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ARTICLE

A comparative examination of models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for spinal cord injury

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Abstract

Study design Qualitative study using semi-structured interviews.

Objectives To describe and compare models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for SCI, and describe the characteristics of these models or approaches.

Setting Spinal services from multiple international countries

Methods Semi-structured interviews were completed with 12 participants from a convenience sample of ten spinal services from developed economies. Interviews were audio-recorded, transcribed verbatim and thematically analysed.

Results Three themes were identified, and are described with supporting quotations. These are: Theme One—Models of service delivery (sub-themes: staffing, peer mentors, facilitating community integration during inpatient rehabilitation; Theme Two—Services provided (sub-themes: telehealth, vocational services, groups); Theme Three—Facilitating self-efficacy and self-management.

Conclusions A variety of models aimed at supporting community integration in the immediate period following inpatient rehabilitation for SCI were found. Multi-disciplinary staffing and involvement of peer mentors was common to all services. The importance of vocational rehabilitation was acknowledged by all participants, although the approaches taken to this varied. Telehealth has the potential to assist in self-management, particularly for patients who live a long distance from the spinal unit or are confined to the home for health reasons, and could be further developed. Although service models are greatly influenced by the funding context, the findings from this study can be used to inform service planning in this area.

Introduction

Community integration is a broad term encompassing the process of returning home and re establishing life following an event such as a spinal cord injury (SCI) [1]. Being integrated into the community refers to someone's ability to fully participate in community life, and includes having access to appropriate housing, being able to get around in the community, participating in work, leisure or educational activities, and being engaged in other community roles such as being a neighbour or volunteer [2, 3]. Poor community integration and lack of social participation is one of the biggest challenges for someone following a SCI. One study found that at 6 months post discharge 55% of an Australian sample of people with SCI had significant difficulties with social participation [4]. Being able to contribute to the community, through volunteer work, paid work or advocacy, assists people with SCI to feel useful and valued, and facilitates a sense of self-worth. Participating in meaningful roles and interests in the community assists a person with SCI to reframe their views on acquired disability [5].

In the current healthcare environment people are being discharged from inpatient SCI rehabilitation earlier than previously [6]. Earlier discharge may mean they do not have

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access to appropriate housing and transport, or have appropriate supports and strategies to assist in returning to work, education or other meaningful community-based roles when they return home [7]. In addition, there is less time for patient and family education and an increased likelihood of patients being discharged before acquiring important knowledge [8]. This can impact the long-term health and wellbeing of people following SCI, including development of mental health problems, increased physical health issues, and increased utilisation of health care services [9, 10].

It is widely acknowledged that rehabilitation of people following SCI is best completed in a specialist spinal unit [11]. Most specialist spinal units follow-up their patients medically, and historically have continued to support them following discharge into the community [12]. However, as the numbers of people with SCI grow due to increased life expectancy and continuing presentations of newly injured people, there is pressure on spinal units to decrease reliance of patients on their services, and to build capacity of community based service providers to manage the needs of people with SCI in the community.

In order to inform strategic planning for people with SCI in Victoria, Australia, the aims of this research were to describe and compare:

(1) Models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for SCI. (Models of service refer to services primarily delivered or coordinated by the health service that undertakes the inpatient rehabilitation of the person following SCI, that aim to support the community integration of people returning home from inpatient rehabilitation).

(2) The characteristics of these models or approaches.

Methods

Study design

Qualitative research can be used to explore complex problems encountered by clinicians and policy makers in health care. Consistent with the epistemological paradigm of pragmatism, this study focuses on "what works", and approaches to problems [13]. The use of qualitative data collection methods—specifically interviewing—enabled topics of interest raised or innovations discussed by the participants to be further explored by the interviewers, thereby providing more detail than would be possible through the use of a survey. The COnsolidated criteria for REporting Qualitative research (COREQ) has been used to inform the reporting of this study [14]. Approval to conduct the study was granted by the Monash University Human Research Ethics Committee (Ref no: 17645). We certify that all applicable institutional and governmental regulations concerning the ethical use of human volunteers were followed during the course of this research.

