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Adolescents with spinal cord injury: Indications and suggestions for recreation therapy practice

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Abstract

The purpose of this article is to examine rehabilitation indications and recreation therapy interventions for spinal cord injury (SCI) occurring during adolescence. For the adolescent with SCI, the impairments associated with paralysis result in significant disabilities that potentially complicate the physical, psychological, and social transitions typical of that life stage. There are leisure-related concerns that include lowered activity levels, boredom, and diminished social interaction. Transitioning from childhood to adulthood may be more complicated than usual for the adolescent with SCI. It is during this time that critical roles and values are explored with the hope of achieving the foundation for adult identity. With the introduction of SCI, there is greater potential for lingering identity crisis. It is suggested that recreation therapy interventions utilize a resilience/competence framework within a comprehensive biopsychosocial rehabilitation/habilitation model.

Key words: adolescence, leisure, spinal cord injury, resilience, biopsychosocial

Approximately 11,000 new cases of traumatic spinal cord injury (SCI) are reported each year, with the average age at injury being 37.6 years. The age group with the greatest frequency of injury comprises individuals between 16 and 30 years old, and 51.8 percent are single when injured. The majority of SCIs (79.6 percent) have occurred in males. Counting nontraumatic causes of SCI, the injured population consists of about 1 million people. Since 2000, about half (47.5 percent) of reported SCI cases have been due to motor vehicle crashes, followed by falls, acts of violence (primarily gunshot wounds), and recreational sporting activities. The incidence rate of SCI due to

acts of violence is six to nine times higher among minorities, and there has been a large increase in severe SCIs in minority groups in the United States. Of those injured by any means since 2000, 67.5 percent are Caucasian, 19 percent are African American, 10.4 percent are Hispanic, and 3.1 percent are from other racial/ethnic groups. Today, about 6.6 percent of all persons with SCI who are discharged from initial treatment are sent to hospitals and group living situations, and 5.3 percent are discharged to nursing homes. The average length of stay in the acute care unit for those with SCI is 19 days, and on average they spent 45 days in a rehab unit in 2003.¹

For adolescents who have an

SCI, there are unique considerations. Adolescence is regarded as one of the most important developmental periods of life, characterized by significant biological, intellectual, and psychosocial changes.^{2,3} It is also a time when individuals are in the process of giving up the world of childhood in favor of the world of adulthood. While wrestling with numerous important developmental issues is challenging for most adolescents, it would be more so for adolescents who experience life-changing traumatic events such as SCI. The injury not only results in dramatic life changes during this critical stage but also disrupts the normal process of transitioning into adulthood. Therefore, adolescents with

SCI must not only cope with the demands of their injury but also prepare for adult roles.

Successful transition between childhood and adulthood demands substantial psychological adjustment.⁴ Specifically, Erikson⁵ identified “role confusion” as the central dilemma of adolescence. The formation of a coherent and firm identity is an essential developmental task for transition from adolescence to adulthood. In this transitional period, the child’s early sense of identity becomes somewhat unstable because of the combination of rapid body growth and the sexual changes associated with puberty. This period has been referred to as a “moratorium” between childhood and adulthood.⁵ The moratorium indicates that adolescents live in a state of limbo, in which they are neither children nor adults. Another important change for this population is the increasing interest in friends. For adolescents, peer relationships play an extremely important role in psychological development and identity formation. Hamburg⁶ reported that adolescents need to seek and acquire meaningful peer relationships if they are to be successful in developing adult roles. Further, peers provide models and feedback that adolescents can not get from adults.⁷

Satisfying leisure involvement with peers builds and maintains adolescents’ self-confidence and positive self-regard, helps anticipate the work and family relationships of adulthood, and supports

the need for autonomy.^{5,8} Furthermore, meaningful peer relationships contribute to identity formation.⁹ However, existing studies of adolescents with disabilities tend to pay less attention to recreation than to the subject of employment.¹⁰ Some authors have noted that a successful transition is more than just an employment issue; the quality of life necessary to work effectively can still be attained if rewarding and satisfying experiences take place outside of the work environment.

