Education and Rehabilitation of Adult Persons with Disabilities

Thematic Collection of International Importance

Education and Rehabilitation of Adult Persons with Disabilities Thematic Collection of International Importance

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SOCIAL INTEGRATION OF ADULT PERSONS WITH SPINAL CORD INJURY

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SUMMARY

Social integration refers to the process of comprehensive engagement of persons with impairments and disabilities in all aspects of family and social life. It is the key issue and the ultimate goal of rehabilitation of persons with spinal cord injury (hereinafter: SCI), covering all aspects of medical and professional rehabilitation. In most cases, people with SCI are healthy and able to participate actively in social life. However, despite the impact and invaluable importance of functional restoration, there are many factors representing significant barriers to social integration of persons from this population.

The aim of this research was focused on the exploration of level of social integration in adult persons with SCI in comparison to those without SCI, as well as among adult persons with paraplegia and tetraplegia. This cross-sectional study included 100 participants of both gender, between the ages of 18 and 65 years. The entire sample was divided into three subgroups: 23 participants with paraplegia, 21 participants with tetraplegia, and 56 participants of typical population. Community Integration Questionnaire – CIQ and socio-demographic questionnaire were used.

Differences in social integration levels among participants with SCI and participants without SCI were found in all examined domains (p < 0,05). Comparing results of participants with paraplegia and tetraplegia, statistically significant difference was observed only in home integration domain ($\chi 2 = 17,746$; df = 9; p = 0,038).

Future research should examine the relation between a wider range of sociodemographic characteristics and various aspects of social integration of persons with SCI.

Key words: social integration, spinal cord injury, adult persons

INTRODUCTION

A pattern of social integration exists in each contest of human existence, in the network of social relations and institutions, regulated by specific ideas of what is right and what is wrong under certain conditions. Under the influence of social relationships that provide our identity and establish a framework for our actions, goals within the institutions are realized within our families, households, different groups, among neighbors or within our community seeking support or protection; we are educated and trained in schools or associations and we work together in workshops, factories, offices, etc. Also, our livelihood opportunities are determined by comprehensive political and economic structure of the society in which we live. The conceptualization of social integration has undergone significant evolution during the past few decades.

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It represents a process that allows all individuals and social groups to fully participate in numerous economic, social and cultural trends and to reach an adequate living standard. This process should enable the participation of all members of society in decision-making, especially of those decisions that affect their own well-being and well-being of their families and society, as well as overall fulfillment of human rights. Also, social integration is connected with the concept of balance in the functioning of human being as a biopsychosocial structure (Gartner & Joe, 1987). Social exclusion occurs when an individual or a social group does not fulfill certain social roles. Social exclusion is defined as a process in which certain individuals are pushed to the margins of society and thus prevented to accomplish their full capacity in the economic, social and cultural trends. Social exclusion can occur due to poverty or lacking of basic knowledge or opportunities for lifelong learning, or it is a result of discrimination. In this way, individual or groups are being kept away from opportunities for education, employment and income, as well as from inclusion and participation in social networks and community activities.

Extended life time and advanced medical knowledge and technology have led to an increase in the number of persons with chronic diseases, disorders or disabilities. Considering that the prevalence of disability is growing strongly each year, significant medical, economic and social problems occur. Policy in the field of health care changes as well, and more attention is given to the problems that are not related only to disease itself, but also on its impact on an individual's functioning in everyday life and in society (Lysack, Neufeld, & Dillaway, 2013). Notwithstanding these findings, a significant number of persons with disabilities have a problem to participate actively in daily life activities and to participate in the community in the way that he or she wants, or in the way that his or her remaining abilities allow. A large number of persons with disabilities consider that they do not have any sense of belonging to their community (Nedović, Odović, & Rapaić, 2010). Disability, physical barriers, prejudices and attitudes of the environment, as well as under-defined system of social protection of persons with disabilities, hinder and limit social integration of persons with disabilities and make this population invisible, not only in a social context, but also in scientific research. Despite the findings about the importance of social integration, there is always the risk that a person with disabilities will be excluded from normal activities within the family and/or the wider community. At the same time, better integration unambiguously leads to increased satisfaction and positive experience.

