



ORIGINALES

The evolution of coping and adaptation in hospitalised adults who have suffered traffic accident-related musculoskeletal trauma

Evolución del proceso de afrontamiento y adaptación en adultos hospitalizados que experimentaron un trauma músculo esquelético por accidentes de tránsito

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ABSTRACT:

Objective: Exploring the evolution of coping and adaptation strategies by 11 cases of adults who had suffered traffic accident-related musculoskeletal trauma during their stay in hospital at Clínica Universidad de la Sabana during 2015.

Methods: Studying the aforementioned cases enabled describing and comparing the 11 patients' coping and adaptation strategies. The abridged Spanish version of Roy's Coping Adaptation Processing Scale (CAPS) was used for measuring such strategies; it was used on patient admission to and discharge from hospital. This research took the relevant ethical principles into account; the patients gave their written informed consent and the Universidad de la Sabana and its hospital where the study was carried out authorised the study (i.e. the Faculty of Nursing and Rehabilitation's Research Subcommittee).

Results: This study's findings showed that eight of the eleven cases maintained a high coping ability, or improved from moderate (on admission to hospital) to high level ability (on discharge).

Conclusion: Problem-centred coping and adaptation strategies were involved in most cases. Patients approached this through resolving situation-related questions before acting, using past experiences considered useful, adopting new skills to cope with difficult situations and using alternative solutions and resources.

Keywords: Nursing; coping; adaptation; musculoskeletal trauma; traffic accidents

RESUMEN:

Objetivo: Explorar la evolución del proceso de afrontamiento y adaptación de 11 casos de adultos que experimentaron un trauma músculo esquelético, por accidentes de tránsito, durante la estancia hospitalaria en la Clínica Universidad de la Sabana en 2015.

Método: Estudio de casos que permitió describir y comparar el proceso de afrontamiento y adaptación en 11 personas. Se aplicó la Escala de medición del proceso de afrontamiento y adaptación versión abreviada en español, al ingreso y al egreso hospitalario. En esta investigación se tuvo en cuenta los principios éticos correspondientes, se obtuvo el consentimiento informado de los participantes y las autorizaciones de la Subcomisión de Investigación de la Facultad de Enfermería y Rehabilitación de la Universidad de la Sabana y de la Clínica donde se llevó a cabo el estudio.

Resultado: Los hallazgos de este estudio muestran para ocho de los once casos una tendencia a mantenerse en nivel alto de afrontamiento o a pasar de nivel medio a alto desde el ingreso hasta el egreso hospitalario. **Conclusión:** La mayoría de los casos tuvo un proceso de afrontamiento y adaptación dirigido al problema, donde se encontró interés por resolver dudas relacionadas con la situación antes de actuar, utilización de experiencias pasadas consideradas como útiles, adopción de nuevas habilidades para afrontar las situaciones difíciles y el uso de soluciones alternativas y recursos.

Palabras clave: Enfermería; afrontamiento; adaptación; trauma músculo esquelético; accidentes de tránsito

INTRODUCTION

Musculoskeletal trauma occurs when people receive a blow to their bodies which alters the functions of affected organs⁽¹⁾; this could be caused by a variety of mechanisms but, whatever its cause, the common issue is cell damage in tissue and organs because of forces being externally transmitted to the body⁽²⁾. Currently projected to become the fourth cause of disability-adjusted life years (DALY) worldwide by 2030 (Mathers *et al.*), it is classified within the ten leading causes of death globally⁽²⁾ and car accidents have been reported to be one of its main causes.

This new pandemic's social impact is so serious that around 3.5 million people die and about 50 million become injured annually worldwide, related damage ranging from minor injuries to severe sequelae involving significant disability⁽³⁾.

The high trauma-related morbidity and mortality figures in Colombia, causing up to 41% years of life lost due to disability (YLD) (according to Quintero⁽¹⁾), especially affect the 15-45 year-old economically-active group of people (i.e. the working population). The Colombian Institute of Forensic Medicine and Forensic Sciences reported 50,574 transport accident-related cases attended during 2014; 87.3% of the cases were related to non-fatal injuries (i.e. 44,172 people). There was a 5.62% increase in injuries due to transport accidents during 2014 compared to 2013, males being more affected in transport accidents regarding both fatal and non-fatal injuries. Concerning age, 65.06% of the people suffering non-fatal injuries were 15 to 44 years-old, the 20 to 24 year-old age-group predominating⁽⁴⁾.

