



CLÍNICA

Competition for health care in women with spinal cord trauma

Competencia para el cuidado de la salud en mujeres con trauma raquimedular

*Burbano López, Margoth Consuelo

*Specialist Nursing in Adult Critical Care; Master of Nursing. Universidad del Valle. Cali, Colombia. E-mail: Margot.consuelo.burbano@correounivalle.edu.co

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Palabras Clave: mujeres; trauma raquimedular; conducta de salud; condiciones sociales

ABSTRACT

Goal: To establish the relationship between the health care competency and some socio-cultural, biological factors and self esteem in women with spinal cord injury.

Methodology: descriptive transversal study with 44 women spinal cord trauma presenting between 2006 and 2010, in Cali Colombia.

Findings: Fifty percent of women were less than 30 years old; most of them had high school education, did not work outside home, and were from low socioeconomic status, with mobility, sensibility, bladder and bowel deficits. The main cause of the injury was fire gun wound. The global competency for care was fair in 43, 1 % of women, good in 40, 9 %, excellent in 9, 1% and deficient in 6, 8%. Self esteem was compromised in women with neurogenic bladder and bowel regardless of their sexual activity. The relationship between health care competency, socio economic status, and bladder deficit was statistically significant.

Conclusions and recommendations: The women's high education level could be a positive factor for their health care. The deficiency in their competence for sexuality care calls for sexual and reproductive health services to young women exposed to several risks and unsatisfactory couple relations. It is needed to carry out studies with statistically representative samples along with qualitative studies to understand the life world and health care issues for women with spinal cord injury.

RESUMEN

Objetivo: Establecer la relación entre la competencia para el cuidado de la salud y algunos factores socioculturales, biológicos y la autoestima en mujeres con trauma raquimedular.

Metodología: Estudio descriptivo transversal con 44 mujeres que presentaron trauma raquimedular entre 2006 y 2010, en Cali, Colombia.

Resultados: 50% de las mujeres eran menores de 30 años; la mayoría tenían estudios de secundaria, no ejecutaban actividades laborales, pertenecían a los estratos bajos, tenían compromiso de movilidad y sensibilidad, vejiga e intestino neurogénico. La causa principal del trauma raquímedular fue herida por arma de fuego. La competencia global para el cuidado fue regular en el 43,1 % de las mujeres, buena en el 40,9 %, excelente en el 9,1 % y deficiente en el 6,8 %. La autoestima estaba comprometida en las mujeres con vejiga e intestino neurogénico independientemente de su actividad sexual; la correlación de la competencia para el cuidado con el estrato socioeconómico y el déficit neurológico vesical fue significativa.

Conclusiones y recomendaciones: El nivel educativo alto de las mujeres puede ser una fortaleza para el cuidado. La competencia deficiente en sexualidad exige la prestación de servicios de salud sexual y reproductiva específicos para mujeres jóvenes expuestas a diferentes riesgos y relaciones de pareja insatisfactorias. Es necesario desarrollar estudios con muestras estadísticamente representativas junto con estudios cualitativos para comprender la problemática de la vida y el cuidado de la salud de las mujeres con trauma raquímedular.

INTRODUCTION

The spinal cord trauma (SCI) is a disease of young people in the world; car accidents are responsible for more than half of the cases, followed by labor and sports accidents. In the United States, The National Spinal Cord Injury Association has estimated that 7,800 injuries occur annually and 250,000 to 400,000 people are living with spinal cord dysfunction. The highest rate corresponds to the age group of 16-34 years, the average age is 33.4 years and 82% were males ⁽¹⁾. In Colombia, SCI is increased by causes of violence and in summertime by diving in rivers and shallow pools ⁽²⁾.

In our setting, there is evidence that women with SCI use very few services of general and specialized health that allow the promotion of health and prevention of complications resulting from neurological injury disability. This situation is worrying, since the literature evidences interrelated risk factors together that affect the health of women with SCI, among which are:

a) factors related to health care: these women report that they often feel isolated, discriminated against, discouraged and sometimes ignored and mistreated by health teams ^(3, 4);

b) Biological personal factors: there are statistically significant differences in the higher risk that women have with SCI of cardiovascular and respiratory diseases compared with men having the same injury ⁽⁵⁾. Since SCI does not affect fertility in women, pregnancy occur on average 6.5 years after injury and these are on average 26.8 years of age at first pregnancy ⁽⁶⁾. Risk factors for health during pregnancy are associated with autonomic hyperreflexia leading to eclampsia and urinary tract infections by bladder catheterization at risk of preterm birth, sometimes not detected by women due to loss of sensitivity ^(6, 7). Support these women receive in health care in the use of contraceptives is unknown;