Different physical, psychological and social consequences are evident during the acute and chronic phase of rehabilitation of persons with acquired disabilities. These consequences have potential to affect the reintegration and leave the consequences on life and health of an individual (Kennedy, Lude, & Taylor, 2006). Successful social integration of persons with spinal cord injury (hereinafter: SCI) can be defined as the mainstream of family and community life, which recognizes an individual as an active contributing members of social groups and society as a whole. It is regarded as one of the key goals of rehabilitation, whereas participation in society is recognized by the World Health Organization (2001) as a critical outcome in persons with disabilities. Most of the people with SCI have a problem to participate actively in daily life activities and to participate in the community in the way that he or she wanted, or in the way

in which it had been performed before the disability occurred (Gartner & Joe, 1987). However, clinical course of the disease is not the only crucial one. Analyzing relevant studies, the importance of both quality and relevance of rehabilitation, general health of an individual, and the role of health care, as well as an invaluable support from immediate and wider community were noted (Cardol et al., 1999).

Problems of social integration of persons with disabilities, including persons with SCI, is not well researched in scientific field of special education and rehabilitation. It is one of the main areas of special education and rehabilitation of persons with physical disabilities aimed at the social integration of persons whose psychophysical integrity is compromised (Stošljević et al., 1997). In this research we have relied upon the fact that persons with disabilities, including persons with SCI, could be integrated into a social environment applying adequate measures and procedures, if this complex problem is approached comprehensively with the intention of minimizing the possibility of handicap situation of an individual. Also, it is necessary to work on educating of all structures of social community in order to reduce marginalization and isolation of members of society whose number increases significantly from year to year. This should be tactically directed to family, work and social environment, knowing the fact that it is an active process that lasts a lifetime.

This raises the question of social integration of persons with SCI. For this reason, the subject of this study was to analyze the constituent elements of social integration expressed through their marital status, parenthood, employment status, socializing, outings and sport activities. The aim of this research was focused on the exploration of level of social integration in adult persons with SCI in comparison to those without SCI, as well as among adult persons with different levels of SCI (paraplegia and tetraplegia).

METHODS

This cross-sectional study included 100 participants of both gender, between the ages of 18 and 65 years, residing in the territory of Republic of Serbia. The total sample consisted of one control group and two subgroups of participants with SCI. Control group included 56 participants of typical population (healthy participants without SCI or any other physical impairment). The first group of participants with SCI (hereinafter: E-1) consisted of 23 participants with paraplegia. Specific inclusion criterion for E-1 group was diagnosed injury at thoracic, lumbar or sacral level of spinal cord (diagnosis of paraplegia). The second group of participants with SCI (hereinafter: E-2) accounted for 21 participants with tetraplegia. Specific inclusion criterion for E-2 group was diagnosed injury at cervical level of spinal cord (diagnosis of tetraplegia). The general inclusion criteria for all three research groups were as follows: age from 18 to 65 years, negative history of any chronic medical problem, brain injury, significant congenital diseases, psychiatric disorders or somatic diseases. Common inclusion criterion for both E-1 and E-2 group was related to the period of time from the occurrence of injury to conduction of present study which had to be longer than one year, whereas all participants should had been treated in an inpatient ward for rehabilitation after SCI for at least six months. The general exclusion criterion for all three research groups was subject's unwillingness to participate in the study.

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The study was conducted during the year of 2012 and 2013 in Belgrade, Serbia, at the Clinic for Rehabilitation "Dr Miroslav Zotovic" and the Association of Paraplegics of Belgrade, and at the Home for Adult Persons with Disabilities in Zemun. When it comes to participants of control group, the survey was carried out at the Health Centre "Dr Simo Milosevic" in Belgrade, Serbia. The study was conducted in two phases. In the first phase, the general inclusion and exclusion criteria were applied, as well as the specific inclusion criterion for two subgroups of participants with SCI. All patients that were present at the time at the Clinic for Rehabilitation and met the criteria listed above were included. Medical records were reviewed in order to exclude potential participants with medical conditions, impairments or illness that could interfere or affect the research results. The study purpose was introduced to selected participants. Participants were also informed that they could withdraw from the study at any time, and they were ensured about confidentiality and privacy of information. Participation was voluntary and anonymous, and written informed consent was obtained from all participants. After the sample was formed, data on health status, time and cause of injury, and diagnosis of paraplegia or tetraplegia were extracted from medical records.