The purpose of this article, which is a review, synthesis, and application of relevant literature, is to examine the unique interplay of adolescence and SCI and suggest a programming framework for recreation therapy professionals who work with this population. The article begins with an examination of the issues surrounding developmental tasks during the transitional period of adolescence. The authors then present general developmental issues that adolescents with SCI encounter in their daily lives, including leisure. Utilizing resilience theory and the biopsychosocial rehabilitation model, key risk/need areas associated with adolescence and disability will be merged with leisure and recreation-based concepts and methods to suggest program intervention areas. Finally, examples of recreation therapy interventions are suggested as ways of providing more effective and practical recreation therapy programming.

Adolescents with SCI

While changes are inevitable during adolescence, the experience of SCI further complicates an already challenging developmental period. While adolescents with SCI experience the changes described above, they also face unique problems imposed by traumatic injury, the resulting disability, and handicapping interactions with environmental barriers and social stigma. There are also concerns for adolescents with SCI in the areas of leisure and identity development.

Biopsychosocial factors affecting adolescents with SCI

Pain is a continuing problem for people with SCI. Ongoing pain has been reported to be associated with negative psychosocial symptoms such as depression, anxiety, low acceptance of the injury, and maladaptive reactions to others in the long term.¹¹ SCI sufferers also lack physical stamina and face other issues related to their limited mobility.

Poor self-perception is an important concern for this population. Researchers have identified self-esteem and self-acceptance as fundamental components of healthy development for adolescents with disabilities.¹² Sinnema¹³ noted that adolescents with disabilities have serious concerns relative to their body image. For example, adolescents with chronic illnesses express more anxiety about their physical appearance (e.g., height, weight, acne), and their perception of their physical

appearance often determines psychological adjustment.² Mulcahey¹⁴ reported that adolescents with SCI attributed lower self-esteem to using a wheelchair and having bowel- and bladder-management problems.

Adolescence is primarily a time of transition from dependence to independence.¹⁵ For adolescents with SCI, there is an increased risk of diminished autonomy and independence. Concern about the promotion of autonomy and independence among adolescents with disabilities during developmental transitions has been widely recognized.^{16,17} In other words, as adolescents with disabling conditions struggle with disability-related dependency, the developmental quest for overall independence is confounded with the condition of excessive physical dependence.¹⁵

Adolescents with SCI also experience problems maintaining and developing friendships. In terms of maintaining friendships, returning to pre-injury peer groups is a big challenge for adolescents with SCI.¹⁴ Problems with peers may occur because adolescents with SCI are not adequately equipped to deal with their new family and community roles.¹⁸ In Dewis's¹⁹ study, published in 1989, some adolescents and young adults with recent SCI reported being able to maintain friendships with two or three pre-injury friends, while others indicated having completely severed relations with former peers and refusing to attend activities when invited, making statements such

as, "I'll just ruin their evening." Holady and Swan's²⁰ 1997 study found that 26 percent of children with chronic illnesses could not even name a friend, and 62 percent of children in the same sample stated that they would like more close friends.

Since peer relationships are regarded as the basis for positive self-esteem, isolation from peers may be detrimental in the course of identity formation.²¹ Parker and Asher²¹ reported that children without social support through peer relationships, specifically friendship, would be at risk for feelings of extreme loneliness or even depression and other psychosomatic disturbances (e.g., hypertension, ulcers, and chronic headaches).

Leisure-related disability experience

Kleiber and associates²² examined the role of leisure in the lives of individuals with SCI. They empirically demonstrated that constraints to previously enjoyed activities contribute to defining the experience of disability in three ways: loss of abilities, disruption of relationships, and dependence on others. "Getting involved" has been identified as an important adjustment strategy for adolescents.²³ Because the image of an "active adolescent" is shaped primarily during free-time activities, the difficulties of engaging in recreational activities inhibit the ability of adolescents with SCI to establish an image of

themselves as "leisure active." For adolescents with SCI, achieving this active image is especially difficult because of their dependence on others, environmental access problems, and the need for a variety of adaptive equipment to conduct daily and/or leisure tasks.

