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Beyond Brushing Teeth: Pilot Study Reveals Community Based Opportunities to Promote Oral Care for Clients with a Spinal Cord Injury

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ABSTRACT

OBJECTIVE: This study identified opportunities for occupational therapists serving those with a spinal cord injury needing community based dental care. METHODS: Dental professionals answered survey questions on attitudes toward treating clients with a spinal cord injury, knowledge of transfer skills, occupational therapy as a community resource, and dental clinic physical design. The data collected for this pilot study were analyzed using descriptive statistics. RESULTS: The participants revealed hesitation toward treating these clients, some knowledge of occupational therapy as a community referral source, limited knowledge for transfer skills, and questionable clinic designs for meeting accessibility guidelines. CONCLUSIONS: Findings from this pilot study should spark interest in more similar study's and expand sample size. Based upon the initial findings, it would seem occupational therapists should search for appropriate dental offices in which to refer clients with a spinal cord injury. In addition, occupational therapists could serve as consultants to local dental clinics ensuring adequate quality of care for a variety of disabilities. Ultimately, the profession is uniquely positioned to educate clients and providers promoting utilization of community oral health care services.

INTRODUCTION

Occupational therapy practitioners offer a valuable role to promote independence for those with a spinal cord injury (SCI). This role focuses on preparing clients to participate in all purposeful life activities.[1] Historically, occupational therapy texts have focused on responsibilities concerning basic oral hygiene without mentioning the community based aspect of participating in oral health care services.[2-4] However, accessing and utilizing dental care in the community is easily placed within the domain of concern for occupational therapy. This aspect of community performance may be considered an instrumental activity of daily living within health management and maintenance. [5]

Persons with disabilities commonly face physical and social barriers when attempting to satisfy their health care needs. [6] A previous study compared utilization of dental care in women with and without a SCI. The findings revealed that those with a SCI were 13% less likely to receive needed dental care.[7] Additionally, a report issued by the Centers for Disease Control indicated that, in general, disabled clients are about 10% less likely to receive annual dental checkups as compared to non-disabled clients. [8]

Over the past several years, the American Academy of Periodontology has been striving to educate the public on the mounting evidence that many common systemic health problems can be linked to poor oral health, most recently supporting the association between periodontal disease and cardiovascular disease independent of shared risk factors.[9] Poor oral health creates an even larger impact on overall health for those with disabilities than the general population.[10] The author further notes that recent years have brought improvements in oral health for the average adult; yet, this has not translated into improved oral health for those individuals with disabilities. This population continues to have extensive oral health problems. The compromised oral health among those with disabilities is partially attributed to a limited awareness of the consequences of poor oral health, as well as limited mobility and qualified dental care providers.[11]

The oral cavity serves as an integral part of the human body. The essential functions are the initial intake and processing of food, the production of speech, and protection of the body from pathogens and injurious agents.[12] Simple measures are suggested by dental professionals to maintain good oral health. These practices include brushing teeth, flossing, using mouth rinses, and dental maintenance procedures. [13] Additionally, licensed dental hygienists are not allowed to provide these screenings, cleaning procedures, or oral hygiene instructions in all states, even though they are knowledgeable and trained to do so. Ironically, interdisciplinary collaboration is required with occupational therapists for teaching oral hygiene instructions too.[11]

Maintaining the integrity and health of the oral cavity is especially important for the client with a SCI. It was found that persons with tetraplegia were less likely to complete daily brushing or flossing routines as compared to other disabled groups, and individuals who were totally dependent for basic oral care tasks had more plaque and gingivitis than those who could independently perform these tasks. Two factors have been identified that might influence the high prevalence of dental caries among those with a SCI. These factors were a diminished salivary flow and barriers to dental care.[14] For many with a SCI, performing basic oral care tasks requires extensive planning and equipment such as use of mobile arm supports, equipment set up, universal cuffs, or specialized splints.[4] This extra effort may contribute to a decreased likelihood of maintaining oral care routines among some with a SCI. Those with high level SCI have a unique oral dependence. For example, a mouthstick allows the individual to interact directly with their environment through the use of a tool held in the mouth.[15] Complications such as inflammation, pain, or tooth loss could impede the use of this device thereby limiting independence. Furthermore, some suggest that side effects from medications commonly prescribed for the clients with a SCI may contribute to compromised oral health.[7] These examples explain why community dental care for this population is an important consideration.

