the current status of research on community integration of people with disabilities? Who are the most influential authors in community integration? Who are the authors most contributing to community integration? Which is the most important literature on community integration? In which journals have most community integration research findings been published? How is their quality? Moreover, How is the citation relationship among different journals?

Bibliometrics uses scientific methods to systematically study the quantity, distribution, structure, characteristics, and patterns of published academic findings. It also involves using information visualization techniques and methods to visually display a specific topic's research development background, status, hotspots, and development trends.[25,26] The utilization of bibliometric methodology in this study is essential and valuable. Firstly, bibliometrics is scientific and widely employed in researching various subject areas. Secondly, the results obtained through bibliometrics are objective and do not rely on individual subjective judgment. Finally, the peers acknowledged and accepted the findings of researchers in the medical field who have utilized bibliometrics in their research. CiteSpace was developed by Chao-Mei Chen, a professor at Drexel University, USA.[27] It is a powerful tool for visualizing and analyzing research progress and current frontiers in a specific subject area. The software has robust co-citation and research frontier analysis capabilities.[28] We aimed to: (1) conduct a literature review about community integration of disabilities. (2) to clarify the knowledge, hotspots, and trends through CiteSpace.

Methods
Data Sources and Data Collection
All data was retrieved from The Web of Science Core Collection (WOSCC), including the Science Citation Index Expanded (SCIE) and Social Science Citation Index(SSCI). WOSCC was chosen for the following reasons: The Core Journals Citation Database database of the Institute for Scientific Information (ISI) contained thousands of high-quality, peer-reviewed journal literature with worldwide impact. Additionally, data obtained from WOSCC can be directly analyzed with popular bibliometric software, eliminating potential problems associated with corrupted data or missing fields and ensuring the integrity of the analysis.

The specific search strategy in WOSCC was as follows: Topic=("community integration") OR Topic =("community reintegration") OR Topic=("community reentry"). Additional search constraints included document type=article and review, language=english, and publication timespan=1990.01.01–2023.12.31. The data retrieval process involved two researchers working consecutively to ensure the accuracy of the search results. We did not include disability-related terms in our search formula for the following considerations: First, community integration is a complex concept, and broader search criteria can reveal more relevant literature; Second, the concept of community integration seems closely associated with disability in general perception; And third, the concept of disability is too big to be well defined. Therefore, the search formula we made can include as much literature as possible with essential insights into the community integration of individuals with disabilities, which will help us uncover interdisciplinary research findings critical to understanding the complexity of community integration. A total of 2242 articles were initially retrieved, with 3 articles being excluded. Ultimately, 2239 relevant hits were obtained (Details in Figure 1).
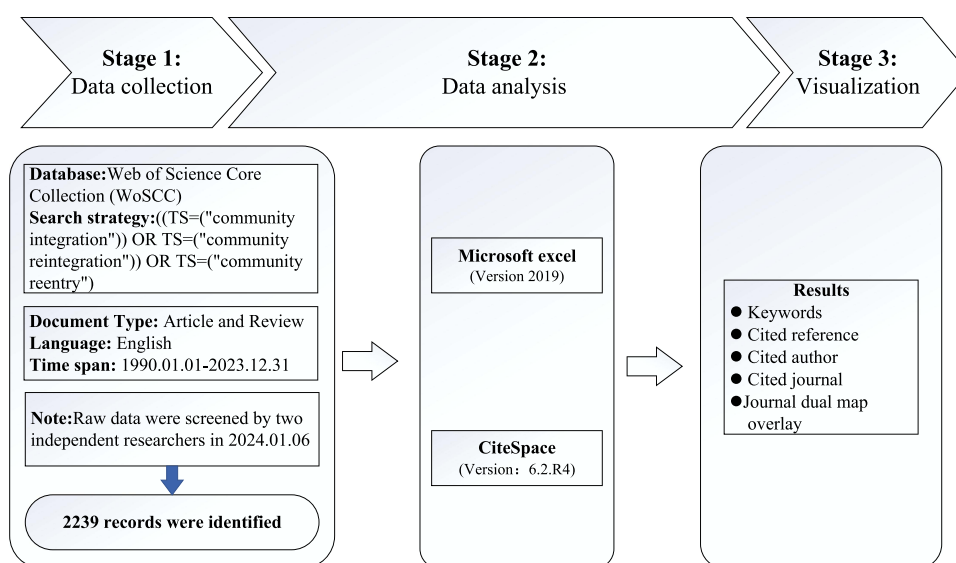
Figure 1 The flowchart for data collection, analysis and visualization.

Data Analysis and Visualization

CiteSpace 6.2.R4 and Microsoft Office Excel 2019 were used in. CiteSpace was primarily utilized for keyword and co-citation network analysis, including cited references, authors, and journal analysis. We also employed CiteSpace's journal dual map overlay function to enhance our research findings. The parameters for CiteSpace were configured as follows: the timespan from 1990 to 2023, with year per slice chosen as 1, and pruning was applied using both the Pathfinder and Pruning sliced networks methods. The selection criterion was set to the g-index (k=25). All other settings remained defaults. The Log-likelihood rate(LLR) algorithm was utilized for clustering.

Microsoft Office Excel 2019 (Microsoft Corp., Redmond, WA, USA) was used to draw the trend of the members of the publication and make tables of co-cited authors, co-cited journals, co-cited references, and keyword frequencies.

Results
## Results of Publications Every year

The number of publications is a crucial indicator for measuring a field's developmental trend. It is also significant in analyzing and predicting its future development trend. There is a fluctuating upward trend in the annual number of community integration publications. The trend can be divided into three stages: First (starting stage) occurred before 1992, during which the annual number of community integration articles was below 10. Second (rising stage) occurred from 1992 to 2014, when the annual number of community integration articles remained under 100. Third (further development stage) spans from 2015 to 2023, when the number of articles on community integration exceeded 100 per year. In addition, it took 25 years (1990–2014) to reach more than 1000 cumulative publications. However, it only took roughly 9 years (2014–2022) to reach 2000 cumulative publications from 1000. The cumulative number of publications is fitted to the equation: $y=2.3399x^2-17.544x+75.656$, $R^2=0.9984$ (Details in Figure 2).

