

SYSTEMATIC REVIEW

Obstacles and Facilitators in Daily Living Activities Among Persons with Spinal Cord Injury: A Systemic Review

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ABSTRACT

Introduction: This systematic review aimed to investigate the level of participation, obstacles, and facilitator factors that influence activities of daily living among persons with spinal cord injury (SCI). **Methods:** A comprehensive search was conducted in four online databases, namely Google Scholar, PubMed, OT Seeker, and Cochrane Library covering the ten-years period from January 2012 to December 2022. Inclusion criteria encompassed original published studies in English focusing on daily activities, work, participation, obstacles, and facilitators in persons with SCI. Non-peer review sources (e.g., abstracts, grey literature, preprints), and studies unrelated to occupational therapy were excluded. The selected studies were assessed for quality using McMaster University Occupational Therapy Evidence-Based Practice critical review form. **Results:** Out of the 678 articles identified, ten studies were included after the screening, exploring participation in daily living activities, employment, return to work, leisure activities, family tasks, and community mobility among persons with SCI. Obstacles and facilitators influencing participation in activities of daily living were classified using the International Classification of Functioning, Disability, and Health (ICF) framework. This review highlighted that long-term participation is challenging for persons with SCI, affected by obstacles such as body functions, pain, low self-esteem, and environmental and social factors. **Conclusion:** The findings underscore the importance of adopting a multidisciplinary rehabilitation approach to enhance participation in daily activities for persons with SCI. Occupational therapy plays a significant role in improving participation levels among persons with SCI.

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INTRODUCTION

The spinal cord is a crucial part of the human body, connecting the brain to the lower back and playing a vital role in controlling motor, sensory, and automatic functions. Spinal cord injury (SCI) can occur worldwide due to traumatic and non-traumatic events affecting the cervical, thoracic, lumbar, and sacral segments of the spine. Traumatic events such as falls, motor vehicle accidents, and acts of violence are common causes, while non-traumatic events such as diseases, infections, tumours, degenerative changes and autoimmune disorders also contribute to SCI. The global burden

of SCI is significant. According to the World Health Organization (WHO), the estimated global incidence of SCI varies between 40 to 80 cases per million population per year, with a prevalence of around 250-500 cases per million population. The actual up-to-date figures of SCI in most developing countries are lacking and may vary depending on nation to nation, sources, and methodology used (1, 2, 3).

Persons with SCI frequently experience lifelong complications such as altered body function, cardiovascular system problems, sepsis, urination issues, respiratory distress, spasticity, pain, pressure sores, low body fitness, and weight gain. As a result, their ability to participate in daily activities is restricted, often requiring ongoing support and care from a multidisciplinary team and family (4). However, in some cases, these problems can become serious until hospitalisation is required to

prevent mortality and morbidity (5, 6).

The dependency on the family among persons with SCI increases after transitioning from hospital to home. It is because persons with SCI have various physical, psychological, social, and environmental barriers in the community that make participation difficult in daily activities (7). Participation in daily living activities is defined as the ability to be involved in various life situations; it is a multidimensional process resulting from interactions and transactions between people and activities in physical, social, cultural, and political settings and communities (8). Activities of daily living, including any household work, self-care tasks, shopping, leisure, employment, education, sports, work, vocational, and other recreational activities, substantially impact the health and well-being of SCI patients (9).

Previous studies have shown that as a result of SCI, the persons were less active, less diverse, and more constrained at home (10). They also have fewer social interactions and less time for everyday activities (11, 12). In this context, Occupational therapy interventions target to improve the functioning status of persons with SCI and to restore their long-term participation in daily activities. These daily activities include self-eating, dressing, showering, bathing, personal hygiene, managing bowel and bladder function, functional mobility, maintaining a healthy lifestyle, socializing, and performing activities independently without assistance from caregivers. Furthermore, occupational therapists identify and address associated environmental factors to provide support and improve the overall quality of life for persons with SCI (13).

While previous systematic and scoping review studies have found several obstacles and facilitators towards participation in daily activities, including long-term general health, personal factors, functional abilities, disability-friendly environments, assistive technology, social factors, comprehensive rehabilitation, and education (14, 15). The results of these studies were based on various qualitative and mix-method studies that relied on more self-reported experiences and perceptions of persons with SCI. However, these studies have limitations; they do not reveal the type, frequency, or duration of particular activities of daily living participation inside and outside the home, nor do they specifically address the impact of various obstacles and facilitators factors to participation in daily activities such as individualised factors, gender, education, interest, mastery in activities, residence in higher, middle and lower income countries, community level supports, social support system and wealth (16, 17, 18, 19).