Through conducting a literature review, a paucity of data was noted regarding the preparedness of dental professionals to treat clients with a SCI. This deficit sparked the interest of the researchers to explore the oral care services for this population and implications for occupational therapy practitioners. The guiding question for this research project was “Are dental clinics prepared to welcome and treat individuals with a spinal cord injury?” These findings are felt to be particularly relevant to the occupational therapy practitioner when considering community re-entry after a SCI.

METHODS

Approval for the research project was obtained through the University of Mississippi Medical Center’s Institutional Review Board. A convenience sample of 50 dental clinics was selected; therefore, this should really be considered a pilot study. Dental offices were contacted via an initial phone call to request completion of a mailed survey. The survey contained 28 questions regarding professional level, special needs training, wheelchair transfers, community resources, attitudes and accommodations, and physical design of the clinic. The survey was reviewed by faculty members from a university dental hygiene program to ensure appropriate question design. This survey was mailed to the clinics agreeing to complete the survey. A follow up phone call was made to the dental offices to encourage survey completion and establish a time for survey collection. Upon collection of the survey from dental clinics, the data was transferred into Excel and SPSS for analysis.

RESULTS

Out of 50 identified dental clinics, 47 clinics agreed by phone to complete the research survey. Upon making 47 follow-up phone calls, researchers were able to retrieve thirty-five completed surveys. Professional characteristics of these individuals who completed the survey are provided in Table 1.

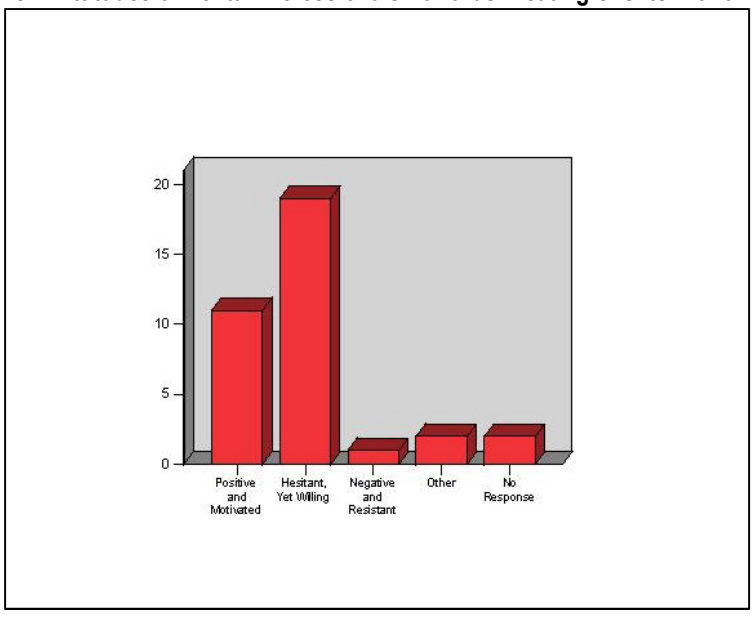
Table 1. Demographic Characteristics of Survey Participants (n = 35)

	n	%
Type Dental Professional		
Dentists	25	71
Dental Hygienists	7	20
Dental Assistants	3	9
Years of Experience		
1 – 10 Years	13	37
11 - 20 Years	6	17
21 - 30 Years	13	37
Above 30 Years	3	9
SCI Clients Treated		
0	13	37
1 -10	16	45
11 -20	3	9
Other (Numerous)	1	3
No Response	2	6

After reviewing the statistical results from the surveys, the researchers identified five questions that provided valuable information in regard to the research question. Subsequently, the results of these questions will be reported and discussed. The remaining questions were either irrelevant to the topic being addressed here or provided no conclusive results. Those questions will not be discussed for this reason.