c) environmental factors: Some women with SCI report feeling infantilized by their caregivers, limited to make their own decisions about themselves and the family

environment, especially with regard to children, while recognizing the importance of the family in the support they require;

d) Factors related to lifestyle: they maintain relationships with friends, yet they push themselves away for fear of being a burden, thus, they stay longer in bed and at home^(4, 8). In general, the lifestyle of women with spinal cord injury compared to that of men differs in the daily care: while men are cared for by their wives and mothers, women often receive such care from a supplier who receives a salary⁽⁹⁾.

Health care of people with SCI must be viewed from approaches such as: 1) humanistic, per the theory of human care by Jean Watson⁽¹⁰⁾ may be based on, among other principles, hope, faith and sensitivity for themselves and for others. Support her to think again of their own values, improve self-esteem and modify the behavior of "having lost everything"; 2) from the models of health promotion, provide people with the means to achieve health and better quality of life. It is proposed to approach it from the functional patterns by Marjory Gordon⁽¹¹⁾, which allows making health care physically, emotionally, spiritually and in close relation with the environment around it. For nursing, as guarantor of comprehensive health care of people, it is of great interest to investigate situations where risk factors such as those that may exist in women with SCI in our environment, both for their gender situation and their disability. Therefore, it was considered appropriate to conduct a study to determine the relationship of personal competency for health care with some sociocultural, biological factors and self-esteem in women with SCI.

METHODOLOGY

Design and sample

Transversal descriptive study. It was not possible to calculate a statistically representative sample because the studies report an incidence which includes men and women with regard to some of 5:1 and in others 8:1, which represents a scarce population of women. Similarly, prevalence studies reported in North America 681-755 per million inhabitants in 30 years and in Europe 250-252 per million inhabitants^(12, 13). Calculating the sample with these data represents a sample size requiring many years for the study, therefore, the sample was determined by convenience. The total number of women admitted to a third level institution in Cali between 2006 and 2010 and that provides most of the SCI population in South West Colombia was taken into account. The 44 women who comprised the sample represent 96% of the total seen during these years. The women met the following inclusion criteria: over 18 years of age, SCI classification of Frankel A, B, C, D and E, the minimum time SCI occurred of 3 months, having no other pathologies diagnosed. Exclusion criteria included mental disorders or consciousness disorders.

The independent variables were: sociocultural factors (marital status, employment and economic condition, educational level, health insurance, cause of injury) biological

factors (age, level of injury, muscle strength, sensory deficits, motor injury level, neurological, bladder and intestinal deficits) and self-esteem; personal competency for health care was the dependent variable.

Instruments and procedures for collecting data

Data was collected using two questionnaires designed by the researcher: one to measure socio-cultural factors and biological factors and another to determine the perceived competency of women to care for their health, which was drafted taking into account the eleven functional patterns by Marjory Gordon ⁽¹¹⁾. The competency was rated using the Likert scale – capable = 5, regularly capable = 4 not too capable = 3, not capable = 2 and extensively not capable = 1, which allowed obtaining the final score to classify competency as excellent, good, fair and poor. Content validity of these instruments was established through the evaluation by five experts and the pilot. Self-esteem was measured using the Rosenberg Scale validated by Martín-Albo, Núñez, Navarro and Grijalvo ⁽¹⁴⁾. According to these authors, the scale has appropriate content validity and reliability; however, the validity and reliability was conducted with Spanish-speaking college students, so a scale pilot test in women with spinal cord injury was also performed. The information was collected only by the researcher.

The external validity of the study may be diminished because the sample is for convenience, however, the fact that the sample represents 96% of the population cared for at a third level health institution in the last five years in Cali may contribute to ensuring its validity.

For processing and data analysis, the SPSS version 15 statistical program was used. Competency for care was comprehensively analyzed and by patterns for the total sample and for the following subgroups: 1) women with neurogenic bladder, with neurogenic bowel and with sexual activity, 2) women with neurogenic bladder, with neurogenic bowel without sexual activity 3) women without neurogenic bladder without neurogenic bowel without sexual activity, 4) women without neurogenic bladder without neurogenic bowel and with sexual activity. To analyze the differences of the dependent variable and the independent variables, the ANOVA test and the chi-square test of Pearson with $p = 0.10$ were used.