Participant selection

In order to compare models of service delivery, convenience sampling of spinal services from developed economies was undertaken. Fifteen spinal services were approached to participate in the research. Four of these were from USA, two from the UK, two from Canada, two from Australia, one from New Zealand, two from Sweden, one from Switzerland and one from Norway. The first and second researchers obtained email addresses from either personal contacts of the first researcher or spinal service websites. The services were emailed asking if they would be interested in being interviewed, and who the most appropriate person would be to interview about the models of service delivery intended to support community integration. A copy of the Explanatory Statement was attached to the email. Recruitment occurred between July 2018 and January 2019. Ten spinal services agreed to participate, and suggested which staff member would be most appropriate to interview. Two of these services identified that more than one staff member would be able to provide more comprehensive information, therefore two staff members were interviewed. Titles of the staff members interviewed are listed in Table 1. Services from the following countries participated: two from USA, two from Canada, two from Australia, one from each of New Zealand, UK, Sweden and Norway.

Data collection

A semi-structured interview schedule was developed by the research team (Box 1). Participants were asked to describe what models or services to support community integration occur in their own service. Questions were open-ended and semi-structured, with prompts used as required to elicit more detailed information. Interviews were conducted via zoom or telephone and took 30–90 min. All interviews were audio recorded, transcribed verbatim and checked by the interviewer. Interviews were conducted by the first and second authors, both experienced in conducting qualitative interviews. The first author has significant experience working as a clinician and researcher in the field of SCI rehabilitation, therefore was known to some of the participants.

Data analysis

Data were analysed using the fifteen-point thematic analysis as described by Braun and Clarke [15]. The analysis was

Table 1 Characteristics of models of service delivery intended to support community integration.