Difficulties accessing various facilities and programs can be a significant prohibiting factor. Accessibility challenges for adolescents with SCI may be compounded by their lack of physical stamina, need for technological assistance (e.g., motorized wheelchair), need for close supervision, or parental restrictions placed on the distance they are allowed to travel from home.²⁰ Mobility is linked to independence for adolescents with physical disabilities, while decreased mobility is related to lower levels of motivation and persistence in working toward goals.²⁴

Alcohol and drug abuse are also increasing leisure-related problems among young people.¹¹ A substantial number of people with SCI in the United States have been shown to use alcohol and drugs such as hallucinogens, anxiolytics, antidepressants, and hypnotics frequently.

A study by Donnelly and colleagues²⁵ found that there may be intrinsic barriers to leisure interest and motivation for a person with SCI in the early stages of rehabilitation. They reported, based on a sample of 41 subjects between the ages of 17 and 83, that patients may be more focused

on basic self-care concerns than on the effects SCI will have on their leisure. These concerns centered on mobility, dressing, grooming, and hygiene. They expressed a desire to regain lost independence and saw their concerns as prerequisites for re-engaging in social and leisure pursuits. The recreation therapist can help the adolescent with SCI understand the relationship between leisure, health, and independence.

Disability, identity crisis, and identity formation

Adolescence is characterized by identity exploration, which is the source of identity crisis.⁹ The crises associated with identity exploration are not necessarily acute or severe. These stages of exploration result in fluctuations in ego strength, which result in cognitive destructuring and in changes in how the adolescent views himself or herself. Symptoms associated with these crises include subjective discomfort, confusion, mood swings, ego defenses, impulsivity, acting out, and heightened health complaints.^{5,9} Kidwell and Dunham,²⁶ using identity exploration as a central variable, provided support for the existence of the decline in ego strength during stages of identity crisis.

Given the intrinsic turmoil associated with adolescent development, there is probably no more difficult time in a person's life for an SCI to occur. The combination of ego destabilization with the psychological, emotional, physical,

and social travails of significant physical disability can potentially create periods of great stress and uncertainty. Lower self-esteem, lack of autonomy and independence, lack of meaningful social relationships, negative social attitudes, and various leisure constraints contribute to an experience of serious identity crisis. Diminishing the crisis of SCI through social supports, leisure interventions, and the development of other adaptation skills may help the adolescent with SCI experience a more normalized process of identity formation.

Recreation-based developmental intervention program

As the brief literature review indicates, adolescents with SCI experience multiple risk factors (Table 1). Generally, they are inadequately equipped to cope with problems associated with the physical (e.g., body image, pain, limited mobility), psychosocial (e.g., self-esteem, autonomy and independence, identity formation, peer-relationships), and leisure-related (e.g., alcohol and drug use, sedentary lifestyle) aspects of being injured. With an awareness of the key issues associated with adolescence and an understanding of the impact of disability on the developmental process, recreation therapy specialists can play a vital role in facilitating SCI-affected adolescents' successful transition into adulthood. Kleiber²⁷ emphasizes how "the development of leisure skills not only addresses the task

of establishing competence, but also responds to the need to define oneself in relation to others."

The resilience perspective

Promoting competence or early-stage problem intervention as tools for prevention should be a priority as programs strive to achieve healthy outcomes for adolescents with SCI. Adolescents who are able to develop needed skills tend to find ways of adapting to stressful developmental challenges without succumbing to the risk factors in their lives. These adolescents are considered to have "high resilience." According to Garmezy,²⁸ qualities of resilience include "the tendency to rebound, or recoil, to spring back, and the power of recovery." Garmezy²⁹ identified three categories of protective factors that promote resilience in adolescence. These categories are a) individual characteristics, which include temperament, social skills, responsiveness to change, cognitive abilities, and coping skills; b) a supportive family and a positive relationship with at least one parent or relative; and c) the existence of available social resources including friends and other community supports.