The study was approved by the Institutional Review Board for Human Ethics, Faculty of Health, Universidad del Valle by Minutes N° 013-09.

RESULTS

Sociocultural factors

50% of the women were single, 27.3% living with a partner; 11.4% separated from their partner after the SCI and none had started a relationship after the injury. 27.3% had completed high school and 20.5% completed college. 70.5% of the women did not

have paid employment, which reflected in 65.9% being supported financially by family members; 81.8% were in socioeconomic level 1, 2 and 3 and were beneficiaries of the subsidized health insurance program. The main cause of the injury was gunfire in 50% of women, followed by falls in 27.3%.

Biological factors

The average age was 33 years with 12-year standard deviation and coefficient of variation of 0.36, i.e., the study population is dispersing in age. The most frequent age was 22 years of age and 50% of the population was under 30 years of age. 72.7% of women had significant involvement of mobility and sensitivity being rated Frankel A, B and C. The majority had thoracic spinal cord injury, neurogenic bladder (70.5%) and neurogenic bowel (90.9%).

Self-esteem

56.8% of women had high self-esteem, 29.5% had low self-esteem and 13.6% were in the average; the average value in the Rosemberg Scale was 30.4 with a minimum value of 13 and maximum of 40, standard deviation of 7.51 and coefficient of variation of 0.25. The average self-esteem was higher in women without neurogenic bladder or bowel, regardless of whether they had sexual activity, unlike women with neurogenic bladder and bowel and sexual activity who presented the lowest average self-esteem. According to the coefficients of variation, the level of self-esteem was homogeneous among women without neurogenic bladder and bowel and heterogeneous in those without these conditions.

Global competency for care

Global competency for care was fair in 43.2% of women, good in 40.9%, excellent in 9.1% and poor in 6.8%. The minimum value obtained was 75 points, the maximum 224 and the average value was 142.3 with a standard deviation of 53.6 and coefficient of variation of 0.24, indicating that there is heterogeneity in the competency for care in women.

Competency for care by functional patterns

By analyzing the competency for care by patterns, it was found to be good in patterns, handling and perception of health, metabolic nutrition, sleep and rest.

Global competency for health care according to the presence of neurogenic bladder, neurogenic bowel and sexual activity

Women without neurogenic bladder and bowel, and without sexual activity, showed the lowest average in the competency in contrast to women without neurogenic bladder and bowel and with sexual activity that had the highest average as shown in

Table I. The average competency was better among women with neurogenic bladder and bowel and sexual activity than among women with these conditions without sexual activity, i.e., that women with sexual activity, regardless of bladder and bowel deficit showed a higher average in the competency to care for them. The level of competency for care was homogeneous only among women without neurogenic bladder and bowel without sexual activity (coefficient of variation = 0.18). Differences of competency among groups and within the groups were not statistically significant ($F = 1.404$, $p = 0.234$).

Table I: Global competency for health care of women with SCI according to neurogenic bladder, neurogenic bowel and sexual activity. Cali.

Groups	Competency for care			
	Scale	Average	Typical Deviation	Coefficient of variation
With neurogenic bladder, with neurogenic bowel and sexual activity	Good	164.33	36,0,6	0.21
With neurogenic bladder, neurogenic bowel without sexual activity	Good	138.90	30,34	0,21
Without neurogenic bladder and bowel, and with sexual activity	Good	184	35.35	0.42
Without neurogenic bladder, without neurogenic bowel, and without sexual activity	Fair	114.50	21.20	0.18

Relationship between global competency for care in the sociocultural, biological factors and self-esteem

Statistically significant differences in the correlation of global competency for care by socioeconomic level ($p = 0.021$) and bladder neurological deficit ($p = 0.087$) were found. No significant correlation with other factors of Table II was found.

Table II: Competency for care according to sociocultural and biological factors of women with SCI, Cali.