Moreover, several existing studies have explored the internal and external factors affecting the resumption of daily activities for persons with SCI during their transition from hospital facilities to the community,

they tend to primarily focus on the individual's physical aspects and environmental challenges. However, these studies often overlook important aspects such as the factual long-term experiences of persons living with SCI in the community, the sociocultural context in which they navigate daily activities, the varying levels of success and challenges they encounter in participating in daily living activities, and their personal experiences and perspectives on changes in their daily routines. In addition, the adaptive strategies employed by persons with SCI in managing complex internal and external obstacles are often neglected. These strategies play a critical role in enabling persons with SCI to participate in daily activities and overcome obstacles effectively. Moreover, the facilitators that contribute to successful participation in daily living activities, as defined by the ICF framework, are often not thoroughly examined (20, 21, 22).

Furthermore, a previous systematic review also identified SCI person's participation in the community, challenges, and awareness for health professionals in community rehabilitation. The focus of this review was only SCI health-related issues, self-management, facilities, an accessible community environment, and performance activities with adaptive devices. Rather than to address how well their participation is met, experiences of persons with SCI participation in daily activities around the world (23).

Hence, a new systematic review based on both quantitative and qualitative studies on the level of participation, obstacles, and facilitators factors that influence the participation in daily life activities across all domains of the ICF framework: body functions/structures, activities, participation, and contextual factors in the border context of community among persons with SCI is needed to provide more objectives evidence-based findings for occupational therapists, other health care professionals, and policymakers to develop effective strategies to enhance the successful long term participation in daily activities after SCI.

METHODOLOGY

Study design

The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) framework and guideline was used as study design for this systematic review, which entails selecting the title and structured summary, objectives, methodology, documenting the data, analysis, and reporting the findings and discussion (24). The rationale for this systematic review is to use this design because it increases the transparency of reporting, eliminates bias, and increases the effectiveness of the systematic process. This systematic review protocol was registered in the PROSPERO database (CRD42022362102).

Search strategy

A search for relevant published studies over the past ten years was conducted, from January 2012 to December 2022 using four electronic databases: Google Scholar, PubMed, OT Seeker, and the Cochrane Library. A ten years-time frame chosen to ensure the inclusion of recent and high-quality literature (25). The following research question based on the populations, intervention, comparisons, outcomes, and study design (PICOS) framework was developed to search the relevant published studies; What are the obstacles and facilitators to participation in daily activities among persons with SCI in the community? The keywords were based on medical subject headings (MeSH) and text words, as shown in Table I.

Table I: Databases studies searching strategy

Databases	Searching Criteria	Keywords terms
Google Scholar,	<ul style="list-style-type: none"> - Filter and articles or studies search that was published between the periods of 2012 to 2022. - Filter and choose only those articles' titles, abstracts, and full text that are available in the English Language. - Grey literature, presentation, non-peer review, and irrelevant articles are excluded. - Use the relevant world to expand the search 	Spinal cord injury OR Spinal cord lesion OR Paraplegia OR Tetraplegia OR Quadriplegia OR Traumatic Spinal Cord Injury OR Spinal cord damage AND Occupational Participation OR Community reintegration OR Activities of Daily Livings OR Employment OR Work OR Social Participation OR Community Involvement OR Community Participation OR Obstacle OR Facilitator.
PubMed,		
OT Seeker,		
Cochrane library.		