In the second phase, data were collected using the selected assessment instrument, *Community Integration Questionnaire – CIQ* (Dijkers, Whiteneck, & El-Jaroudi, 2000; Willer, Button, & Rempel, 1999; Wilier, Ottenbacher, & Coad, 1994), and the socio-demographic questionnaire. Each participant was provided a peaceful and quiet setting in a separate room within the clinic. Participants responded to questions individually, in one session that took no more than 90 minutes. If needed, the time was extended or divided into two time intervals.

The general socio-demographic questionnaire was designed specifically for this research. It consisted of closed questions and short answers about demographic variables including gender, age, marital status, employment, socializing and sport activities. The aforementioned CIQ was originally constructed to assess social integration in a fast, reliable and simple way. Primarily, the questionnaire was developed to assess home integration, social integration and productive activity in persons with acquired brain injury. However, CIQ can be applied to assess social integration of persons with different types of injuries. When using this questionnaire in population of persons with different types of disabilities, researchers should use the term "person with disabilities" on item number 10 instead of the term "person with brain injury". The instrument consists of 15 items. It can be completed by self-report or with the assistance of a family member or caregiver familiar with the person's health status and social activities. The total score represents the sum of scores on individual questions and can range from zero to 29. Higher scores indicate greater integration, while lower scores reflect a lower degree of integration. CIQ consists of three subscales. Subscales were developed to facilitate the analysis of integration in certain areas of everyday life. The items are grouped in terms of their associations with 1) the home-related activities, 2) activities related to socialization, and 3) educational, vocational or other productive activities outside the home. Home integration refers to participation in shopping, preparing meals, housework and child care. Social integration refers to participation in activities outside the home, travel, leisure, activities with the others, as well as the having of a best friend. Productive activities are related to employment status, education and various forms of education. Most of the questions are focused on the way in which individual performs an activity within their home or community setting. The possible responses indicate that an individual performs activity independently, with another person, or that activity is performed by someone else. The frequency of certain activities is also recorded.

Standard methods of descriptive and inferential statistics were used. Statistical analysis of data collected from the documentation and survey consisted of a descriptive analysis (absolute frequency and percentages, means, and standard deviation) and χ^2 test in order to determine differences in the areas of social integration of persons with and without SCI. A *p* value of *p* < 0, 05 was considered statistically significant. All analyses were completed using Statistical Package for the Social Sciences for Windows (SPSS) version 19.0.

RESULTS

In accordance with the research aim, basic socio-demographic characteristics of participants (age, gender, marital status, family status, employment, outings and sports activities) will be presented first, thus providing a clearer picture of our research sample.



Figure 1 Sample structure according to age of participants

Figure 1 shows the age structure of participants in the research sample. As can be seen, there is a certain homogeneity in both E-2 and control group according to age, in contrast to E-1 group in which heterogeneity was noted. In E-2 group, 33,3% of participants were older than 50 years, 28,6% of participants aged between 18 and 28 years, while 23,8% of participants were between 40 and 50 years old. Only 14,3% of participants were in the category of 29–39 years of age. The uniformity of the age structure was observed in the control group, also. The majority of participants was noted in the category of 40–50 years of age (28,6%). Lower percentage of participants was noted in the category of 18–28 years of age (26,8%), whereas 23,2% of participants were older than 50 years. A total of 21,4% of participants aged between 29 and 39 years. Inconsistency of the sample according to the age criterion was found in E-1 group. The majority of participants was in the category of 40–50 years older than 50 years of age (39,1%). Lower percentage of participants older than 50 years of age was recorded and it accounted for 34,8% of this subsample, while 17,4% of participants aged between 29 and 39 years. Only 8,7% of participants were in the category of 18–29 years of age.



Figure 2 Sample structure according to gender of participants



Figure 3 Sample structure according to marital status of participants



Figure 4 Structure of participants in relation to parenthood

Figure 2 shows the distribution of participants by gender. The majority of E-2 group consisted of males (90,5%). Presence of male participants was dominant in E-1 group (73,9%), whereas 26,1% of participants were female. In control group, slightly higher frequency of male participants (57,1%) was noted in comparison to frequency of female participants (42,9%).

Marital status of participants is presented in Figure 3. In E-2 group, the largest percentage of participants was not married (71,4%), whereas the same percentage of participants were divorced or married (14,3%, both). In E-1 group 52,2% of participants were married, 43,5% were not married, while 4,3% of participants were divorced. Similarly, 56% of controls were married, 44,6% were not married, while 5,4% of participants were divorced.