Service and person interviewed	Number of inpatient & outpatient/other beds	Funding source for spinal rehabilitation	Model of community integration service delivery	Staff
Service 1 Advanced Occupational Therapy Practitioner	110 beds 5 wards: 1 × acute; 2 × rehab; 1 × paediatric; 1× pre-discharge	Government funded. Additional funding from not-for-profit community spinal organisation (where possible)	Most patients go through the pre-discharge ward prior to discharge for a few months, (sometimes less) but ideally at least four weeks. No separate community integration service.	Multi-disciplinary team: OTs, patient liaison officer (paid peer), driving instructor once/month.
Service 2 Physiotherapy Practice Coordinator	Unknown beds 3 separate units: traumatic, non-traumatic readmissions for skin issues.	Government funded. If work or transport related injury, will be followed up by private contractors	Inpatients may be referred to outpatient rehabilitation, e.g. Intensive Day Programme patients attend 5 days/week for 6 weeks. Have a home care OT and PT. If compensation, use private rehabilitation outpatient service. No separate community integration service.	Outpatient staff available via referral are: podiatrists, music therapy, sexual health clinician, vocational rehabilitation, driving rehabilitation, OT, PT.
Service 3 Advanced Practice Leader, and Outpatient Social Worker	60 beds 3 units of 20 beds each	Government funded.	Can come back for outpatient appointments. No separate community integration service - aim to prepare people for discharge during rehabilitation.	Outpatient programme: PT, OT, social work, nursing psychology, dietician, kinaesiologist.
Service 4 Occupational Therapy Specialist	18 SCI beds Plus some beds available in other wards if needed	Government funded. No government funding for home modifications.	After 3 months inpatient rehabilitation, patients go home for 4 weeks, then return to complete more inpatient rehabilitation (2–6 weeks). Routine readmission 12-months post-discharge for 5 days.	Inpatient staff: nurses, community nurses, doctors, OT, PT, sports counsellor, social workers, peer consultants.Outpatient staff: OT and nurse.
Service 5 Clinical Manager, Occupational Therapy	26 inpatient beds 4 Transitional Rehabilitation beds (self-contained units) onsite	Government funded. Additional funding accessible via accident insurance compensation.	Has a designated TR service. 4 weeks in on-site self-contained unit. Follow-up at 4 weeks and 6 months post-discharge. No other support post-discharge.	OT, PT, Transitional Rehabilitation Coordinator, Independent Living Coaches (people with lived experience of SCI).
Service 6 Manager, Transitional Rehabilitation Service	40 inpatient beds	Government funded.	Has a designated TR service. Provided to people in their own home after discharge (limited to 120 km radius). Average duration 4–8 weeks, but can be longer for very complex needs. After patient finishes TR may/may not be referred to outreach team.	PT, OT, social worker, nurse, therapy assistant, research officer.
Service 7 Programme Manager, Transition Support	152 beds (includes ICU, SCI and ABI)	Self-insured (majority of patients), Medicaid (some patients), 'financial assistance programme', & uninsured (some charity patients). Only accept people who have a discharge destination.	Has a designated TR service. Referral to TR if considered "at high risk for rehospitalisation". 60 days of telehealth follow-ups with closer monitoring in first 30 days. Average inpatient LOS 4–6 weeks.	Case managers, recreation therapist, resource specialist, Paid Peer Support Manager, paid peer support liaison officers, vocational rehab specialists. (OT & PT either as outpatient or in own community (not part of TR))
Service 8 Occupational Therapist, Transition Programme and Research Fellow	90 inpatient beds 4 transition beds off campus	Government funded. Peer programme coordinators are currently grant funded.	Has a designated transitions programme. Not all inpatients offered this - referred by inpatient staff therapists. TR typically consists of 2 weeks in patient and family housing. Patient will have a 24-hour outing then PT and OT meet with patient to identify issues to address.	TR: OT, PT, recreational therapist, nurse, physician, caseworker, pharmacist, psychiatrist.
Service 9 Manager, Community Integration Service	20 inpatient beds	Government funded	Has a designated CI service. Service and support post-discharge for about 12 months (can be longer). Some team members also provide inpatient services.	OT, PT, nurses (including sexual health and mental health nurses), vocational consultant, building consultant, exercise physiologist, peer support worker, leisure specialist.
Service 10 Senior Occupational Therapist	30 inpatient SCI beds	Government funded, private organisation. Patients contribute a very small amount per day.	Inpatient LOS approximately 3–8 weeks. Post-discharge home: day care 3 days/week up to 12 weeks (sometimes longer). Yearly follow-up. Day care patients live within 100 km radius.	Day care: OT, PT, nurses, social workers, physicians, peer workers.

OT occupational therapist, *PT* physiotherapist, *TR* transitional rehabilitation, *CI* community integration, *LOS* length of stay, *GP* general practitioner

conducted using the interview schedule as a framework, but with the overall goal of conducting a comparison of the differing approaches to facilitating community integration of people with SCI being discharged from inpatient rehabilitation. Transcripts were each read a number of times by the first author to allow for familiarisation with the data. The first author independently coded individual transcripts, using an iterative process. Once potential themes were identified, a process of constant comparison was employed until final themes and sub-themes were decided, named and defined. Discussion of the findings, themes and sub-themes occurred regularly among the research team, providing opportunities to ensure the rigour of the findings [14]. As per COREQ guidelines, supporting quotations are provided to illustrate the themes.

