

ARTICLE



Strategies used by providers to support individuals with spinal cord injury in weight management: a qualitative study of provider perspectives

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STUDY DESIGN: This is a descriptive qualitative study.

OBJECTIVES: To explore recommended strategies employed by healthcare providers to support individuals with SCI in weight management.

SETTING: Fourteen veteran administration hospitals in the United States and the Shirley Ryan AbilityLab (SRALab) SCI Model Systems in Illinois.

METHODS: Semi-structured interviews were conducted with interprofessional SCI providers involved in weight management with individuals living with SCI. Thematic analysis methods were used.

RESULTS: A total of 25 interprofessional providers were interviewed. Providing clinical expertise to assist in weight management included (1) checking progress or status of weight over time, (2) monitoring and tracking other health-related indicators, (3) stressing weight-related health risks, (4) providing education, (5) encouraging healthy behaviors, and (6) identifying and accessing resources. Fostering provider–patient relationships included (1) establishing and maintaining rapport and (2) tailoring/individualizing weight management treatment. Coordinating a team approach included (1) involving a dietitian or nutritionist, (2) communicating the same message, and (3) involving the informal caregiver/family.

CONCLUSION: Weight management strategies should incorporate patient preferences and goals, informed through provider expert and personalized clinical advice, and supported within the context of interprofessional team collaboration that includes caregivers and family.

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INTRODUCTION

Overweight and obesity are common long-term maladies in individuals living with spinal cord injury (SCI), primarily due to a decrease in physical activity associated with the injury and an imbalance of caloric intake relative to energy expenditure [1]. Excess weight is a risk factor for cardiometabolic syndrome in the general population, but more commonly in the SCI population, with a high prevalence of hypertension, diabetes mellitus, and coronary artery disease, particularly for individuals with tetraplegia [2, 3]. Obesity in SCI is also associated with spinal pain [4] and many other consequences [5–7]. Managing weight in individuals with SCI is important to prevent secondary conditions and promote health.

Weight management guidelines exist and describe evidence-based recommendations [8–10]. Although some studies have been successful in initiating weight loss in persons with SCI, most are effective only in the short term [11–25]. Identifying provider strategies used in practice is unknown. Persons with SCI face many barriers to weight management in the context of life [26]. Healthcare providers understand the magnitude of overweight/obesity in persons with SCI

and the subsequent consequences [27] and are well positioned to share experience-based recommendations for weight management. SCI providers across various interprofessional positions have critical insights to share. Therefore, the objective of this study was to explore recommended strategies employed by healthcare providers to support individuals with SCI in weight management.

METHODS

In a descriptive, qualitative design [28, 29], interprofessional SCI providers in the United States were interviewed to describe provider perspectives of recommended weight management strategies used for individuals with SCI. Providers were recruited using convenience sampling from both the Veterans Health Administration (VHA) and the Shirley Ryan AbilityLab SCI Model Systems. This study was approved by both Institutional Review Boards. SCI leadership at each facility was asked to identify interprofessional staff with experience in SCI weight management. Letters were also sent to SCI providers through a national VHA SCI listserv. Potential participants were screened for inclusion criteria of being a SCI provider who is involved in weight management.

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Table 1. Qualitative interview questions used in provider interviews.

1. In general, what do you think adequate weight management strategies are for individuals with SCI? Probe: describe those strategies used in practice; what strategies can/should be used?
2. How do you or would you as a provider incorporate the patient's preferences with regard to weight management for individuals with SCI?
3. Has considering preferences and choices affected weight management strategies or education delivery among persons with SCI? How so?
4. What kind of a role do you think healthcare providers should play in weight management? Probe: SCI Physicians? Primary care providers? Other SCI providers (probe: therapists/nurses)?
5. What disciplines are involved in weight management for individuals with SCI? Probe: Primary care medical providers (e.g., physicians, physician's assistants, nurse practitioners), primary care staff nurses, behavioral health specialists (e.g., social workers, psychologists), nutrition specialists (e.g., dietitians), physical activity specialists (e.g., PT, OT, RT, KT, exercise physiologist), specialty medical providers, others?