Figure 4 shows the distribution of participants in relation to parenthood status. A total of 76,2% of participants from E-2 group had no children, while 23,8% were parents. In E-1 group 52,2% of participants had no children, while 47,8% were parents. When it comes to control group, 55,4% of participants had no children and 44,6% were parents.



Figure 5 Structure of participants in relation to employment status



Figure 6 Structure of participants in relation to socializing

Figure 5 shows the distribution of participants in relation to their employment. Unemployment is the problem that affects both participants with SCI and participants without SCI. It is necessary to emphasize that in E-2 group only one participant was employed (4,8%), while the remaining 95,2% were unemployed. In E-1 group 26,1% of participants were employed in comparison to 73,9% that were not employed. Different distribution was observed in the control group; 62,5% of participants were employed while 37,5% were unemployed. By analyzing Figure 6, it can be observed that high percentage of participants with SCI (both E-2 and E-1 group) declared that they did not socialize enough (80,9% and 73,9%, respectively) while the remaining 19,1% and 26,1% of participants, respectively, reported that they socialized often and enough. Quite a different distribution was observed in the control group; 80,4% of participants reported that they socialized often and enough, whereas 37,5% declared that they did not socialize enough.



Figure 7 Structure of participants in relation to outings

Figure 7 summarizes data on frequency of outings of participants. Participants from E-2 group reported the greatest lack of outings; 90,4% of participants believed that they were not going out often with friends, while 9,5% reported they did. Almost seventy percent of participants from E-1 group (69,5%) considered that they were not going out often in contrast to 30,4% who reported that they did. However, the distribution

of responses indicating satisfaction or dissatisfaction with the frequency of outings changes significantly in control group. The results indicate that 73,2% of participants did go out often enough, as compared to 26,7% considered that they were not going out often to socialize.



Figure 8 Structure of participants in relation to engagement in sport activities

The general conclusion that can be drawn on the basis of data presented in Figure 8 is that 85,7% of participants from E-2 group did not practice any kind of sports activities in contrast to 14,2% who stated that they were engaged a certain kind of sports activities. In group E-1, 73,9% of participants were not involved in sports. However, 48,2% of controls were engaged in sports activities while 51,8% were not.

In accordance with the research aim, level of social integration of participants with SCI, as measured by CIQ, is compared to that of control group. In addition, social integration level was compared among participants with tetraplegia and paraplegia using χ^2 test. Table 1 shows the differences between the scores and subscores in group of participants with SCI (both E-1 and E-2) and participants without SCI using the χ^2 test. Statistically significant differences were noted within each CIQ subscale: Home Integration ($\chi^2 = 50,676$; df = 9; p < 0,05), Social Integration ($\chi^2 = 51,300$; df = 10; p < 0,05), and Productive Activity ($\chi^2 = 37,962$; df = 10; p < 0,05). Statistically significant differences between participants from E-1 and E-2 group in domain of Social Integration and Productive Activity, and on total CIQ score (see Table 2). Statistically significant difference between participants from E-1 and E-2 group was confirmed only in domain of Home Integration ($\chi^2 = 17,746$; df = 9; p = 0,038).

Questionnaire – CiQ in participants with SCI and participants without SCI			
Subscale	χ^2	df	р
Home Integration	50,676	9	0,000
Social Integration	51,300	10	0,000
Productive Activity	37,962	10	0,000
Total CIQ Score	61,535	26	0,000

Table 1 Comparison of levels of social integration assessed by Community Integration Ouestionnaire – CIO in participants with SCI and participants without SCI

Table 2 Comparison of levels of social integration assessed by Community Integration Questionnaire – CIQ in participants with paraplegia and participants without tetraplegia

Subscale	χ^2	df	р
Home Integration	17,746	9	0,038
Social Integration	11,161	10	0,345
Productive Activity	11,227	7	0,129
Total CIQ Score	30,639	20	0,060

DISCUSSION

The research aim was to explore social integration of adult persons with SCI. This aim was achieved by determining the level of social integration of both adult persons with SCI and adult persons without SCI. In addition, differences in the level of social integration were identified among adult persons with SCI and adult persons without SCI, as well as among adult persons with paraplegia and tetraplegia. Our research results indicate that there are differences in the level of social integration among adult persons with SCI and adult persons without SCI in all examined domains of social integration. When it comes to adult persons with paraplegia and tetraplegia, statistically significant difference was observed only on the Home Integration subscale, while on other tested variables (Social Integration, Productive Activity, and Total Community Integration) no significant differences were confirmed.

