



**The coping strategies in psychological adjustment after spinal
cord injury in rehabilitation context**

**As estratégias de enfrentamento no ajustamento psicológico após
a lesão medular em contexto de reabilitação**

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Abstract

The aim of the present study was to examine the importance of social demographic, psychopathological, psychiatric, emotional well-being and psychosocial variables in coping strategies of patients with spinal cord injuries (paraplegic and quadriplegic with different etiologies).

The study comprises 60 hospitalized patients, 25 of which quadriplegic and 35 paraplegic. The subject assessing included a clinical interview and the following questionnaires: The Spinal Cord Lesion Coping Strategies Questionnaire, The Spinal Cord Lesion Emotional Well-being Questionnaire, The Hospital Anxiety and Depression Scale and Social Support Satisfaction Scale. The results show that coping strategies don't differentiate significantly paraplegic and quadriplegic groups, but adaptive strategies (Fighting Spirit and Acceptance) are significantly associated with low levels of anxiety and depression, high levels of personal growth, low levels of helplessness and high educational levels.

Keywords: coping strategies, anxiety, depression, emotional well-being

Resumo

O objetivo deste estudo é examinar a importância das variáveis sócio-demográficas, psicopatológicas, psiquiátricas, bem-estar emocional e variáveis psicossociais relacionadas com estratégias de coping em pacientes com lesões na espinal medula (paraplégicos e quadriplégicos com diferentes etiologias). Este estudo integra 60 pacientes hospitalizados, 25 dos quais quadriplégicos e 35 paraplégicos. O assunto em estudo incluiu uma entrevista clínica e os seguintes questionários: The Spinal Cord Lesion Coping Strategies Questionnaire, The Spinal Cord Lesion Emotional Well-being Questionnaire, The Hospital Anxiety and Depression Scale e a Social Support Satisfaction Scale. Os resultados demonstraram que as estratégias de coping não diferenciam significativamente os grupos de quadriplégicos e paraplégicos, mas as estratégias adaptativas (espírito de luta e aceitação) estão significativamente associadas a baixos níveis de ansiedade e depressão, altos níveis de crescimento pessoal, baixos níveis de desamparo e alto níveis de educação.

Palavras-chave: estratégias de coping, ansiedade, depressão, bem-estar emocional

Introduction

The Spinal Cord Injury (SCI) diagnosis involves changes of bodily structures and functions, such as mental process, sensory and pain functions, cardiovascular functions, and respiratory, digestive, endocrine, genito-urinary, reproductive systems and neuromuscularskeletal system implicated in movement (Dantas, Amaro Silva, Margalho, & Laíns, 2012). This gives rise to multiple secondary disorders, physiological in nature (Vera & Araujo, 2011), and to limitations/restrictions in the subject's participation in different activities, with consequent loss of autonomy and negative impact on quality of life (Dantas et al., 2012), requiring the learning of new behaviors essential to the subject survival and social reintegration (Vera & Araujo, 2011). It also highlights the high specificity of the subject when adapting to their own disability (Galhordas & Lima, 2004), with some reacting in a dysfunctional way to the new condition and others adopting a more constructive

and adaptive attitude (Amaral, 2009).

SCI is usually associated with a set of psychosocial reactions that have been studied in terms of coping (Folkman, 2011; Kennedy, Evans, & Sandhu, 2009; Kennedy, Lude, Elfström, & Smithson, 2010, 2011), described as a set of cognitive, emotional and behavioral strategies in constant change (Vera, 2012), used by individuals to adapt to adverse or stressful circumstances (Livneh & Martz, 2011; Livneh & Martz, 2007) that ultimately aims for the psychic balance (Oliveira, 2010; Sousa, Landeiro, Pires, & Santos, 2011).