Keywords

The high-frequency keywords in CiteSpace reflected the research foundation within community integration. We have compiled keywords of community integration topics. It is evident that from 1990 to 2023, the three most frequently occurring keywords are brain injury (571, 13%), individuals (488, 11%), and quality of life (434, 10%). The more frequently a keyword appears, the more critical it is to the research foundation of community integration. We presented the top 20 keywords based on frequency (Details in Figure 3).
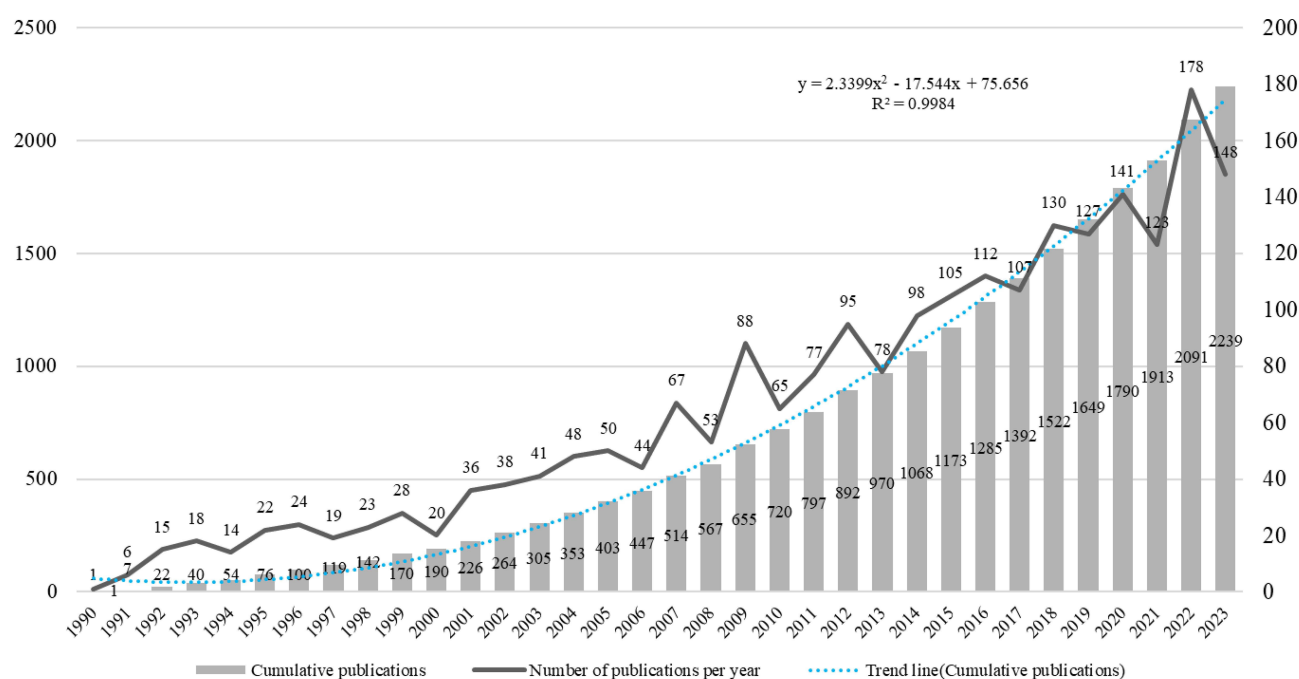
Figure 2 Research publications trends on community integration from 1990 to 2023.
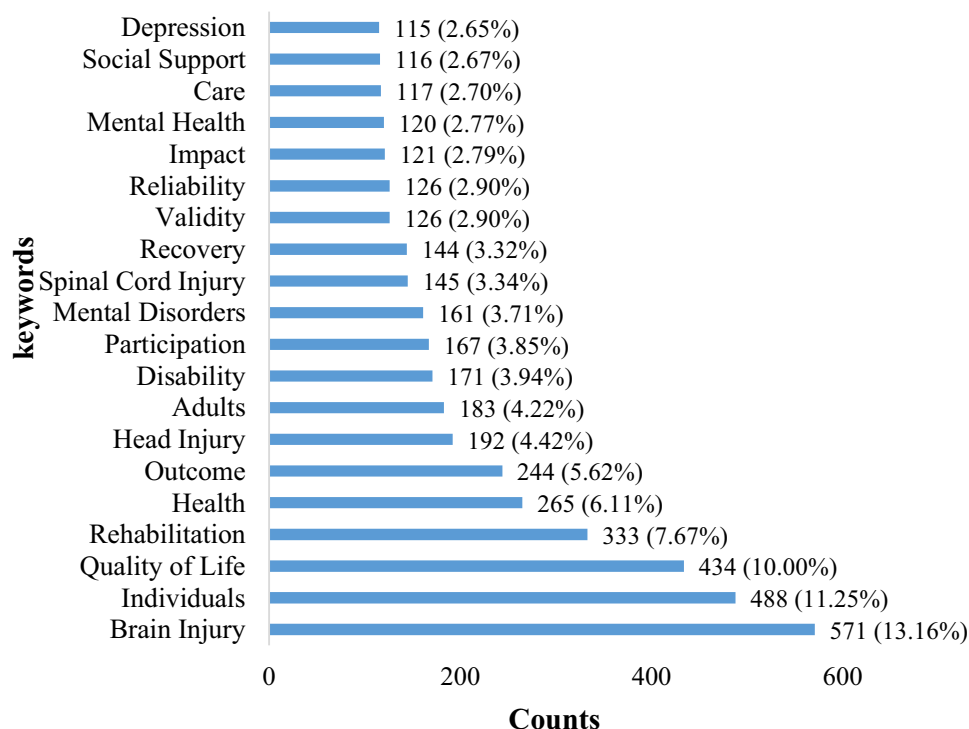
Figure 3 Top 20 keywords on community integration.