Study selection and eligibility criteria

Following the comprehensive search of the four electronic databases, the first author uploaded the identified papers to an EndNote manager, where duplicates were identified, selected, and removed. The records were then uploaded to Covidence, a web-based application for systematic reviews, where all the researchers collaborated. Three researchers were involved in the screening process, which consisted of two steps. In the first step, they screened the titles and abstracts of the articles to assess their relevance. They evaluated and rated the articles based on their titles. In the second step, the researchers performed a full-text eligibility matching and selection. The inclusion criteria are as follows: (I) Full-text original published quantitative, qualitative, and mixed-methods studies that were published in the English language between 2012 and 2022; and (II) Studies focused on the critical topic of daily activities, work, participation, obstacles, and community facilitators for persons with SCI. The articles, thesis, or studies that contained irrelevant information, published in non-peer review journals such as only abstract, grey literature and presentations and the studies that involved conditions other than SCI, such as spina bifida, prolapse herniated disc, spinal stenosis, their treatment management,

and outcomes, which were unrelated to occupational therapy in enhancing participation in daily activities were excluded. Furthermore, during the two-step study selection process, if any challenges, discrepancies, or conflicts arose between the researchers, they sought the assistance of a fourth researcher to resolve them through discussion until a consensus was reached (26).

Data extraction and analysis

The first and second authors examined the selected studies' details based on a data extraction Excel sheet. The information in the sheet includes the author, year of publication, sample size, countries, design of studies, data collection tools and characteristics of participants as shown in Table II. In this study, the next step level of participation in daily activities, obstacles, and facilitators factors that influenced the participation in activities of everyday life to persons with SCI was identified and classified across the four domains of ICF, including (i) body function and structure factors (body physiology, structures, psychology, and sensory, cognitive, and motor function), (ii) activity, and participation (involvement in everyday life activity), (iii) environmental factors (physical, social, architectural design), and (iv) personal factors (person age, financial security, family support, and lifestyle) are all essential factors that interlink to each other was used.

Quality assessment

Each selected study's methodological quality was critically appraised using the McMaster University occupational therapy evidence-based-practice research group critical review form and guidelines for quantitative and qualitative studies by the first and second authors. The total score for a quantitative study is 15, and 24 for a qualitative study, which is applied under the subheading study purpose, literature, study design, sampling, data collection, data analysis, trustworthiness, conclusion, and implications (27, 28). The higher the score indicates the better quality of the paper. The score then was categorised as follows; 0-9 (poor), 10-14 (satisfactory), and 15-24 (good) (29). Moreover, in this review, comprehensive searches on electronic databases are used to reduce the possibility of risk bias. Each included study findings' reliability was reviewed by two research team members who had working experience with Persons with SCI. Any disagreements among the reviewers are resolved through consensus discussion.

RESULTS

Study search and selection process

Systematic scanning of the electronic databases initially found 678 articles, as indicated in the flow diagram in Figure 1. Then, in the first step of the screening process, we excluded 608 papers by carefully reviewing them, as their study titles and abstracts were not relevant to the topic of this study. In the next step two of the screening process, 58 articles were excluded from

Table II: Characteristics of studies, participants, and Quality appraisal of studies in the systemic review

Author & Years	Characteristic of studies			Characteristic of participants		Quality appraisal of studies			
	Total Sample Size & Participants Countries	Study Design	Data Collection Tools	Age in Years and Gender (Male or Female)	Marital Status and living situation	McMaster Total Score:	Qual	Quant	Rating
(Ferdiana, A et al., 2021)	12; Indonesia	Qualitative design	Semi-structured deep Interview	24-67 years (8-Male & 4 - Females)	The majority of males and females people are single, and some are married living in the home.	N/A	22		Good
(Hatefi M et al., 2021)	120; Iran	Cross-sectional design	IPA-P	18-65 years (Male & Female)	Most male and female participants have a spouse and live with family at home.	12	N/A		Satisfactory
(Jiang, L et al., 2021)	392; china	Cross-sectional design	QOL index Modified Barthel Index	18-68 years or more (Male and Female)	Most male and female participants are married and living with family.	12	N/A		Satisfactory
(Nizeyimana, E et al., 2021)	108; South Africa	Cross-sectional exploratory design	KIM & MSES	19-71 years old (Male & Female)	Most female participants are single and male participants are married, and living in houses and nursing homes.	11	N/A		Satisfactory
(Gross-Hemmi, M. H et al., 2019)	1549; Switzerland	Cohort study design	USER Participation design	16 years or older (Female)	Female not having a partner and living alone.	13	N/A		Satisfactory
(Lee, R et al., 2018)	160; Malaysia	Cross-sectional design	SCIM III WHO QOL BRIEF CHART-SF	18-60 years and above (114-Male & 46 - Female)	The majority of male and female participants are single and living in the home.	13	N/A		Satisfactory
(Carr, J. J et al., 2017)	270; Australia	Sequential Mix Method design	Survey Form and Telephone Interview	20-76 years (Male & Female)	In a relationship with a partner.	13	23		Good
(Tsai, I. H et al., 2017)	3162; Taiwan	Cross-sectional design	CHIEF-SF CHART-SF	18-90 years (Male & Female)	Marital status and living situation were not reported.	12	N/A		Satisfactory
(Barclay, L et al., 2016)	17; Australia	Qualitative design	Interview 60 to 90 minutes	18-85 years (Male & Female)	Not in a relationship and living with parents.	N/A	23		Good
(Suttiwong, J et al., 2015)	139; Thailand	Cross-sectional design	IPA-Thai version CHIEF-SF-Thai version, PRQ2000-Thai version, FIM Scale	18-55 years (Male & Female)	Most participants are single, and some participants are married and living both alone and with family.	12	N/A		Satisfactory