Based on the Stress Appraisal and Coping model (Galvin & Godfrey, 2001; Kennedy, Duff, Evans, & Beedie, 2003; Pollard & Kennedy, 2007), coping can be defined as an intentional process, aimed to overcome stressful situations in order to overcome the negative effects, such as anxiety and depression (Ferreira, Ribeiro, & Warrior, 2003; Sousa et al., 2011), caused by

several transitional periods like diagnosis communication and the surgical interventions, the beginning of the rehabilitation process and the accommodation to the wheelchair (or to other technical assistance), the confrontation with day-to-day accessibility, the homecoming and the reintegration process (Alves, Santos, & Otero, 2014).

Research about coping with SCI has shown that successful adaptation to this condition is positively associated with the adoption of strategies that focus on the problem, such as searching for social support and the perception of control over their own health (Livneh, 2000; Murta, & Guimarães, 2007). For example, the research made by Elfström et al. (2002_b) showed that the coping factors in subjects with SCI predict psychological reactions to injury, even when the background variables are controlled (sociodemographic, clinical and social support). Other research, assuming a

longitudinal methodology, shows that coping strategies related to social reliance in conjunction with an evaluation made by "Spinal Cord Lesion - related Coping Strategies Questionnaire", contribute significantly to explain the variance of the functional outcomes, measured by the Functional Independence Measure (FIM) (Kennedy et al., 2011).

The way individuals respond to this type of chronic disease, whose physical injuries are permanent and irreversible (Berto & Barreto, 2011), varies considerably from person to person (Kaiser & Kennedy, 2011) due to psychological, socio-cultural and situational factors (Sousa et al., 2011). The psychological adjustment to the physical impairment is a generally dynamic process by which the individual gradually approaches an ideal condition, in which people and environment become more congruent (Muller, Cieza, & Geyh, 2011), largely because of the well-being, mental health and coping processes developed by the subject (Craig & Tran,

2008; Galvin & Godfrey, 2001; Martz, Livneh, Priebe, Wuermsler, & Ottomanelli, 2005; Middleton & Craig, 2008; Muller et al., 2011).

The identification of the coping strategies and its relation with the emotional well-being can be considered an important tool in psychological intervention. The way the individual thinks or "evaluates" the situation, influences these strategies and may contribute to increase the psychological well-being (Kennedy et al., 2010), particularly, the coping strategy "acceptance", responsible for modifying life values and the establishment of new priorities (Elfström, Kennedy, Lude, & Taylor, 2007; Elfström et al., 2002; Elfström, Ryden, Kreuter, Taft, & Sullivan, 2005).

Depressive episodes associated with a serious clinical disorder seem to depend more on factors such as genetic predisposition, coping strategies, personal resources and environmental factors (Hassanpour et al., 2012) and less of the

level and severity of the injury (Bombardier et al., 2012; Middleton, Tran, & Craig, 2007). The research performed by Pollard and Kennedy (2007), also suggests that anxiety and depression incidence in SCI is relatively stable over time. It has also been found a predictive relationship between the use of more adaptive coping strategies during the first month after injury (or in the early stages of rehabilitation) and a decrease of depression one year (or years) after being discharged from the hospital (Elfström & Kreuter, 2006; Pollard & Kennedy, 2007).

Depressive disorders are the most common psychological problems in SCI subjects (Shin Goo, Yu, Kim, & Yoon, 2012), with approximately one third of the subjects developing high levels of these disorders (Bombardier et al., 2012; Kaiser & Kennedy, 2011; Woolrich, Kennedy, & Tasiemski, 2006). Particularly depression is the most significant disorder in traumatic SCI, ranging between 7% and 31% (Craig & Middleton, 2009;