When applying a resilience perspective in a comprehensive physical rehabilitation setting, a recreation therapy program would focus on building competencies in physical, psychological, and social areas. The area of physical competence suggests interventions in areas of fitness, wheelchair mobility, sports

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Table 1. Summary of risk factors by category for adolescents with SCI

Biopsychosocial	Leisure-related	Identity formation
<ul style="list-style-type: none"> • Altered body image • Pain • Limited mobility • Lower self-perception <ul style="list-style-type: none"> • Lower self-esteem • Lower self-acceptance • Poor body image • Diminished autonomy and independence • Maintaining and developing friendships <ul style="list-style-type: none"> • Returning to pre-injury peer groups • Self-segregation • Establishing family and community roles 	<ul style="list-style-type: none"> • Getting involved and being active • Environmental accessibility • Adapted equipment costs and availability • Mobility difficulties • Time with friends • Diminished meaningful leisure participation • Alcohol and drug use • Passive leisure participation 	<ul style="list-style-type: none"> • Identity exploration leads to identity crisis • Dilemma of retaining or returning to old roles and values or identifying new ones • Need to diminish crisis of SCI

involvement, and talent development. Psychological competence interventions for an adolescent with SCI will focus on the patient's needs to enhance self-esteem, accept the disability, become comfortable with his or her body, and generally become more competent and self-affirmed through leisure involvement. Social competence covers a range of issues that include communication skills, social skills training, friendships, and mentoring. Though each of these areas is presented separately in the following sections, it is important to keep in mind that many factors associated with these areas are interrelated or even interdependent.

The remainder of this article will present relevant competencies identified for this population and organize them within a biopsychosocial framework, which is a model

for comprehensive rehabilitation.³⁰ In each area of the model, potential competency-oriented needs related to SCI will be identified (Table 2).

Building physical competence

Dewis¹⁹ found that recently injured adolescents and young adults with SCI were interested in increasing upper body strength and muscular bulk as a means of enhancing their appearance and drawing attention away from other physical changes due to impaired function, such as "skinny legs" or a protruding abdominal area. In a demonstration of the interconnected nature of these competencies, there is evidence of improved social interaction and friendship development through participation in active recreation or sports programs.¹⁰

Though it is not supported empirically, Hutchison and Kleiber³¹

present a concern that too often individuals with SCI are directed toward competitive sport activities at the expense of a potentially better outcome with some other type of activity. While paralysis results in reduced physical functioning, lowered self-esteem, and diminished masculine identity, sports have traditionally been associated with stereotyped masculine images, or a so-called "heroic masculinity."³¹ They argue that juxtaposing attempts at being physically tough, competitive, and athletic with the emasculating effects of SCI could impede the adjustment process. It seems reasonable that this would be a concern for an adolescent with no interest or past involvement in athletics or a patient with pronounced adjustment issues, and therefore other forms of self-expression should be introduced in the rehabilitation/transition process.

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Table 2. Summary of competency areas by identified risk factors for adolescents with SCI

Physical competence	Psychological competence	Social competence
<ul style="list-style-type: none"> • Enhance physiological functioning • Sport involvement • Sequence development of interests and skills that transfer to available activity options 	<ul style="list-style-type: none"> • Build trusting relationships • Enhance self-awareness and sense of identity • Enhance internal locus of control • Use of free-time activities for self-direction and self-expression • Talent development may lead to serious leisure commitment 	<ul style="list-style-type: none"> • Social skills training • Development of appropriate social characteristics • Assertiveness • Friendships • Communication • Mentoring from older individuals with SCI

If, however, an adolescent does have a history of and/or interest in athletic involvement and wishes to pursue competitive activities after his or her injury, it would be reasonable to support and facilitate that decision.

