

Living ups and down: The Life Experiences of the Spinal Cord Injured in Winter Sport of Tube-riding: A Qualitative Phenomenology Research

Heidar Ali Abedi¹, Fatemeh Ghani Dehkordi², Mohammad Esmail Hajinezhad³, Mohammad Ali Najafi Khah⁴, Zohreh Ghezelsefli⁵, Safar Ali Esmaili Vardanjani⁶

¹BSc, MSc, PhD in Nursing, Associate Professor, Faculty of Nursing and Midwifery, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran.

²PhD Nursing Student, Faculty Member, Bushehr University of medical sciences, Bushehr, Iran.

³ Faculty member, Bushehr University of medical sciences, Bushehr, Iran.

⁴ MSc Student in nursing, Tehran University of Medical Science, Tehran, Iran.

⁵ Msc student in Nursing Education, Young Researchers Club, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran.

⁶ Ms in Nursing Education, Shahrekord University of Medical Science, Shahrekord, Iran
safaraliesmaili@yahoo.com

Abstract: Winter sports are very entertaining, exciting, and pleasurable but they can be simultaneously very dangerous and hazardous with the high ratio of damages. The hostile environment, equipments, devices, and the athlete's lack of sufficient skills cause the increase in the amount of damages and dangers derived from them. One of the winter sports is tube-riding. Because the tube-rider does not have any controls on the tube with regard to the speed control, path direction, brake, and stop, it leads to the high amount of damages; therefore this study aims to investigate the life experiences of the spinal cord injured in the winter sport of tube-riding. The researcher used a quantitative approach of qualitative phenomenology in the study. The participants were the spinal cord injured who were selected among the injured of winter sport of Koohrang tube-riding piste in Chaharmahal and Bakhtiari province. The sampling was aim based and finally through data saturation, six spinal cord injured were selected for the study. Data were collected by the interviewing the participants deeply and then were noted completely. Data analysis was based on Colaizzi approach. After analyzing the data, the life living up and down theme was elicited. The theme includes four subsets: 1) Physically living ups and down, 2) Mental, psychical, and emotional living ups and down, 3) Economical living ups and down, and 4) Social living ups and down. The obtained results of the study present a deep understanding of the life experiences of the spinal cord injured in the winter sport of tube-riding to the nurses and hygienic observers and also it is a warning for people and authorities to prevent and decrease the damages of this winter sport.

[Abedi HA, Ghani Dehkordi F, Hajinezhad MA, Najafi Khah MA, Ghezelsefli Z, Esmaili Vardanjani SA. **The Life Experiences of the Spinal Cord Injured in the Winter Sport of Tube-riding: A Qualitative Phenomenology Research.** *Life Sci J* 2012;9(4):5529-5535] (ISSN:1097-8135). <http://www.lifesciencesite.com>. 820

Keywords: Spinal Cord Injury, Tube-riding, Life experiences, winter sport, Qualitative phenomenology

1. Introduction

Tube Riding: One of the most popular winter sports in our country Iran is a tube riding. Tube riding is a winter sports or better winter recreation that people using inflated car tubes as a device like a sledge for sliding down on gradient snow (Ghani Dehkordi et al., 2012).

Abedi et al (2009) named tube riding winter sport as a non-standard sport, and stated that the amount and severity of injuries resulting from this non standard winter sport is a very high. As well as have expressed that the non standard tubes as a sport tool is the main causes of injuries in tubes riding winter sports. Since the athlete does not have any control over the tube (in terms of speed control and guidance of the tube in the along the track), the extent and severity of injuries is very high than any other winter sports (skiing, snowboarding, sleigh rides,

etc). In addition to the nonstandard tube as an sports vehicle, the other factors causing injuries in nonstandard tube riding sports can be included: the lack of standard and special track for tube riding, Encounter tube riders with natural obstacles (trees, shrubs, rocks, ups and downs the surface of track and...), artificial barriers (lights, fences, tables, etc), the overturning tube rider on the ramp of track, encounter tube rider with other tube riders on the surface of track because a lot of tube riders at the same time crowded on the track, encounter tube rider with the viewers that standing round the track, encounter tube riding with people who are climbing from track, On the other hand, because the players ride the tube as groups and collectively, if the event of accident injured several people at the same time (Abedi et al; 2009).