Hassanpour et al., 2012), although other studies relate the incidence of moderate to major depression being lower in SCI subjects (<5%) (Hassanpour et al., 2012). These discrepancies can be related to different diagnostic systems, biases caused by cohort differences (Jensen, Hoffman, & Cardenas, 2005), and to several different methods of measuring the phenomenon. Nonetheless, it's likely that many individuals adaptively face SCI (Kaiser & Kennedy, 2011), with low levels of depression and anxiety symptoms (Livneh & Martz, 2011; Martz et al., 2005). However, living with an acquired physical disability involves a difficult process, with social support playing an important role defined as an exchange of resources (operational, economic and affective) between individuals able to create a sense of belonging and inclusion (Muller, Peter, Cieza, & Geyh, 2012). In SCI the importance of this support is very noticeable by the operational requirements, involving the daily routines of essential

care such as hygiene, nutrition, vesical-intestinal function, changes in decubitus, among others (Vera, 2012), giving rise to a certain hypersensitization to this reality (Elliott, Herrick, Witty, Godshall, & Spruell, 1992) which includes relational and affective issues (Sarason et al., 1983). In fact, research has found that the assistance provided allied with a social support network are positively related to a better adaptation to the adversities associated with serious injuries (Cerezetti, Nunes, Lamb, & Tedesco, 2012), having also an effect on life satisfaction (Müller et al., 2012).

Satisfaction with social support and coping strategies are important dimensions for the psychological stress resistance caused by the injury, lessening the adverse emotional conditions, encouraging self-esteem and receptiveness to new learning (Coelho & Ribeiro, 2000; Kessler et al., 1985; Müller et al., 2012; Oliveira, 2010; Parents, 1999).

Aims

The focus of this work is the relation between sociodemographic variables (sex, age, educational level and financial situation), psychopathological and emotional well-being variables (history of psychological and psychiatric follow-ups, anxiety and depression), psychiatric variables (etiology of the injury and type of lesion) and social support in coping processes in SCI quadriplegics and paraplegics patients in a rehabilitation context.

Sixty SCI subjects were studied at Rovisco Pais Hospital. This group is part of a convenient clinical sample, involving quadriplegic and paraplegic patients with no compromised functions (logic, mnesic and communication), chronic psychiatric disorder and with ages below 18 years old. The evaluation of these criteria was based on diagnostic data, clinical anamnesis, and interviews with each subject. Following the procedures proposed by Elfström et al. (2007), the sample was divided in quadriplegics and paraplegics groups (Table 1 and 2).

Participants

Table 1. Characteristics of the sociodemographic variables being studied (N = 60).

	Quadriplegic (n = 25)		Paraplegic (n = 35)	
	<i>M</i> (SD)	<i>Mdn</i> (range)	<i>M</i> (SD)	<i>Mdn</i> (range)
Age	51.20 (13.4)	54 (26-70)	48.26 (15.3)	52 (18-72)
Sex:	<i>n</i>	%	<i>n</i>	%
Male	21	84.0	24	68.6
Female	4	16.0	11	31.4
Educational level:				
≤6 years	19	76.0	16	45.7
7-12 years	5	20.0	15	42.9
>12 years	1	4.0	4	11.4
Financial situation:				
≤ 485€	7	28.0	5	14.3
]485€, 970€]	11	44.0	13	37.1
> 970€	7	28.0	17	48.6

M = Mean; *SD* = Standard Deviation; *Mdn* = Median

Table 2. Characteristics of the psychiatric variables being studied (*N* = 60).

	Quadraplegic (<i>n</i> = 25)		Paraplegic (<i>n</i> = 35)	
	<i>M</i> (<i>SD</i>)	<i>Mdn</i> (range)	<i>M</i> (<i>SD</i>)	<i>Mdn</i> (range)
Injury time (months)	57.8 (18.2)	8 (4-288)	34.7 (11)	8 (2-240)
	n	%	n	%
Etiology:				
Traumatic	20	80.0	26	74.3
Tumoral	-	-	1	2.9
Infecious	1	4.0	4	11.4
other	4	16.0	4	11.4
Type of Lesion:				
Complete Injury	6	24.0	14	40.0
Incomplete Injury	19	76.0	21	60.0

M = Mean; *SD* = Standard Deviation; *Mdn* = Median

Measures

- Semi-structured interview. Sociodemographic variables (age, sex, nationality, marital status, educational level and financial situation) and clinical variables (etiology of the SCI, date of injury and clinical condition of paraplegia or tetraplegia) were obtained through the elaboration of a semi-structured interview. Medical variables (degree and severity of the locomotion damage) were subsequently validated with the information available in each patient's clinical record (classified according to the

criteria of the American Spinal Injury Association).