Semi-structured interviews to explore current recommended practice were conducted in-person or over the telephone, lasting 30–60 min, by three experienced researchers, guided by interview questions developed based on a literature review (Table 1). Field notes were completed after each interview. Interviews were audio-recorded, transcribed verbatim, and verified by an external professional transcription service.

Transcripts were coded and analyzed by three research team members with expertise in qualitative methods using thematic analysis methodology [28, 29]. Dependability and confirmability were supported by maintaining an audit trail for the emerging themes using a codebook, coding rules, and NVivo (QSR International, version 12 NVivo, 2018, Doncaster, Victoria, Australia) that aligned the themes with the data. The researchers independently coded two transcripts to develop an initial codebook, then met to compare and resolve coding discrepancies to reach agreement on a modified codebook after four transcripts. All transcripts were then independently coded using this codebook, and the team subsequently met to compare coded themes. Definitions and attributes of each theme continued to be refined during these meetings until saturation and parsimony was reached.

RESULTS

SCI providers from 14 VA hospitals and the model systems ($n = 25$) were interviewed (Table 2). Provider participants identified 11 strategies for healthcare providers to assist individuals with SCI in weight management, summarized in Table 3. These strategies related to providing clinical expertise, fostering provider–patient relationships, and coordinating a team approach. Participants are identified by a participant ID.

Providing clinical expertise to assist with weight management

Participants recommended to consistently and systematically use their clinical expertise to monitor, educate, and share resources to assist patients in weight management. Six themes emerged.

Checking progress or status of weight over time. Providers recommended to monitor weight regularly and share this information with patients. “We kind of keep an eye on the trends with their weight...to look at trends and see if patients have lost, gained, or maintained weight over time and then intervene if need be” (HP24). If populated, documentation systems helped identify weight trends: “there just needs to be some kind of documentation. Keeping a close eye on weight” (HP19). Identifying trends can help guide discussions about weight goals: “I’ll pull up and look at their weight trends” (HP15). Providers shared this information with patients. “Health providers just making sure that if that information [weight, weight behaviors] is being gathered, that it’s being shared and addressed with the patient because they might not be aware of what the weight gain is” (HP03). Providers regularly checked on and shared weight trends with patients.

Table 2. Sample characteristics ($n = 25$).

Sample characteristic	<i>n</i>	Percent
<i>Provider role</i>		
MD/NP/PA	6	24
Psychologist/SW	4	16
Therapist	9	36
Registered nurse/dietitian	6	24
<i>Gender</i>		
Male	3	12
Female	22	88
<i>Practice site</i>		
VA	15	60
SRA model system	10	40
<i>Age</i>		
26–39	15	60
40–64	9	36
65+	1	4
	Mean	Range
<i>Years providing SCI care</i>	9.56	1–29
<i>Hours work per week</i>	41.48	32–65
<i>Percentage of week in SCI</i>	63.43	6.25–100

Table 3. Weight management strategy themes and subthemes.

<i>Providing clinical expertise to assist with weight management</i>
Checking progress or status of weight over time
Monitoring and tracking other health-related indicators
Stressing weight-related health risks
Providing education
Encouraging healthy behaviors
Identifying and helping access resources
<i>Fostering provider–patient relationships</i>
Establishing and maintaining rapport
Tailoring/individualizing weight management strategies
<i>Coordinating a team approach for weight management</i>
Involving a dietitian or nutritionist
Communicating the same message
Involving the informal caregiver/family

Monitoring and tracking other health-related indicators. Providers recommended tracking weight-related chronic disease and mental health indicators that influence weight management in SCI. "It may be that they're looking at metabolic disease and looking at diabetes management, looking at other indicators of things that need to be managed" (HP14). Participants discussed the importance of "tracking mood" (HP16) and cognitive status: "you have to always tread lightly, especially depending on how close they are to their initial injury. You always have to think about cognitive status if there was some kind of brain injury associated with their spinal cord injury" (HP05). Providers should monitor for complications and co-morbidities associated with overweight and obesity as a tool to guide weight management efforts.