Then, we generated a keyword clustering map, and eight clusters were generated. Modularity(Q) and silhouette(S) are crucial indicators for evaluating the clustering level. Generally, the Q greater than 0.3 and S greater than 0.5 indicate a reasonable cluster structure and convincing results. After the clustering, the following parameters were obtained: Q=0.37>0.30 and S =0.70>0.50, indicating reasonable clustering and high confidence. In the keyword cluster map, we display 8 large-scale clusters. The clustering labels start from 0; the smaller the value, the larger its size. The three most significant clusters are #0 traumatic brain injury, #1 mental health, and #2 stroke. We further combined the cluster names and browsed the keywords contained in the eight clusters to further summarize the eight clusters into three main clusters, namely cluster 1 (#0 traumatic brain injury, #1 mental health, #2 stroke, and #6 spinal cord injuries): the main scope of the community integration study. Cluster 2 (#3 children and #5 veterans): the relevant population of the community integration, and cluster 3 (#7 meditation): the assessment tools of the community integration (Detailed in Figure 4a). Subsequently, a keyword timeline map was created based on the keyword clustering map. The timeline view illustrates each cluster keyword's temporal evolution trend and mutual influence, explaining research dynamics and evolution trends by visualizing the number of clusters, temporal distribution, and knowledge flow. The position of nodes on the horizontal axis indicates their first appearance while connecting lines represent co-citation relationships.As seen in the timeline, research on community integration emerged along with research on children's issues from 1990 to 2023 and then received much in-depth research in traumatic brain injury. So far, the research areas that are still active are #0 traumatic brain injury, #2 stroke, #3 children, and #6 spinal cord injuries, which indicates that these may be the main research topics at present (Detailed in Figure 4b). Keyword citation burst refers to the sudden increase in the frequency of keywords within a short period, which is utilized to illustrate the hotspots and trends in a specific field. The two keywords, mental retardation (10.4, 18) and developmental disabilities (8.1, 18), had the strongest burst and the most extended duration. So far, the five keywords with the strongest burst are social participation (5.6, 7), substance use (5.9, 5), experiences (7.56, 4), interventions (7.15, 4), and Afghanistan (5.6, 3). In addition, among the four keywords, experiences and interventions have the strongest intensity, greater than 7, which indicates that experiences and interventions related to community integration should receive more attention for they may represent a hotspot and direction of future study (Detailed in Figure 5).
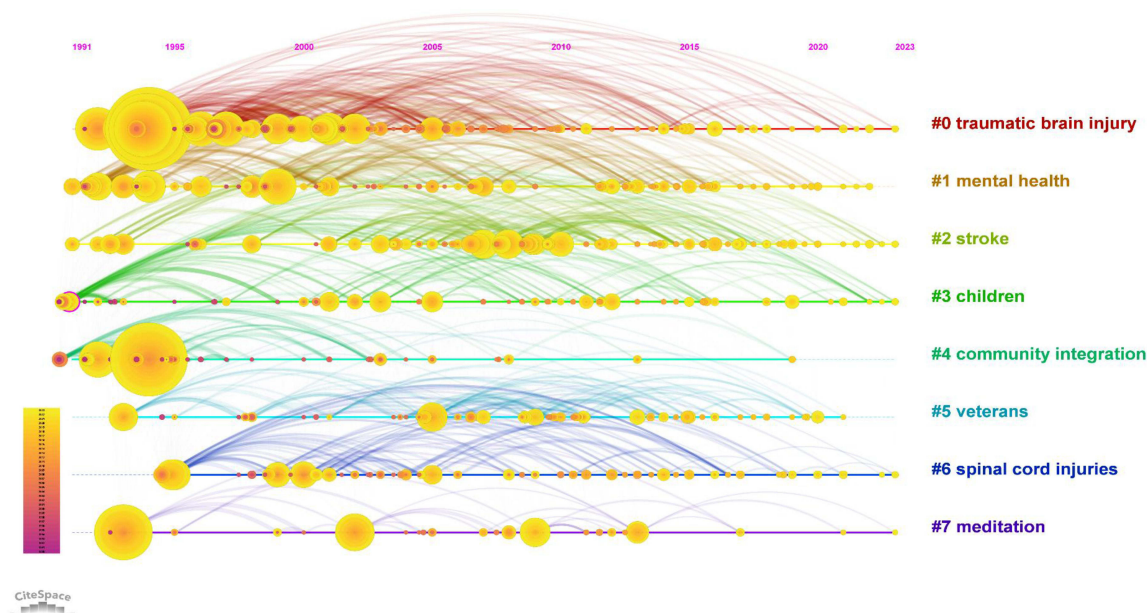
a
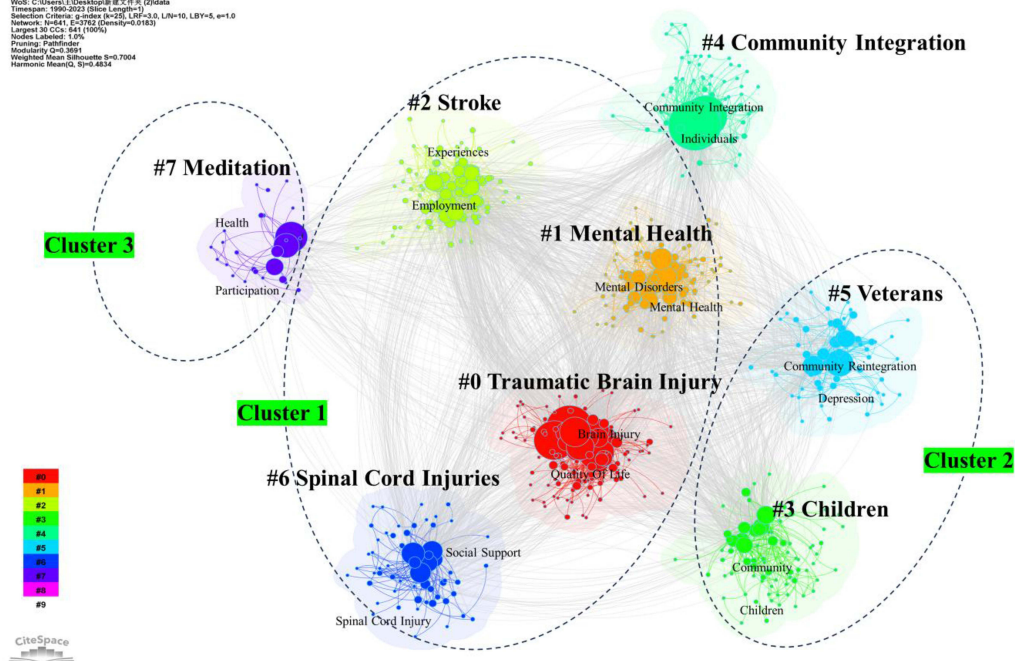
b

Figure 4 (**a**) and (**b**) Co-occurrence analysis of keywords in community integration. (**a**) keyword cluster map in community integration. (**b**) Timeline view map of keywords in community integration.

Top 25 Keywords with the Strongest Citation Bursts

Keywords	Year	Strength	Begin	End	1990 - 2023
Mental Retardation	1991	10.4	1991	2009	
Developmental Disabilities	1991	8.1	1991	2009	
Community	1991	5.42	1994	2005	
Head Injury	1993	37.55	1995	2008	
Adjustment	1995	5.97	1995	2007	
Community Integration Questionnaire	1996	7.38	1996	2004	
Coma	1996	7.04	1996	2009	
Functional Independence Measure	1996	6.27	1996	2007	
Disability Rating Scale	1996	5.91	1996	2006	
Handicap	1997	11.63	1997	2011	
Disability	1996	10.61	1997	2009	
Follow Up	1997	6.7	1997	2009	
Outcome Assessment	1994	5.95	2000	2012	
Cognitive Rehabilitation	2001	6.86	2001	2013	
Satisfaction	2000	6.9	2002	2006	
Brain Injury	1994	5.64	2005	2006	
Symptoms	2005	5.73	2012	2016	
Home	2009	5.93	2014	2015	
Survivors	2013	5.54	2015	2019	
Physical Activity	2009	5.54	2015	2019	
Social Participation	2010	5.65	2016	2023	
Substance Use	2013	5.9	2018	2023	
Experiences	2007	7.56	2019	2023	
Interventions	2009	7.15	2019	2023	
Afghanistan	2013	5.6	2020	2023	

Figure 5 Top 25 keywords citation bursts map in community integration.

Distribution of Cited Authors and Cited References

Frequently cited authors are the most influential scholars within a field, reflecting the pinnacle of knowledge innovation in that particular area. Willer is the author with the most citations, with 405 counts, followed by WHO and Sander, with 380 and 262 citations, respectively. In addition, McColl has a relatively high centrality (0.8) but is still less than 0.1, indicating relatively little contact and cooperation between scholars in community integration. This study presented the top 10 authors with high citation frequency (Details in Table 1).