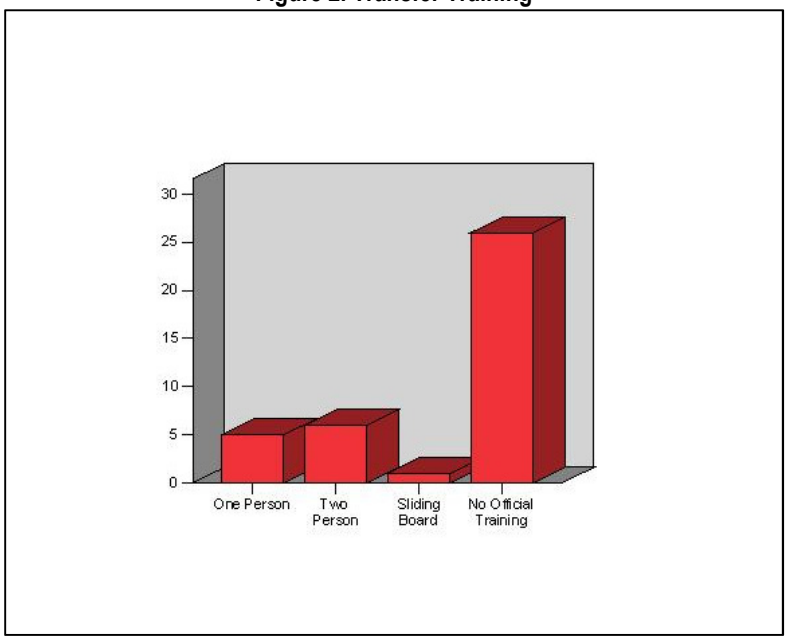
Dental professionals were asked to identify how they felt about treating clients with a SCI. The options included positive and motivated, hesitant yet willing, negative and resistant, and a space for other possible answers. The results were 54.3% reported feeling hesitant, but willing, 31.4% said that they are positive and motivated, and only one respondent indicated being negative and resistant. Several individualized responses were provided. One individual suggested that they are concerned and want to provide the best care possible. Another indicated that they feel the same toward treating SCI clients as they feel toward treating all clients. Two individuals did not respond to the question. In Figure 1, the graph represents the attitudes of dental professionals toward treating clients with a SCI.

Figure 1. Attitudes of Dental Professionals Towards Treating Clients with an SCI



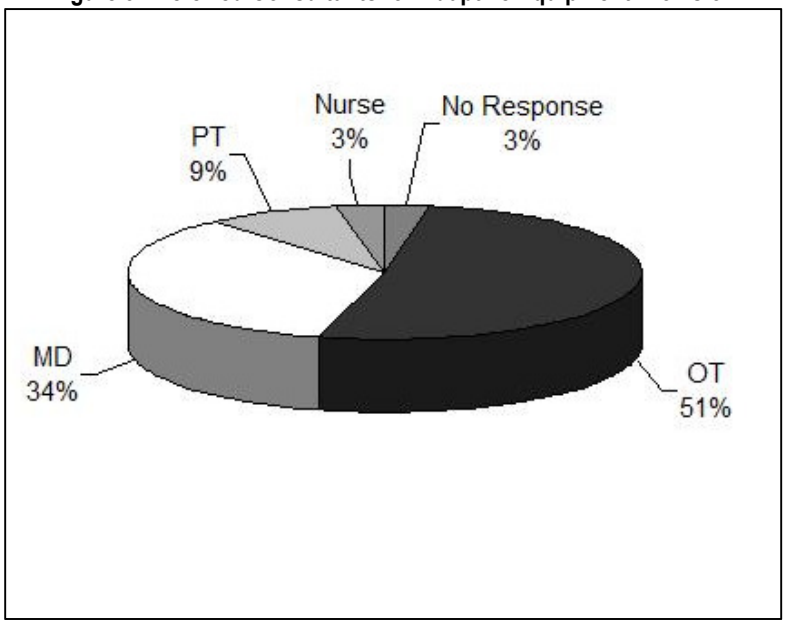
Regarding transfer training, participants were asked what types of transfers they had been trained to perform. Transfer training options included one-person, two-person, sliding board transfers, and no official training. An overwhelming majority (74.3%) of the participants reported having no official transfer training. Of those who had participated in transfer training, one respondent had been educated in the use of a sliding board; six respondents were trained in two person transfers; and five respondents in one person transfers. The findings are illustrated in Figure 2.

Figure 2. Transfer Training



Another area assessed was knowledge concerning the role of occupational therapy practitioners for providing adaptive equipment to perform personal oral hygiene. When asked which health care professional they would refer a client with SCI for adaptive dental equipment, eighteen participants (51%) identified occupational therapists as the appropriate consultation. Twelve reported that referrals would be made to a physician, three to a physical therapist, and one would refer to a nurse. One participant did not respond. These finding are displayed in the graph in Figure 3.