- The Spinal Cord Lesion Coping Strategies Questionnaire (CSQ-SCL) by Elfström, Ryden, Kreuter, Persson and Sullivan (2002a) is a self-report Likert scale that measures coping strategies directly related to the SCI and its consequences. The original version (12 items) includes 3 subscales related to the following dimensions: (1) Acceptance (reevaluation of life values involving the injury integration and its consequences on

the subject's life and the ability to find new interests and values that replace the unattainable); (2) Fighting Spirit (adoption of independent behavior, on which the person tries to make the best of life despite the lesion; trying to get along by her/himself, sets goals to achieve and attempts to find tricks that can make living easier); (3) Social reliance (tendency to have a dependency behavior, where the support of others is seen as the only protection against helplessness).

- The Spinal Cord Lesion Emotional Well-being Questionnaire (SCL-EWQ) by Elfström, Ryden, Kreuter, Persson and Sullivan (2002a), is a self-report Likert scale that measures the psychological consequences (emotional) directly associated with the SCI. The SCL-EWQ is a 12 item scale with three subscales related to the following dimensions: (1) Personal Growth (evaluates the moral positivity in terms of current changes and the attitude towards life in a crisis condition); (2) Helplessness (assesses the psychological

distress in terms of "amazement", "lack of control" and "low self-esteem"); (3) Intrusion (assesses the psychological distress considering the level of bitterness and rumination).

- Hospital Anxiety and Depression Scale (HADS) (Snaith & Zigmond, 1983, Pais-Ribeiro et al., 2007) is a self-report Likert scale enables detection of clinical cases and used to screen probable presence and severity of clinical anxiety and depression (Elfström et al., 2007) without contamination of scores through physical symptomology (Elfström & Kreuter, 2006). Anxiety and Depression are measured by seven items each, and answered on a four-step Likert scale from 0 to 3.

- Escala de Satisfação com o Suporte Social (ESSS) (Pais-Ribeiro, 1999), is 15 items self-report Likert scale, focused on perceptions about social support network, with a four factors structure: Satisfaction with family/friends, Intimacy, Satisfaction with family and Social Activities.

Procedures

The patient's participation was voluntary and accordingly to ethical procedures approved by the Ethics Committee of the Hospital Rovisco Pais. The administration of the protocol was carried out through a structured interview and the instruments were applied to all subjects.

Statistical analyses

Data were analyzed using the SPSS, Version 20.0. ^a. Data quality checks were performed to examine the distribution of measures and internal consistencies within scales. For the comparison between groups, we used the *T-Student Test* (for two independent samples) and the nonparametric equivalent *U-Mann-Whitney* and *Kruskal-Wallis* test and size effect calculations. Simple linear relationships were quantified using Pearson correlation. Assumptions of normality, linearity, multicollinearity and homoscedasticity were calculated.

Multiple Linear regression were performed to determine how socio-demographic variables (sex, age, educational level and financial situation), psychopathological variables (history of psychological and psychiatric follow-ups, anxiety and depression), emotional well-being variables (personal growth, helplessness and intrusion), psychiatric variables (etiology of the injury and type of lesion) and social support are able to predict adaptive coping strategies.

RESULTS

Comparative analysis between Quadriplegic and Paraplegic

In general, no differences were found concerning sociodemographic variables (age $F(1,58) = .592, p = .445$, gender $F(1,58) = 1.847, p = .179$, financial situation $F(1,58) = 3.118, p = .083$) and clinical variables (time of injury $F(1,58) = 1.316, p = .256$, traumatic etiology $F(1,58) = .298, p = .587$; non-traumatic etiology $F(1,58) = .019, p = .892$; type of lesion F

(1,58) = 1.671, $p = .201$), with one exception - the educational level show a significant difference between groups $F(1,58) = 5.248, p < .05$.