Table 1 Top 10 Cited References in Community Integration

Rank	Counts	Year	First Author	Journal	DOI
1	33	2001	WHO	INTERNATIONAL CLASSIFICATION OF FUNCTIONING	DOI 10.1097/01.PEP.0000245823.21888.71 https://www.who.int/standards/classifications/international-classification-of-functioning-disability-and-health
2	25	1999	Sander AM	ARCH PHYS MED REHAB	DOI 10.1016/S0003-9993(99)90034–5
3	21	2010	Sander AM	J HEAD TRAUMA REHAB	DOI 10.1097/HTR.0B013E3181CD1635
4	20	1994	Willer B	AM J PHYS MED REHAB	DOI: 10.1097/00002060-199404000-00006.
5	19	2015	Moher D	SYST REV-LONDON	DOI 10.1186/2046-4053-4-1
6	18	2004	Cicerone KD	ARCH PHYS MED REHAB	DOI 10.1016/J.APMR.2003.07.019
7	18	1993	Willer B	J HEAD TRAUMA REHAB	DOI 10.1097/00001199-199308020-00009
8	16	2001	Novack TA	ARCH PHYS MED REHAB	DOI 10.1053/APMR.2001.18222
9	15	2011	Mittal VA	PSYCHIAT RES	DOI 10.1016/J.PSYCHRES.2011.06.006
10	15	2003	Goranson TE	BRAIN INJURY	DOI 10.1080/0269905031000088513

Table 2 Top 10 Cited Author in Community Integration

Rank	Cited Author	Counts	Centrality	Year
1	Willer B	405	0.05	1994
2	WHO	380	0.04	1995
3	Sander AM	262	0.02	1997
4	Whiteneck G	247	0.07	1995
5	Corrigan JD	246	0.04	1996
6	Dijkers M	199	0.03	1999
7	McColl MA	197	0.08	1999
8	Ponsford J	161	0.04	1999
9	Cicerone KD	160	0.04	2003
10	Malec JF	124	0.02	1997

Frequency cited references serve as the foundation of knowledge for a research field, which is vital in advancing the research. As can be seen from Table 2, the article with the highest number of citations is: "The International Classification of Functioning, Disability and Health (ICF)" with a total of 33 citations, followed by two articles by Sander: "The Community Integration Questionnaire revisited: an assessment of factor structure and validity" and "What is community integration anyway?: defining meaning following traumatic brain injury". It is worth noting that another scholar, also a highly cited scholar in this study, Willer, also has two articles with high citation frequencies. This study presented ten highly cited references, each with 15 or more citations (Details in Table 2).

Distribution of Cited Journal

Journal co-citation refers to a network structure that reflects the citation relationships between journals. Scholars can gain insights into the field and assess the quality of journals with articles published on community integration.In this study, the journal with the highest number of citations was *Archives of Physical Medicine and Rehabilitation* (1122, Q1), followed by *The Journal of Head Trauma Rehabilitation* (744, Q1) and *Brain Injury* (732, Q3). The journal with the highest impact factor is *Social Science & Medicine*, with an impact factor of 4.9. Among the top ten journals, eight are ranked in Journal Citation Reports (JCR) Q1 or Q2 in 2023 (n=10, 80%). A total of eight journals are from the field of rehabilitation(n=10, 80%). This study presents the top ten journals with the highest number of journal co-citations (Details in Table 3).

Table 3 Top 10 Cited Journals in Community Integration

Rank	Cited Journal	Counts	Year	JCR IF (2023)	Category	Category Quartile
1	ARCH PHYS MED REHAB	1122	1992	3.6	①Rehabilitation; ②Sport Sciences	Q1
2	J HEAD TRAUMA REHABIL	744	1994	2.4	①Clinical Neurology; ②Rehabilitation	Q1; Q2
3	BRAIN INJURY	732	1995	1.5	①Neurosciences; ②Rehabilitation	Q3; Q4
4	DISABIL REHABIL	666	1997	2.1	①Rehabilitation	Q1
5	AM J PHYS MED REHAB	497	1994	2.2	①Rehabilitation; ②Sport Sciences	Q1; Q2
6	NEUROREHABILITATION	390	1995	1.7	①Clinical Neurology; ②Rehabilitation	Q2; Q3
7	J REHABIL MED	384	2004	2.5	①Rehabilitation; ②Sport Sciences	Q1; Q2
8	PSYCHIAT SERV	381	1999	3.3	①Health Policy & Services; ②Psychiatry; Public, Environmental &Occupational Health	Q1; Q2
9	SOC SCI MED	367	1992	4.9	①Public, Environmental &Occupational Health; ②Social Sciences, Biomedical	Q1
10	REHABIL PSYCHOL	351	1990	1.9	①Rehabilitation	Q2
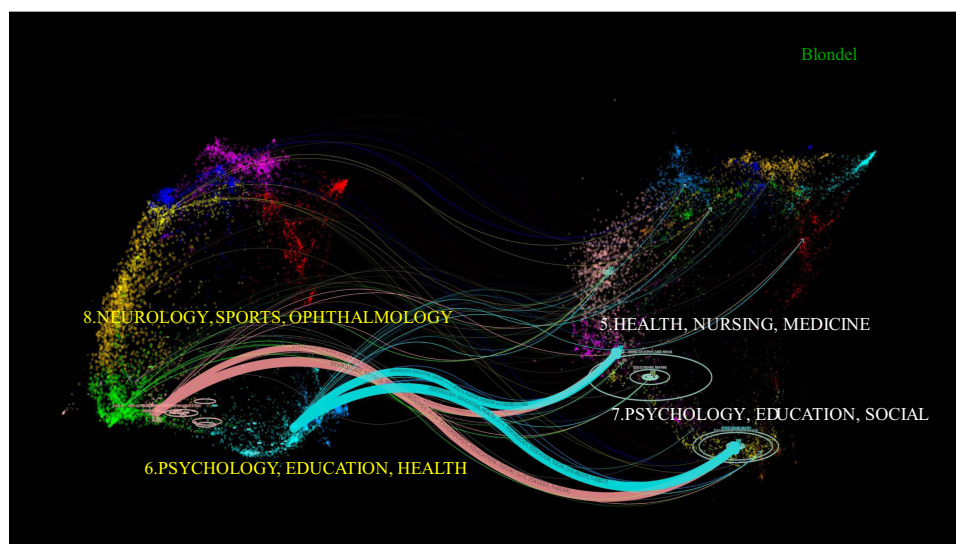
Figure 6 The dual-map overlay of journals in community integration.

Journal Dual-Map Overlay

Dual-map overlay of journals can analyze the diffusion direction of knowledge in community integration research. This method embodies the analytical objects on a single map and clearly shows the knowledge flow process and the citation relationship between journals. The results of the dual-map overlay analysis of the journals show that there are four main citation paths in the journals on community integration. The citing journals are concentrated in "neurology, sports, ophthalmology", "psychology, education, social", and the cited journals are concentrated in "health, nursing, medicine", "psychology, education, social". This study analyzed the distribution of journals by field of specialization using the dual-map overlay of journals. In Figure 6, the citing journals are on the left, and the cited journals are on the right (Details in Figure 6).

