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Article 83

Spinal Cord Injury and Substance Abuse: Implications for Rehabilitation Professionals

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Roughly 11,000 individuals per year acquire spinal cord injuries (SCI; Rehabilitation Research and Training Center [RRTC], 2006). The overall population living with spinal cord injury is estimated to be 250,000- 400,000. The majority of these individuals are single (53%) and male (82%), with disability onset occurring between the ages of 16 and 30. The major factors causing this disability are vehicle accidents (44%) and acts of violence (24%; National Spinal Cord Injury Association [NSCIA], 2007). More importantly, as many as 40 to 80 percent of these injuries involved alcohol and drugs at time of onset (Substance Abuse and Resources and Disability Issues [SARDI], 2007). Unfortunately, a vast number of spinal cord injury (SCI) survivors continue to use

alcohol and other substances (Benshoff & Janikowski, 2000; DeLambo, Chandras, Chandras, & Eddy, 2006), despite the many grave consequences, including significant risk of re-injury (Chandras, Chandras & Eddy, 2009, Krause, 2004); major depression (Elliot & Kennedy, 2004); suicide (Rish, Dilustro, Salazar, Schwab & Brown, 1997); life-threatening drug synergistic effects from prescription drugs (e.g., barbiturates) combined with alcohol (Benshoff & Janikowski, 2000); high risk behaviors (Alston, 1994); increased intoxication levels due to weight loss; decreased immune system functioning; urinary-tract kidney and bladder infections; skin conditions and pressure ulcers; dehydration; autonomic dysreflexia; overstretched bladder; and stomach and intestinal bleeding (Bombardier, 2003; Chandras et al., 2009). In addition, individuals with SCI who continue to abuse substances are more likely to experience anger and anxiety (Greer & Walls, 1997); reduced quality of life (Tate, Forchheimer, Krause, Meade, & Bombardier, 2004); psychosocial distress (Livneh, 2000); lower functional independence scores and longer periods of inpatient rehabilitation (Bombardier, Stroud, Esselman & Rimmele, 2004); social isolation; and unemployment (Benshoff & Janikowski, 2000). For these reasons, it is imperative that rehabilitation professionals address substance abuse issues with SCI clients (Chandras et al., 2009).

Pre-injury substance abuse can have long-standing psychological and physical repercussions that hinder the rehabilitation of individuals with SCI. In one study, abstinence from substance abuse following SCI was associated with an increase in pressure ulcers, relapse, and lower disability acceptance, as well as an increase in depressive symptoms (Heinemann & Hawkins, 1995). These findings may indicate that former substance abusers had not developed proper coping and social mechanisms needed for community reintegration and self-care regimes (Hawkins & Heinemann, 1998). In addition, a significant relationship exists between unemployment and the onset of spinal cord injury (Lidal, Huynh, & Biering-Sorensen, 2007; Marini, Lee, Chan, Chapin, & Romero, 2008), and employment has been linked to successful treatment outcomes for substance abuse clients. Given the risk factors and consequences of substance abuse combined with SCI, rehabilitation professionals are likely to encounter unique barriers and challenges when working with this population (Benshoff & Janikowski, 2000). Consequently, awareness of these coexisting disabilities and the array of treatment modalities and related issues are necessary for successful rehabilitation.

Treatment and Spinal Cord Injury

For persons with substance dependency issues, having an SCI significantly decreases the probability of successful substance abuse recovery (Krahn, Deck, Gabriel, & Farrell, 2007; Magura & Staines, 2004; West, Graham & Cifu, 2009) as well as positive medical (Heinemann, Goranson, Ginsburg & Schnoll, 1989) and vocational outcomes (Benshoff & Janikowski, 2000; Chandras et al., 2009; Machlan, Brostrand, & Benshoff, 2004). Unemployment has been linked to relapse, and the vast majority of those in treatment are either unemployed or underemployed and not exposed to vocational rehabilitation services (Chandras et al. 2009; Magura, 2003; West, 2008). Moreover, substance abuse treatment counselors may lack sufficient disability-related knowledge to work effectively with this population (Machlan et al., 2004). Unfortunately, few treatment centers' clinicians are equipped to provide Vocational Rehabilitation (VR)

services to their clients, nor do they refer their clients to state VR agencies. Given these issues, a connection should be made between VR and substance abuse treatment providers (West, 2008).

