INSide the OUTcomes: A Rehabilitation Research Podcast

Episode 15: How do differences in rehabilitation length of stay affect outcomes for people with spinal cord injury?

SHARON PARMET, HOST:

Welcome to INside the OUTcomes: A Rehabilitation Research Podcast. I'm your host, Sharon Parmet. On this episode of INside the OUTcomes, I'll be speaking about a new 4. 2 million, five-year grant from the National Institute on Disability, Independent Living, and Rehabilitation Research to the Center for Rehabilitation Outcomes Research at Shirley Ryan AbilityLab.

The grant funds an international study exploring how differences in inpatient rehabilitation length of stay after spinal cord injury affect the experiences and long-term outcomes of people with SCI. Countries involved in the research include the United States, Australia, Canada, the Netherlands, Norway, and the United Kingdom.

I'll be speaking with Dr. Ann Deutsch, a clinical research scientist in the Center for Rehabilitation Outcomes Research and co-project director on the grant, and Dr. Jane Duff, a consultant clinical psychologist and head of the National Spinal Injury Center psychology team at Stoke Mandeville Hospital, Buckinghamshire Healthcare NHS Trust in England, and an investigator on the grant.

Welcome, Ann and Jane, to the podcast.

JANE:

Hello, Sharon. Good to be with you.

ANNE:

Thank you for having us, Sharon.

SHARON:

So the grant is about rehabilitation length of stay after spinal cord injury and how differences in that length of stay affect outcomes. Could you walk me through kind of what happens when someone sustains a spinal cord injury and where does that inpatient rehabilitation come into the picture?

JANE:

So when somebody has a spinal cord injury, there's either a traumatic injury and intervention with somebody experiencing surgery, often in major trauma centers, or their spinal cord injury can come about through other means. Sometimes related to cancer or other disease or disorders and can come around over time and then be diagnosed. And typically that's called non traumatic, but for the person concerned, it is definitely traumatic from a psychological perspective because it's although it's not been a certain onset from an acute event, it's still a significantly life changing event in anybody's life in terms of spinal cord injury.

So people typically receive a period of acute care and then they move into rehabilitation, which is all focused on how to maximize someone's abilities that they have left. So really practical things transferring, you know, from a bed to a wheelchair, if they're going to be using a wheelchair in the longer term, as many people do. Getting dressed, eating, you know, going out and about doing all the kind of things that are people find valuable in their lives, how to kind of reconnect, how to consider how to return to work, how to consider any kind of caring responsibilities, just practical aspects in terms of in terms of life.

SHARON:

So after this traumatic event, you're in the hospital, you're adjusting to a new reality or adjusting to a new body, you're learning how to do the things you're going to need to know how to do once you go home. So what are some of the kind of average inpatient lengths of stay that we know of in different countries?

ANNE:

Yeah, so one important note is that In the 1970s in the U. S., the average length of stay on the acute care side was 24 days, and then the rehabilitation stay that followed right after acute care was on average 127 days. More recent data has shown that in the U. S., the average length of stay in the acute care is about 12 days, and the average length of stay in the inpatient rehabilitation unit is about 42 days on average. So, there are, as you mentioned, there are differences in different countries, and in Australia, the average length of stay from some more recent data is about 83 days.

In inpatient rehabilitation, and in Canada, it's about 81 days, so almost double the time that is spent in the U. S. in the rehabilitation stay.

SHARON:

So different countries, there are different lengths of stay, the averages are different. What are some of the factors that we know of that go into the differences in the length of stay?

ANNE:

So, there are differences in length of stay, depending on. Things like the level and completeness of injury. So, for example, somebody who has an injury that is at the cervical level. So, you know, at the neck and is on a complete injury, they will typically have a longer stay, in order to work on the recovery that Jane mentioned earlier during our discussion.

Somebody who would have a shorter stay would be somebody who let's say had an injury that was more in the lower back, the lumbar area and had an incomplete injury meaning that they had more functional abilities, for example, to be able to walk. They would typically have a shorter length of stay and, and that is generally across countries.

One of the trends that I think has happened in many countries is that the average age of patients has actually increased. And so people who are older tend to require a little bit more time to recover, and they, some of it is potentially due to aging, but also people who are older tend to have more coexisting medical conditions, and so sometimes that can interfere with the recovery trajectory. And so somebody who is older may have a bit of a longer stay in order to make sure that they're ready to go home after the rehabilitation phase of their stay.