Sporting and amusing activities are one of the most important components of a healthy life style (Marshall and Guskiewicz, 2003; Shephard, 2003). Sporting activities have been converted to the most important components of the modern life and the majority of people are willing to have much time for entertainment. Also, there is a significance increase in the number of club and stadium members (Majewski et al., 2006). The psychical and mental advantages of sport may be decreased by any damages arising with this sports (Marshall and Guskiewicz, 2003; Shephard, 2003). Damage is an unavoidable part of any sports major (Bahr and Reeser, 2003). Increasing the number of athletes and the interested persons toward the sport has led to the increase in damages which depend on sport (Faude et al., 2005). Mainly, winter sports such as snowboarding, skate, and mountaineering which are increased daily in popularity and become more common have a higher ratio of damages among other sports (Steinbrück., 1999). Simultaneously, by increasing the popularity of such sports, the amount of damages arising therefrom will increase too (Majewski et al., 2006). Although attending winter sports may lead to serious deficiencies (Guenther, 2003), fortunately there are little damages arisen from such sports (Muller et al., 2000). Skate, snowboard, sledge and other kinds of such sports are of common winter sports among the people that their popularity is increasing day by day and according to their increasing popularity, the amount of their damages will increase too (Majewski et al., 2006). Tube-riding is one of the most common winter sports in Iran. Ghani Dehkordi et al stated that tube-riding is a non-standard winter sport from which the ratio of damages arisen is high (Ghani Dehkordi et al., 2012). maintain that because tube is below the standard level, it is one of the most important reasons for making damages in tube-riding. Since the athlete does not have any controls on the tube (with regard to his speed control and path direction in the piste), its ratio of damages is higher than the other winter sports (skate, snowboard, sledge...). In addition to being below standard, there are other reasons for tube as a sporting device that causes damages in non-standard sport of tube-riding. These reasons are mentioned below: lack of a private and standard piste for tube-riding, the collision of tube-rider with natural barriers (trees, shrubs, stones, rough surfaces of the piste, ...), artificial barriers (poles, fences, curbs, ...), tube capsizing, and tube-rider rolling on the slope of the piste, the collision of the tube-rider with other tube-riders for the simultaneous high crowd of tube-riders in the piste, the collision of tube-riders with the spectators who are standing near the piste, the collision of tube-rider with the persons who are

climbing the piste surface, and finally because persons ride tube in groups, occurring an event simultaneously makes some persons injured (Ghani Dehkordi et al., 2012).

Although there are much damage arisen from tube-riding, the following reasons can be mentioned to its high popularity among the people: Lack of people's awareness of the ratio of its damages, lack of the need to instruct persons to do it, lack of the need to have a private piste, and tube-riding in groups, and finally because tubes are cheaper in comparison to the other equipments in winter sports such as skate, snowboard, etc (Ghani Dehkordi et al., 2012). As mentioned before, tube-riding is a non-standard sport with a high ratio of damages. According to the pattern and amount of damages in this sport which are arisen from capsizing and rolling the tube-rider during the piste and its slope as well as the collision of the tube-rider with the natural and artificial barriers available in the piste, it can lead to a high ratio of damages on the head and the spinal. Because of the great numbers of the spinal cord injured in tube-riding, the current study is aimed to investigate the life experiences of the spinal cord injured in this non-standard sport and also it is a warning to people and authorities in relation to the high ratio of damages in tube-riding sport. Accordingly, the current study has been done to prevent and decrease these damages.

2. Material and Methods

Nature, subject, and question are the distinguishing factors in selecting the research method (Halloway and Wheeler, 2002; Wood and Harber, 2002). When the aim of the study is the understanding of the participants' experiences, the most appropriate research method is phenomenology (Borns and Grove, 2008). The research subject is the life experiences of the spinal cord injured in winter sport-tube-riding- and also the research is of quantitative descriptive phenomenology. Phenomenology means studying the persons' experiences. In this method, the researcher investigates the persons' experiences through the interview and some explanations that the participants present. In quantitative studies, sampling will be done by the goal-oriented sampling and the maximum difference of approach (Borns and Grove, 2008). The participants were selected after identifying the spinal cord injured in tube-riding sport by using the inclusion criteria into the sample. The entry scales consisted of the injured who suffered from the spinal cord damages arisen from tube-riding in the piste, the spinal cord injured who were willing to take part in interview and could express their experiences about the spinal cord damages; the samples could be both