It is important to acknowledge that successful involvement in any recreation experience that is challenging and provides a range of intrinsic benefits and extrinsic social reinforcements is likely to motivate the participant to continue involvement. There are fundamental properties associated with human motivation to pursue selected activities based on experiences of “flow,”³² perceived enjoyment/fun,³³ and the perceived value of the activities.³⁴ As recreation therapists plan to address the physical activity needs of adolescents with SCI, they should not lose sight of the basic concept of matching individual clients’ strengths and interests with compatible activity demands. Achieving this “goodness of fit” will provide the best chance for continued activity involvement and healthy functioning.

Adolescents with SCI who use a wheelchair for mobility need to understand the importance of endurance, strength, range of motion, and balance. If any one of these areas is underdeveloped, then it potentially becomes a health and functional liability. While people with significant mobility impairments are considered generally healthy, they are more vulnerable to certain health problems than those without disability.³⁵ This vulnerability stems from direct effects of the impairment combined with a diminished likelihood of living a healthy lifestyle that includes, for example, regular aerobic and strengthening activities. The resulting health risks include coronary heart disease and adult-onset diabetes due to poor cardiovascular health and obesity.^{36,37} Maintaining a high level of physical ability and skills will also contribute to competence in areas of wheelchair handling, problem solving regarding access issues, involvement in community activities, independent living, and social interactions.

Interventions for building physical competence. The authors suggest providing patients with training and opportunities to develop physical fitness and activity skills. The therapist may begin with education about physical fitness and health and proceed to build on that knowledge base through various programs. Examples of physical intervention programs include strength training (or weight training), aerobic conditioning exercise, and coordination and balance improvement. Specific activity skills (competitive and noncompetitive options) can be taught based on the client’s interest and desire to explore and develop new physical activities. For example, the therapist may introduce wheelchair sports and help develop mobility- and conditioning-related skills. However, individualized exercise programs should be developed for each participant with the help and supervision of a qualified trainer and/or physical therapist.

Warms and co-investigators³⁸ reported on a pilot study of a program designed to enhance physical

activity and participation of patients with SCI through education and support from healthcare professionals. The program is called Lifestyle Physical Activity, and it was implemented with people with SCI for the first time in this pilot study. Results showed significant decreases in motivational barriers and increases in exercise self-efficacy, which contributed to a high level of exercise maintenance behavior. Participants with exercise experience were motivated to begin exercising again, while those without exercise experience were more likely to begin specific lifestyle activities. This appears to support the need to identify pre-injury active leisure/recreation preferences or explore new exercise options that support lifestyle development.

Building psychological competence

In general, during the initial interactions with the adolescent with SCI, the therapist should focus on developing a trusting relationship. Li and Moore³⁹ have indicated that people who develop a severe physical disability are likely to experience significant “psychological trauma from both the personal loss and the changes from their former state” During this unstable period, the client will potentially struggle with issues of self-confidence and trust. When life events result in physical and psychological destabilization, the individual is most concerned with the need to

reestablish stability and security.⁴⁰ Generally, during the stabilization period, according to Austin’s⁴⁰ recreation therapy practice model, the recreation therapist should provide the patient with opportunities for success while working to build a trusting relationship. Without trust and security, the client may not be able to engage in leisure experiences. Neulinger⁴¹ identified the relaxation of the trusting child as a precursor of the capacity for leisure.

The “leisure self” is another central aspect of an adolescent’s self-awareness and sense of identity to which a therapist using cognitive-behavioral therapy (CBT) should pay attention. Mobily⁴² proposed that leisure valuing is an important developmental theme during adolescence and across the life span as individuals explore identity through leisure. He further stated that those who are able to glean value from leisure in more varied ways are the most adaptable people and are less constrained by other physical, social, and psychological encumbrances. For the adolescent with SCI, psychological value in a leisure context will be found in experiences that facilitate independence and provide opportunities for meaningful social interactions, self-exploration, mastery of leisure skills, and self-determination.