Structure of participants according to their age is presented on Figure 1. As seen, E-2 group and control group are homogeneous by age, in contrast to E-1 group in which heterogeneity was noted. Specifically, distribution of participants was equal across all age categories within E-2 and control group. Analyzing the results obtained in the E-2 group, predomination of specific age group was not found. However, in E-1 group the lowest frequency of the youngest participants was noticed, suggesting that persons from 18 to 28 years of age were rarely diagnosed with paraplegia as the outcome of SCI.

Gender structure of our research sample is presented on Figure 2. The majority of E-2 group consisted of males (90,5%). Presence of male participants was also dominant in E-1 group (73,9%), whereas 26,1% of participants were female. In control group, slightly higher frequency of male participants (57,1%) was noted in comparison to frequency of female participants (42,9%). These results are consistent with other studies conducted worldwide in which a significantly higher incidence of SCI among male persons was also observed. The data published in 2011 indicated that 80,7% of persons with SCI were male. In comparison to 1980, a trend of slightly decreasing of this percentage was observed yet with no significant statistical progress (National Spinal Cord Injury Statistical Center, 2011). In a study conducted in Australia on a sample of 58 participants, a group of authors found that the sample consists of 45 male participants (78%) and 13 female participants (22%), confirming the fact of greater percentage of males in the population of persons with SCI (De Wolf, Lane-Brown, Tate, Middleton, & Cameron, 2010). Pentland et al. (2002) suggested that 80% of persons with SCI were males. Moreover, the most dramatic data was obtained in the study by Sekaran et al. (2010) in which 90,3% of participants were males. The cause of such statistics probably lies within different lifestyle and different life situations between males and females, but also among various ethical, demographic or cultural factors. Thus, in the cross-sectional study conducted in Sweden and Australia at the same time, 78,6% of participants in the Australian group and 81,7% of participants in the Swedish group were male (Kreuter, Siösteen, Erkholm, Byström, & Brown, 2005). In Germany, dominance of men diagnosed with paraplegia or tetraplegia as the outcome of SCI was confirmed but to a somewhat lower percentage. The obtained percentage of males was 74,5% (Thietje, Giese, Kaphengst, Runde, & Schulz, 2010). In addition, significant difference was found in the nature of injury. In general, women are less likely to be injured during sporting accidents or due to acts of violence, opposed to higher procentage of women injuried in traffic accidents (Devivo & Jackson, 2002; Stover, 1996). Also, weakness caused by an old age and weakness as a consequences of diseases are more frequent in female population (Hammell, 2004).

The data presented in Figure 3 shows the marital structure of participants in our research sample. The highest percentage of participants of the whole sample was never married (50%), a somewhat smaller percentage of participants (43%) was married, whereas 7% of participants were divorced. However, several facts can be noticed by reviewing the structure of participants according to their marital status. The marital structure of participants from E-1 group correspond to the same of control group. The highest percentage of participants in E-2 group was not married indicating that their marital structure was less favorable in comparison to both E-1 and control group, because in E-2 group the category of those who had not been married is the dominate one. The disadvantage of this structure is even more noticeable given the fact that the percentage of married participants was lower while the percentage of divorced participants was greater. Studies conducted worldwide have shown that SCI and the consequences that occur as inevitable represent a major challenge in marital relationships. It is estimated that chances for divorce are 1,5 to 2,5 times higher than that of general population. Commonly, divorce rates are high during the first three years after SCI, but they become equalized with the divorce rates of general population a few decades later. Also, there is a positive correlation with demographic characteristics, age, and lower educational levels (Karana-Zebari, de Leon, & Kalpakjian, 2011). Following discussion on sample structure according to marital status of participants, a cumulative coaction of factors related to age, severity of injury and marital status should be expressed in the claim that younger, more active participants with risky behavior are getting more severe spinal cord injuries. Our results indicate that one of the consequences are lower marriage and higher divorce rates. All the above mentioned hinder or reduce the level of their social integration of persons with SCI.

