

# Body image, perceived stress, and resilience in military amputees of the internal armed conflict in Colombia

Imagen corporal, estrés percibido y resiliencia en militares amputados en el conflicto armado interno en Colombia

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## Abstract

The objective of this study was to determine the levels and the relationship between body image satisfaction, perceived stress and resilience in soldier amputee victims of the internal armed conflict in Colombia. It was a quantitative, cross-sectional study of correlational scope, with the participation of 22 Colombian soldiers who were victims of the internal armed conflict and with some degree of amputation. For each soldier, the Multidimensional Body Self-relations Questionnaire (MBSRQ), Perceived Stress (EEP-14) and the Connor-Davidson Resilience Scale (CD-RISC 10) were applied. The results show high scores in behaviors aimed at maintaining physical fitness, self-assessed physical attractiveness and physical appearance, low scores in stress and scores with high trends in resilience, as well as a negative correlation between stress and conducts aimed to maintain physical fitness.

## Resumen

El objetivo del presente estudio fue determinar los niveles y la relación entre satisfacción de la imagen corporal, estrés percibido y resiliencia en soldados con amputación víctimas del conflicto armado interno colombiano. Fue un estudio cuantitativo, transversal, de alcance correlacional, se contó con la participación de 22 soldados colombianos víctimas del conflicto armado interno y con algún grado de amputación, a quienes se les aplicó el Multidimensional body self relations questionnaire (MBSRQ), la Escala de estrés percibido (EEP-14) y el Connor-Davidson Resilience Scale (Cd-Risc 10). Los resultados muestran altas puntuaciones en conductas orientadas a mantener la forma física, atractivo físico autoevaluado y cuidado del aspecto físico, puntuaciones bajas en estrés y puntuaciones con tendencias altas en Resiliencia, así como una correlación negativa entre el estrés y las conductas orientadas a mantener la forma física.

## Keywords

corporal image; stress; resilience; armed conflict; amputation.

## Palabras Clave

imagen corporal; estrés; resiliencia; conflicto armado; amputación.

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## 1. Introduction

In the last fifty years, Colombia has lived through an internal conflict with special characteristics, which have led to a high cost of human lives and notable consequences for its development. The victims' statistics for antipersonnel mines until now show a record of 11.567 in 2006, the year in which most cases were recorded; 80.3%

of these victims were wounded while 19.7% died. It is necessary to highlight that several groups are affected in this conflict, including civilians, victimizers and the soldiers of the public forces, who make up 61% of the total number of cases registered (Dirección para la Acción Integral Contra Minas Antipersonal, 2017).

Bearing these statistics in mind it becomes necessary

to carry out studies about the consequences of these events in the public forces, specifically with soldier amputee victims of the internal armed conflict in Colombia, evaluating effects on body image, anxiety, stress, and resilience (Dirección para la Acción Integral Contra Minas Antipersonal, 2017).

Corporal image is understood as a person's self-perception or the perception from another of physical characteristics and implies three components: (a) perceptual, the appraisal of the body in its entirety or some of its parts; (b) cognitive, the valuations regarding the body or a part of it; (c) and finally the affective component, the feelings or attitudes around the body. The perception of body image is influenced by different sociocultural, biological and environmental aspects guided by the standards of beauty of each culture, which allow the formation of different concepts around the shape and decoration of the body (López Sánchez, Suárez, & Smith, 2018; Vaquero-Cristóbal, Alacid, Muyor, & López-Miñarro, 2013).

In synthesis, body image is defined as the union between feelings and attitudes lodged in the memory that are evoked when perceiving the body (Gallego del Castillo, 2009). In constructing this, resort to elements of social and cultural type that respond to aesthetic collective ideals that can trigger health problems in people according to individual transcendence, that is to say alterations of body image that are generated by particular judgments distant from reality (Chávez, Macías, Gutiérrez, Martínez, & Ojeda, 2004).

These alterations of body image are the result of a disturbance in cortical functioning that can generate, among others, the Phantom Limb syndrome, which is defined as the perception of sensations of an amputated limb that is still connected to and works with the body (Raich, 2004).

In Western cultures body image appears to be based on youth and physical appeal. This emphasis may overshadow other personal attributes (Taub, Blinde, & Greer, 1999), which affect the importance given to the physical body and can have a negative impact on people with amputations, especially in body perception (Sousa, Corredeira, & Pereira, 2009). After an amputation, people face loss of functionality and many times the loss of the ability to continue working, which may also have an effect on their self-concept (Horgan & MacLachlan, 2004); In addition, these stigmas generate depression and generalized anxiety and tend to be associated with poor adjustment in terms of increased activity restriction (Horgan & MacLachlan, 2004).