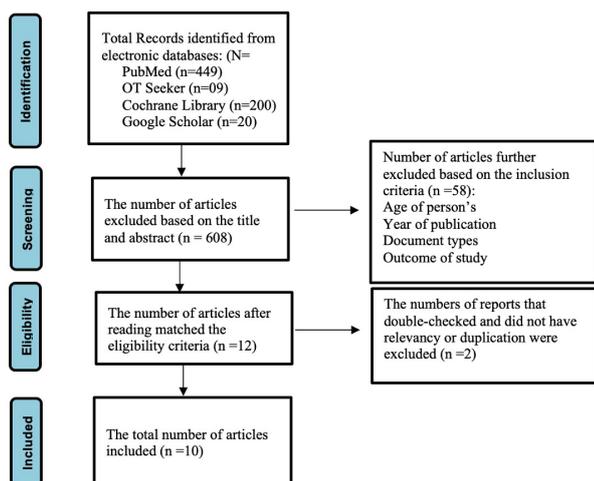


Figure 1: Prisma Flow diagram for selection of studies in the systematic review

the consideration because their date of publication, document types, and outcomes of studies did not match the inclusion eligibility criteria of this review. In step three, eligibility criteria matching, 12 studies, after a careful reading, were selected, and then in step four, to recheck and a thorough discussion of the full texts

of the articles, found two studies to be duplications in the search results, and eliminated them from this review. Finally, step five included part a total of 10 studies after a critical examination satisfied the requirement of this study. All ten studies evaluated the level of participation, obstacles, and facilitators factors in activities of daily living of a person with SCI. The findings are described in detail according to the ICF framework component. Out of the ten included studies, three studies were rated as having good quality, while the remaining seven studies were considered satisfactory in terms of their quality. The hierarchy level of evidence for the included study ranged from Level II to IV indicating high to moderate quality of evidence.

Characteristics of the selected studies and participants

Studies design and location: A total of ten studies were selected from the examination of the literature review; of those, six studies used the cross-sectional study design, two used the qualitative approach design, and the other two used a mix-method and cohort study design for data collection. The locations of the studies were Australia, Taiwan, Switzerland, Thailand, South Africa, Indonesia, Malaysia, Iran, and China. Table II shows the

characteristics of the selected studies and participants. The demographic of Participants: This study primarily included young people aged between 16 and 90 years old with spinal cord injury diagnoses, including males and females. The majority of participants are married, while others are single. The majority live at home, while others reside in private nursing homes. Furthermore, the vast majority of participants had completed primary, secondary, and tertiary education, worked or studied in their community, and suffered from both complete and incomplete levels of injury due to traumatic and non-traumatic incidents.

Data collection tools: A mixture of standardised and non-standardised assessment tools was used in the selected studies. A standardised tool such as; 1) Community Integration Measure (CIM);-, 2) Clinical Outcome Variables Scale (COVS);-, 3) Functional Independence Measure (FIM);-, 4) Secondary Conditions Screening Instrument (SCSI);-, 5) Craig Hospital Inventory of Environmental Factors-Short Form (CHIEF-SF);-, 6) Craig Handicap Assessment and Reporting Technique-Short Form (CHART-SF);-, 7) Utrecht Scale for Evaluation of

Rehabilitation-Participation (USER-Participation);-, 8) Impact on Participation and Autonomy Questionnaire (IPA-Thai version); 9) Personal Resource Questionnaire (PRQ2000-Thai version) 10) Mooring Self-Efficacy scale 16 items (MSES);-, 11) Spinal Cord Independence Measure (SCIM III);-, 12) World Health Organization Quality of life Scale Brief (WHOQoLBref);-, 13) World Health Organization Quality of life Index; 14) Modified Barthel Index. Non-standardized tools that were used include; 1) a Survey Form; and 2) Interviews via Live or Telephone.