Studies conducted in the United States of America indicate that the time of injury, both education and employment status, as well as self-assessed health status significantly affect the percentage of divorce, or the preservation of marriage. The strongest predictor of preservation of marriage was the level of social integration. The chances of divorce are decreased by two in a group of socially integrated persons with SCI. Also, a college education is factor that significantly contributes to the preservation of marriage. On the other hand, retired persons, housewives and unemployed persons are twice as likely to be divorced after injury compared to the general population (Karana-Zebari et al., 2011).

Parenthood is one of the indicators of the level of social integration along with additional roles that are related to parenthood. Economic, educational, social and developmental functions of the family as the basic structure of society indicate an increased level of responsibility and expectations that are placed in front of each parent. The question of possibilities of achieving these roles significantly depends on the level and severity of SCI. Structure of participants according to their parenting status is presented on Figure 4. Out of the total sample, 41% of participants had children. Looking at parenting status across our research groups, the following facts

were noted: 44,6% of participants in control group had children, 47,8% of participants in E-1 group had children, as well as 23,8% of participants in E-2 group. Generally, it can be concluded that the majority was not parents. The parenting status of participants in E-1 group was more favorable as compared to controls, and particularly to E-2 group. The fact that participants in E-2 group were members of the youngest population and that they were injured earlier in life than participants from other two research groups (between 18 and 28 years of age), consequently led to situation that they had failed to realize themselves in the parenting role. Their status supports findings related to the cumulative impact of etiological factors. Compared to the control group, participants of E-1 group are in a more favorable position, while participants of E-2 group are at a disadvantage. These facts point to the extremely difficult position of persons with tetraplegia, as opposed to persons with paraplegia. Persons with tetraplegia rarely get married, because of their youth, the time of injury, severity of injury and consequences that it entails, nor they realize themselves as parents, which all together affect the level of their social integration.

As the primary source of income for sustaining and improving of existence and overall position of a person within a community, employment represents an important factor of social integration. By working, human beings are getting involved in social processes, relationships and institutions, therefore achieving full potential, contributing to both personal and social well-being, reaching the level of self-affirmation. Exclusion from a working process, despite the existence of adequate predisposition, represents a problem for both society and individual, making that person a user of social benefits instead of a creator of social values. The question is to what extent society managed to socially integrate person with SCI through employment. Data are presented on Figure 5. Unemployment is a problem that affects both population with SCI and typical population. Overall, unemployment is a feature of 58% of our research sample, whereas less than half of participants is employed (42%). However, the situation is even more difficult when reviewing specific groups. A total of 62,5% of participants in control group was employed in contrast to 26,1% of participants in E-1 group and only 4,8% of participants in E-2 group. Data published in 2011 by the National Spinal Cord Injury Statistical Center (2011) shows a completely different picture of employment status of persons with SCI in the United States of America. One year after injury 11,6% of participants were employed. Twenty years after injury 35,2% of persons with SCI were employed. In addition, similar data on employment status was noted 30 years after injury. Results obtained in a study conducted in UK showed that 32% of participants were employed regardless of level of injury (Kennedy et al., 2010). A similar study conducted in Germany showed that 42% of participants with SCI were employed in full or in part-time work, while 13% of participants were unemployed (Thietje et al., 2010). Also, 20% of participants with SCI in Australia were employed, 12% were retired due to the injury, while 23% were unemployed. In Sweden, 39% were employed, 17% were retired due to the consequences of injury SCI, while only 6% were unemployed (Kreuter et al., 2005). The conclusion that can be drawn from these data is directed towards social criticism in domain of employment of persons with disabilities, because in spite of relatively high-quality pre-conditions related to education, their employment is not implemented in adequate extent. All stated affect the level of social integration of persons with SCI. The situation is getting more serious linearly with the increasing of level of injury, so practically there is no social integration through work in population of persons with tetraplegia. Procedures, resources and results of socialization in the process of social integration (in terms of the consequences of social participation) include the issue of employment in addition to many other important aspects. In study dealing with an unsatisfactory social needs of persons with SCI, employment (work, occupation) has been shown as an unattainable goal for many, but also the greatest source of satisfaction and increased perceived quality of life (Kennedy et al., 2006). Employment makes economic independence, raising the level of self-assessment, as well as decreasing in social benefits from society, and is one of the most important factors of integration.