Stressing weight-related health risks. Participants stressed weight-related risk and complications to motivate patients in weight management. "Sometimes you have to be very brutal and scare them" (HP09) and discuss "how the excess weight is going to contribute to...medical conditions that they're monitoring and kind of catching things before they turn into a real limitation" (HP12). Some of the risks mentioned by providers included shorter life span, immobility, and more complications from diseases as a result of weight concerns: "We are able to present some of the hazards of immobility that come with issues with weight gain; a lot of patients will become conscious of that and try to engage and stay kind of strict with their regimen and with their diet" (HP17). Providers stressed consequences of overweight/obesity to motivate patients.

Providing education. Providers recommended incorporating education in nutrition and exercise. "I think education is my biggest proponent" (HP18). Education should begin early post injury during acute care to establish new habits: it is integrated "as part of [SCI] management instead of something that starts being talked about after it's already a problem" (HP04). Education focused on nutrition: "having a well-rounded diet, as well as just making sure they're drinking enough and taking in enough like fluids" (HP08), "techniques of cooking" (HP14) and shopping. Participants suggested that providers also teach hands-on exercise options and how to properly use exercise equipment, providing demonstration and supervised practice. Providers also taught movement strategies, including "tai-chi and yoga" (HP13). Providers incorporated nutrition and exercise education for weight management.

Encouraging healthy behaviors. Providers encouraged healthy behaviors as positive reinforcement to maintain healthy weight management efforts. "We do try to encourage them to stick to a healthy diet, especially on the outside" (HP17) and "We try to encourage activity" (HP06). Providers reinforcing the benefits of activity or healthy eating was a recommended weight management strategy.

Identifying and helping access resources. Providers recommended or referred patients to healthcare or community resources, including exercise programs, and helped with insurance financing, if needed: "I love to involve recreational therapy for co-treatment sessions with the different adaptive cycles, and then ask rec therapy to help them with applying for grants to get their own exercise equipment...or we'll try to get something funded by insurance to help promote exercise and activity" (HP01). Providers also suggested exploring community resources in "figuring out where they live and what is possible and kind of pairing them up with someone from their community to help and see if there's any groups" (HP04). Identifying healthcare and community resources helped individuals with SCI find or follow through with weight management plans.

Fostering provider-patient relationships

Provider participants stressed the importance of developing relationships with patients to help motivate patients in weight management efforts. Two themes emerged.

Establishing and maintaining rapport. Providers built and maintained rapport with their patients by learning about the patient, listening to and encouraging open communication, and discussing patient goals. Providers learned about their patients with SCI by asking a lot of questions to build a relationship: "Be inquisitive. Be interested in them. You build a relationship with your patients" (HP18). Learning about the patient included chart reviews: "look in their chart to see what the providers and all the other staff has put in there about them so that I know their limitations and risks and what they should and shouldn't be doing" (HP13). Participants described the importance of "motivational interviewing" (HP16) to discuss patient goals: "being more systematic about 'what are your weight management goals'" (HP15). Participants agreed on the importance of checking in on weight issues routinely and having open conversations about weight management: "encouraging healthy eating and just opening up those conversations more frequently" (HP01). Patient assessments incorporated learning more about the patient, building a relationship to identify and discuss patient-identified weight management goals.