Martín⁽⁵⁾ has mentioned that traumatic situations affecting adults have been related to the psychological impact and appearance of psychiatric disorders since they are related to situations involving a mixture of psychological, medical and legal consequences. Polytraumatised people are uneasy and confused by the immediate circumstances, the unknown and their fear of death, mutilation, becoming immobile and other alterations regarding their bodily identity and integrity, as effects which can occur as a result of trauma⁽¹⁾.

For example, Cáceres⁽⁶⁾ has reported that people become confronted by a series of loss regarding different aspects of their lives following a traumatic event; they experience a stage of bewilderment and disbelief, progressive awareness accompanied by feelings of sadness, guilt, hopelessness, sleep and eating disorders. This results in an altered emotional state which can affect how people face their own

rehabilitation and how they adapt to their new living conditions; this entails people developing their own coping capability.

Zavala⁽⁷⁾ has stated that stressful stimuli force people to evaluate their situation and provide coping strategies, to which emotional expressions must be added, thereby leading to a series of responses. How a particular person interprets this must be ascertained to know whether an event is experienced as being stressful (Lazarus, 1991); while a traumatic event may constitute an obstacle for one person, it may present an opportunity for other people to become aware and restructure their way of understanding the world⁽⁸⁾.

Some people often resist life's onslaughts finding unsuspected sources of strength; many people even offer great resistance to extreme events, leaving them psychologically undamaged or having suffered minimum damage from an event⁽⁸⁾. In fact, theories supporting post-traumatic growth or learning adopt the premise that adversity can sometimes lose some of its severity through cognitive adaptation, thereby managing to restore an adaptive vision of oneself, others and the world and foster the conviction that one is now better than one was before a traumatic event occurred⁽⁸⁾.

The pertinent data show that around 85% of people affected by a traumatic experience recover naturally and do not develop any type of disorder⁽⁸⁾; however, many people having suffered/experienced a traffic accident continue having great difficulty in completing their adaptation, given the on-going psychological, social, physical, legal and financial challenges⁽⁹⁾.

Psychology, medicine, psychiatry and nursing have approached this topic; such approaches have focused on reporting the consequences for people experiencing these events, emphasising the psychological consequences, the risk of developing psychiatric disorders^(5,10-12), the quality of life following trauma^(13,14), the experience's meaning for polytraumatised people⁽¹⁾ and their perceptions concerning such experience, the nursing care received in these circumstances^(9,15,16) and the educational interventions created for this group of patients^(6,17,18). International qualitative and quantitative research has reported studies concerning these people's coping strategies⁽¹⁹⁻²⁵⁾, highlighting the importance of identifying coping and adaptation capability for designing early interventions which can reduce the risk of trauma-related alterations, since identifying coping styles is related to varied psychological outcomes and changes regarding functionality and the quality of life⁽²⁶⁾.

However, a preliminary search failed to reveal any pertinent national research studies concerning this phenomenon's evolution, the strategies used to face traffic accident-related musculoskeletal trauma and/or how patients adapt to their new life-styles. It was thus thought useful to explore the coping and adaptation strategies of adults who had experienced traffic accident-related musculoskeletal trauma by analysing case studies to amass in-depth knowledge regarding this phenomenon which has been little studied in Colombia from the theoretical basis of nursing.

This led to the following research question: "How did adults' coping and adaptation strategies evolve during their hospital stay at the Clínica Universidad de la Sabana regarding 11 cases of adults who had experienced musculoskeletal trauma due to traffic accidents during 2015?" The evolution of such coping and adaptation was explored by describing these patients' coping and adaptations strategies on being

admitted to and on their discharge from the Clínica Universidad de la Sabana and comparing the results.

MATERIALS AND METHODS

This research was designed as the study of cases since this would enable describing and comparing coping and adaptation strategies regarding 11 people's cases to gather in-depth knowledge concerning this phenomenon. As well as being descriptive, it was comparative because it contrasted the coping and adaptation capability of adults suffering/experiencing traffic accident-related musculoskeletal trauma regarding two distinct moments over a determined period of time for examining any such variations⁽²⁷⁾.