Results

Theme one: models of service delivery

Four different models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for SCI were identified. Table 1 outlines the characteristics of the models provided by each spinal unit. In the case of four spinal units there were no designated services that specifically addressed community integration, but rather community integration was part of the inpatient rehabilitation programme, undertaken by the same staff involved with the patient's inpatient rehabilitation. In three of these units, once the patient was discharged to the community, they were referred to community based services, usually not-for-profit peer-based organisations (Services 1, 2 and 3). After 3 months of inpatient rehabilitation, Service 4 allows the patients to return to the spinal unit for more inpatient rehabilitation to work on specific goals identified while at home:

> "*They come back for ending the rehabilitation period, where they can say that okay you have been [home]—you have noticed that this and this and this is difficult when you come home, and we are going to have more focus on these things so you can manage when you come home*." (Service 4 participant)

Four services offered a designated programme they named transitional rehabilitation. In the case of services 5 and 6, most patients are referred to this service, which is time limited (ranging from 4– 8 weeks), with specific goals identified for the patients to work on. Service 8 offered a short term transitional programme which involves patients living with their families in off-site accommodation for two weeks. This allows for patients and their families to experience what it will be like when they return home, but still with support from the spinal unit staff.

> "*The families are staying in our patient family housing, so this housing is technically off-campus. So really it's a live trial for when they go home."* (Service 8 participant)

Service 7 has a designated transitional rehabilitation team that follows patients up for 60 days via telephone. Patients are referred to this monitoring service if they are considered to be *"at risk"*.

> *"So really all of these transitions concerns, I'd like to think that they kind of fall under three categories; one is medical, one is financial and one is psycho-social. So we will follow them for those reasons. So the case manager is following them while they're in-patients or will refer to our program*." (Service 7 participant).

Service 9 offered a 12 month community integration service to which patients can be referred after discharge. It operates in a similar way to the transitional rehabilitation programmes but for longer duration. The length of service involvement is based on the patient's needs.

> *"Some people might actually be integrating quite well in to their communities and not really feel they need our support for as long as the 12 months, so we try to provide a service that meets the client's wishes, rather than just setting a stock standard time frame."* (Service 9 participant).

Service 10 offered a unique model. The government funded spinal unit admits all people with SCI within 100 km of the unit. Length of stay is quite short, because following discharge from the unit, all SCI patients are referred to a separate, privately run service for community integration services. Patients attend this service up to 3 days per week for up to 12 weeks, sometimes longer. This model is viable because the catchment area is restricted to people living within 100 km of the centre and patients are able to attend. This would not be possible in many of the other spinal units that admit patients who in some instances live in other parts of the country.

> "*So in day care we have a lot of time also to practice. And then of course the person is home, so they come there every day and that's the setting.So then you capture the more everyday problems."* (Service 10 participant).

Box 1

Interview schedule

Description of service/model

- Can you please describe your spinal injury rehabilitation service and the community integration model or service that is provided? What are the key services and/or programmes that are delivered? (prompts: staff involved, when it occurs (inpatient/outpatient, duration, structure, location))

Link between inpatient rehabilitation and community integration

- How does the inpatient rehabilitation service link with the community integration service? For example—opportunities for weekend leave to trial equipment and care, role of peer mentors/peer linkage if occurs, allowing client to stay connected with family, community and employers
- Does your programme/model facilitate self-direction or self-management? If so, how? Does this occur in conjunction with the inpatient service?

Community outreach

- Does your programme/model integrate or link with other providers in the community setting? If yes, how? Specifically, peer mentoring organisations?
- When the client is living in regional/rural areas, how do you deliver post-discharge rehabilitation? How do you reduce the reliance on city-based teams? (e.g. telehealth, virtual medicine, regional treating teams)
- How does the programme/service contribute to capacity building? (for other health professionals, families, other)

Coordination

- How does your community integration service/programme provide efficient, effective and co-ordinated service delivery?
- Are clients appointed a key liaison worker? How does this work?