Factors	Correlation	ANOVA F	p
Sociocultural factors	Competency vs. marital status	1.221	0.318
	Competency vs. current job	1.278	0.290
	Competency vs. income	0.788	0.508
	Competency vs. socioeconomic level	3.054	0.021
	Competency vs. educational level	1.404	0.234
	Competency vs. social security	1.716	0.192
	Competency vs. cause of the injury	0.132	0.877

Biological factors	Competency vs. age	1.818	0.185
	Competency vs. Frankel classification	0.706	0.592
	Competency vs. level of injury	0.376	0.695
	Competency vs. muscle strength	0.890	0.497
	Competency vs. altered sensitivity to pain	1.203	0.279
	Competency vs. neurological bladder deficit	3.079	0.087
	Competency vs. neurological bowel deficit	0.004	0.952

However when analyzing the level of global competency for care grouped into two categories: poor-fair and good-excellent, important findings were found from the clinical point of view. The level of competency was poor-fair in women with the following sociocultural factors: no partner, no job who are financially dependent on their families, belong to the lower socioeconomic levels, with elementary, middle and high school studies, beneficiaries of the subsidized health insurance and firearm injury; with biological factors such as cervical spinal cord injury even without alteration of sensory or motor functions (Frankel E) and under 30 years of age. Likewise, it was poor-fair in women with low self-esteem with statistical significance ($p = 0.05$). Table III.

Table III: Level of competency for care according to biological factors and self-esteem of women with SCI, Cali.

Biological factors	Competency		X ²	P
	Poor - Fair	Good - Excellent		
Frankel:				
• A, B, C	16	16	2,362	0.66
• D	6	5		
• E	1	0		
Level of injury:				
• Cervical	6	3	1,352	0.50
• Thoracic	13	12		
• Lumbar	4	6		
Muscle strength:				
• 0 -3	15	16	6,690	0.24
• 4	6	5		
• 5	2	0		
Altered sensitivity:				
• Yes	3	3	0.14	0.90
• No	20	18		

Bladder Deficit:				
• Yes	15	16	0.635	0.42
• No	8	5		
Bowel Deficit:				
• Yes	3	3	2.27	0.13
• No	20	18		
Age:				
• < 30 years	14	8	2.27	0.13
• > 30 years	9	13		
Self-esteem:				
• Low	11	3	5,715	0.05
• Average	7	11		
• High	5	7		

DISCUSSION

Socio-cultural factors of women in the study, except the educational level may be considered factors affecting competency for health care. Most had no partner to support or stimulate them to care for themselves; they were economically dependent on their families, belonged to the lower socioeconomic levels and were beneficiaries of the subsidized health insurance system, which does not provide the resources for health care such as probes for intermittent bladder catheterization, medicines for pain management, urinary infection and pressure ulcers. In addition to the socioeconomic condition that created difficulties to have transportation to health facilities. These situations are paradoxical, if one takes into account that the Constitution of Colombia, Articles 47, 54 and 68 sets forth the rights of persons with disabilities, within the concept of multidimensional social support including access to health services with the provision of the necessary resources for health promotion and rehabilitation ⁽¹⁵⁾. Blanes L, Carmagnani MIS, Ferreira LM ⁽¹⁶⁾, reported risks on quality of life and health irrespective of gender in people with SCI when these people depend on social security provided by the State, i.e., when people are from low socioeconomic levels, have poor educational level and are young with reduced employment opportunities.

Richards E, Tepper M, Whipple B, Komisaruk B ⁽¹⁷⁾ and Sing and Sharma ⁽¹⁸⁾ found that between 8% and 48% of women living with a partner separated as a result of adaptation that the couple required to the new sex life, and to the changes in family relationships and the role of the spouse or partner. There is little scientific evidence on the relationship adjustment of women with spinal cord injury, plus health services do not consider this aspect of the lives of women as relevant and therefore do not provide guidance services in this regard, which may result in frustration feeling in women for not being able to resolve the couple issues they face. When women gain this support, they experience satisfaction with life and better results in personal competency and self-motivation ⁽¹⁷⁾.

The women in this study had a higher education than that found in studies of Richards et. al. ⁽¹⁷⁾ and Sing and Sharma ⁽¹⁸⁾ who reported 5% to 12% for high school and college education and 22% with no education. Therefore, the educational level of these women may be a factor favoring their competency for care, allowing health personnel to use several communication strategies to improve the quality of life and independence of these women. In this regard, it has been found that people with SCI through Telesalud can access health services, obtain information on their rights and exchange with other patients on health care (19). It is also expected that women with more formal education are better able to understand the situation and find resources to resolve it.