Limb amputation has been reported as a significantly stressful event for an individual (Horgan & MacLachlan, 2004). Sometimes trauma inflicted during an accident or an explosion may result in a partial amputation that must be surgically completed to avoid complications (Tintle,

Keeling, Shawen, Forsberg, & Potter, 2010). Amputation represents an irreversible surgical option that can cause bodily and physical disfigurement. Several investigations in this field report that the traumatic loss of a limb is a highly stressful vital event that can significantly affect quality of life (Sinha & Van Den Heuvel, 2011).

Exposure to such events creates a risk of developing a depressive disorder due to multiple factors such as feelings of loss, self-stigma, and difficulty in overcoming the impediment (McKechnie & John, 2014). Stressful events leading to amputation, especially if the amputation is accident-or explosion-induced, may induce symptoms of post-traumatic stress disorder (Abeyasinghe, de Zoysa, Bandara, Bartholameuz, & Bandara, 2012).

In this regard, post-traumatic stress is a common diagnosis in victims of the internal armed conflict in Colombia and is considered a debilitating disease that occurs after a traumatic event such as a violent act or an accident. Due to recurrent memories of the event, those who experience it have a predisposition to suffer from depression accompanied by irritability, anger, guilt, evasion and denial (National Institute of Mental Health, 2015).

In Colombia Corzo and Bohórquez (2009), conducted a cross-sectional descriptive study, applying the Clinical Administered Posttraumatic Stress Disorder Scale (CAPS) to a sample of 140 hospitalized patients with combat wounds in the Hospital Militar Central of Bogotá. They performed a bivariate data analysis where prevalence and frequency were measured. With a 16.66% prevalence for post-traumatic stress disorder and no evidence of acute stress disorder, their findings provide clear evidence that injuries caused during perceived traumatic combats are a major risk factor to developing a post-traumatic stress disorder.

Therefore, amputation as an event produces high stress levels and a challenge to the coping strategies of the individual in the loss of a body limb. Ocampo, Henao, and Vásquez (2010) found that traumatic amputations bring with them psychological alterations that have emotional, family and social repercussions for individuals who suffer from them, and involve a radical change in their lifestyle and quality of life. This study shows that there are 5 stages of mourning for the loss of a limb: the first is of shock, the second denial, the third anger, the fourth depression and finally the fifth is acceptance.

This is why resilience has been studied, approximately since the second half of the twentieth century, as a phenomenon based on the evidence that some people have a greater ability than others to cope with adversity (Be-coña, 2006; Rutter, 1985, 1993, 2006, 2007). Resilience is a fairly broad construct and there are different definitions, but they all focus on the ability to adapt and cope with adversity (Vinaccia, Quiceno, & San Pedro, 2007).

In studies related to protective factors against body

dissatisfaction, it has been found that resilience could be a significant protection factor (Cook-Cottone & Phelps, 2003). In this regard Choate (2005) proposed a model of resilience of body image where five specific protection factors were identified that could serve as a basis for a specific resilience model. Protection factors would include: (a) support from the family of origin, (b) gender role satisfaction, (c) positive physical self-concept, (d) problem-centered coping strategies, and (e) psychological well-being levels. In addition, this model of resilience implies the maintenance of self-esteem, encompassing physical self-esteem (body esteem) and purpose in life (Richardson, 2002).

Ferguson, Sperber Richie, and Gomez (2004) studied 68 victims of anti-personnel mines in 7 countries using a semi-structured protocol. The results indicated that the acceptance of the survivors of the loss of limbs and their state of psychological recovery were greatly influenced by the resilience characteristics of the individual, social support, healthcare, and the economic situation and social attitudes towards people with disabilities. The authors concluded that the recovery of traumatic amputation in mine survivors must be comprehensive and coordinated, and requires addressing the physical, psychological, economic and social needs of the individual in the context of the family, community and sociocultural environment in which he lives.

In another study developed some years later in Holland Van Dongen et al. (2017), applied the MOS-SF36, EuroQoL 6 and functional scale of the lower extremity questionnaires to Dutch soldiers who had been wounded and mutilated in combat between the years 2005 and 2014 in Afghanistan. The results were compared with people with non-combat serious injuries in extremities. In comparison with non-war wound patients, the war victims who had more severe wounds were considerably younger, needed more frequent operations and long periods of clinical rehabilitation. Their levels of social and cognitive functioning and well-being were considerably lower than those with non-combat-related injuries.