Patient outcomes

- What client outcomes does your programme/model aim to address? (mental and physical health, independence, community participation, social connectedness, return to work, transport/mobility, managing carers, life role and goal attainment, early discharge, etc)
- Does your programme/model facilitate early intervention and an expectation regarding return to work? If so, how?
- How do you evaluate client outcomes? (patient assessment tools, length of stay, measure of satisfactory discharge, return to work, etc) (standardised vs centre developed)

Sub-theme: staffing

There was significant variation in the staffing provided at the various services, however, a multi-disciplinary staffing approach was consistent across the services. Most services included core staff of physiotherapy, occupational therapy, and nursing. Service 5 also offered Independent Living Coaches who were people with lived experience of SCI, and a Transitional Rehabilitation Coordinator. Service 9 offered the most comprehensive multi-disciplinary staff profile, including occupational therapy, physiotherapy, social work, digital health, leisure specialist, exercise physiologist, community services, access to peer support from the inpatient unit, vocational consultancy, building consultancy, and four community spinal nurses, including one that incorporates sexual health into her portfolio. The peer support worker and vocational consultant followed the patient from inpatient through to the community.

Sub-theme: peer mentors

The inclusion of peer mentors (people with lived experience of SCI) was evident in most of the services. Peer mentors were either volunteers or in paid positions. In some services peers received training to fulfil specific roles (e.g. Independent Living Coaches at Service 5). Peer mentors were also involved in running groups (Service 8). In some cases, community based peer-mentoring organisations were co-located at the same site as the spinal rehabilitation service, making access to peer mentors easier for inpatients.

"Because they're in the building and you can refer to them pretty easily, often they'll identify somebody to be a peer mentor and to be their go-to if they have questions on the clients, and they'll often visit that person while in inpatients but sometimes in outpatients as well." (Service 2 participant).

Sub-theme: facilitating community integration during inpatient rehabilitation

There were a variety of approaches taken to facilitating community integration during the inpatient phase. Primarily this was achieved either by offering day leave or encouraging community outings to enable patients to experience issues they would be likely to face in the community. Day outings organised by recreation staff were also common. Some services were not able to facilitate overnight or weekend leave, either due to the long distance the patients live from the centre or because funders do not pay for this.

"*Well we encourage the patients to go home for leave for the weekends. But many of them live very far away and we don't pay for their transport more than—I think it's once. So of course that really gives some restrictions for those living far away. And also the houses are not always adapted for their injuries, for their functional level. So that will also be a drawback."* (Service 4 participant)

One way to limit the need for weekend leave was to use transitional living units situated on the hospital site or close by, enabling patients and their families to be exposed to some of the challenges they will face when they return home to the community, while still having close available support of the spinal unit. There were no service evaluation data, however, to support this approach over other approaches.

Theme two: services provided

Sub-theme: telehealth

Services 4 and 9 regularly offered videoconferencing to their patients once they have returned to living in the community. Service 9 offered telehealth consultations to patients if they could not attend clinics in-person due to work commitments, health or distance issues. While there were some reported barriers, for example poor internet connection, a number of positives were identified, including being able to conduct a joint consultation with a community-based provider together with the patient. Service 4 also offered videoconferencing with a multidisciplinary team to manage pressure sores for people living in the community.

"We have been working a lot with pressure ulcers the last years, so we now have a videoconferencing service for some of the patients that are living at home, where we have a videoconference to the patient's home, together with the nurses in the municipality, who are treating the pressure ulcers from day to day." (Service 4 participant)

Service 7 conducted their transitional rehabilitation service almost entirely via telephone. They followed their "at risk" patients up for 60 days via regular telephone calls or sometimes via FaceTime.

Sub-theme: vocational services

There were a variety of approaches to facilitating return-to-work for people with SCI. Most of the participants interviewed identified that if the patient raised the issue of work as a goal then this would be addressed. Most spinal services had strong connections with community-based vocational providers (Services 2, 5, 6). Some of the participants interviewed felt that it was too early to address vocational issues while people were still completing inpatient rehabilitation. In addition, funding contexts had an influence as to whether this was a patient goal.

"Some of them they do all the things by themselves, they are in contact with their work, or they have work that they can almost do from their bed. But I would think that the experience is that it's not so easy to get the patients to think about work and how to go on. Perhaps the welfare system in [country] is so good that—they have sick leave for a year, where they get the same amount of money that they're used to." (Service 4 participant).