Discussion

This review used CiteSpace, the most commonly used bibliometric analysis software worldwide, to visually analyze research on community integration of individuals with disabilities from 1990 to 2023. It objectively described the current status, development trends, and future research hotspots of community integration. This review can help researchers better understand the current research status and development trends in community integration. To our knowledge, no studies have yet employed a bibliometric method to explore community integration.

From 1990 to 2023, the number of publications focusing on community integration has been on an upward trend. This trend became particularly pronounced after 2015, with the annual publication count exceeding 100, indicating a positive development.This increase may be related to the implementation of disability-related legislation and policies in various countries,[29] and the reform and development of long-term care and continuous care worldwide.[30,31] The current trend predicts that research related to community integration will continue to grow and increase in both the level and content, which suggests that more and more scholars are recognizing the importance of community integration.

Many keywords with medical characteristics appeared in the top 20, such as "brain injury", "quality of life", "rehabilitation", "disability", "recovery", and "care."they formed the research basis for community integration. In addition, the top 20 high-frequency keywords can give a general impression of community integration, which is of great significance for researchers to grasp the main content of research on community integration.[32]

We have divided the keyword cluster map into three clusters (Figure 4a). Cluster 1 is the largest and most important. We have discovered that the community integration study population includes those with traumatic brain injury, spinal injury, stroke, intellectual disability, and mental retardation. The common thread among them is the presence of neurological problems. After consulting the literature, we found a clue: the deinstitutionalization movement. This

movement gained after the 1950s and shifted the focus of psychiatric rehabilitation towards a community-based model. Deinstitutionalization involves relocating individuals with mental illness from large, closed hospital institutions to the community in order to facilitate their better integration into society.[33] Subsequently, deinstitutionalization swept through the United States[34] ultimately leading to the enactment of the Americans with Disabilities Act. This historical context highlights why studying mental illness is essential to community integration. An analysis conducted by The Lancet reveals that neurological disorders are now the leading cause of ill health and disability worldwide. Since 1990, there has been an 18% increase in disabilities, illnesses, and premature deaths attributed to neurological disorders.[35] It has become imperative to provide people with neurological disorders access to targeted high-quality care, treatment, and rehabilitation services. Consequently, the issue of community integration for people with disabilities has become increasingly important since 1990.

From the timeline view, community integration was first studied in children around 1990. Graphically, research on the community integration of children has yet to develop rapidly and extensively, which may be limited to the fact that the timespan of the data we included began in 1990. A few years later, community integration of traumatic brain injury (TBI) was studied on a large scale. Although the research scale has declined over time, it is still a topic worthy of research.[21,36] However, our study cannot effectively answer why and how community integration research would shift from the children's research field to the research of TBI patients. Therefore, more research is needed to investigate this diffusion or transfer of knowledge thoroughly. Meanwhile, it is also essential to pay attention to the community integration of stroke, children, and spinal cord injury patients, which represent the current topics of focus for community integration scholars.

The first to burst keywords were mental retardation and developmental disabilities, and they appeared with the highest intensity and most prolonged timespan. Bouras and Szymanski[37] compared the services provided to mental retardation and patients in the United States and the United Kingdom and concluded that the mental health services for mental retardation and patients were attributed to the influence of the deinstitutionalization movement and normalization movement in the United States, the renewal of care philosophy, and the advancement of mental illness assessment and diagnosis techniques. The keywords that are still burst and may continue to burst are "social participation", "substance use", "experiences", "interventions", and "Afghanistan".

Levasseur et al[38] summarized social participation as the process by which individuals interact with others in the community or society. Cooper et al[39] mentioned in a study on the social participation of people with cerebral palsy that there is no clear definition of social participation, and the boundaries with social/community integration are often blurred. Shaikh et al[21] also mentioned in their research that although there are some similarities between social participation and community integration, the latter should be explored as a concept distinct from participation. Therefore, more clarification about community integration and social participation is needed.

Substance Use among adolescents is also a direction that deserves attention in the future. Substance Use Disorder (SUD) is a medical condition involving the abuse or dependence on a substance (such as alcohol, nicotine, opioids, stimulants, sedatives, etc)., which often leads to significant problems in an adolescent's physical, psychological, and social functioning, and it remains a severe public health problem worldwide.[40] A survey showed that 20.4 million people aged 12 or older in the United States were diagnosed with SUD in the previous year, but less than 11% of them received treatment. Therefore, responses to SUD require more attention and intervention. In the future, it is possible to explore the development of effective integrated care interventions and the role of integrated care models in promoting the community integration of substance abusers at the community level.[41]

Starting in 2020, issues related to the community integration of Afghan veterans have begun to increase. These issues focus on the psychological community integration of veterans and the factors influencing community integration. Bernstein et al[42] studied predictors of driving status in veterans within 1 year of traumatic brain injury, and their conclusion was reached that rehabilitation efforts to improve function and reduce negative impacts may positively impact driving and community reintegration. Fogle et al[43] used the National Health and Resilience in Veterans Study to review the mental health and physical health outcomes of veterans and several critical risk and protective factors. They also discussed how to promote veterans' mental health and resilience through social support, psychosocial characteristics (such as resilience, gratitude, and meaning in life), and social connectedness (such as secure attachment, community integration, and social participation).

Experiences and Interventions are the two strongest keywords in the five burst keywords. Combined with the timeline chart, research on the experiences and interventions of community integration for people with different disabilities should receive more attention in the future. Ownsworth et al[44] conducted a longitudinal study to understand the psychological state and degree of community integration of patients with traumatic brain injury after discharge. They concluded that stigma may still negatively impact an individual's community reintegration a few months after discharge. Becker et al[45] conducted a qualitative study to explore the community reintegration experiences of stroke survivors in New Zealand and identified four themes associated with successful community reintegration.

The content of community integration research has gradually migrated from its earliest focus on disabilities caused by neurological disorders such as intellectual disabilities and head/brain injuries to a focus on social participation among diverse populations,[46–48] and substance abuse issues among homeless people and offenders,[49–51] and community integration for veterans associated with the wars in Afghanistan.[52,53] Studying diverse populations' experiences and finding effective interventions to promote community integration has become a popular approach.[54–57] These are the focus and trend of future research on community integration.

Willer led the rankings and developed the community integration questionnaire (CIQ), an assessment tool widely utilized by academics and making significant contributions to community integration. McColl's centrality reaches 0.8<0.1. McColl et al[18] developed the community integration measure (CIM) in 2001 based on qualitative research with patients with acquired brain injury. The CIM can measure a person's level of participation in community activities, level of contact with the community, and sense of belonging.