In summary, little empirical evidence has been found about the alterations in body image typical of soldier victims of armed conflicts. This supports the need for this study, whose objective is to determine the levels and the relationship between body image satisfaction, stress and resilience in soldier amputee victims of the internal armed conflict in Colombia.

## 2. Method

### 2.1 Type of study

This is a nonexperimental quantitative research project with a correlational scope (Hernández, & Baptista, 2014).

### 2.2 Participants

The participants were 22 soldiers who were victims of the internal armed conflict in Colombia who signed informed consent to participate in the study and were selected by non-probabilistic convenience sampling. Participants were characterized by having some type of amputation and carrying out a process in the center of inclusive Rehabilitation in the city of Bogotá. All participants were men, with ages between 18 and 45 years (mean = 29,  $S.D = 7.120$ ), the majority without children (54.5%) and with a level of high school studies completed (50%). Regarding to war affectation, 45.5% have lower limb amputations under the knee. The heterogeneity of the sample with respect to marital status and the place of birth was verified. Greater data about the sample can be found in Table 1.

### 2.3 Instruments

In body image, the Multidimensional Body Self Relations Questionnaire (MBSRQ) evaluates attitudinal aspects related to body image considering cognitive and behavioral factors. This scale has 45 items and the following sub-measures, all rated 0 to 5: SIC = Satisfaction with body image, ISC = Subjective importance of corporality, COMF = behaviors aimed at maintaining physical fitness, AFA = self-assessed physical appearance, and CAF = Care of physical appearance. It is designed for a population of 15 years and older and was applied in the Spanish-adapted version by Botella García del Cid, Ribas Rabert, and Ruiz (2009). A Cronbach's alpha of 0.812 was found.

In stress, the Perceived Stress Scale (EEP-14) elaborated by Cohen, Kamarck, and Mermelstein (1983), is an instrument of 14 reagents Likert type questions with five options each: never, almost never, occasionally, often and very often. These give scores from 0 to 4, evaluating the perception of stress over the past month. For this study the adjusted Colombian version by Campo, Bustos, and Romero (2009) was used. A Cronbach's alpha of 0.728 was found.

Finally, for resilience, the Connor-Davidson Resilience Scale (CD-RISC 10) originally developed by Campbell-Sills and Stein (2007) is a scale consisting of 10 items in a Likert format with 5 options from 0 to 4 points. It has been validated in Colombia by Riveros, Bernal, Bohórquez, Vinaccia, and Quiceno (2017). In the present study we obtained a Cronbach's alpha of 0.922.

## 3. Results

The results are shown at a descriptive level for each of the variables, followed by the correlation analysis between them. According to the descriptive results shown in Table 2, high scores of above 4.0 are shown in the behavioral variables oriented towards maintaining physical fitness (COMF), self-evaluated physical attractiveness

Table 1

*Socio-Demographic data of the participants.*

	Marital status		Number of children		
	Frequency	Percentage	Frequency	Percentage	
Cohabitation	8	36,4	0	12	54,5
Single	14	63,6	1	5	22,7
			2	4	18,2
			3	1	4,5
	Schooling level		Type of amputation		
	Frequency	Percentage	Frequency		Percentage
None	2	9,1	Disarticulated		
Incomplete High school	2	9,1	Knee		
Complete High school	11	50	Both ends of the 3 same hemi-body		
Incomplete technical studies	1	4,5	Bilateral		13,6
Complete technical studies	3	13,6	Bilateral lower limbs		4,5
Incomplete Bachelor's degree	2	9,1	Lower limb above knee		18,2
Incomplete Postgraduate degree	1	4,5	Lower limb be-10 low knee		9,1
			Upper limb		45,5
			1		4,5

(AFA) and Care of physical appearance (CAF). Additionally, satisfaction with body image (SIC) showed average to high scores and subjective importance of corporality (ISC) also demonstrated low-stress scores and high resilience scores.

Table 3 shows the correlations between stress, age, and resilience with the satisfaction of body image (SIC), where it was found that there is a negative and statistically significant correlation between stress and behaviors oriented to maintaining physical fitness (COMF). However, no correlations were found between age and resilience with satisfaction of body image (SIC) or with other components.