One aspect of the realization of interpersonal relations is the quality and intensity of interpersonal relationships established through the affirmation of social relations within the immediate surroundings. The present study included a self-assessment of participants in terms of the frequency of their socializing with friends. Data are presented on Figure 6. Replies of participants with SCI were mostly directed to confirmation of the lack of contact with friends in the context of meeting and socializing. Analyzing the answers of the participants within the studied groups, one could notice that participants of control group are the least likely to identify themselves in the direction of deprivation of socialize enough in 73,9% of cases. Also, participants of E-2 group do not socialize enough in 80,9% of cases. The data presented indicate that the presence of SCI hinder both intensity and quality of interpersonal relations reflected through frequency of socializing with friends and that it was not perceived as satisfactory.

Social integration, as a process, can be reviewed through the analysis of the frequency of outings in order to get engaged in social events (cultural, entertainment, recreation, sports, etc). Analysis of presented data is made on the basis of self-perception of participants who reported satisfaction with the frequency and types of outings. This method has been applied with regard to the perception of the frequency of outings that differs significantly between groups of participants. In other words, participants with significantly mobility impairment (such as persons with SCI) perceive positively every opportunity for going out expressing satisfaction with each new lived experiences. For someone, going to a store represents a burden, while for someone else it is an extraordinary living experience. Persons without SCI have a much greater mobility, and they have higher aspirations in this area, their satisfaction with participation in social events is considerably more difficult to manifest. They respond only to those events that meet their specific needs. This fact should be kept in mind during the analysis of data on the extent to which participants believe that they do go out. Overall, as presented on Figure 7, half of participants (50%) declared affirmatively, while the other half chose in the direction of dissatisfaction with the frequency of outings in order to meet social needs. However, the distribution of responses indicating satisfaction or dissatisfaction with the frequency of outings changes to some extent when the responses of participants are observed within the research groups. Participants from

E-2 group reported the greatest lack of outings. Majority of participants from E-1 group reported low frequency of outings, as well as controls.

After injury of spinal cord organic system dysfunction occurs. Depending on the injury level different organic systems may be affected: cardiovascular, skeletal, genitourinary, respiratory, peripheral circulatory system, thermal-regulatory, etc. The fact is that some of these systems, with altered roles or developed pathology, can be stimulated, partially preserved or reactivated by sports activities. In addition to the beneficial effects of stimulation of these systems, sport is also an indicator of social integration. Through engaging in these activities persons with SCI improve their health status, they communicate, socialize, they form and maintain friendship. In addition, their will is getting stronger, they raise their self-esteem and gain more realistic assessment of their own abilities. Special education and rehabilitation tends to positively affect both sustention and improvement of both mental and physical health by affirming the remaining abilities, to achieve the function of recreation and entertainment, improving at the same time the process of social integration. It is necessary to have in mind that the intensity and frequency of sports activities may be affected by numerous factors such as the severity of injury, time of occurrence, and age of participants. A general conclusion that can be drawn from the data presented on Figure 8, is that participants from all three research groups were rarely included in various forms of sports activities. Out of the total sample, 64% of participants reported that they did not participate in any form of sport activities, while 36% of participants reported that they were engaged in some type of sport. The responses varied between research groups thus providing different and even more unfavorable distribution. In group E-1, 73,9% of participants, as well as 85,7% of participants from E-2 group, did not practice any kind of sports activities. On the other hand, 51,8% were not engaged in sports activities.

This distribution of participants' answers indicate a significant disadvantage of participants with SCI as compared to participants without injury because the efforts to involve persons with disabilities in sports actively are not accomplished sufficiently, thus ultimately reflecting on their social integration level. The trend of greater involvement of persons with SCI in sports activities is noted in studies conducted worldwide. The results obtained in the UK indicated that all patients were aware of the importance of this rehabilitation activities for the duration of rehabilitation process. At least 72,7% of participants had tried to engage in some kind of sports during the rehabilitation period, while 30% of participants reported regular exercising after hospital discharge. General benefit of sports activities was recognized by 78,8%, while rehabilitative benefits was recognized by 69,7% of participants. Self-assessed benefit was related to physical condition, quality of life, self-confidence and social contacts (O'Neill & Maguire, 2004). Dramatic differences in the implementation of sports activities in population of persons with SCI are found when comparing the results obtained in our study and the results of the aforementioned authors. The reasons can be found within the economic differences, architectural barriers, transport, support from government agencies, as well as in adaptation of equipment and sports facilities.