male and female. Exclusion criteria included the injured that were unable to express their experiences because of their mental, psychical, or physical problems. After the participants were selected, they were informed of the aim of the research by calling. When the participants were ready to take part in the study, the place to give the interview was arranged based on the injurer's comfort. They were interviewed after the attainment of the written and verbal satisfaction of the participants. Besides, they were assured about the confidentiality of the information. All interviews were recorded on the tape and were analyzed by the 7-step Colaizzi method. Immediately after ending the interview, its passage was written. Each interview was recorded and analyzed before doing the next one. After studying, reviewing, and rewriting the data and passage line by line, the researcher determined the main concepts and allocated a code to them. In the next step, significant units and early themes were identified by the permanent comparison of data and codes. The process of analyzing the data was repetitive and the main themes appeared by reviewing the interview passages and development of analysis. The main questions of the interview include the life experiences of persons, their problems in their daily life, the ways of adaptability, and facing the problems. The allocated time for each interview according to the condition, opportunity, and the participants' interests was about 45 to 60 minutes. The final size of the sampling was determined based on the data completion formula and finally the participants included six persons. The reliability and validity of the study were based on the four components of real value, being applied, continuity, and being real (Borns and Grove, 2008). Real value means that the statement which is arisen from the experience should be true for an individual who experienced it in reality. This study was carried out by referring to the participants and affirming the arisen statements. Being applied or applicability means whether the results are generalized in other places and groups or not? In this case, the researchers tried to achieve this aim by selecting the large numbers of participants in terms of their ages and the cultural backgrounds. Stability was achieved when the participants were representing similar answers to the same questions which were formed in different shapes. When the research process is without any biases, a real research will be achieved. During the study, the researchers tried to take away any biases about the researchable event from themselves before and after the interviews.

3. Results

Six persons participated in the study. The participants included both male (4 male) and female (2 female) of the paraplegia or tetraplegia injured. One of them was tetraplegia injured and the rest paraplegia did. The time of the event passed in tube-riding piste was from 2 to 4 years. Two participants were single and four ones married. The life alteration was the first and the most important answer that the spinal cord injured in winter sports gave to the research question, which is their answer about the life experiences after the spinal cord damages and being injured. They used some words such as "Suddenly, everything was finished, my life converted, my life path changed ...". The life alteration theme includes four subsets in the study: 1) physically alteration of life, 2) mental, psychical, and emotional alteration of life, 3) economic alteration of life, 4) social alteration of life.

1) Physically living ups and down

Spinal cord injury and incapability was the most important experiences of the injured in winter sports. It can be referred to multiple trauma, head and brain concussion, brain bleeding and other inner bleeding, the fracture of different body's organs, organs and tissues rupture, spinal-column fracture, infections, lacerations, anesthesia, coma, pain, etc. as other physical experiences. "My shoulder blade, pelvis bone, ribs, and both ankles were fractured while I was tube-riding and colliding with the stones of the piste."

"I rode the tube and I have not yet gone down 10-12 m that the tube was slipped and I rolled during the slope; in addition to other fractures of different body's organs, my neck spinal cord was damaged too." "My bed sore were so severe that consumed 2kg of Gauze. The damage was so serious that my lumbar bone was completely clear." "Since I injured until now, my body is painful, because my spinal cord is damaged, I always feel pain in my hands and feet; at first I thought my hands and feet wrenched into each other, now after passing some years my body is painful. Since I recovered my senses in the hospital, I found that I couldn't move my lips correctly. "I went to Well being social welfare (Behzisty) and formed the file. Then they recorded me as an incapable person, because in that time I was physically incapable and their regulations included me". "My lifetime is divided into two parts, when I wanted to say something, I said before my incapability and after my incapability". "I lost my spouse in the piste, while my children were young and my whole life was destroyed."