The Substance Abuse and Mental Health Services Administration (SAMHSA, 1998) advised that treatment providers should review program structure and modify any of the following barriers: a) discriminatory procedures, practices and policies; b) attitudinal barriers; c) architectural barriers; and d) communication barriers. Despite these recommendations, a significant proportion of those with SCI are denied access to substance abuse treatment centers due to lack of accessibility (West et al., 2009). Krahn et al. (2007) suggested that Centers for Independent Living (CIL) should be informed concerning the underutilization of substance abuse treatment by persons with disabilities as well as advocate for treatment accessibility. These CILs, which are legislated through 1998 Amendments to the Rehabilitation Act, are located throughout the United States, and provide a comprehensive set of services to individuals with disabilities (Rubin & Roessler, 2008). CIL services include: a) information and referral services (pertaining to disability related concerns such as locating personal attendant services); b) independent living services (information relating to all aspects of activities of daily living); c) peer counseling (psychosocial adjustment services provided by a person with a disability); and d) advocacy (promoting self-determination and consumer autonomy). Consumers hold CIL services in high regard (O'Day, Wilson, Killeen, & Ficke, 2004). Since the major underpinning of the CIL movement is empowerment and independence (Rubin & Rosseler, 2008), consumers should be provided with a full array of information so that the most useful services are available. For example, following discharge, individuals with SCI rated peer recreation activities and peer support as two substantial unmet needs (McAweeney, Forchheimer, & Tate, 1996). The CIL could address these as well as substance abuse referral issues with SCI consumers. Medical rehabilitation centers and CILs should collaborate to promote a smooth community reintegration. Likewise, a collaborative approach between substance abuse treatment centers and vocational rehabilitation is imperative for successful vocational and substance abuse treatment outcomes (Chronister et al., 2008; Machlan et al., 2004; Magura, Staines, Blankertz, & Madison, 2004). In fact, Hills and Cullen (2007) asserted that hospitals should begin addressing employment issues at the admission stage of physical rehabilitation. Medical staff may provide vocationally-related information to SCI patients and plan for needed services and supports to promote employment and reintegration into the community. The individual with the coexisting disabilities of substance abuse and SCI has unique challenges and characteristics that must be addressed in a holistic manner. A disconnect between the various service providers can be detrimental to each outcome (i.e., physical rehabilitation, vocational, and substance abuse recovery). Therefore, a collaborative approach must be established between substance abuse treatment providers, VR services, CILs, and physical medicine and rehabilitation (DeLambo et al., 2006).

When working with coexisting disabilities, substance abuse treatment providers should be aware of treatment barriers, myths and misconceptions about disabilities, and effective treatment approaches that have an impact on outcomes (Chandras et al. 2009; DeLambo et al., 2006; SAMHSA, 1998). Common treatment barriers include:

- *Life problems that affect substance use disorders:* Particular issues such as adjustment to disability, social isolation, or unemployment can all contribute to drug abuse.
- *Care givers and substance abuse:* Personnel assistants may exploit or may supply substance abuse consumers with alcohol and drugs.
- *Pre-injury abuse patterns:* Pre-injury substance dependence can be linked to an array of negative consumer outcomes such as depression, medical complications, as well as relapse, suicide, and unemployment.
- *Abstinence following injury:* SCI clients may lack necessary self-care skills to address activities of daily living due to limited coping skills associated with pre-injury substance use behavior.
- *Social Skills:* Consumers may have social skill deficits.
- *Psychosocial adjustment issues:* Consumers may have difficulty adjusting to SCI. Denial and resistance may be SCI specific and not related to substance abuse.
- *Possible multiple diagnoses of substance abuse, traumatic brain injury, and SCI:* Treatment providers need to be aware of the many treatment issues pertaining to traumatic brain injury implications such as fatigue, environmental stimuli, seizures, lowered inhibitions.
- *Architectural Barriers:* Treatment providers need to identify and modify any physical barriers to treatment such as inaccessible group meeting rooms.