The most frequently cited reference is ICF issued by the WHO in 2001. The ICF provides a theoretical framework and classification system that considers the impact of disease, disability, and other health conditions on the structure and function of the human body, mobility, and participation. It integrates biological, psychological, social, and environmental aspects, aligning with the core goal of modern rehabilitation medicine to improve and restore function.[58] The ICF is crucial in recognizing and studying health and health-related conditions. To some extent, it also provides a more robust framework for studying the community integration of patients with disabilities. Regarding cited individuals, Willer and Sanders had two documents with many co-citations. Willer et al[15] developed the CIQ in 1993 and validated it with psychological measures. In 1994, Willer et al[59] utilized the CIQ for further validation in patients with acquired brain injury. The CIQ has been continuously refined and has emerged as one of the most widely used assessment tools for measuring community integration. In 1999, Sander et al[60] investigated the Questionnaire's factor structure and concurrent validity, further refining the scoring system for enhanced completeness in evaluating community integration. In 2010, Sander et al[61] further contemplated the definition and concept of community integration, analyzed the challenges encountered by researchers and rehabilitation practitioners, and indicated the direction for future research on community integration. In 2001, Novack et al[62] conducted a prospective study that identified multiple factors influencing outcomes in patients with acquired brain injury, laying the groundwork for further interventions in this patient population. The paper of Moher is a statement on Preferred reporting items for systematic review and meta-analysis.[63] His citation count is among the highest in the field of community integration, which suggests that there has been some increase in evidence-based types of articles in the field of community integration, possibly after 2015. In 2004, Cicerone et al[64] conducted a non-randomized controlled trial of TBI patients to validate the intervention effects of two interventions, and they found that both interventions had a significant effect on patients with TBI and contributed to the improvement of patients' community integration.

Using the dual map of journals overlay, we found that the journals cited by the community integration come from multiple fields. This suggests that community integration is a complex social phenomenon that involves psychological, educational, and health domains. The cross-disciplinary citation pattern implies that researchers from different disciplines explore community integration from multiple perspectives, leading to broader interdisciplinary exchange and cooperation. Furthermore, frequent journal citations focus on interrelated and complementary aspects of community integration. This reflects the complementary nature of research themes. As community integration research deepens, methods and theories from different fields influence each other, indicating a new trend in the field's development - cross-fertilization between disciplines becoming an important direction for future research.

Limitations

Despite the progress we have made, our research inevitably has some limitations. Firstly, our data only includes more than two thousand results from the WOSCC database but does not encompass results from other databases, which may affect the stability of the conclusions. Second, for the sake of comprehensively searching for relevant community integration research, we did not include search terms related to people with disabilities. However, this may prevent us from studying the results of community integration at a more subtle level. Community integration is a complex concept, and our research has pointed the way for future research on community integration: in future research, community integration research should be limited to a single field, such as stroke, children, traumatic brain injury, etc. Finally, we did not analyze the content of authors, institutions, and countries and lacked sophisticated graphics to show the relationships between nodes. In the following study, we will consider an analysis based on graph theory to study community integration comprehensively.

Conclusion

Community integration is gradually becoming a popular research topic, and the annual number of publications in this field is expected to grow in the future. Research on community integration related to traumatic brain injury, stroke, children, and spinal cord injuries is currently the focus of this work. Future research should explore the experiences and feelings of different groups of individuals regarding community integration and develop more effective interventions for community integration. Barry Willer is the most prominent contributing author in community integration. McColl is the most influential scholar. The most authoritative cited reference is the ICF framework published by WHO. Rehabilitation journals, led by the *Archives of Physical Medicine and Rehabilitation*, are authoritative journals on community integration. More multidisciplinary cooperation in community integration should be conducted. Furthermore, more profound research is needed on community integration in the future.

Abbreviations

WHO, World Health Organization; CI, Community integration; ICF, International Classification of Functioning, Disability and Health; SUD, Substance Use Disorder; CIQ, Community Integration Questionnaire; CIM, Community Integration Measure; TBI, Acquired Brain Injury.

Acknowledgments

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.

Funding

Disclosure

The authors declare that they have no conflicts of interest in this work.