2) Mental, psychical, and emotional living ups and down

One of the main problems of the injured who suffer from the spinal cord damages in winter

sport relates to the mental, psychical, and emotional difficulties. As they said, their upset and what they suffered from result from a few minutes of tube-riding pleasure that lead to the irreversible and stable damages. "What is the difference between me and a war Veterans? What is the difference between me and one who was damaged during working? How were they exposed to the spinal cord damages and what about me!" "After I was rolling down the piste, I tried to stand up but I couldn't. I couldn't move my feet. I lost my hope and I was talking with myself that maybe an event was happening to my feet, and during the whole of my life being repentant to this event. Finally, from what I was frightened happened to me, my spinal cord was damaged and I was injured." "I spent very bad days, the ones worse than the piste event. I thought that I was a burden and wasn't able to do something. My husband divorced me and got married again. He told me that I was incapable and my conditions were different from his. He said that I had my own lifestyle and he had his own way. In the first six months after that event, I tried to suicide three times. Several times I wanted to suicide but even I wasn't able to do it. I prayed to God for an end to my sufferings. When God didn't answer me, I pleaded others to end my life."

3) Economical living ups and down

Economical pressures built the basis for establishing new problems for the patients. Because of their job losing and inability to do them, the spinal cord injured meet many economical problems. Going frequently to the hospital and its cost, clinic costs, frequent hospitalization, high therapy costs such as medicine costs, and remedial pursuits caused the increase of life costs for those patients that some of them forced to sell their houses and cars and family income lead to the creation of the economical problems for the patients and their families. Also economical pressures caused the poverty, excruciating life, and the feeling of being a burden. In addition to the above costs, the injured that lost their job hadn't any incomes. "I lost my house and life, I had to convey them to the town, I had a house here but it was sold and spent for my therapy. The costs of going to the clinic, costs of home visits, families and friends' costs, cost of sweetness, fruits, dinner, and lunch for the guests were higher than the hospital costs. My father had to sell his car which was his income source and then he was never able to buy a new car and now he has to labor. That time I lost my job, in reality I lost my job. Economically, I really damaged. Before the event I had a computer store, and after that I lost my job because of the spinal cord damages, brain concussion, and memorial problems."

4) Social living ups and down

Losing spouse and life partner while tube-riding and spouse death, losing the partner's life because of divorce, lack of protection for caring children, the destruction of family life, job losing, the abandonment of education, the change of role, the role contrast and so on were factors that affect the insured's lives. "My spouse and I rode the tube and we haven't yet gone down 10-15 m that the tube was slipped and I lost my spouse there, also my neck was damaged in the vertebra of 4 and 5." "You don't deserve us, our daughter couldn't keep you until the end of her lifetime, said my spouse family, and they required her dowry and sued for a divorce. We were married and two weeks were remained to our marriage ceremonies. My spinal cord was damaged in the piste. My husband told me that you were clever and healthy before the event and I wanted to live with you but now how your conditions are? He told me that you are incapable and your conditions are different from me. He abandoned me and got married again. I had two children, my neck spinal cord was damaged, and also my spouse died in the piste that time, my house and properties were lost, I had to sell my properties and spent them for my therapy, my children were fatherless, I had to go and live with my old mother who needs a nurse and now she has to keep us."

4. Discussions

The sport damages as a public health problem were mentioned in recent decades that are followed by harmful influences on health and imposed costs to society (Conn et al., 2003; Burt and Overpeck, 2001). Sport damages are among the most important kinds of damages in modern west countries. Always, their treatments are very time-consuming and expensive. The pattern of damages is different from the kind of snow sport. 23% (about one-third) of the sport damages in Switzerland is related to snowboard and skate in Alp Mountains. The related damages to the spinal cord are different between 2-10% that whose 1% leads to the permanent nervous defects. The most damaged part of the spinal canal relates to the neck spinal (Alp Skate 3/9%, Snowboard 6/8%) (17, 18). Molly and et al measured the ratio of the spinal cord damages in winter sports such as skate and snowboard from 2 to 6 persons for exercising 1000 days while skate and snowboard are among the safe winter sports because of the individuals' control on speed and direction. Also it is said, although the ratio of the spinal cord damages is low in skate and snowboard, the amount of death is high in these individuals (Molly et al., 2011). The ratio of the spinal cord damages which were arisen from the sport was 8%. Other factors of the spinal cord damages include accidents (41/3%),