Figure 3. Preferred Consultants for Adaptive Equipment Provision



Lastly, the surveyed dental professionals were asked about the physical design of his or her dental office as it relates to handicap accessibility. Of those surveyed, 91.4 % affirmed that his/her place of employment met the accessibility guidelines of the Americans with Disabilities Act (ADA). This information is illustrated in Figure 4. To meet these guidelines, all doorways within the structure must be a minimum of 34 inches, with a preferred width of 36 inches. After reporting that his/her dental clinic met the ADA guidelines, one individual reported having door widths of only 29 inches. Twenty-seven individuals reported having door widths greater than or equal to 32 inches. Two individuals provided no response to the question, while two chose the option of "other" without specifying the door width.

Figure 4. Responses for Office Meeting ADA Accessibility Guidelines

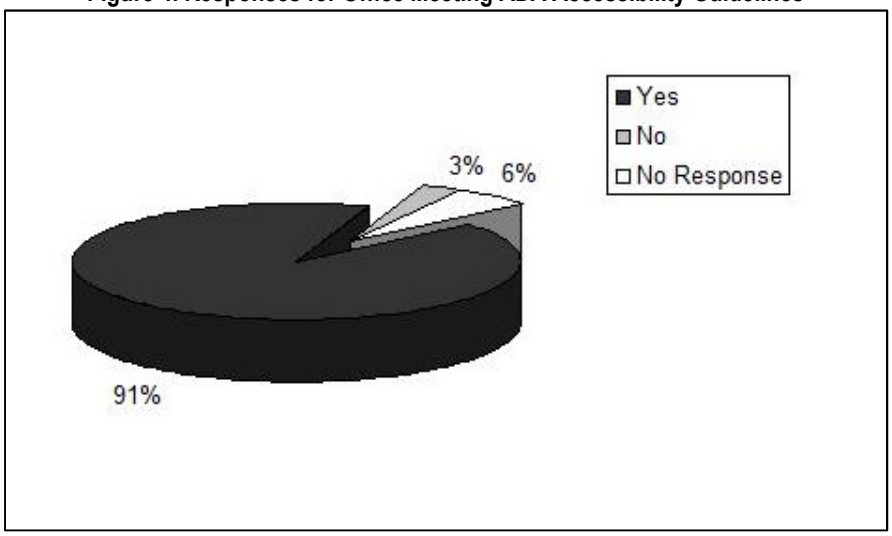
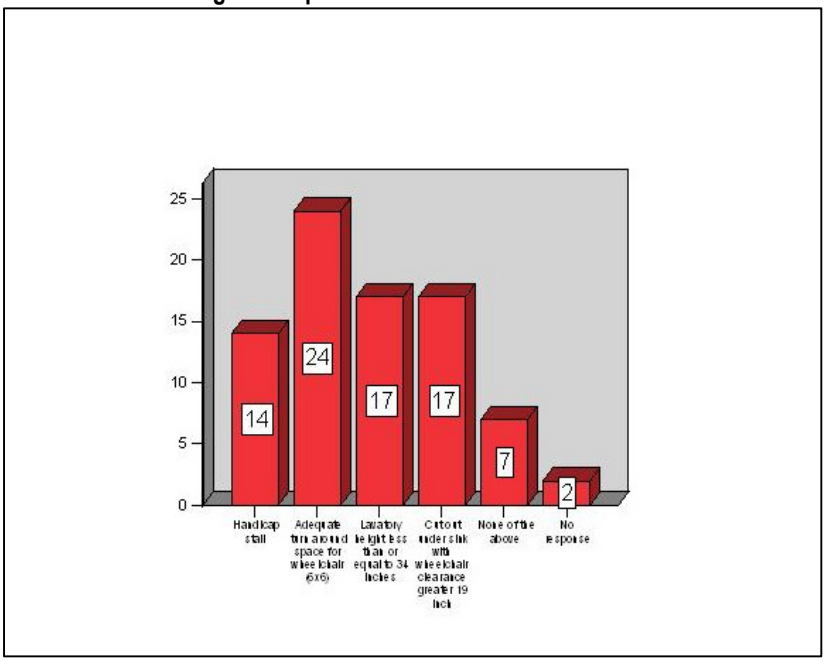


Figure 5 shows the structural features that participants reported were present in his/her dental clinic bathroom to allow access for disabled clients. Included features were a handicap stall, adequate turn around space for a wheelchair (6' x 6'), lavatory height greater than or equal to 34 inches, and/or a cut out under the sink with at least 19 inches for wheelchair clearance. Twenty percent of those surveyed reported that the office in which he/she practices does not have any of the aforementioned features. Two individuals provided no response to the question. Refer to Figure 5 for accessibility features reported by the 35 participants.