References

1. World Health Organization. *WHO Global Disability Action Plan 2014-2021: Better Health for All People With Disability.* World Health Organization; 2015.
2. Martin Ginis KA, van der Ploeg HP, Foster C, et al. Participation of people living with disabilities in physical activity: a global perspective. *Lancet (London, England).* 2021;398(10298):443–455. doi:10.1016/s0140-6736(21)01164-8
3. World Health Organization. Disability. Available from: https://www.who.int/news-room/fact-sheets/detail/disability-and-health.Accessed November 11, 2024.
4. Carty C, van der Ploeg HP, Biddle SJH, et al. The First Global Physical Activity and Sedentary Behavior Guidelines for People Living With Disability. *Journal of Physical Activity & Health.* 2021;18(1):86–93. doi:10.1123/jpah.2020-0629
5. Abu Saydah H, Turabi R, Sackley C, Moffatt F. Stroke Survivor's Satisfaction and Experience with Rehabilitation Services: a Qualitative Systematic Review. *Journal of Clinical Medicine.* 2023;12(16):5413. doi:10.3390/jcm12165413
6. Agtarap SD, Campbell-Sills L, Jain S, et al. Satisfaction with Life after Mild Traumatic Brain Injury: a TRACK-TBI Study. *Journal of Neurotrauma. Mar.* 2021;38(5):546–554. doi:10.1089/neu.2020.7055
7. Yang CL, Labbé D, Sakakibara BM, Vissers J, Bird ML. World Café- a community conversation: a Canadian perspective on stroke survivors needs for community integration. *Topics in Stroke Rehabilitation.* 2022;29(5):392–400. doi:10.1080/10749357.2021.1928839
8. Hughes AJ, Hartoonian N, Parmenter B, et al. Cognitive Impairment and Community Integration Outcomes in Individuals Living With Multiple Sclerosis. *Archives of Physical Medicine and Rehabilitation.* 2015;96(11):1973–1979. doi:10.1016/j.apmr.2015.07.003
9. Kashif M, Jones S, Darain H, Iram H, Raqib A, Butt AA. Factors influencing the community integration of patients following traumatic spinal cord injury: a systematic review. *JPMA the Journal of the Pakistan Medical Association.* 2019;69(9):1337–1343.
10. Jellema S, van der Sande R, van Hees S, Zajec J, Steultjens EM, Nijhuis-van der Sanden MW. Role of Environmental Factors on Resuming Valued Activities Poststroke: a Systematic Review of Qualitative and Quantitative Findings. *Archives of Physical Medicine and Rehabilitation.* 2016;97(6):991–1002.e1. doi:10.1016/j.apmr.2016.01.015
11. United Nations. Convention on the Rights of Persons with Disabilities. Available from: https://www.ohchr.org/en/instruments-mechanisms/instruments/convention-rights-persons-disabilities.Accessed November 11, 2024.
12. United Nations. Support systems to ensure community inclusion of persons with disabilities, including as a means of building forward better after the coronavirus disease (COVID-19) pandemic: report of the Office of the United Nations High Commissioner for Human Rights. Available from: https://digitallibrary.un.org/record/4001929?ln=en&v=pdf.Accessed November 11, 2024.
13. World Health Organization. *Global report on health equity for persons with disabilities.* ISBN: 9789240063600. 2024. Available from: https://www.who.int/publications/i/item/9789240063600.Accessed September 11, 2024.
14. Pastorino R, Loreti C, Giovannini S, Ricciardi W, Padua L, Boccia S. Challenges of Prevention for a Sustainable Personalized Medicine. *Journal of Personalized Medicine.* 2021;11(4):311. doi:10.3390/jpm11040311
15. Willer B, Rosenthal M, Kreutzer J, Gordon W, Rempel R. Assessment of community integration following rehabilitation for traumatic brain injury. *The Journal of Head Trauma Rehabilitation.* 1993;8:75–87. doi:10.1097/00001199-199308020-00009
16. Willer B, Corrigan JD. Whatever it takes: a model for community-based services. *Brain Injury.* 1994;8(7):647–659. doi:10.3109/02699059409151017
17. Willer B, Rosenthal M, Kreutzer JS, Gordon WA, Rempel R. Assessment of community integration following rehabilitation for traumatic brain injury. *Journal of Head Trauma Rehabilitation.* 1993;8(2):103–111. doi:10.1097/00001199-199308020-00009
18. McColl MA, Davies D, Carlson P, Johnston J, Minnes P. The community integration measure: development and preliminary validation. *Archives of Physical Medicine and Rehabilitation.* 2001;82(4):429–434. doi:10.1053/apmr.2001.22195
19. Won YL, Solomon PL. Community integration of persons with psychiatric disabilities in supportive independent housing: a conceptual model and methodological considerations. *Mental Health Services Research. Mar.* 2002;4(1):13–28. doi:10.1023/a:1014093008857
20. Parvaneh S, Cocks E. Framework for describing community integration for people with acquired brain injury. *Aust Occup Ther J. Apr.* 2012;59(2):131–137. doi:10.1111/j.1440-1630.2012.01001.x
21. Shaikh NM, Kersten P, Siegert RJ, Theadom A. Developing a comprehensive framework of community integration for people with acquired brain injury: a conceptual analysis. *Disability and Rehabilitation.* 2019;41(14):1615–1631. doi:10.1080/09638288.2018.1443163
22. Pahwa R, Smith ME, Kelly EL, et al. Definitions of Community for Individuals with Serious Mental Illnesses: implications for Community Integration and Recovery. *Administration and Policy in Mental Health.* 2021;48(1):143–154. doi:10.1007/s10488-020-01055-w
23. Gupta S, Jaiswal A, Norman K, DePaul V. Heterogeneity and Its Impact on Rehabilitation Outcomes and Interventions for Community Reintegration in People With Spinal Cord Injuries: an Integrative Review. *Topics in Spinal Cord Injury Rehabilitation.* 2019;25(2):164–185. doi:10.1310/sci2502-164
24. Truelle JL, Fayol P, Montreuil M, Chevignard M. Community integration after severe traumatic brain injury in adults. *Current Opinion in Neurology.* 2010;23(6):688–694. doi:10.1097/WCO.0b013e3283404258
25. Zheng S, Wang Y, Geng J, Liu X, Huo L. Global trends in research on MOG antibody-associated disease: bibliometrics and visualization analysis. *Frontiers in Immunology.* 2024;15:1278867. doi:10.3389/fimmu.2024.1278867
26. Wang J, Zhao W, Zhang Z, et al. A Journey of Challenges and Victories: a Bibliometric Worldview of Nanomedicine since the 21st Century. *Advanced Materials.* 2023;36:e2308915. doi:10.1002/adma.202308915
27. Chen C. CiteSpace: detecting and visualizing emerging trends and transient patterns in scientific literature. *Journal of the American Society for Information Science and Technology.* 2006;57(3):359–377. doi:10.1002/asi.20317
28. Yang K, Hu Y, Qi H. Digital Health Literacy: bibliometric Analysis. *Journal of Medical Internet Research.* 2022;24(7):e35816. doi:10.2196/35816
29. Angell AM, Goodman L, Walker HR, et al. "Starting to Live a Life": understanding Full Participation for People With Disabilities After Institutionalization. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association.* 2020;74(4):7404205030p1–7404205030p11. doi:10.5014/ajot.2020.038489
30. Friedman C, VanPuymbrouck L. Environmental Modifications for People With Intellectual and Developmental Disabilities: a Policy Analysis of Medicaid Home- and Community-Based Services. *The American Journal of Occupational Therapy: Official Publication of the American Occupational Therapy Association.* 2024;78(3):50393. doi:10.5014/ajot.2024.050393

31. Hillebregt C, Trappenburg M, Tonkens E. 'Let us be'. Social support needs of people with acquired long-term disabilities and their caregivers in rehabilitation practice in the Netherlands. *Health & Social Care in the Community*. 2022;30(6):e4384–e4394. doi:10.1111/hsc.13838

32. Tang S, Fan T, Wang X, Yu C, Zhang C, Zhou Y. Cancer Immunotherapy and Medical Imaging Research Trends from 2003 to 2023: a Bibliometric Analysis. *Journal of Multidisciplinary Healthcare*. 2024;17:2105–2120. doi:10.2147/jmdh.S457367

33. Bachrach LL. Deinstitutionalization: a semantic analysis. *Journal of Social Issues*. 1989;45(3):161–171. doi:10.1111/j.1540-4560.1989.tb01562.x

34. Hudson C. A Model of Deinstitutionalization of Psychiatric Care across 161 Nations: 2001–2014. *International Journal of Mental Health*. 2016;45 (2):135–153. doi:10.1080/00207411.2016.1167489

35. Steinmetz JD, Seeher KM, Schiess N, et al. Global, regional, and national burden of disorders affecting the nervous system, 1990–2021: a systematic analysis for the Global Burden of Disease Study 2021. *The Lancet Neurology*. 2024;23(4):344–381. doi:10.1016/S1474-4422(24) 00038-3

36. Nikolaisen M, Arntzen C, Eliassen M, Gramstad A. Rehabilitation models for community integration of adults with acquired brain injury in rural areas: a scoping review. *Rural and Remote Health*. 2024;24(1):8281. doi:10.22605/rrh8281

37. Bouras N, Szymanski L. Services for people with mental retardation and psychiatric disorders: US-UK comparative overview. *The International Journal of Social Psychiatry*. 1997;43(1):64–71. doi:10.1177/002076409704300106

38. Levasseur M, Richard L, Gauvin L, Raymond E. Inventory and analysis of definitions of social participation found in the aging literature: proposed taxonomy of social activities. *Social Science & Medicine*. 2010;71(12):2141–2149. doi:10.1016/j.socscimed.2010.09.041

39. Cooper C, Linden M, Kerr C. Social participation in adults with cerebral palsy: a systematic review of the evidence-base. *Disability and Rehabilitation*. 2023;2023:1–14. doi:10.1080/09638288.2023.2236026

40. Patel V, Chisholm D, Parikh R, et al. Addressing the burden of mental, neurological, and substance use disorders: key messages from Disease Control Priorities. *Lancet*. 2016;387(10028):1672–1685. doi:10.1016/s0140-6736(15)00390-6