Key findings as classified in the ICF Framework components

Body Function and Structures: Nine studies (30, 31, 32, 33, 34, 35, 36, 37, 38) identified body function and structures such as secondary health issues; the severity of SCI, poor hand functioning, weakness, pain, and pressure injuries are the most common impairment that influence participation among the person with SCI in daily activities. Meanwhile, self-control, self-efficacy, confidence, motivation level, and mental health are the facilitator factors that promote a higher level of

Table III: Summary of Classify the findings level of participation, obstacles, and facilitator factors in activities as per the ICF domain

ICF Frame Work Component	Author & Years	Type of Participation	Obstacle Factors in daily life activities	Facilitator Factors in daily life activities
Body Function and Structures	(Hatefi, M et al., 2021)	Persons with SCI who participate in social, physical, and self-care activities.	The main obstacles in daily social and physical activities are a lack of caring body parts, a lack of regulating urination, and cleaning clothes.	For patients with SCI, participation in social activities, and physical activities was facilitated by a person with SCI's education level and social life.
	(Gross-Hemmi, M. H et al., 2019)	Individuals with SCI participated in major life domains such as leisure, sports, and social activities.	For individuals with SCI, the main obstacles to participation in major life domains were the difficulty learning the skills, mobility, communication, and interpersonal interactions issues.	Individuals with SCI, participation in major life domains was improved through vocational rehabilitation and policy intervention.
	(Lee, R et al., 2018)	Persons with SCI who participate in driving activities.	For persons with SCI, the main obstacles to participation in driving activity were various factors such as problems in carrying, handling, and driving the modified vehicle.	For persons with SCI, driving activity was facilitated by the availability of modified vehicles, good hand function, and driving rehabilitation services.
	(Carr, J. J et al., 2017)	Persons with SCI who are employed full-time paid and unpaid work in the community.	The main obstacles to functional independence are secondary complications, such as pain, fatigue, pressure sores, urinary infection, and time since injury.	Persons with SCI, who are employed and have solid work experience, and have recommendations from employers are the primary facilitator factors to be successful placement.
Environmental Factors	(Ferdiana, A et al., 2021)	Persons with SCI who participate in work and social activities in their community.	The main obstacles to work and social participation in the community were environmental limitations, stigma, and financial issues.	For persons with SCI, participation in work and social activities was facilitated by the importance of work, motivation, adaptation, and social support.
	(Tsai, I. H et al., 2017)	Persons with SCI who socially participate in their community.	For persons with SCI, the main obstacles to social participation in their community were the physical built environment, climate, and transportation.	Social participation among persons with SCI was facilitated by environmental policies and laws.
	(Barclay, L et al., 2016)	Persons with SCI who participate in meaningful and social activities in the community.	The main obstacles for persons with SCI in community participation were the physical environment, negative attitudes, and poor mental health prevention services and policy issues.	For persons with SCI, participation in their community was facilitated by the accessible environment, assistive technology, and occupational therapy intervention.
Personal Factors	(Jiang, L et al., 2021)	People with SCI who participated in activities of daily living in the community.	The main obstacles in daily living activities were a lack of motivation and poor self-perceived functioning.	For people with SCI, the activity of daily living in their community was facilitated by higher education, nursing services, and rehabilitation center.
	(Nizeyimana, E et al., 2021)	Persons with SCI, who participate and live in the community.	The main obstacles to reintegration into their community were poor coping style from negative events, painful experiences, and a sense of control.	Reintegration into the community among persons with SCI was facilitated by the availability of counselling, self-confidence, and motivation.
	(Suttiwong, J et al., 2015)	People with SCI who participate and live in the community.	For people with SCI, the main obstacles to participation in their community were older age status, aloneness, and fewer qualifications.	Participation in the community was facilitated by family support, employment, and a higher level of education.

participation in the community. Table III shows the summary of key findings based on the classification in the ICF discussed and reported that an SCI person's level of participation in employment in the community is mostly an obstacle.