rolling down the height (27/3%), violence and war (15%), and unknown reasons (8/5%), in turn. 55% of the spinal cord damages occur among the individuals of 16 to 30 years old. Males are the majority of victims in damages of the spinal cord (National Spinal Cord Injury Statistical Center, 2010) and only 9% of the spinal cord damages occur in the individuals up to 60 years old. With regard to the improvement in emergency treatments, pre-hospital and long-period treatment management in the spinal cord injured, the rest of the lifetime of these injured persons were increased in the past decade (Krause and Broderick, 2004). And the increase in lifetime requires the improvements in new technologies to improve the function and to decrease the secondary complications which are related to lack of movement in this group of patients (Chen et al., 2005). Because of the improvements in medicine and lack of reduction in the rest of lifetime in the spinal cord damages, these individuals imposed directly (treatment payments) and indirectly (losing income or efficiency power and production) heavy payments on themselves, family, and society. Therefore, the total amount of direct and indirect payments during the life is more than one to two million dollars for every individual suffering from the spinal cord damages. The total amount of the direct payments for all Americans who suffered from the spinal cord damages was estimated 7/736 billion dollars yearly (National Spinal Cord Injury Statistical Center, 2010). France and Powers (Ferrans and Powers, 1993), and Vin Geit (Wingate, 1995) maintained that the patients' financial problems cause to change not only the life pattern, but also the availability of economic problems to the social valuable sources, individual power⁵, friends, credit, and self-esteem. The main components of life in the individuals who suffer from chronic illness are the management of the social complicated life and malady. The patients' personalities changed from a quite healthy person to a person who needs care with the special limitations. And because of the inability and losing the job, they face economic problems which are among the most effective reasons on the management of malady (Mendelson, 2006). Without the social and economic sponsor, the patients can't follow the prescript remedial plan (Telford et al., 2006). As Royer says, "because of their physical inability and other reasons such as wasting the time for the malady, lack of the anticipation of the malady, and the most important reason which relates to the deep economic pressures that affect all aspects of their life, the patients can't take a trip and enjoy the life pressures and involve in other daily important affairs (Royer, 2004). Chen and Bour state that the spinal cord damages are among the most disastrous damages that one person may be

faced it. The spinal cord damages existed as a deep inability along with many changes in these individuals' life style. Also they impose unimaginable physiological and psychical stresses on these individuals and their families in all contexts of the individual life, family, mental-psychical, and social. They state that these changes, in terms of the function, life style, role, work, family, social connection, and so on involve the patient and his/her family during the whole lifetime and will paralyse the patient and his/her family (Chen et al., 2005). The amount of experienced inability by the patient in the spinal cord damages depends on the surface, intensity, and mechanism of the stroke. Other reasons arisen from the spinal cord damages are based on the distance and adjacency of the spinal cord damage level, because adjacency and distance of any kind of body systems whose nerves are connected with the spinal cord are affected directly and indirectly under the stimulating effects of the nerve, and the reduction of the stimulation leads to the damage in its control process (Boroner and sudarse, 2010). The established clinical manifestation in the spinal cord damage depends on the kind of damage relating to the severity of damages on the spinal cord. Under this level, sensorial and dynamic paralysis, lack of the control of intestine and urinary bladder (usually along with the keeping urine and urinary bladder dilation), lack of Tonous Vazamotor, and perspire function, and the significant reduction of blood pressure arisen from lack of the stability of environmental vessels exist. The quite damages of the spinal cord (lack of sense and ability to autonomic control of organs under the damaged level) cause the appearance of paraplegia or tetraplegia (Boroner and sudarse, 2010). Berry maintains that to be affected with the chronic illness cause some irreversible changes in the patients' life. Biographic disorders arise from disintegration of the patient's daily life structure (Bury, 1991). Chen and Bour stated that the individuals who suffer from the spinal cord damages and their families pass three steps: 1) life catastrophic event, 2) facing the problems and in the third level if the families of the spinal cord injured could be able to adapt themselves with the problems, they achieve stability. But without their adaptability, these families disintegrate (Chen and Boore, 2007). Lon and Sorenson mentioned the incomplete cycle after they investigated the experiences of the spinal cord injured and their hope and toil during the first year after damaging. And it was related to the participants' experiences of the spinal cord damages in the first weeks and months after damaging that they named it life alteration and bad days. Incomplete cycle in this study means all factors which permanently and increasingly destroy individual's life such as