#### 4. Discussion

The numbers of victims of the internal armed conflict and the victims of amputations in Colombia are of high social impact (Dirección para la Acción Integral Contra Minas Antipersonal, 2017). However, only a scarce number of studies have been carried out with this vulnerable group, denoting the importance of conducting research on this population, The need for this study is highlighted by Ocampo et al. (2010), who show that traumatic amputations bring with them psychological alterations that have emotional, family and social repercussions for the individuals who suffer them.

In this regard, the results of this research on amputee soldiers evidence low levels of stress in relation to the averages of non-clinical populations based on research

in Colombia (see Campo et al., 2009). These results are similar to numerous studies where anxiety, depression, stress, and hopelessness were measured in chronic Colombian patients who presented on average much lower levels of negative emotions than expected in relation to information found in the scientific literature (Vinaccia & Quiceno, 2012).

Body image scores show behaviors aimed to maintain physical fitness, high levels of self-assessed physical attractiveness and care of physical appearance, which leads to the inference that it is an important element for the population, bearing in mind that they are in a period of social adjustment and adaptation to their body. It is therefore crucial for participants to remain in suitable physical condition and thus maintain their attractiveness. Vaquero-Cristóbal et al. (2013) attribute this concern for the care and maintenance of the body image to a response to the social and cultural construction of specific patterns, corresponding to the findings of this study.

Other studies suggest that there may be an overestimation of body image as a representation of dissatisfaction (Perpiñá & Baños, 2007); this study includes no correlation measurements to evaluate this argument. These results also contradict the research of Horgan and MacLachlan (2004), who argue that patients with mutilations tend to develop low levels of body image satisfaction.

As for resilience this study shows high-trend scores which may be associated with Pedraza (2015) accounting

Table 2

*Descriptive data between the studied variables.*

	SIC	ISC	COMF	AFA	CAF	Stress	Resilience
Mean	3,95	3,86	4,15	4,03	4,18	<b>15,82</b>	<b>29,00</b>
Standard Deviation	,54	,56	,75	,95	,53	7,69	14,15
Minimum	2,09	1,97	2,14	1,67	3,00	0	0
Maximum	4,60	4,60	5,00	5,00	5,00	30	48

*Note:* SIC = Body image satisfaction, ISC = Subjective importance of corporality, COMF = Behaviors oriented to maintaining physical fitness, AFA = Self-assessed Physical appearance, CAF = Care of physical appearance.

Table 3

*Descriptive data between the studied variables.*

		SIC	ISC	COMF	AFA	CAF
Age	Rho	,069	-,021	,301	-,128	,146
	Sig. (bilateral)	,768	,928	,186	,582	,529
Stress	Rho	-,157	,025	-,436*	-,159	,109
	Sig. (bilateral)	,486	,912	,043	,479	,631
Resilience	Rho	-,207	-,143	-,117	-,134	-,090
	Sig. (bilateral)	,355	,525	,605	,552	,691

of the existence of characteristics of these soldiers that favor the development of resilience, like having good levels of social support, being religious and/or spiritual, using problem-based coping strategies, having adequate levels of well-being, being part of functional families with a sense of belonging to the institution of the military and a positive self-image, as found in his research with a sample of 68 active Colombian soldiers.

A negative correlation was found between stress and behaviors oriented to maintaining physical fitness (COMF). This could be associated with research that proposes that people react differently to different stressors (Sandín, 2008). It has been suggested that regular physical activity produces a cumulative effect of reducing physiological reactivity to social stressors irrespective of the type of stressors assessed (Sandín & Chorot, 2010). This implies that physical exercise can produce a beneficial and protective effect against reactions to different stressors and their emotional (anxiety, depression, hopelessness) and psychophysiological (activation of the sympathetic system) manifestations in the individual (Sandín, 2010).

One limitation of this research is a small sample size due to stringent inclusion criteria, the location and constant displacement of the participants for medical treatments, licenses and places of residence. These factors make it difficult to generalize the present results.

Similar studies with a larger sample size of members of the Colombian armed forces who have been subject to war events with and without mutilations and wounds in combat should be conducted to assess whether the presence of post-traumatic stress is more associated with physical damage (Corzo & Bohórquez, 2009) argued.

The PSS-14 scale evaluates this factor in a generic way. The validation and development of clinical instruments that ensure the accuracy of measurements with this population is also recommended, considering their socio-cultural and academic characteristics.

It is necessary to develop studies that deepen the characteristics of the state of body image in the amputee population, with the purpose of clarifying the variables involved that favor rehabilitation processes and generate the various positions that have been articulated in previous research.

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