Activity and Participation: All of the ten studies (30, 31, 32, 33, 34, 35, 36, 37, 38, 39) reported that the maximum level of participation in daily life activities among persons with SCI in the community like employment, return to work, engagement in primary life domain, leisure activities, outdoor work, household duties, community mobility, driving task, and self-care activities are affected. Meanwhile, white-collar paid or unpaid work, hobbies, and sporting activities are the facilitator factors that contribute to participation in the community.

Environmental Factors: Three studies (31, 32, 36) reported that people with SCI experience a reduction in their overall level of social participation in society, academic achievement, and productive outdoor leisure activities because lack of family support, societal attitudes, social norms, perceived physical environment obstacles, such as poorly designed wheelchairs, a lack of assistance aids, inaccessible housing, and transportation choices, mobility problems, incomprehensive rehabilitation services and physical barriers at the workplace. Hence, to overcome these perceived contextual barriers, it is necessary to promote facilitator factors such as the development of lightweight assistive devices, the availability of new technology such as phone and computer services and mobility-adaptive transportation, the advancement of vocational rehabilitation, and the implementation of intervention policies.

Personal Factors: Seven studies (30, 31, 34, 35, 37, 38, 39), reported that participation of persons with SCI in daily activities after being discharged from the hospital to home face many obstacles due to personal factors such as dependency on caregivers, older age status, gender, aloneness, less qualified. Meanwhile, social background, financial support, lifestyle, coping, and life satisfaction are the primary facilitator factors that enhance their participation in work and independent life in society.

DISCUSSION

This study aimed to examine and summarise published studies on the level of participation in daily living activities, as well as the obstacles and facilitators factors that affect participation among persons with SCI. In this systemic review, all the included studies (quantitative and qualitative) showed the diverse experiences of 5929 participants in total about the level of participation, obstacles, and facilitators factors. The majority of studies from high, middle, and low-income countries reported

that SCI people's level of participation in daily activities in society, such as full-time and part-time paid, non-paid working in public facilities, a private company, driving a private vehicle, recreation activities, shopping, self-care activities, and social functioning improves the overall quality of life, which is essential for their life satisfaction, physical and mental health (40). However, many obstacles challenged the participation of persons with SCI in the community. Most studies included in this review reported that the obstacles that persons with SCI experienced could be divided into external and internal factors.

External factors include a non-disability friendly physically built environment, lack of accessibility to public transport, financial difficulty, secondary body structure complications, ageing, low level of education, lack of skills, lack of support from family and friends, social stigma, unemployment, and lack of availability of multidisciplinary rehabilitation services for SCI individuals in the community. Meanwhile, the internal factors include personal issues, relationships, the severity of the injury, pain, motivation, laziness, fatigue, bed sores, self-belief, marital status, emotional issues, and depression, which entirely or partially restrict their level of participation in the community (41, 42).

A person with SCI is empowered by government policies, social support, job demand, job security, previous work experience, involvement in recreational activities, long-term good health, supportive family role, interest, confidence, religious faith, financial support, mobile phone, assistive devices, electric wheelchair, and accessible environment. These are among the primary facilitators that help a person with SCI overcome obstacles and participate in the community.

This review included studies, from various nations with distinct economic, social, cultural, and political development and found that a limited number of studies on participation were conducted in developing countries among persons with SCI. Most studies in developing countries focused on primary body function, and secondary structural complications such as bed sore, urinary tract infection, bladder/bowel function disorder, and physical environment, which are described to become common obstacles to long-term participation in daily activities in the community (43, 44). Most of the studies reviewed reported that people with SCI in developing countries are unemployed, lack wheelchair accessibility, have difficulty participating in daily activities for an extended period, and spend most of their time and energy alone in bed.

Thus their family members or caregivers assist in self-care activities such as grooming, bowel and bladder routine, transferring, and mobility. As they rely so much on their family members and caregivers, family commitments and dynamics in other activities are severely affected

(45, 46, 47). Thus, more studies should be conducted globally to investigate SCI daily, lifelong participation issues, and its strategies, not just from the perspective of the individual with SCI, but their family as well.