Treatment providers also need to be aware of common myths and misconceptions about disability that hamper treatment efforts, such as:

- *Individuals with disabilities do not abuse substances:* Staff may believe that persons with disabilities do not abuse substances.
- *Individuals with disabilities deserve pity:* Substance use may be viewed as an entitlement due to the traumatic disability.
- *People with disabilities will sue the program:* The fear that individuals with disabilities are more likely to sue the treatment program.
- *Don't assume a missed appointment is intentional or due to resistance:* Punctuality can be due to extensive effort devoted to hygiene and other activities of daily living which take longer due to the SCI.

Finally, treatment providers should be cognizant of treatment approaches that have been found to be linked to successful outcomes for persons with SCI, including:

- *Employment and SCI:* Employment plays a vital role in promoting client sobriety and should be included in treatment planning.
- *Vocational Rehabilitation:* VR counselors are aware of the unique challenges of SCI and how to locate suitable employment.
- *Centers for Independent Living:* Providers should understand that CIL's are consumer-run agencies that strive to empower individuals with disabilities. They use a peer-support model that can contribute greatly to recovery.
- *Determine unique communication styles:* Ask how the client reads and writes, or evaluate samples.

- *The single most important factor for successful treatment is the therapeutic alliance between counselor and client:* Utilize a proven approach (e.g., Person-Centered) that builds this partnership.
- *Enlist the client's social circle (friends, family and service providers) to reinforce goals.*
- *Attend to transportation issues:* These are often a major treatment barrier for individuals with SCI.
- *Strengths-based approach:* Highlight client strengths and incorporate them within the recovery process.
- *Functional limitation awareness:* Both staff and clients should be aware of client functional limitations and how they may impact the recovery process.

Work and Recovery

Employment is a vital contributor to substance abuse recovery (Chronister et al., 2008; Machlan et al., 2004; Magura & Staines, 2004; Platt, 1995). Successful vocational outcomes lead to enhanced self-esteem, self-efficacy, social interaction, social status, social interaction, and skill development (Blankertz, McKay & Robinson, 1998). The rehabilitation professional facilitates successful vocational outcomes by building a therapeutic relationship, which is key to outcome success (Raskin & Rogers, 1995). Successful employment depends upon the establishment of an effective working relationship between the client and counselor. The primary focus of this partnership is to locate an appropriate job that will promote the recovery process. Locating an appropriate job involves consideration not only of the client's skills and interests, but also of identifying a work environment that will support continued sobriety.

Work Environment

Sobriety is linked to an employment site that both promotes abstinence and discourages substance abuse. Work environments with a "Wet" (i.e., open drug use/abuse) norm most likely will sabotage the recovery process (Blankertz et al., 1998). Environmental stimuli such as individuals (coworkers/supervisors) or locations (e.g., work parking lot), and things (e.g., car, smell or sounds) can all influence the substance abuse process via respondent conditioning (DeLambo et al., 2006). For example, at lunch break, the client meets a coworker in the parking lot and enters a car where previous substance abuse occurred. These environmental stimuli (i.e., break time, coworker, parking lot, car) produce a craving (i.e., psychological and physiological response) that activates the substance abuse process. The employee then consumes drugs in the work parking lot. Hence, a work environment itself can "trigger" the substance abuse process (Inaba & Cohen, 2007). The rehabilitation professional, using both addiction and vocational rehabilitation information, must determine if this particular employment setting will promote sobriety.

Job Accommodation Network and Spinal Cord Injury

According to Rubin and Roessler (2008), a comprehensive intake interview will provide the rehabilitation professional with a client profile that outlines major assets (e.g., social support system), barriers (e.g., substance abuse) and preferences (e.g., work outdoors; avoid customer service positions). This rehabilitation plan will match the client

to a specific job and work environment that is conducive to recovery. The rehabilitation professional will also use important resources, such as the Job Accommodation Network (JAN) to identify appropriate job accommodations for individuals with disabilities (Rubin & Roessler, 2008). JAN may be contacted by either telephone or by interactive web site (JAN, 2009a; JAN, 2009b).