Comparative analysis of quadriplegic and paraplegic groups considering all the subscales, did not show significant statistically differences (Table 3).

Table 3. Comparative analysis of the means obtained for the SCL-CSQ, SCL-EWQ, HADS and ESSS variables in tetraplegia ($n = 25$) and paraplegia ($n = 35$) groups.

Scales	Quadraplegic	Paraplegic	t	p	D
	$M(SD)$	$M(SD)$			
<u>SCL-CSQ</u>					
Acceptance	3.02 (0.53)	3.03 (0.58)	-0.10	.915	-0.017
Fighting Spirit	3.35 (0.42)	3.42 (0.37)	-0.68	.494	-0.176
Social Reliance	3.16 (0.43)	3.13 (0.56)	0.19	.843	0.060
<u>SCL-EWQ</u>					
Personal Growth	2.69 (0.51)	2.53 (0.58)	1.08	.281	0.292
Helplessness	2.21 (0.56)	2.08 (0.55)	0.90	.370	0.234
Intrusion	2.48 (0.51)	2.28 (0.68)	1.16	.250	0.332
<u>HADS</u>					
Anxiety	7.60 (3.6)	6.06 (4.2)	1.45	.151	0.393
Depression	5.76 (3.6)	4.43 (2.8)	1.59	.117	0.412
<u>ESSS</u>					
Friends Satisfaction	17.40 (2.9)	18.20 (2.1)	-1.10	.227	-0.315
Intimacy	12.40 (2.1)	12.57 (2.0)	-.310	.755	-0.082
Family Satisfaction	12.00 (2.8)	12.00 (2.5)	0.00	1.00	0
Social activities satisfaction	9.36 (2.1)	9.40 (2.7)	-0.06	.952	-0.016
ESSS total	51.16 (5.9)	52.17 (5.7)	-0.65	.513	-0.174

Neither sex variable demonstrated impact in the adoption of coping strategies: quadriplegic (acceptance $U = 40.00, p = .881$; fighting spirit $U = 32.50, p = .476$; social reliance $U = 31.00, p = .402$) and paraplegic (acceptance $U = 100.5, p = .255$; fighting spirit $U = 107.5, p = .379$; social reliance $U = 86.500, p = .100$).

Correlation analyses

Pearson's correlation was calculated for the overall sample. Thus depression

(HADS) and satisfaction with friends (ESSS) ($r = -.30, p < .05$), and depression

(HADS) and satisfaction with family depression (ESSS) ($r = -.29, p < .05$) shows small and negative correlation results (Cohen, 1988). Depressive/anxious symptoms (HADS) and emotional well-being (SCL-EWQ) showed a positive relation of large and medium effects (Cohen, 1988), (i.e. between the anxiety and helplessness $r = .58; p < .01$; and anxiety and intrusion $r = .39, p < .01$). A positive correlation with medium effect was also verified between depression and helplessness ($r = .49, p < .01$). Finally, the relation between emotional well-being (SCL-EWQ) and satisfaction with social support (ESSS) showed a middle positive relation (Cohen, 1988) between helplessness and intimacy ($r = .31 ; p < .05$).

Considering the variables: depression/anxiety symptoms (HADS), satisfaction with social support (ESSS), emotional well-being (SCL-EWQ) and the coping strategies scale (SCL-CSQ), results show negative correlations with moderate

effect (except for depression and acceptance) and statistically significant correlations between depressive and anxious symptoms (HADS) and coping strategies (SCL-CSQ): anxiety and acceptance ($r = -.47, p < .01$), anxiety and fighting spirit ($r = -.36, p < .01$); depression and acceptance ($r = -.57, p < .01$), depression and fighting spirit ($r = -.38, p < .01$). It was also observed statistically significant relations between emotional well-being (SCL-EWQ) and coping strategies (SCL-CSQ), including a positive and medium relation between personal growth and acceptance ($r = .35; p < .01$), a large negative relation between helplessness and acceptance ($r = -.53, p < .01$) and between helplessness and fighting spirit ($r = -.60, p < .01$). There were no statistically significant correlations between social support (ESSS) and coping strategies (SCL-CSQ).