Occupational therapy treatment is the major pillar of rehabilitation that can help people with SCI to achieve independence in all facets of their lives. Occupational therapy aims to; improve daily living skills, function in society, and participation in meaningful activities and occupations while also improving their health and well-being. Evidence on the effectiveness of occupational therapy intervention mainly focuses on static splinting and prolonged stretching, lifestyle modification, time-voiding, mobilization, pressure relief techniques, transferring skills, use of a wheelchair in everyday life, and environment modification (49, 50). While previous research suggested that occupational therapy interventions assist the participation of persons with SCI in everyday activities, there is a paucity of research on intervention strategies to improve the social participation and life of persons with SCI, especially controlled trial studies (48).

Therefore, more studies are required to provide evidence on the effectiveness of occupational therapy intervention in enhancing the participation and quality of life of a person with SCI. This study used the ICF, which is based on the “biopsychosocial” paradigm and provides a comprehensive view of persons with SCI health conditions from biological, psychological, and social dimensions. The ICF is an integrative paradigm that has not yet been fully integrated into rehabilitation practice in certain countries. However, many efforts are being made to incorporate the ICF framework into the thinking and operations of disciplines such as occupational therapy, to understand the level of participation among people with SCI in daily life activities in the community. The only way to facilitate inclusion into mainstream society and assist people with SCI in overcoming obstacles is by empowering them in the community.

This systematic review has several limitations to be acknowledged. First, the search strategy was confined to only four electronic databases, potentially limiting the identification of relevant studies from other databases and resulting in a restricted number of articles meeting the review’s inclusion criteria. Second, the decision to only include studies published within the last ten years may have excluded older studies that could have provided valuable insights into the topic under investigation. However, this timeframe restriction may have compromised the overall comprehensiveness of the evidence included in the review. Besides, the included studies in this review exhibited heterogeneity in terms of methodologies, participant characteristics, interventions, and outcome measures. This variability may have posed challenges in directly comparing and synthesizing the findings, potentially impacting the overall conclusions and generalizability of the review.

Despite the limitations, the results of this systematic review provide some implications in the field of occupational therapy. Firstly, the identified obstacles to participation in activities of daily living for persons with SCI highlight the need for interventions and strategies that address these challenges. Occupational therapists can play a crucial role in developing and implementing interventions that target the specific impairments and limitations identified, such as poor hand functioning, weakness, pain, and pressure injuries. By addressing these issues through tailored interventions, occupational therapists can help persons with SCI enhance their participation in daily activities. The facilitator factors identified in the review, including self-control, self-efficacy, confidence, motivation, and mental health suggest that interventions focusing on enhancing these factors can promote higher levels of participation in the community. Occupational therapists can incorporate strategies to improve self-efficacy, self-control, and mental well-being into their treatment plans, empowering persons with SCI to overcome obstacles and completely engage in activities of their choice.

The findings related to environmental factors highlight the importance of creating inclusive and accessible environments for persons with SCI. Occupational therapists can advocate for changes in societal attitudes, promote the development and availability of assistive devices and technology, and advocate for improved accessibility in housing, transportation, and workplaces. By addressing these environmental barriers, occupational therapists can create enabling environments that facilitate participation and independence for persons with SCI.

Additionally, the influence of personal factors, such as dependency on caregivers, age, gender, and social background, suggests the need for person-centred approaches in occupational therapy practice. Occupational therapists can work closely with persons with SCI to understand their unique needs, preferences and goals, and tailor interventions accordingly. By considering personal factors and providing appropriate support and resources, occupational therapists can help persons with SCI overcome obstacles and achieve greater participation and independence.

CONCLUSION

This systematic review suggests that people with SCI have limited lifelong participation in daily activities such as employment, social, personal hygiene, family, and leisure after being discharged from rehabilitation facilities due to various contextual obstacles. This study provides health professionals with knowledge and understanding of participation levels in daily activities, such as obstacles, and facilitators of the person with ICF based on the framework. Despite insufficient evidence, this

review suggests that occupational therapy is significantly beneficial for the person with SCI. Incorporation of the ICF client-centred, goal-directedness, and occupation-focused on the rehabilitation of the person with SCI is suggested to improve daily activities performance and promote successful community participation. It is recommended that future research explores the obstacles and facilitators in daily living activities from multiple perspectives including occupational therapists', persons' with SCI and the community's viewpoints to provide a more holistic understanding of the topic.

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