Services 8, 9 and 10 actively encourage conversations about work early on during inpatient rehabilitation.

"The return to work happens at inpatient, actually. They really like to start as early as they can, so the primary OT puts in a referral and the patient meets one-on-one with one of our community reintegration therapists - and they're typically OT by background - and what they do is they start speaking to the employer early on about what kind of adaptations and modifications they might need to return to work." (Service 8 participant)

There was recognition that facilitating return-to-work was a continuum that started during inpatient rehabilitation, and continued for months, often years after people are discharged. Service 10 has initiated a very comprehensive approach to return to work with their patients, which involves a 15 step process that commences during the inpatient stay.

Sub-theme: groups

Some services offered specific groups to facilitate community integration. Service 3 offered a variety of groups to outpatients including Mindful Eating, Stress Management, Cognitive Behavioural Therapy, and Community Support Groups. Services 3 and 8 had run closed time-limited groups to address community integration goals for recently discharged patients in the past, but were not currently running them at the time of the interview due to staffing and funding issues.

Theme three: facilitating self-efficacy and self-management

Self-efficacy refers to the belief of an individual in his/her ability to manage challenging situations and accomplish a goal [16]. Services 3 and 8 offered closed, time-limited, goal-based groups with an emphasis on development of self-efficacy to address community integration goals. However, both of these were pilot programmes, and neither were being run as part of standard care at the time of the interviews.

A variety of approaches were taken by the spinal services to maximise the client-centredness of their programmes, with the aim of maximising self-direction and self-management. Three services used patient-centred outcome measures at the beginning and end of their designated transitional rehabilitation programmes (Services 5, 6, and 7). These measures included: the Canadian Occupational Performance Measure (COPM), the Goal Attainment Scale (GAS), and the Multidisciplinary Goal Attainment Measure (MGAM).

In order to promote patients' self-management of health issues after discharge, services were using a variety of education approaches. Service 3 in particular had a strong focus in this area.

> "*Nurse X has a lot of experience in adult education and self-management so she's done a lot of work, particularly with our nursing staff, around self-management philosophies…She develops a lot of the patient education materials and then all of the education sessions that are run always have a staff person, but then someone with lived experience….. teaching that together.*" (Service 3 participant)

Discussion

The aim of this research was to describe and compare models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for SCI and to describe the characteristics of these models or approaches. When considering the different models and services described above, the policy and funding contexts need to be taken into consideration, as these directly impact what services can be provided and in what context they are delivered. Some services (e.g. Services 2, 3, and 4) reported feeling less pressure to reduce their length of stay than others (e.g. Service 8). In these cases, the emphasis was on providing most of the community integration services during inpatient rehabilitation. While for other services, the pressure to discharge patients as soon as possible resulted in the spinal units utilising different approaches. These included short term transitional rehabilitation services (Services 5, 6 and 7) or longer term community integration services (Service 9). There is limited evidence regarding which of these approaches provides the most successful community integration outcomes for patients. One of the advantages of short term transitional rehabilitation is that interventions are goal focused [17], with a strong emphasis on encouraging patients to take responsibility for their own management and transition to community-based services, rather than relying on the spinal unit for prolonged periods [18]. However, there is no evidence to determine whether this approach impacts on readmissions or improves community integration outcomes. Keeping patients in hospital for longer possibly prolongs dependency on the spinal unit [19], and potentially interferes with or slows the process of referring patients to community-based therapists, gyms and community organisations.