Participating in leisure activities and the development of specialized activity and social skills contributes to the successful establishment of a sense of autonomy

and independence for adolescents with SCI. At the root of these ideas is the concept of an internal locus of control, which means the adolescent perceives himself or herself as directly responsible for his or her behavior and the resulting outcomes.⁴³ An internal locus of control for an adolescent with SCI may be facilitated through opportunities to make leisure choices and be involved in the planning of leisure treatment and education programs, as well as by developing competence in leisure and recreation activities. An internal locus of control also contributes to improved self-esteem and self-acceptance, which can be important psychological tools when coping with negative social attitudes toward individuals with disabilities.

Leisure-time activities also help develop self-direction and self-expression.⁴⁴ Shamir⁴⁵ maintained that leisure-related identities express and affirm an individual’s unique talents and capabilities. Haggard and Williams⁴⁶ have also suggested that leisure plays a significant role in maintaining self-consistency and positive self-regard. They theorized that freely chosen activities can be “particularly potent in the self-affirmation process,” and they empirically supported the idea that leisure activities facilitate the self-affirmation process. Leisure activities that require effort, concentration, and persistence are regarded as inherently “transitional” for adolescents because they incorporate the requisite behaviors of many adult work

roles while perpetuating the intrinsic value of childhood enjoyment.⁴⁷

As adolescents with SCI pursue leisure-related talent development and sports involvement, there is a chance that they will become highly involved with and committed to those activities. Such a high level of commitment has implications for psychological and social development. Those activities that require extra effort, concentration, and persistence have been labeled "serious leisure."⁴⁸ Serious leisure is defined as "the systematic pursuit of an amateur, hobbyist, or volunteer activity that is sufficiently substantial and interesting for the participant to find a career there in the acquisition and expression of its special skills and knowledge."⁴⁸ Kelly⁴⁹ posited that the considerable investment in skill development and equipment places serious leisure in a central position in identity formation and expression. Within the serious leisure experience there is a well-established social field and opportunities for developing competence and confidence. These characteristics may also provide a context for the exploration and development of sexual identities, as well as contribute to the working out of the issues of peer identification and independence from parents.

In sum, the recreation therapist will need debriefing skills in order to facilitate reflection exercises on activity experiences that demonstrate the patient's skills and abilities and result in a high level of enjoyment. These insights

are important building blocks for identity that do not focus on disability. Providing opportunities for success and specific positive feedback will enhance self-confidence and help build a trusting relationship between patient and therapist. The recreation therapist can involve patients in the process from the beginning of the rehabilitation program by providing choices, asking for feedback, directing patients to facilitate problem solving, and instilling responsibility by allowing them to help with the planning and implementation of activities. The value of learning new activities that provide ways to learn more about the self, feel better about the self, and gain skills that may generalize to other areas of life should also be emphasized. Finally, if a patient already has a substantial investment in a leisure activity (serious leisure), then it will be important to find the methods and means to help him or her re-engage with that activity.

Interventions for building psychological competence.

Psychology-based therapy such as CBT may be a very cost-effective and successful procedure for reducing risks of negative life indicators such as depression, anxiety, pain, and alcohol and drug use. CBT is recognized as an effective technique for managing a wide range of disorders. CBT attempts to change thinking and behavior patterns that are believed to be associated with the problem behavior and emotions. More specifically, therapists using CBT

try to identify negative and/or irrational thoughts and teach strategies for generating rational and positive thoughts. The ability to reduce some psychological problems may be very useful for clients with SCI during their hospital rehabilitation period, as it can help them prepare for physical, psychological, and social barriers they will encounter in the community.¹¹ In particular, given the demands of a shortened length of stay in an acute care unit or rehabilitation facility, CBT would be an effective therapeutic intervention approach.

By utilizing CBT, the therapist may help adolescents with SCI who are trying to construct an individual identity. The therapist will help adolescents with SCI define what the disability means for them, as well as identify their remaining levels of physical ability. The therapist will help the clients share their own views of their disability and ability. When a client demonstrates irrational thinking or negative self-defense mechanisms, the therapist will challenge the validity of the client's thoughts and irrational beliefs. That is, CBT may help the client enhance self-awareness (and self-concept) and become more accepting of his or her disability, improving his or her chances of success in the search for identity.