Figure 5. Specific Office Accommodations



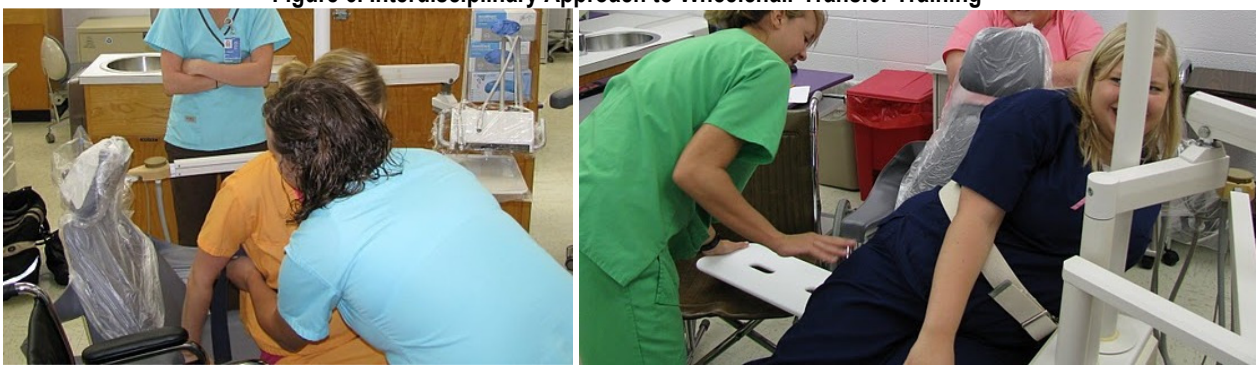
DISCUSSION

Perhaps one of the most understated barriers faced by a client with special needs is the attitude of healthcare professionals towards the disabled population. The magnitude of this invisible service barrier becomes apparent with this pilot study revealing over 50% of respondents being hesitant, yet willing, to serve those with a SCI. It is felt that the hesitancy reported in this study may stem from poor knowledge of the medical condition and lack of training for necessary skills. With only 31.4% of those surveyed reporting that they are positive and motivated to treat SCI clients, exploration of academic training in the area of special needs dentistry may offer valuable insight. The lack of training for necessary skills is noted in Figure 2. Only 28.6% of the surveyed professionals reported having some level of training in proper transfer techniques. This suggests that over 70% of those performing transfers in the dental clinic are not trained to do so. This raises serious safety concerns. These findings are consistent with previous studies indicating that dentists lack training for special needs cases and are reluctant to treat individuals with disabilities. An investigation of five states found there were a minimal number of dentists "willing and able to treat children or adults with special health care needs."[16] The report further revealed many academic centers are instructing future dental care professionals to refer disabled patients elsewhere without providing them with the skills needed to personally treat this needy population. Numerous studies investigating attitudes toward those with disabilities indicate that the level of training and exposure to this population influences attitude.[17-21] Since the Commission on Dental Accreditation Standards does incorporate criteria for providing care for "special needs" patients, this too should be examined on a larger sample size.

This creates opportunities for both professions. First, it creates a consultative opportunity for occupational therapy practitioners. Occupational therapy professionals could readily provide consultation services to educate dental professionals on skills needed to service those with a SCI, as well as other disabilities. The outcome would be positive for all parties: the consultant renders a needed service for a fee; the dental professional is able to safely manage a client with a SCI; and the client who has a SCI is provided with welcoming and safe dental care. Opportunely, it appears that there is currently some awareness among dental professionals regarding the expertise of occupational therapy practitioners. A majority of respondents (51.4%) recognized occupational therapists as the appropriate referral source for a client with a SCI who need adaptive equipment for oral care. This demonstrates that many of the surveyed dental professionals were knowledgeable about the role of occupational therapy in providing adaptive dental equipment. Another 34.3% reported that they would refer clients in need of adaptive oral hygiene equipment to a physician. This may also be an effective referral as physicians often refer clients to occupational therapists for treatment. Since 85% of individuals surveyed identified an appropriate referral source, it is felt that the vast majority of individuals surveyed are able to access adequate resources for adaptive equipment. It may also offer a platform for which a consulting occupational therapist could initiate a dialogue to offer other areas of expertise such as transfer training, workstation modifications, and handicap accessibility.