JANE:

And I think one of the features of this grant and is this research, is that those trends that Anne has mentioned are trends across globally in terms of developing nations. So although the UK has one of the longest lengths of stay and, and longer than Canada and Australia, we notice the same trends in terms of the degree of severity of injury and in terms of the aging population. But one of the key things that from the, from the grant call is, um, to look at. So, if there's a similarity in terms of in terms of the terms of those general trends across all the nations that are participating, but a difference in terms of length of stay, which is where the interesting features of what patients experience in rehabilitation and how prepared they are for community life from the rehabilitation. And that's kind of one of the key features that we're investigating.

SHARON:

Right. We spoke in an earlier conversation about how, you know, and in the United States, at least in terms of length of stay, or for staying in the hospital for almost everything, is getting shorter and shorter and shorter. And you think, you know, that's, that's gotta be wrong. I want more care. I want to be in the hospital a little bit longer and get the most out of it, but that's not necessarily the case with rehabilitation. Is that right?

JANE:

Certainly, I think it is about preparedness for community living. That's what is the kind of cornerstone of rehabilitation. So the longer that you stay can be advantageous because you can have more therapy and more treatment and kind of resume, kind of greater amount of those activities. But there is, could be a downside in terms of people becoming more institutionalized. Certainly, in many places, people are geographically far away from their families and their support systems, which can be difficult.

And particularly people's partners have additional responsibilities in terms of childcare and jobs and things like that. It can be very difficult to support the person with injury. So we're looking at whether there is an optimal moment, an optimal length of time in terms of rehabilitation for people to be sufficiently prepared to be able to have gained the skills that they need to be able to translate that into living well with injury, but not too long so that there is risk of difficulties returning to community life. And, you know, potentially negative aspects in terms of the impact on people's families and friendships and social support systems.

ANNE:

Just, just to add on to what Jane mentioned, sometimes in the hospital, unfortunately, people do acquire what's called healthcare acquired conditions, such as infections. Or sometimes if somebody is, you know, relearning how to walk, they may have falls where they sustain an injury, which, of course, is a negative. And pressure ulcers, unfortunately, or pressure injuries are also sometimes acquired when somebody Is in the hospital for a long period of time. So, of course, those are things that ideally are avoided, but sometimes do happen for people who are hospitalized for a long period of time.

I think the other important feature is that in the U. S., even though the length of stay is shorter, there are outpatient or day rehab programs where people continue to get rehabilitation services. It's just that they're not overnight in the hospital. And so, there can be sometimes advantages to that because sleeping in the hospital can be challenging due to all the other activities happening at night with patients and just the hospital environment generally being sometimes noisy and so being able to sleep in your own bed sometimes is really an important thing that can aid with recovery.

So, again, people can still get those rehabilitation treatments, but it's perhaps more at a day rehab or outpatient.

SHARON:

Can we talk a little bit about the research itself, and what are the different projects that are going to be undertaken as part of this grant?

ANNE:

Sure. I can get started with that. So the first study, which is led by Dr. Alex Wong, is focused on doing a literature review to know what we, what is the current knowledge, what do we know and what are the gaps in terms of our knowledge base. So, for the second project, there are three. And the first aim is focused on describing variations in length of stay, including the acute care and rehabilitation length of stays. And as I mentioned, I'll be splitting the data by whether the injury was traumatic versus non traumatic, the neurologic category, that is the level and completeness of injury and by the country. The goal of this is to understand the length of stays and how they vary by those factors. A second aim is to examine non-clinical factors, both modifiable and non-modifiable person and facility level to understand differences in length of stay and rehabilitation therapy intensity. And again, that will be stratified. Or separated by the etiology, whether it's a traumatic or non-traumatic injury, and the neurologic category. So this aim focuses primarily on patients and treatment factors, um, and looking at healthcare acquired conditions. The last aim is focused on looking at whether there are, looking at functional outcomes for patients as they recover and also, in the U. S, I'll be able to look at readmission rates, because people generally don't want to leave the hospital only to have to return to the hospital to get additional care. I'll let Jane talk about project three.

JANE:

Thank you, Anne. That's the project that I'm involved with in the UK, and we've got kind of several, many collaborators. There's the Shirley Ryan AbilityLab team. There's the team at McGill University in Canada. There's a team in the University of Sydney in Australia, a VA hospital team, also in the US, and a team in the Netherlands. So there are two phases to the project. The first one is each of those teams will be having focus groups for both people with a spinal cord injury, their support persons, and clinicians that provides spinal cord injury care.

And looking at, devising the final survey, which is the kind of second phase. So, those focus groups will be facilitated, and will ask people about their preparedness, their experiences of rehabilitation, their preparedness for discharge, their experiences since discharge and since being in the community.