The relation between coping strategies (SCL-CSQ) and age, educational level and financial situation, showed the

following: small negative correlation between subscale fighting spirit and age ($r = -.29, p < .05$); medium positive correlations between acceptance and educational level ($r = .38, p < .01$), and fighting spirit and educational level ($r = .42, p < .01$); small positive correlation between fighting spirit and financial situation ($r = .26, p < .05$).

The psychiatric variables (etiology of injury and type of lesion) showed no significant associations with specific coping strategies for SCI (SCL-CSQ). Finally, psychiatric and psychological evaluation history showed a small and positive correlation with the coping strategies, including SCL-CSQ acceptance factor ($r = .27, p < .05$).

Predicting acceptance strategies

In order to explore how coping strategies can be predicted, two multiple regressions were performed (standard method): one

exploring the predictability capacity of anxiety and depression (HADS), personal growth and helplessness (SCL-EWQ), educational background and psychological/psychiatric help (sociodemographic survey) in the adoption of acceptance strategies (SCL-CSQ) (Table 4); and the other exploring the predictability capacity of the same HADS and SCL-EWQ variables in the adoption of "fighting spirit" strategies (SCL-CSQ) (Table 5). Results show that the first strategy is explained by 57% of the variance results ($R^2 = .57$) for these variables. Variables with significant contribution to this prediction are: personal growth ($\beta = .36, t = 3.87, p < .001$), helplessness ($\beta = -.25, t = -2.15, p < .05$) and educational level ($\beta = .20, t = 2.02, p < .05$). The regression analysis showed statistical significance [$F(6,52) = 11,894, p < .001$] (Table 4).

Table 4. *Anxiety, depression, personal growth, helplessness, educational level and sought assistance at a psychologist/psychiatrist as predictive variables in coping strategies of acceptance.*

	<i>B</i>	<i>SE B</i>	β
Constant	2.77	.38	
Anxiety	-.02	.01	-.16
Depression	-.03	.02	-.20
Personal Growth	.36	.09	.36***
Helplessness	-.26	.12	-.25*
Educational Level	.08	.04	.20*
Sought assistance from a psychologist	.21	.15	.13
<i>R</i>	.76		
<i>R</i> ²	.57		
ΔR^2	.53		

* $p < .05$ *** $p < .001$

Predicting Fighting Spirit

The fighting spirit strategy (SCL-CSQ), is explained by the same HADS and SCL-EWQ variables, explaining 42% of the total variance ($R^2 = .42$). However, only

the helplessness variable had a statistically significant contribution ($\beta = -.56$, $t = -3.70$; $p < .001$), with $F(6,53) = 6.55$, $p < .001$ (Table 5).

Table 5. *Anxiety, depression, helplessness, age, financial situation and educational level as predictive variables in the fighting spirit coping strategy.*

	<i>B</i>	<i>SE B</i>	β
Constant	4.23	.332	
Anxiety	.00	.01	.03
Depression	-.01	.01	-.11
Helplessness	-.41	.09	-.56***
Age	-.00	-.00	-.11
Financial Situation	.01	.06	.01
Educational Level	.04	.036	.15
<i>R</i>	.65		
<i>R</i> ²	.42		
ΔR^2	.36		

* $p < .05$; *** $p < .001$

Discussion

In this study tetraplegic and paraplegic group are equivalent samples, except for educational level. Results with the coping strategies (SCL-CSQ), emotional well-being (SCL-EWQ), depressive/anxious symptoms (HADS) and satisfaction with social support (ESSS) variables, showed no significant differences between quadriplegic and paraplegic group. Fighting spirit is the most used strategy of coping and Acceptance the less (Migliorini et al., 2008). These findings are also consistent with other studies (Elfström et al., 2002a; Elfström et al., 2002b; Elfström et al., 2007). Were not found differences statistically significant in coping strategies for SCI (SCL-CSQ) between clinical condition (tetraplegia and paraplegia) and sex (Elfström et al., 2002a, 2002b).