frustration, seclusion, impatience, dependency, violence, mental and psychological problems, physical problems, thoughts and willingness to suicide. Also they state that the spinal cord damages and paralysis often play the role in breaking the marital life, especially if the connection is weak. Illness can be a basis for all sexual, emotional, and communicative problems (Lohne and Severinsson, 2005). Kralik and et al (2003) state that chronic illness makes inability and the majority of persons experience the lack of control on their body and life when they face chronic illness, feeling that is like falling and changing their view toward life. Charmaz (1995) maintain that chronic illness attacks the mind and body and destroys the individuals' daily life and also destroy their personality permanently. They believe that to be affected with a chronic illness is a sudden crisis and an unwilling loss. It is an unpredictable event that separates the individual from his/her previous personality and may be representing of an unclear picture of the individuals in the future. In fact, to be affected with the chronic illness, destroys the family life and the individuals' views in the future (Telford et al., 2006). Freedom threatens them and makes a feeling that they are different from others (Oki and Hoshi, 2004.). Corbin and Strauss (1998) state that experiencing the life with the chronic illness is a permanent and blooming process, and the individuals' talks with him/herself and the world which is accompanied by the destruction of the individual's life in many contexts affect the individual's personality, losing their own worth feeling, and connecting with others and society.

Acknowledgements:

This research is a part of a thesis project and a research plan, Khorasgan (Isfahan) Branch, Islamic Azad University, Isfahan, Iran. Authors express their appreciation for all participants of this study due to the expression of honest feelings and perceptions of their experience that they made this study possible.

Corresponding Author:

Safar Ali Esmaeili Vardanjani
Ms in Nursing Education,
ShahreKord University of medical sciences,
ShahreKord, Iran.
E-mail: safaraliesmaili@yahoo.com

References

- 1- Ghani Dehkordi F, kooshesh F, Alinajad H, Malekpour P, Abedi HA, Esmaeili Vardanjani SA. Epidemiologic of Winter Sports Injuries in the Tube Riding Track of Kohrang City, Shahrekord, Iran 2012: Life Science Journal 2012;9(4): 2202- 2205.
- 2- Abedi HA, et al. 2009. Epidemiologic of Winter Sports Injuries in the Tube Riding Track of Kohrang City, Shahrekord, Iran. The 6th Regional Nursing & Midwifery Conference, Focusing on the latest Topic in Family Health, Khorasgan (Isfahan) Branch, Islamic Azad University. [In Persian].
- 3- Marshall SW, Guskiewicz KM. Sports and recreational injury: the hidden cost of a healthy lifestyle. *Inj Prev* 2003; 9:100–2.
- 4- Shephard RJ. 2003. Can we afford to exercise given current injury rates? *Inj Prev* , 9:99–100.
- 5- Majewski M, Susanne H, Klaus S. 2006. Epidemiology of athletic knee injuries: A 10-year study. *The Knee* 13:184 – 188
- 6- Bahr R, Reeser J.C. 2003. Injuries among world-class professional beach volleyball players. *The American Journal of Sports Medicine*. 31: 119-125.
- 7- Faude O, Junge A, Kindermann W, Dvorak J. 2005. "Injuries in female soccer players". *The American Journal of Sports Medicine*. 39: 3-9.
- 8- Steinbru'ck K. 1999. Epidemiology of sports injuries—25-year analysis of sports orthopedic-traumatologie ambulatory care. *Sportverletz Sportschaden* ,13(2):38– 52.
- 9- Muller R, Brugger O, Mathys R, et al. 2000. Snowboarding accidents. *Sportverletz Sportschaden* ,14:121-127.
- 10- Guenther SE, Edward P, Kadish H. 2003. Serious Winter Sport Injuries in Children and Adolescents Requiring Hospitalization. *American Journal of Emergency Medicin*, Volume 21.
- 11- Halloway I. Wheeler S. 2002. Qualitative research in nursing. Australia: Blackwell.
- 12- Wood, GL, Harber J. 2002. Nursing Research. Methods, Critical Appraisal and Utilization. St. Louise: Mosby.
- 13- Borns N and Grove SK. 2008. The Practice of Nursing Research: Conduct, Critique and Utilization, 5th ed.
- 14- Conn JM, Annett JL, Gilchrist J. 2003. Sports and recreation related injury episodes in the US population. *Inj Prev* , 9:117–23.
- 15- Burt CW, Overpeck MD. 2001. Emergency visits for sports-related injuries. *Ann Emerg Med*, 37:301–6.
- 16- Parkari J, Kujla UM, Kannus P. 2001. Is it possible to prevent sports injuries? Review of controlled clinical trials and recommendations for future work. *Sports Med*, 31(14): 985-985.
- 17- Boroner and sudarse. 2010. Medical surgical nursing: Brain and neurology. Translation by: Moshtagh Z, Tehran, Jmeae negar publication.