41. Hill K, Kuo I, Shenoi SV, Desruisseaux MS, Springer SA. Integrated Care Models: HIV and Substance Use. *Current HIV/AIDS Reports*. 2023;20 (5):286–295. doi:10.1007/s11904-023-00667-9

42. Bernstein JPK, Sevigny M, Novack TA, et al. Predictors of Driving Status in Service Members and Veterans at 1 Year Posttraumatic Brain Injury: a VA TBI Model Systems Study. *J Head Trauma Rehabil*. 2021;36(6):437–446. doi:10.1097/htr.0000000000000668

43. Fogle BM, Tsai J, Mota N, et al. The National Health and Resilience in Veterans Study: a Narrative Review and Future Directions. *Frontiers in Psychiatry*. 2020;11:538218. doi:10.3389/fpsyt.2020.538218

44. Ownsworth T, Mols H, O'Loghlen J, et al. Stigma following acquired brain injury and spinal cord injury: relationship to psychological distress and community integration in the first-year post-discharge. *Disability and Rehabilitation*. 2024;46(9):1796–1806. doi:10.1080/09638288.2023.2205173

45. Becker I, Maleka MD, Stewart A, Jenkins M, Hale L. Community reintegration post-stroke in New Zealand: understanding the experiences of stroke survivors in the lower South Island. *Disability and Rehabilitation*. 2022;44(12):2815–2822. doi:10.1080/09638288.2020.1839792

46. Mamman R, Mortenson WB, Fleming J, Schmidt J. Living in a reshaped reality: exploring social participation and self-identity after TBI. *Neuropsychological Rehabilitation*. 2022;32(8):2102–2124. doi:10.1080/09602011.2022.2113100

47. King G, Smart E, Bowman L, Pinto M. Social participation interventions targeting relational outcomes for young people with physical and developmental disabilities: an umbrella review and narrative synthesis. *Disability and Rehabilitation*. 2023;45(13):2073–2086. doi:10.1080/ 09638288.2022.2085332

48. Costi S, Pellegrini M, Braglia L, Cavuto S, Fugazzaro S. Occupational therapy improves social participation of complex patients discharged from hospital: results of a powered randomized controlled trial. *Disability and Rehabilitation*. 2023;2023:1–11. doi:10.1080/09638288.2023.2218653

49. Pagerols M, Valero S, Dueñas L, Bosch R, Casas M. Psychiatric disorders and comorbidity in a Spanish sample of prisoners at the end of their sentence: prevalence rates and associations with criminal history. *Frontiers in Psychology*. 2022;13:1039099. doi:10.3389/fpsyg.2022.1039099

50. Stewart AC, Cossar RD, Wilkinson AL, et al. The Prison and Transition Health (PATH) cohort study: prevalence of health, social, and crime characteristics after release from prison for men reporting a history of injecting drug use in Victoria, Australia. *Drug and Alcohol Dependence*. 2021;227:108970. doi:10.1016/j.drugalcdep.2021.108970

51. Manning RM, Greenwood RM. Recovery in homelessness: the influence of choice and mastery on physical health, psychiatric symptoms, alcohol and drug use, and community integration. *Psychiatric Rehabilitation Journal*. 2019;42(2):147–157. doi:10.1037/prj0000350

52. Rattray NA, Miech EJ, True G, et al. Modeling Contingency in Veteran Community Reintegration: a Mixed Methods Approach. *Journal of Mixed Methods Research*. 2023;17(1):70–92. doi:10.1177/15586898211059616

53. Keller AV, Clark JMR, Muller-Cohn CM, Jak AJ, Depp CA, Twamley EW. Suicidal ideation in Iraq and Afghanistan veterans with mental health conditions at risk for homelessness. *The American Journal of Orthopsychiatry*. 2022;92(1):103–108. doi:10.1037/ort0000590

54. Norlander A, Iwarsson S, Jönsson AC, Lindgren A, Månsson Lexell E. Participation in social and leisure activities while re-constructing the self: understanding strategies used by stroke survivors from a long-term perspective. *Disability and Rehabilitation*. 2022;44(16):4284–4292. doi:10.1080/09638288.2021.1900418

55. Donnelly KZ, Goldberg S, Fournier D. A qualitative study of LoveYourBrain Yoga: a group-based yoga with psychoeducation intervention to facilitate community integration for people with traumatic brain injury and their caregivers. *Disability and Rehabilitation*. 2020;42(17):2482–2491. doi:10.1080/09638288.2018.1563638

56. SH Lo, Chau JPC, Choi KC, Wong RYM, Kwan JCY, IHL Lu. Health Professional- and Volunteer-partnered Self-management Support (COMBO-KEY) to Promote Self-efficacy and Self-management Behaviors in People with Stroke: a Randomized Controlled Trial. *Annals of Behavioral Medicine: a Publication of the Society of Behavioral Medicine*. 2023;57(10):866–876. doi:10.1093/abm/kaad028

57. Ingebretsen SMH, Kirmess M, Småstuen MC, Hawley L, Newman J, Stubberud J. Rehabilitation of Social Communication Skills in Patients With Acquired Brain Injury With Intensive and Standard Group Interactive Structured Treatment: a Randomized Controlled Trial. *Archives of Physical Medicine and Rehabilitation*. 2023;104(7):1016–1025. doi:10.1016/j.apmr.2023.02.023

58. VanSant AF. The International Classification of Functioning, Disability and Health. *Pediatric Physical Therapy*. 2006;18(4):237. doi:10.1097/01. pep.0000245823.21888.71

59. Willer B, Ottenbacher KJ, Coad ML. The community integration questionnaire. A comparative examination. *American Journal of Physical Medicine & Rehabilitation*. Apr. 1994;73(2):103–111. doi:10.1097/00002060-199404000-00006

60. Sander AM, Fuchs KL, High Jr WM, Hall KM, Kreutzer JS, Rosenthal M. The Community Integration Questionnaire revisited: an assessment of factor structure and validity. *Archives of Physical Medicine and Rehabilitation*. 1999;80(10):1303–1308. doi:10.1016/s0003-9993(99)90034-5

61. Sander AM, Clark A, Pappadis MR. What is community integration anyway?: defining meaning following traumatic brain injury. *J Head Trauma Rehabil*. 2010;25(2):121–127. doi:10.1097/HTR.0b013e3181cd1635

62. Novack TA, Bush BA, Meythaler JM, Canupp K. Outcome after traumatic brain injury: pathway analysis of contributions from premorbid, injury severity, and recovery variables. *Archives of Physical Medicine and Rehabilitation*. 2001;82(3):300–305. doi:10.1053/apmr.2001.18222

63. Moher D, Shamseer L, Clarke M, et al. Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. *Systematic Reviews*. 2015;4(1):1. doi:10.1186/2046-4053-4-1

64. Cicerone KD, Mott T, Azulay J, Friel JC. Community integration and satisfaction with functioning after intensive cognitive rehabilitation for traumatic brain injury. *Archives of Physical Medicine and Rehabilitation*. 2004;85(6):943–950. doi:10.1016/j.apmr.2003.07.019