The emotional well-being scale (SCL-EWQ) showed higher values in the personal growth factor for both conditions, in accordance with Elfström et al. (2002b) and Elfström and Kreuter (2006)

observations. In Depressive/anxiety symptoms (HADS), scores are similar to what Snaith (2003) established as normal. These results are close to those found by others (Craig et al., 2009; Kennedy et al., 2010). However, it's important to note that anxiety levels are superior to those of depression, a phenomenon also shown by Elfström et al. (2007) and Kennedy et al. (2010). In this case, though more than half of the sample present "normal" levels of anxiety and depression (Snaith, 2003). The percentage of small to moderate anxiety levels (41.6%) is superior when compared with depression (15%). These results may be related to hospital environment perceived as a safe, secure and welcoming, but also as an additional source of stress, sequential to daily life rehabilitation routine (Kaiser & Kennedy, 2011).

On the other hand, social support (ESSS) revealed a positive satisfaction with the perceived social support. This might partly explain the results obtained for anxiety and

depression. As others authors note, social support plays a key role in the psychological resistance to the stress caused by the disease (Coelho & Ribeiro, 2000).

Correlations analyses showed some significant results. The negative correlation between the depression factor (HADS) and the satisfaction with friends and family factor (ESSS). In this case an inverse relationship between ESSS subscale and Depression can be observed: as the score on the ESSS subscale increases, the levels of depression decreases (the opposite is also true). These results are consistent with other studies showing that the absence of Satisfaction with social support has negative effects and tends to be related with a depressive mood condition (Kessler et al., 1985; Ornelas, 1996). This reinforces the hypothesis that satisfaction with social support can be seen as a protective health variable (Parent, 1999). It is worth noting that Anxiety (HADS), Depression (HADS)

and Helplessness (SCL-EWQ) positively correlate with each other (Migliorini et al., 2008). However, Helplessness (SCL-EWQ), which consists of "perplexity", "out of control" and "low self-esteem" factors, positively correlates with Intimacy (ESSS), which measures the perception of intimate social support. Hypothetically, this relation can be explained by the incongruity between subjective aspects (perceived social support availability, if needed) and the actual needs of the SCI patients for support in a hospital context. In fact, these patients tend to enhance the intimate social support received, and the frequency and intensity of being contacted by others. This may be explained because they are social isolated in hospital, which consequently implies alienation of the closest people (family and friends) as well as limiting the contact with external social support (Oliveira, 2001).

The results also show that anxiety (HADS) is positively correlated with the psychological distress factor Intrusion

(SCL-EWQ). It was expected that the coping strategy, Social reliance (SCL-CSQ), interpreted as a negative psychological dependence, would be associated positively with psychological distress indicators and depressive and anxiety symptoms (HADS). However, no associations were found between this construct and the remaining variables. This hypothesis implied a relation between psychological stress and dependence on others, that is, the subject would adopt a vision of total dependence on others, being this perception the only protection experienced against helplessness (Migliorini et al., 2008).

The correlation study between the emotional variables (SCL-EWQ), social support (ESSS), anxiety and depression (HADS) and the coping strategies of SCI (SCL-CSQ) concluded that the use of more adaptive strategies is associated with the reduction of depressive and anxiety symptoms (Elfström et al., 2002a; Elfström et al., 2002b; Elfström et al.,

2007), and with the emotional well-being (Elfström et al., 2007).