Social integration and abilities of participants with SCI to perform normal roles in and outside their home were assessed in three domains of functioning: home integration, social integration, and productive activities. Differences in social integration of persons

with and without SCI were identified by applying χ^2 test. Differences between group of participants with SCI (paraplegia and tetraplegia) and participants without SCI are presented in Table 1. Statistically significant differences were noted in domain of home integration, social integration, and productive activities, as well as in the domain of total social integration. It can be concluded that participants without SCI have significantly better achievement in all domains of social integration. Differences between group of participants with paraplegia and participants with tetraplegia are presented in Table 2. No statistically significant differences were confirmed in domains of social integration and productive activities, and total social integration. Statistically significant difference was found only in the home integration domain.

Persons with paraplegia prepare their own food, go shopping and take care of children more frequently. These results are expected and consistent with greater functional independence of population of persons with paraplegia. With a well-adjusted living space, they have ability to fully participate in almost all household activities independently. In contrast, persons with tetraplegia, regardless of the level of their functional independence, always require assistance of other person in some domain and it is very difficult to assume that they can fully function independently. As opposed to these results, both participants with paraplegia and participants with tetraplegia achieved about the same results on the subscale of social integration related to participation in activities outside home. Also, there was no statistically significant difference in the domain of productive activities. On the items of employment, schooling, education and volunteering, both participants from E-1 and E-2 group had approximately equal achievements. Our results are equivalent to results of study by De Wolf, Lane-Brown, Tate, Middleton, & Cameron (2010) in which these authors did not find significance of social integration between the groups in relation to level of injury.

CONCLUSION

This paper presents several basic socio-demographic characteristics of persons with SCI and characteristics of their social integration that are related to marital status, parenthood, employment status, socializing, outings and sports activities. In addition, social integration of persons with SCI is viewed in a relation to persons from typical population, as well as between persons with different levels of injury. As presented, persons with SCI showed a significantly less favorable performance in comparison to persons without SCI. More dramatic situation appeared when analysing research groups in relation to their injury level, whereas better results was confirmed in the group of persons with paraplegia compared to group of persons with tetraplegia.

Social integration as the central theme of this paper, as a concept and as a quality of content of life activities and interactions, differs depending on a numerous factors. In this regard, the level of social integration differs according to expectations, dispositions, capabilities and implementation of different contents, processes and relationships at different ages. Exploring the level of social integration of persons with and without SCI, it was found that persons without SCI had higher level of social integration in all tested factors. Further analysis of results had revealed a better achievements in

persons with paraplegia on home integration in comparison to achievements in persons with tetraplegia. In other domains of social integration, persons with tetraplegia and paraplegia had roughly similar achievements and no statistical significance was found.

Understanding of social integration has undergone considerable evolution over the past several decades. The importance of social integration is well recognized in scientific and professional literature. Common factors of everyday existence almost always involve relationships with other people, independence in activities of daily living and meaningful socializing. Social integration is generally presented as a process that allows all individuals and social groups to fully participate in various economic, social and cultural trends, thus that achieving an adequate living standard. This process should particularly allow all members of society to participate in decision-making, especially in those that have influence on their well-being and realization of all human rights. According to its importance, but also to actual difficulties, families, collective, other entities and society in general have a right and a moral obligation to provide all persons with disabilities protection and support in order to get fully integrated into community life (Murphy, Molnar, & Lankasky, 2000).

Social integration is the key issue of the process of rehabilitation of persons with SCI. The ultimate goal of their rehabilitation is fulfillment of roles in accordance with their age and gender. Roles are realized in relationships with their family, friends and within their community, as well as providing them with the opportunity to work, to earn an income and make decisions. In most cases, persons with SCI are healthy and able to actively participate and to be integrated in social life (Sekaran et al., 2010; DeSanto-Madeya, 2006). However, despite the impact and invaluable importance of functional restoration, the fact that numerous physical and architectural barriers, inaccessibility of health care, reduced availability and lack of transportation present significant obstacles to social integration of persons from this population. Future research should examine the relation between a wider range of socio-demographic characteristics and various aspects of social integration of persons with SCI.

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