JAN spinal cord injury accommodation categories include:

- Activities of daily living (e.g., allow personnel attendant services);
- Workstation access (e.g., height adjustable desk);
- Work-site access (e.g., accessible bathroom),
- Travel for work (e.g., accessible transportation)
- Wheelchair etiquette (e.g., do not lean on wheel chair during conversation); and
- Wheelchair ergonomics (e.g., relationship between worker and job and productivity; JAN, 2009a).

The following are job accommodations categories for drug abuse issues:

- Treatment needs (e.g., provide leave to attend AA meetings);
- Fatigue (e.g., implement ergonomic workstation design);
- Difficulty handling stress (e.g., provide self-paced workload);
- Drug exposure in the workplace (e.g., provide workplace supports); and
- Maintaining concentration (e.g., provide private office; JAN, 2009b).

Utilizing JAN and vocational rehabilitation knowledge, the rehabilitation professional can arrange the employment setting in order to promote both a successful vocational outcome and client sobriety. These accommodations will promote work adjustment (Rubin & Roessler, 2008) as well as sobriety (Inaba & Cohen, 2007).

Employment Strategies

Employment is viewed as both a treatment intervention as well as final outcome for individuals diagnosed with substance abuse and SCI (Chandras et al., 2009). Supported employment is an effective job placement intervention used for clients with disabilities. The supported employment model's underpinnings include: employment strategies are implemented within the actual work environment; competitive employment is both the focus and final outcome; and employment is grounded within the individual's existing abilities and skills, along with natural supports and follow-up services. In a supported employment model, the rehabilitation professional (e.g., employment specialist or job coach) helps the client identify employment assets and support needs (e.g., memory, substance abuse triggers/personality); the rehabilitation professional also helps the client find a job and learn the skills needed to maintain employment (Rubin & Roessler, 2008; Wehman, Targett, Yasuda, & Brown, 2000). Employment specialists ask specific questions to determine a drug-use behavior's function (e.g., escape, social isolation, or reducing pain) and to identify possible drug "triggers" and coping strategies to address these impulses when they occur (Wehman et al., 2000). Relapse prevention strategies are vital and should be explored within all areas of the client's life (Inaba & Cohen, 2007), including employment.

Return to work can be a challenging process for those with SCI. To increase the probability of successful employment, careful consideration of the initial placement is vital. Schuster (2005) reported that either overestimating or underestimating clients' abilities can have a negative impact on employment. If capabilities are overestimated, the

worker will not be able to complete the essential functions and likely experience job loss, lowered esteem, and lack of motivation to pursue the job finding process. Likewise, by underestimating client abilities, both boredom and lack of motivation will likely hamper the job placement process. Thus, the rehabilitation professional needs to have a comprehensive understanding of the client's vocational, personal, and educational traits, along with the many facets of the work environment to ensure a successful match between the person and the job (Rubin & Roessler, 2008). Research suggests that SCI clients' positive expectations about job placement may have a significant impact on vocational outcome. For example, results of one study found that over 50% of the SCI clients with positive employment expectations successfully reintegrated within the work environment (Schonherr, Groothoff, Mulder, Schoppen, & Eisman, 2004). Future Time Orientation (FTO) for individuals with SCI is imperative within the vocational process. A sudden traumatic injury can drastically affect this future outlook. Consequently, psychosocial reactions such as shock and depression resulting from SCI can hamper the job placement process. Disability acknowledgement is a predictor of FTO. Future goal-directed behavior such as employment requires both insight and an internal locus of control (Cassell & Mulkey, 1985). The rehabilitation professional is in a key position to successfully facilitate the client's adaptation to disability by addressing shock and depression and other contributors to placement (Martz, 2004). In addition, addressing client self-perception of personal health is of the utmost importance. Krause and Pickelsimer (2008) found that SCI client self-perceptions of ill health are significant employment barriers. Thus, interventions should be targeted toward the client's physical and psychological health prior to vocational intervention. Likewise, Lohne and Severinsson (2005) encourage professionals to listen with a "third ear" to client suffering and comfort the individual by focusing on realistic future "roads of hope." For example, with careful assessment and insight, the rehabilitation professional and client can develop a vocational plan that accurately addresses consumer assets, limitations and preferences, as well as the future employment goals (Martz, 2004).