Secondly, it creates an opportunity in the dental and dental hygiene curriculum. At the University of MS, where this study was conducted, dental hygiene has since incorporated an entire semester designated to "special needs patients," which includes SCI patients. During this semester, the occupational therapy students are brought under the supervision of occupational therapy professors to teach the dental hygiene students proper technique and transfer of the SCI patient to the dental chair. Additionally, this gives dental hygiene an opportunity to share oral hygiene instructions, including denture care often used with OT nursing home clients, with the current OT students. Here again, this demonstrates another potential consult opportunity for occupational therapists with dental and dental hygiene schools (Figure 6).

Figure 6. Interdisciplinary Approach to Wheelchair Transfer Training



Under Title III of the Americans with Disabilities Act (ADA), accommodations are required that remove barriers which limit access into healthcare facilities for individuals with disabilities.[22] Even though 91.4% of those surveyed reported compliance with accessibility guidelines, 20% stated that they did not have any of the required restroom accessibility features. Other research revealed that almost 50% of the special needs population reported facing barriers when trying to access healthcare offices.[8] One study was found which specifically explored wheelchair accessibility in healthcare clinics for clients with a SCI. These researchers found that 100% of healthcare providers believed their facilities offered wheelchair accessibility, but additional research revealed that a significant portion of these same facilities were not in compliance with ADA accessibility guidelines. Furthermore, the researchers were surprised that only 32.5% of office managers were interested in obtaining more education on accessibility issues even after participation in the study.[23] It has also been found that primary care physicians' offices deviate from ADA guidelines.[24] Similar limitations for individuals with disabilities attempting to access dental service facilities in England have also been reported.[25] Research in another venue of health care found that chiropractic clinics are in poor compliance with ADA standards as well.[26]

This study's findings and others indicate a lack of knowledge in the specific guidelines for accessibility as outlined by ADA. This suggests that the lack of knowledge and accessibility features in dental clinics may pose a barrier to clients with a SCI when attempting to access dental care. Opportunity for occupational therapy practitioners to serve as client advocates in relation to health service utilization exists.[27] Consultation on ADA guidelines and clinic accessibility features could offer occupational therapy practitioners another avenue for service consultation.

There are several inherent limitations to consider in the design of this study. The small convenience sample utilized limits generalization to the broader community of dental professionals. The informal survey used in this research project may have created misinterpretation due to a lack of clarity for certain questions. However, the survey was reviewed and supported by university faculty members who were dentists and dental hygienists. Because of the nature of a survey, the information collected was a self report. This may be prone to some inaccuracy due to discomfort with self disclosure, limited recall of professional history, and the desire to answer questions accurately rather than honestly. For example, survey respondents may have favored occupational therapy as a referral choice for adaptive equipment simply because this survey was provided by occupational therapy researchers. However, this study does indicate the need for more research to be conducted in this area. Future studies could expand upon the information gathered by increasing sample size and geographic distribution of those sampled. Another potential area for investigation would be curriculum content of special needs dentistry among dental and dental hygiene programs. Furthermore, occupational therapy practitioners could be surveyed as to their perceived role for promoting access and utilization of community dental services by the SCI population.

CONCLUSIONS

As well established in the literature, dental care is an important component of health management in community living. This research may serve to heighten awareness for this issue among occupational therapy practitioners and dental professors. These research findings seem to indicate that dental offices may not be prepared to welcome and treat clients with a SCI; therefore, occupational therapy practitioners are encouraged to seize this opportunity for consulting services to offer training. Potential areas for consultation include increasing awareness of special needs for those with disabilities, proper body mechanics, transfer training, and clinic accommodations. In addition, occupational therapists may consider identifying referral sources that are prepared to treat the dental needs of the SCI population for inclusion in discharge planning. This would allow clients to be educated on which dental clinics are most prepared to welcome and treat those with a disability. In conclusion, occupational therapy practitioners are in a unique position to educate service providers, schools, and consumers with a SCI. By extension, this should promote service utilization of oral healthcare among the clients with a SCI.

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