All the participants interviewed for this study described a multi-disciplinary staffing approach used by their service. This is consistent with accepted best practice in SCI rehabilitation [17, 20]. The services in this study all included therapy staff, while three services included vocational rehabilitation providers, three included staff who provided psychosocial interventions, and two included staff that addressed sexuality needs. Sexuality has been identified as one of the most frequently reported unmet needs in SCI studies [21] and is therefore considered essential to include in community integration services. While there are mixed findings in relation to the mental health of people following SCI, the majority of evidence demonstrates higher rates of depression than in the non-injured population [22], with an increased likelihood of people experiencing two or more emotional disorders than the general population [23]. As people are transitioning home and adjusting to life following SCI, it is recommended that staff are available with

expertise to provide psychosocial support, in addition to formal mechanisms of referring patients onto relevant services in the community.

People with lived experience perform a critical role as peer mentors assisting people with SCI to return to living a fulfilling life back in the community. There is increasing evidence of the efficacy of including peers in programmes aiming to maximise community participation [24]. All the services included in this study demonstrated clear recognition of the important role that people with lived experience have in facilitating return to work, study and community roles [25], by including them on staff, either in a voluntary or paid capacity. To include people with lived experience in an authentic way in service delivery, they should be involved in rehabilitation team decisions, participate in governance structures and be specifically recruited for their skills and attributes.

Group work has advantages which include fostering motivation and optimism, facilitating personal growth, creating sources of support, and providing an environment for constructive growth and problem solving [26]. In addition there is evidence that an emphasis on self-efficacy enhances community integration outcomes following SCI [19]. Two of the services interviewed for this study have piloted goal-based groups with a focus on facilitating self-efficacy, and have published their findings [26, 27]. Preliminary results of these pilots are positive. More evidence is needed to establish if such groups can maximise community integration outcomes, in what settings they should be conducted, and how long after injury [27].

A number of services interviewed were using telehealth (videoconferencing and telephone support) to support health maintenance and facilitate the community integration of their patients. This is consistent with evidence that telehealth has the potential to decrease the need for people to return to the SCI unit by assisting in the prevention and management of secondary health conditions [28], particularly through the use of internet-based self-management programmes [29]. Videoconferencing has an advantage over teleconferencing as it enables a visual image to be seen by the consulting health practitioner, which is particularly useful for pressure sore management. A further advantage is to facilitate capacity building of health professionals working in the community with SCI patients [30]. In the context of rapidly evolving and increasing accessibility of internet services, use of videoconferencing has the potential to assist with multiple aspects of community integration while decreasing reliance on SCI units.

It was evident from the interviews that vocational interventions were considered to be an important component of community integration. This is consistent with a study conducted regarding transitional rehabilitation goals following SCI, that found future work/study options were a commonly expressed goal [18]. Work is important in assisting people with SCI to regain a sense of control and purpose in their lives, and helps motivate them for the future [31]. There is preliminary evidence that early vocational intervention has the potential to offer similar return-to-work rates as traditionally offered services, but sooner [32], suggesting that conversations regarding return to work and study could be undertaken earlier by some services.

The main limitation of this study was the small number of spinal units that participated in interviews, potentially leading to bias in the results. In addition, it should be noted that the data is the perception of the participants interviewed, thus it was not possible to gain all information about a service from one interview. A number of participants acknowledged that they could not provide comprehensive answers to all the questions.

In conclusion, this study has compared models of service delivery intended to support community integration in the immediate period following inpatient rehabilitation for SCI. A variety of models were found, which were influenced by the funding and policy context of the country in which they were delivered. Multi-disciplinary staffing and involvement of peer mentors were viewed as important components and common to all services. The importance of vocational rehabilitation was acknowledged by all participants, although the approaches taken to this varied. Telehealth has the potential to assist in self-management, particularly for patients who live a long distance from the spinal unit or are confined to the home for health reasons.

Data availability

Interview transcripts are available on request.

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Author contributions LB was responsible for designing the study, conducting the interviews, analysing the data, and writing the manuscript. The remaining three authors were responsible for analysing the data and contributing to writing the manuscript. In addition, AL conducted some of the interviews.

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Compliance with ethical standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical approval We certify that all applicable institutional and governmental regulations were followed during the course of this research.

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