Tailoring/individualizing weight management strategies. Providers tailored dietary and physical activity weight management strategies based on patient wants and contextual factors. This included identifying patient preferences and integrating those preferences into a weight management plan. "I try to ask them what they like, what do they enjoy, and incorporate that somehow" (HP02). Participants described probing about enjoyable activities or food choices: "Identifying desirable activity, so that it's not something that they think, oh gosh, I'm going to have to do this. It's something they can look forward to" (HP15). Participants described the importance of adapting strategies to life contextual factors: "Weight management strategies really is going to depend on so many factors, the education level, the cultural background, their technology tolerance, their motivation to lose weight, willingness to change diet, willingness to change lifestyle" (HP14). This information guided providers to "try to make a workable plan that suits their needs, their energy needs" (HP10); "Everything needs to be kind-of customized" (HP19). This included discussing balance and choice: "it's just a matter of balancing; you can still have what you really like, but just limit a portion and the quantity and how often you're eating it in a typical week" (HP17). Successful strategies were individualized based on patient desires and contextual factors.

Coordinating a team approach for weight management

Provider participants discussed the importance of coordinating a team approach for weight management in persons with SCI. This included involving the dietitian/nutritionist, communicating the same message, and engaging the family/caregivers. Three themes emerged.

Involving a dietitian or nutritionist. Providers recommended that dietitians or nutritionists be on the SCI interprofessional team. "It's imperative for them to have, just as important as a doctor, to have a dietitian" (HP05). Dietitians assist in both education and life integration: "Dietitians are...very helpful for the education piece, both around the basics of like calorie amounts and how to estimate calories in an efficient, kind of a workable pragmatic way" (HP12). Dietitians hold a critical role on the interprofessional team in weight management.

Communicating the same message. It was important that everyone on the healthcare team work together and communicate the

same message about weight management. “It’s just a matter of a team approach to keep these guys on track” (HP11). Interprofessional collaboration occurred during team meetings: “where all of the providers meet with the individual with SCI, and everyone is kind of on the same page” (HP13). Consistent and clear communication promoted understanding: “If you have multiple people telling you the same thing, you’re more apt to listen” (HP08). Weight management strategies should be clearly communicated.

Involving the informal caregiver/family. The healthcare team promoted unpaid caregiver and family involvement in SCI weight management. This involvement created a comprehensive team approach: “It’s not just the person with SCI going home and reporting what the dietitian said, but rather including the caregiver or family as team members when those different consultations are occurring” (HP22). Caregivers played an important role in weight management: “caregivers are the ones who are doing the grocery shopping and preparing the meals, so just letting them know this is really what your son or daughter needs right now, and this is what you need to continue doing over time” (HP08) and “can help the individual with SCI exercise” (HP02). Communications were on-going and integrated into life patterns: “The dietitian makes a lot of phone calls talking to the families, trying to make sure that everybody has got what they need and what they’re missing education-wise, especially when these guys are jumping diets” (HP11). Caregivers and families should be well integrated into the weight management team for healthy eating and physical activity efforts to be successful.

DISCUSSION

The purpose of this study was to explore recommended strategies in weight management for individuals living with SCI among SCI providers. SCI healthcare providers recommended weight management across three key areas: providing clinical expertise to assist with weight management describes provider clinical activities; fostering provider–patient relationships are relationship-building strategies with the patient; and coordinating a team approach requires collaboration among healthcare providers and informal caregivers/families. This demonstrates the complexity of weight management in practice.

Providers are in the unique position of giving expert medical, psychological, and therapeutic advice including checking progress or status of weight over time, monitoring and tracking other health-related indicators, and stressing weight-related health risks while also encouraging healthy behaviors. It is critically important that providers move beyond gathering clinical data and intentionally discuss and integrate weight management strategies within the context of the clinical practice [30]. Additional questioning, exploration, and follow-through helps ensure weight management goals are consistently being addressed. These strategies are consistent with current guidelines [8–10]. These communications can be challenging when aligning patient goals with medical and therapeutic advice. Past research related to vaccination behaviors found that stressing high risk sequelae creates a fear response that can lead to improved patient self-efficacy and participation in healthy behaviors [31]. Focusing weight management discussions on patient health and encouraging healthy behaviors to avoid weight-related health risks may motivate patients in weight management.