For Shackelford, Farley and Vines ⁽⁹⁾, there are differences in risk factors for SCI between men and women, especially because men are exposed to factors of violence or risk behaviors such as driving cars faster and using psychoactive drugs. These authors reported vehicular collision as the cause of SCI in 50% of both men and women and violence as the second leading cause only in men. The finding of this study shows a change in this trend, as firearm injury followed by vehicular collision were the main causes of SCI in women. According to Van de Ven, Post, Witte, Van Den and Heuvel (19), persons with SCI caused by violence are at increased risk of depression and PTSD until years after the injury. Krausea Broderickb L, Broylesb J ⁽²⁰⁾ also found that this risk is higher in women than in men, especially because women are more susceptible to show lower adaptation to the situation of disability.

The influence of biological risk factors such as age, involvement of mobility, sensitivity and neurological and bowel deficit in the competency for care are similar to those of other authors. As these are young women in productive and reproductive age, planning and development of services and intervention strategies for health promotion must be consistent with this fact. Young people with SCI are considered high risk for loss of identity, frustration for not being able to do the same as their peers and the consequent risk of taking refuge in tobacco, alcohol and use of psychoactive drugs ^(9, 21, 22, 23). In this study, no risk was found in any of the women regarding the use of alcohol or psychoactive drugs; however, this was only explored with a question.

It is considered that health-generating behaviors in people with SCI are determined by the established patterns prior to injury ⁽¹⁹⁾, however, the involvement of mobility and sensitivity are intervening factors in motivating these people to carry out any physical activity. 72.7% of women in the study had Frankel A, B and C; therefore, these women are more likely not to participate in recreational and sports activities, and also because of the resulting emotional barriers from being victims of violence. Physical activity and exercise are very important in women with SCI because of the increased risk of osteoporosis due to the premature menopause they suffer ^(7, 24).

Neurogenic bladder complications are responsible for hospital readmission of persons with SCI ^(25, 26, 27). 70.5% of the women in the study, because of the difficulty in accessing the toilet, do not perform the required bladder catheterization with the

required frequency and prefer using a diaper and eliminate overflow. This causes complications such as urinary tract infection, sepsis, retrograde reflux into ureters due to increase in bladder pressure and kidney failure. Urostomy and other ureter-cutaneous catheters are considered as the option for the care of neurogenic bladder in women with quadriplegic SCT; however, no health system in Colombia considers these and further studies are required to assess their benefit ⁽²⁸⁾.

For 70.4% of the women studied, self-esteem could be considered a protective factor for health; however, almost a third had low self-esteem and it was clinically relevant in women with neurogenic bladder and bowel and sexual activity. Samuel, Marini and Ku ^(29, 30, 31) establish a linear relationship between neurogenic bladder and feelings of dissatisfaction or depression, even 3.8 times higher in women than in men. Other studies link low self-esteem of people with SCI, with job loss, environmental aspects at home and in public that do not provide conditions for mobilization in wheelchairs, problems associated with deterioration of the body such as pain, spasticity, urinary infections and pressure ulcers, several of these sociocultural and biological factors related to women in this study ⁽¹⁶⁾.

50% of women with fair and poor health care competency showed the same rating in patterns, roles, relationships, coping with stress, sexuality, reproduction and elimination. This means that peer counseling, family and friends are crucial in caring for these women, through them, they are able to develop feelings of hope and motivation within their role and personal relationships. There is a tendency to consider these women as asexual; studies show that for women with SCI, sexuality is the core of what they think and feel about their body, satisfactory sexual relationships build trust for the care of the neurogenic bladder and bowel, and they achieve control over decisions about their lives. The possibility of pregnancy must be taken into account for referral to health services that provide guidance in this respect, and including monitoring menstrual disorders, where periods of amenorrhea followed by others with heavy bleeding and other complications such as anemia occur. Women need to be encouraged to perform breast self-examination, and mammography must be considered in rehabilitation as cytology in preventive health. Therapeutic measures must be established for the risks associated with premature menopause such as osteoporosis ⁽⁷⁾.

It is recommended to conduct studies with larger samples and in different regions of the country to have a broader scientific understanding of the situation of women with SCI in Colombia leading to arising a national health care policy for these women that addresses services which are specific and consistent with their needs and problems and the rights recognized by the State in the Constitution of 1991. Also, to develop studies, preferably qualitative, to further address psychological aspects such as self-esteem and sexuality of women with SCI in order to understand the importance of these aspects in their life and health care.

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