Leisure education may be regarded as an application of CBT that the recreation therapist can utilize as a good opportunity for awareness of self in leisure.

Dattilo and Murphy⁵⁰ noted that the primary focus of this component of leisure education helps clients “explore, discover, and develop knowledge about themselves in a leisure context.” A self-awareness program would help clients explore new and alternative values, life and leisure goals, leisure activities, and meanings of disability. Discussions about their own responses to the profound body changes that have occurred would facilitate new insights and understanding of how their disability has impacted them psychologically, emotionally, and socially.

Another important CBT-related intervention area for building psychological competence could be providing educational information sessions. Some example topics are communicating with healthcare professionals to discuss healthy life after SCI, how to purchase and use adaptive equipment, alcohol and drug education, wellness and nutrition, pain management, and sexuality. Other topics such as using appropriate terminology, the role of attitudes in behavior, and disability/accessibility legislation may also be introduced. Lastly, it seems that teaching effective communication skills, assertiveness training, and values clarification exercises will help prepare the adolescent to cope with imposed social stigma and discrimination.

Building social competence

Li and Moore³⁹ concluded that “adjustment to disability must be

contextualized as a social phenomenon as much as an individual one.” Results of their study suggest that recreation therapists promote the development of a supportive family and friendship network in an effort to minimize the stigmatizing effects of the disability. The adolescent with SCI will encounter social discrimination against people with disabilities. Li and Moore³⁹ found that the more the subjects thought they were being discriminated against, the less likely they were to accept their disability. Hallum¹⁷ encourages people with disabilities to challenge the dominant social value structure that elevates physical strength, independence, and physical appearance above other qualities. Instead, emphasis needs to be placed on characteristics such as kindness, intelligence, and productivity in the context of one’s strengths.

The foundation for social interaction may be communication. Grotevant and Cooper⁵¹ indicate that communication helps the adolescent to clarify his or her position within the family and to learn to be sensitive to the ideas and feelings of others. They suggest that this encourages feelings of both individuality and connectedness, and that together these facilitate the process of individuation. Noller and Callan⁵² support this position, noting that good communication and negotiation within the family help to increase the adolescent’s sense of independence.

Friendship patterns are thought to be an indicator of emotional

health and healthy social interaction among young people.⁵³ Participating in school, community, and clinic-sponsored recreation and leisure activities would be an effective means of developing and maintaining a supportive social/friendship network. These programs should also attempt to involve young adults with SCI from the local community or region who are active in recreation and sports and who have achieved success in education and employment. The adults with SCI could participate as co-players, coaches, or recreation leaders and be available outside the activities for casual interaction.

Interventions for building social competence. The recreation therapist should be knowledgeable of the social dynamics relevant to adolescence and be prepared to provide any needed training in social skills. Social skills training should be an important component of recreation therapy programs for adolescents with SCI. These programs should focus on developing social competence through the use of didactic skill education, modeling, role playing, authentic social interaction in treatment/support groups, and community experiences. Such training would include adapting or modifying previously used social skills as well as finding individualized strategies for coping with social situations. Effective psychosocial rehabilitation is founded on the need to build on client strengths and utilize an individualized program approach.⁵⁴ In social skills

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Table 3. Examples of recreation therapy intervention programs for adolescents with SCI

Physical competence	Psychological competence	Social competence
<ul style="list-style-type: none"> • Strength training • Aerobic conditioning • Coordination and balance • Specific leisure-activity skills training • Wheelchair mobility skills • Wheelchair sports preparation and participation 	<ul style="list-style-type: none"> • Cognitive-behavioral therapy <ul style="list-style-type: none"> • Self-awareness • Leisure education • Educational information sessions • Pain management • Relaxation and stress management • Communication skills • Value clarification 	<ul style="list-style-type: none"> • Social skills training <ul style="list-style-type: none"> • Assertiveness • Communication • Team-building activities • Peer support and peer mentoring program (maintaining contact with previous SCI patients) • Community reentry program

training programs, it is important to focus on assertiveness training, communication, and self-management skills—skills many adolescents are trying to develop regardless of their physical status. These skills are also part of a comprehensive social rehabilitation approach that focuses on quality of life issues and improves adjustment to community life.