The survey is the second phase, which will involve people with spinal cord injury. So in the UK, we're reaching out to 500 people to take part in that survey of their experiences of rehabilitation. And all the sites are very actively engaged

with user groups and charities, people with lived experience to populate, and to be able to speak to both domains, both the focus groups and the survey.

And then reaching out to people support persons also via those, those groups, and then reaching out to local clinicians that have worked for 5 years or more working in spinal cord injury rehabilitation.

SHARON:

So what kinds of information are you hoping that the research will generate and how do you see it being used going forward?

ANNE:

So in the US, one of the issues that has emerged over time is that some patients after a spinal cord injury may receive their rehabilitation services in an inpatient rehabilitation facility and those facilities are focused on providing intensive rehabilitation therapy and typically do have shorter length of stays. And many may receive care in what's called subacute rehabilitation. And those facilities are skilled nursing facilities. They're sometimes part of a nursing home. So they provide services both to people who live at the facility, as well as people who are getting short term rehabilitation. So in the subacute or skilled nursing facility setting, one recent study just looking at the length of stay and costs, found that on average patients who are receiving care in skilled nursing facilities after a non-traumatic spinal cord injury, they're actually traumatic or non-traumatic spinal cord injury, and this was mainly older people who had Medicare fee for service insurance, the average length of stay in the skilled nursing facility was 43.6 days. And the Medicare cost, so the insurance cost associated with that stay, was about $20.700. Whereas people who had a spinal cord injury and were treated in an inpatient rehabilitation facility, again, this is the older population generally covered by Medicare fee for service, their average length of stay was about half at 19.1 days. And yet, their costs during that shorter stay were higher at about $27,500. And that's because the intensity of therapy was different. And so, there's not, I'm not aware of a study that has actually looked at the intensive therapy in subacute versus inpatient rehabilitation facilities for people who have experienced a spinal cord injury. And so that's one issue that we will be looking at.

There is data that I've looked at in terms of the amount of therapy in inpatient rehab facilities and for patients with non-traumatic spinal cord injury. And this was the Medicare, older Medicare population. I found that on average, people who had a length of stay of 14 days or longer during the first two weeks, they had on average about 1.1 hours of therapy, of physical therapy per day. So that's like the average across like seven days, so probably during the week they're getting that therapy for the most part and having less therapy, if any, on the weekends. And the average amount of therapy and occupational therapy was just over an hour per day on average. And they had 0.14 hours a day of speech language pathology therapy. So again, you know, one of the things I'll be able to look at in project two is comparing the amount of therapy received in the inpatient rehab facility setting versus the subacute setting for patients recovering for spinal cord injury, and I would say there's a similar degree of variation and amount of things that we don't know in the UK, which is what this grant will directly speak to.

JANE:

We have eight spinal cord injury centers in England. There's a variety between them and particularly in terms of kind of my reach out, we will be kind of covering that geographical variety in terms of our, in terms of the sample from England. There is also, similar to in the US, not everybody is able to access better spinal injury rehabilitation and the Spinal Injury Association estimates that to be about a third of people who don't access special rehabilitation and who receive perhaps rehabilitation by a neurodisability ward or, or just a general hospital ward. And again, about a third of people receive rehabilitation on an outpatient basis and don't receive it on an inpatient basis. There's a great variety in the UK.

But I also think this grant will speak to global need because the World Health Organization launched in July 23, the package of rehabilitation interventions to begin to look at the detail of what is required for spinal cord injury rehab and specifying for health ministries worldwide the kind of fundamentals associated with that, both in terms of, you know, personnel, and in terms of what the rehabilitation should involve, and in terms of the potential time that an intervention would involve.

And it was really to help, to look to provide ministries with health and policymakers with evidence to support spinal cord injury rehabilitation. So some of our outcomes, we would hope would very much speak to evidence or provide some additional information that can support those developments globally, and be kind of pulled on to evidence need

in different nations. Although we're all developed nations that are taking part in this study, it's a bit of a black box. And so beginning to open up some of that black box and, and find out the detail of what's involved, I think is really important.

SHARON:

Wow, it sounds like it's going to be a really exciting research project with implications that are certainly global.

I want to thank both of you for being on the podcast today, and I will look forward to reading about your research results in the coming years of the study.

JANE:

Thank you very much, Sharon. Good to be involved.

ANNE:

Thank you, Sharon.

SHARON:

This has been INside the OUTcomes: A Rehabilitation Research Podcast. This podcast is supported by the National Institute on Disability, Independent Living, and Rehabilitation Research. This is your host, Sharon Parmet, signing off.