Results indicate that providers should share information and point out resources that may help with weight management. Specifically, provider participants recommended helping with insurance coverage logistics to access resources, discussing exercise options, and referring to physical therapy or community weight management groups. Health system and community resources vary locally, and providers need to be aware of and

intentionally integrate appropriate resources into clinical practice. Participants specifically highlighted the effectiveness of programs, such as the Working on Healthy Eating, Exercise and Life Style program, which is a successful program that is tailored for individuals with SCI [32]. Although current guidelines encourage leisure time physical activity [8], in the population without SCI, research indicates that few providers refer patients to community-based behavioral counseling programs in weight loss [33], suggesting the need for more community collaboration between providers and community resources. Community resources have the benefit of providing local gatherings among peers and should be integrated into health system weight management initiatives [30]. Some community resources exist for individuals with SCI at the local level; for example, some community organizations (e.g., YMCA) have created and experienced successful weight management with SCI-specific exercise programs [34]. This presents an opportunity for healthcare providers to facilitate collaboration between health systems and community organizations to further encourage weight management for individuals with SCI. This study supports the need for providers to link patients to both health system and community-based resources.

Results indicated the provider–patient relationship is an important aspect of weight management. Establishing and maintain rapport by learning about the patient and having open communication can build a positive relationship, which has been shown to improve patient accountability and positive weight management behavior change [35]. Past research indicates that providers demonstrate less emotional rapport with patients with obesity [36, 37], indicating that provider efforts to intentionally build rapport may be beneficial. Using techniques such as motivational interviewing creates a forum for patients to share health goals and concerns [18]. Key motivational intervention strategies include listening, revealing patient goals, and aligning patient goals to patient-supported strategies. Provider participants recommended incorporating patient interests when tailoring weight management to patient-identified goals. Collaboratively developing weight management efforts with on-going communications through telehealth may lead to more success. These results are consistent with guidelines [8] and past research demonstrating that co-created exercise regimens led to better adherence and more rigorous physical activity among individuals with SCI. Building rapport and individualizing strategies can lead to better success in meeting weight management goals.

A team approach to weight management is key. This study supports the importance of interprofessional teams in weight management and that all members of the healthcare team communicate the same message. SCI providers support interprofessional practice, but also need to apply that strategy in weight management in SCI [38]. Weight management programs incorporating interprofessional approaches and/or teams have demonstrated some success in weight loss [21, 25, 39]. Some of the challenges in integrating dietitians into the interprofessional team are related to the lack of accessibility to dietetic services and associated cost to patients [40]. Results from this study reiterate the importance of an interprofessional approach that includes the dietitian’s expertise.

Provider participants also emphasized the importance of involving informal caregivers and family members in the SCI weight management team. Weight management occurs within the context of people’s lives, and the degree to which caregivers and families support weight management is important [30]. Little research has been done to incorporate caregiver and families in supporting weight management education and weight loss strategies in SCI [38, 41, 42], yet informal support may be necessary [43, 44]. Family members and caregivers actively support weight management in food choice and meal preparation and should be integrally involved in the care team.

Healthcare providers can facilitate weight management behaviors by intentionally and consistently providing professional medical monitoring and guidance as an interprofessional team. Providers should balance patient preferences and goals with honest medical and therapeutic advice so that strategies are individualized and realistic, and patients have access to health system and community-based resources. This study further supports team alignment that includes families and caregivers to meet patient weight management goals.

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AUTHOR CONTRIBUTIONS

All authors conceived and/or designed the work that led to the submission, acquired data, and/or played an important role in interpreting the results and approved the final version. LB, CP and SL drafted or revised the manuscript and agreed to be accountable for all aspects of the work in ensuring that questions related to the

accuracy or integrity of any part of the work are appropriately investigated and resolved.

COMPETING INTERESTS

The authors declare no competing interests.

ADDITIONAL INFORMATION

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