Social skills training should also consider the issues of activity similarity and enjoyable social interaction. The importance of shared activities in the development of friendships should be particularly emphasized. Adolescents' friendships, regardless of gender, are organized to a large extent around shared activities. Werner and Parmelee⁵⁵ reported that activity similarity between friends in adolescence is a better predictor of liking than attitude similarity. This is consistent with Kandel's⁵⁶ finding that adolescent best friends were more similar in terms of behaviors than attitudes or personality. Burleson and Denton⁵⁷ also reported that similarity in attitude and values is unnecessary if interacting parties

possess similar social skills, because that similarity would lead to more enjoyable interactions. Shared, informal leisure activities offer an avenue for adolescents to develop social roles, skills, and values away from adult supervision and controls, where they can seek reaffirmation of themselves from peers.⁵⁸

Peer support and peer mentoring programs⁵³ can be another effective intervention to facilitate both psychological and social competence. Through these programs, clients learn from one another's experiences and establish healthy role models for growth, personal changes, and increased participation in leisure and community life. Maintaining contact with previous SCI patients who can serve as mentors and role models can be another effective intervention. It will also be beneficial to involve adolescents with SCI in community reentry programs that provide opportunities to interact with new peers, both with and without disabilities, and encourage potential future friendships. Intervention strategies for each competency area are summarized in Table 3.

Conclusions and recommendations

For the adolescent with SCI, there are concerns about social responses to physical changes, physical performance, a lack of independence, and difficulties associated with developing friendships and coping with isolation. Disability has implications for the adolescent's leisure, recreation, and social participation. It can impose difficulties related to mobility, accessibility, and the need for activity adaptations, and when adolescents are faced with negative social responses, it can lead to issues of discrimination, faulty assumptions, and lowered expectations.

There is the potential for high identity crisis as a result of SCI during adolescence. It may be more difficult for the adolescent with SCI to resolve the cumulative, deconstructive effects of the disability when they are combined with the typical adolescent identity-formation processes. Adolescents with SCI must strive to make commitments to roles and values within family and community systems while constructing a healthy, individual identity.

The resilience perspective was introduced as a general framework for developing intervention programs for adolescents with SCI. Resilience comprises risk and protective factors (competencies) in a diametrical model to guide more specific service delivery. Enhancing the physical, psychological, and social competence of adolescents with SCI through a comprehensive, individualized, recreation-based intervention program improves their ability to adapt and achieve positive outcomes.

Very little is known about the leisure experience of adolescents with SCI. While Groff and colleagues⁵⁹ examined the attitudinal issues related to leisure for adolescents with SCI, more studies are needed to identify other important adjustment and quality of life variables and to examine the effects/relationships of those variables on the leisure and life experience of adolescents with SCI. More specifically, future research should target the personal meaning of leisure and perceived impact of leisure experiences on the lives of adolescents with SCI. Another area for empirical examination is the role of leisure in the process of adjustment to SCI during this transition period for adolescents. Currently, little is known about the impact of leisure during this developmental period for adolescents with SCI. Also, more research is needed to examine the role of family and peer relationships in coping with disability during adolescence.

While the information and intervention strategies provided

here may be worthy of consideration for rehabilitation intervention programming, this article is primarily geared toward intervention strategies for adolescents with SCI in general. A large increase in severe SCI in minority populations in the United States (home to 32.5 percent of all SCI cases) since 2000 indicates that special attention and consideration should be given to issues associated with adolescent development, disability adjustment, leisure, and intervention strategies for adolescents with SCI of diverse ethnic backgrounds.

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