Throughout the rehabilitation process, the substance abuse issues are considered primary and treated accordingly (Doweiko, 2006). It is vital that the rehabilitation professional's decisions are based on substance abuse, vocational, physical, and mental health concerns. A thorough assessment and evaluation will predict a successful vocational placement (Rubin & Roessler, 2008) as well as substance abuse treatment outcome (Kayser, 2009). Other important variables that are likely to enhance successful employment outcomes include provision of job placement services, vocationally targeted counseling, assistive technology and job accommodations, monetary incentives, transportation services, interdisciplinary team collaboration, family support, disability awareness, accessibility, and positive role models (Chandras & Eddy, 2008; Chandras et al., 2009; Chapin & Kewman, 2001; Delambo et al., 2006; Marini et al., 2008).

Rehabilitation professionals should be aware that those SCI clients in recovery with preinjury problem drinking behaviors may have a number of grave consequences following the injury, such as pressure sores, reduced social support, coping skill deficits, increased depressive symptoms, and lower self-care skills (Heinemann & Hawkins, 1995). During their initial hospitalization, these individuals may spend less time engaged in productive treatment activities (i.e., rehabilitation, vocational rehabilitation, and educational activities). According to Heinemann, Goransen, Ginsburg, & Schnoll (1989),

the rehabilitation professional should address the following areas when working with these individuals: a) time management; b) valuing responsibility; c) community reintegration; d) self-worth; d) social isolation and loneliness; e) coping strategies; f) disability acceptance; and g) depression. In addition, client sensation-seeking behaviors may have been the determining factor in the SCI (Alston, 1994; Pires, 1989). For example, the individual engaged in thrill-seeking behavior by driving a motorcycle at excessive speed and crashed, causing the SCI. The rehabilitation professional could assess this trait using the Sensation Seeking Scale. These behaviors, such as impulsiveness, drug abuse, risky sexual behavior, sensation-seeking risky behavior (e.g., wreckless driving) likely will cause future injuries for the client and should be addressed to prevent further client harm (Alston, 1994).

The psychological benefits of work accomplishments include enhanced self-concept and self-esteem and a sense of connection with society, which help foster continued sobriety. Once all personal as well as employment issues are addressed, the rehabilitation professional can collaborate with the client's interdisciplinary team (IDT) to enhance the likelihood of a successful job placement. The team members can include: rehabilitation professional, supported employment specialist, medical and substance abuse treatment professionals, social worker, and family members. The IDT must recognize addiction and disability as barriers to employment (Becker, Drake, & Naughton, 2005) and address both SCI and substance abuse in the planning phase. A vocational profile addressing client strengths, skills, and specific substance abuse issues (e.g., coping strategies, relapse triggers) is developed and implemented. This client profile can be used to determine appropriate employment settings, and identify sobriety supports (Becker et al., 2005; Doweiko, 2006). Again, the rehabilitation professional should be aware that certain employment arenas can be "breeding grounds" for substance abuse, while others are therapeutic to recovery (Chandras & Eddy, 2008).

Conclusion

Individuals with SCI have an alarming rate of substance abuse issues following injury. Rehabilitation professionals are in key positions to address the unique needs of this population. This can be accomplished by collaborating with interdisciplinary team members and identifying employment positions and settings consistent with the client's substance abuse and vocational profile. Employment is an essential component of the recovery process. Rehabilitation professionals who are aware of the implications of the coexisting disabilities of SCI and substance abuse and the concomitant vocational issues have an increased likelihood of producing successful outcomes, that is, sobriety and competitive employment.

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