The coping strategy Acceptance (SCL-CSQ) is positively related with Personal growth factor in the emotional well-being scale (SCL-EWQ). On the other hand, the Acceptance and Fighting spirit factors of SCL-CSQ, are negatively related with the psychological Helplessness distress factor (SCL-EWQ). Although, the alleged relation between emotional well-being and the adoption of adaptive coping strategies was partially verified because only the coping strategy Acceptance (SCL-CSQ) was correlated with the emotional factor directly associated with SCI, the Personal growth (SCL-EWQ). It was expected that Fighting spirit (SCL-CSQ) would also correlate positively with Personal growth (SCL-EWQ), but this was not the case. However, some authors emphasize that Fighting spirit can be a weak covariate of psychological and physical well-being when compared with the other two coping strategies (Elfström et al., 2007). They

argue that Fighting spirit is a highly valued attitude in Western culture, but if overrated it can lead the subject to maintain unrealistic and inappropriate goals (Elfström et al., 2007). Finally, the importance of satisfaction with social support in the strategies of adaptive coping was not determined, neither was verified any statistically significant relationship between satisfaction with social support (ESSS) and the coping strategies (SCL-CSQ).

Sociodemographic and psychiatric variables influence in coping strategies (SCL-CSQ) shows that Acceptance and Fighting spirit are positively correlated with the Educational level. This has been previously verified by Murta and Guimarães (2007). It is also observed a negative relation between the Age of SCI subjects and the Fighting spirit (SCL-CSQ), with younger patients showing better psychological adjustment to SCI, as observed in other studies (Kennedy, Evans, & Sandhu, 2009; Woodrich &

Patterson, 1983). It has also been verified a positive correlation between a favorable income and the Fighting spirit, according to Matos (2012) study on coping with chronic pain. Psychological and psychiatric assistance history is positively correlated with the Acceptance coping strategy, previewing the possible influence of this assistance in the development of strategies and improved efforts of coping when facing stressful events. Finally, there were no correlations between psychiatric variables (etiology of injury and type of lesion) and coping strategies (SCL-CSQ), as observed in the Leeuwen, Hoekstra, Kopenhagen, Groot and Post (2012) study. SCI do not predict specific mental health trajectories or different psychological adaptation levels (Migliorini, New, & Tonge, 2009). This implies that successful adaptation to traumatic SCI are more related with environmental resources and subject psychosocial variables than specific characteristics of the injury (Murta &

Guimaraes, 2007).

Predictive variables of Acceptance coping strategy (SCL-CSQ), involves Personal growth, low Helplessness (SCL-EWQ) and high Educational level. The best predictor of Fighting spirit (SCL-CSQ), are the Helplessness variable (SCL-EWQ) and, as already observed by Migliorini et al. (2008), low Helplessness have an important contribution for the adoption of more adaptive coping strategies.

The results show that the emotional well-being indicators, namely the feelings of helplessness and the intrusive thoughts about the injury, are associated with depressive and anxiety symptoms.

Finally, SCI patients who were more dissatisfied with family and friends support, express more depressive symptoms. Younger SCI patients, with a higher Educational level have more adaptive coping strategies (Fighting spirit and Acceptance as measured by the SCL-CSQ). Accordingly, these strategies have a lower association with psychopathological

indices (depression and anxiety).

Conclusion

Tetraplegic and paraplegic subjects in rehabilitation shows normal levels of depressive and anxiety symptoms (HADS). Positive satisfaction with social support (ESSS) and emotional well-being (SCL-EWQ), with preponderance of personal growth factor in crisis (SCL-EWQ). We also demonstrate appropriate coping strategies, in particular Fighting spirit (SCL-CSQ). Therefore, show a favorable psychological adjustment in adverse circumstances, as well as an ability to mobilize effective coping strategies in dealing with disability experience. Considering that the identification of strategies of coping and encouragement to develop their strategies in a rehabilitation context, can effectively contribute to reduce the psychosocial maladjustment and the incidence of depressive and anxiety symptoms. We proposed that rehabilitation process

includes the dysfunctional beliefs demystification and the development of new adaptive behaviors attitudes.

Some limitations should be recognized in this study, namely: (1) the absence of psychometric studies in Portuguese population with "The Spinal Cord Lesion Coping Strategies Questionnaire" and with "The Spinal Cord Lesion Emotional Well-being Questionnaire"; (2) the small samples size; (3) the differences between samples; (4) and the fact that drug therapy effect were not controlled.

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