It involved non-probability sampling of 11 cases of people suffering/experiencing traffic accident-related musculoskeletal trauma who had been hospitalised in the Clínica Universidad de la Sabana from January to December 2015. They had to comply with the study's inclusion criteria and the coping and adaptation measurement scale had to be successfully used with them on being admitted to and on discharge from the clinic's hospitalisation service.

Inclusion criteria: Adults from both genders aged over 18 years-old were to be included; they had to have had a 15/15 score on the Glasgow coma scale and have the physical and mental conditions to be able to respond to the Coping Adaptation Processing Scale (CAPS) on being admitted to the Clínica Universidad de la Sabana's hospitalisation service due to traffic accident-related musculoskeletal trauma.

Exclusion criteria: traumatic brain injury, unstable haemodynamic status, a background of serious medical illness and/or a history of psychiatric disorders.

Roy's CAPS was used in this work; it consists of 33 items, for which a 0.83 index of global content validity, 0.70 Cronbach's alpha of internal consistency and 95% face validity have been reported for this abridged and modified final version⁽²⁸⁾. The original version of this scale consisted of 47 items; each item concerned a short phrase regarding how a person would respond when experiencing a crisis or difficult event. The latest version of CAPS was used since the original scale's construct was complex and difficult to apply due to its semantics and extension according to the limitations found by Gutiérrez *et al.*⁽²⁹⁾.

Information was collected as follows:

1. Participants were selected after the inclusion and exclusion criteria had been verified;
2. Informed consent forms were filled in;
3. The CAPS scale was used with people who had authorised its use and consented to participate in the research. It was used administratively outside visiting hours on patients being admitted to and discharged from hospital; an atmosphere of tranquillity and privacy was guaranteed, avoiding interruptions due to simultaneous medical or nursing procedures as much as possible; and
4. The results from using the CAPS scale were recorded on Google Drive forms.

Processing the information:

1. Basic descriptive statistics were used for analysing the sociodemographic data regarding the 11 cases;
2. First (on admission) and second (on discharge) round CAPS scores were compared;
3. A comparative Table of the 11 cases was constructed to facilitate analysis; and
4. Each case was analysed by comparing CAPS results according to coping ability level (high, moderate and low) according to overall CAPS score.

Ethical considerations

This research was carried out in line with the Council for International Organizations of Medical Sciences (CIOMS) ethical guidelines regarding research involving human beings⁽³⁰⁾, as well as Declaration of Helsinki guidelines concerning the duty to protect human life, health, dignity, integrity, right to self-determination, privacy and dignity when conducting medical research (World Medical Association's Declaration of Helsinki, 2002)⁽³¹⁾.

Nuremberg Code (1947) guidelines regarding research ethics principles for human experimentation were also considered, along with the Belmont Report's guidelines regarding informed consent (2014), providing sufficient information concerning the nature, purpose, methods, mediums, duration, benefits, risks and alternatives in a clear, complete and comprehensible manner⁽³¹⁾.

The Universidad de la Sabana's institutional policy and standards were adhered to; the Universidad de la Sabana's Ethics Committee authorised the research and the information arising from using CAPS was treated confidentially.

The methodology involved in the present research involved no risks for the participants, in accordance with Colombian Ministry of Health resolution 008430/1993⁽³²⁾.

RESULTS

Sociodemographic description of cases

Classification according to age: The ages of those participating in the study ranged from 18 to 50 years-old (most aged 18-24 and 35-40 years-old). Such figures were close to Colombian Institute of Forensic Medicine and Forensic Sciences' statistics stating that 65.06% of people suffering non-fatal injuries were aged 15-44 years-old (the 20-24 age group predominating) (Instituto Nacional de Medicina Legal y Ciencias Forenses, 2014)(4).

Table 1. *Classification according to gender*

Gender	Frequency
Male	9
Female	2
Total	11

Source: data collected at the Clínica Universidad de la Sabana, 2015, using Roy's Coping and Adaptation Processing Scale (CAPS)

It was observed that more males were affected by traffic accidents than females; such data was similar to that reported by the Colombian Institute of Forensic Medicine and Forensic Sciences' statistics for 2014 and Colombian and international research concerning this area of study^(10, 14, 17,18).