- 18- Ackery A, Hagel BE, Provvidenza C, Tator CH. 2007. An international review of head and spinal cord injuries in alpine skiing and snowboarding. *Inj. Prev*, 13:368-375.
- 19- Franz T, Hasler RM, Benneker L, Zimmermann H, Siebenrock KA, Exadaktylos AK. 2008. Severe spinal injuries in alpine skiing and snowboarding: a 6-year review of a tertiary trauma centre for the Bernese Alps ski resorts, Switzerland. *Br J Sports Med*, 42(1): 55–58.
- 20- Molly E, Hubbard BS, Ryan P, Jewell MD, Travis M, Dumont MD, Anand I, Rughani M.D. 2011. Spinal injury patterns among skiers and snowboarders. *Neurosurg Focus* 31 (5):E8.
- 21- National Spinal Cord Injury Statistical Center. 2010. Spinal cord injury facts and figures at a glance. [Cited 10 Apr 2010.] Available from URL: <http://www.nscisc.uab.edu/>.
- 22- Krause JS and Broderick L. 2004. Outcomes after spinal cord injury: comparisons as a function of gender and race and ethnicity. *Arch Phys Med Rehabil*, 85: 355-62
- 23- Ferrans C, Powers M. 1993. Quality of life of hemodialysis patients. *ANNA Journal*, 20(5): 575- 581.
- 24- Wingate S. 1995. Quality of life for women after a myocardial infarction. *Heart and Lung*, 24: 467-473.
- 25- Mendelson C. 2006. Managing and socially complex life: Women living with lupus. *Qualitative Health Research*, 16: 928- 997.
- 26- Telford k, Kralik D, Koch T. 2006. Acceptance and denial: implication for people adapting to chronic illness: literature review. *Journal of Advanced Nursing*, 55: 457- 464.
- 27- Royer A. 2004. Year social isolation: the most distressing consequence of chronic illness paper presented at the annual meeting of the American Sociological Association, online <PDF> retrieved 2009. 03- 04, from [http://www.allacademic.com / Meta / P 110216_ index. Html](http://www.allacademic.com/ Meta / P 110216_ index. Html). In, 2004.
- 28- Chen HY, Boore JRP, Mullan FD .2005. Nursing models and self concept in patients with spinal cord injury – a comparison between UK and Taiwan. *International Journal of Nursing Studies* 42: 255–272.
- 29- Bury M. 1991. The Sociology of Chronic illness: a review of research and prospects *Sociology of health and illness*, 13: 451- 468.
- 30- Chen HY, Boore JR. 2007. Establishing a super link system: spinal cord injury rehabilitation nursing. *Journal of Advanced Nursing*, 57: 639-648.
- 31- Lohne V, Severinsson, E. 2005. Patients experience of hope and suffering during the first year following acute spinal cord injury. *Journal of Clinical Nursing*, 14: 885- 993.
- 32- Kralik D, Koch T, Eastwood S. 2003. The salience of the body: transition in sexual self-identity for women living with multiple sclerosis. *J Adv Nurs*; 42: 11-20.
- 33- Charmaz K. 1995. The body, identity and self: Adapting to impairment. *The Sociological Quarterly*; 36: 657- 80.
- 34- Oki S, Hoshi T. 2004. Empowerment Process of Self-help Group: A Qualitative Study of Patient Group Members of Crohn and Colitis. *Comprehensive Urban Studies*; 83: 29-45.
- 35- Corbin JM, Strauss AL. 1998. Shaping a new health care system. San Francisco: Jossey- Bass Inc Publication.

12/21/2012