Classification according to educational level: More than half of the 11 cases concerned people who had completed high school, thereby coinciding with Colombian Institute of Forensic Medicine and Forensic Sciences' findings for 2014⁽⁴⁾, specifying that 79.92% of people injured in traffic accidents were people having a basic high school education, and that reported by Mi-Ling Wong *et al.*,⁽¹⁷⁾ when analysing their study data, stating that 52% of patients suffering musculoskeletal trauma had completed secondary education.

Classification according to civil status: Civil status recorded as being single occurred most frequently in this study, thereby agreeing with Colombian Institute of Forensic Medicine and Forensic Sciences' statistics for 2014 (valid rates close to 41% concerning people suffering non-fatal injuries)⁽⁴⁾.

Classification according to type of injury: 5 cases concerned injuries related to fracture of the tibia and/or fibula, thereby agreeing with a study by Fitzharris *et al.*,⁽³³⁾ which reported 46.8% of cases involved injuries to the lower limbs regarding patients involved in traffic accidents (Table 2)

Table 2

Type of injury	Frequency
Complex injury affecting the hands and legs	1
Closed chest trauma	1
Fracture of the tibia and fibula	5
Fracture of the right femur	2
Polytrauma	1
Hip fracture	1
Total	11

Source: data collected at the Clínica Universidad de la Sabana, 2015, using Roy's Coping and Adaptation Processing Scale (CAPS)

Classification according to condition during an accident: Six of the 11 cases involved having been a driver during a traffic accident; such data was also reported by the Colombian Institute of Forensic Medicine and Forensic Sciences' statistics for 2014, stating that 67% of victims had been driving a vehicle when the accident they had been involved in occurred. This also coincided with Ching-Hui Wang *et al.*'s findings (2005) that 89% of study participants had been drivers in traffic-related accidents⁽¹⁰⁾.

Classification according to length of hospital stay: Eight of the 11 cases involved a 4-7 day hospital stay, this being lower than that reported by O'Donnell⁽¹⁸⁾ (an average 8.2 day hospital). However, this could have been related to the type of injury and initiatives taken by the Clínica de la Sabana's Strategic Hospitalisation Unit during 2014 which managed to reduce average hospital stay to a 3-4 day stay, based on patients' needs and institutional need for early, safe and increased turnover of beds⁽³⁴⁾.

Describing the cases according to Roy's Coping and Adaptation Processing Scale (CAPS)

After describing each case, their CAPS scores were totalled (the scale ranges from a minimum of 33 to a maximum of 132), giving the following results: 33-89 low coping ability, 90-103 moderate coping ability and 104-132 high coping ability⁽²⁸⁾.

Table 3. Comparing the 11 cases studied. This Table compares the 11 cases' CAPS scores:

Case number	Sociodemographic data	Coping on admission (1)	Score	Coping on discharge (2)	Score
Case 1.	A 34 year-old male: driver, married, socioeconomic stratum 2. Educational level: completed high school. Suffering multiple injuries to the hands and complex leg injuries; 8 days' hospitalisation.	Moderate	103	High	109
Case 2.	A 39 year-old female, passenger, cohabiting, socioeconomic stratum 2. Educational level: incomplete high school. Suffering closed chest trauma; 5-day hospital stay.	Moderate	94	High	104
Case 3.	A 45 year-old male, driver, cohabiting, socioeconomic stratum 2. Educational level: completed high school. Suffering fractured tibia and fibula; 6 days' hospitalisation.	Moderate	98	High	104
Case 4.	A 42 year-old male, passenger, married, socioeconomic stratum 2. Educational level: completed high school. Suffering fracture of the right femur – closed abdominal trauma; 31 days' hospitalisation.	Moderate	102	High	110
Case 5.	A 48 year-old female, pedestrian, separated, socioeconomic stratum 1. Educational level: completed primary school. Suffering closed chest trauma, fractured tibia and fibula and hip trauma; 5 days' hospitalisation.	Moderate	100	High	105
Case 6.	A 40 year-old male, driver, single, socioeconomic stratum 1. Educational level: incomplete high school. Suffering left tibial plateau fracture; 4-day hospital stay.	High	109	Moderate	98
Case 7.	A 24 year-old male, driver, single, socioeconomic stratum 3. Educational level: completed high school. Suffering open fracture of the tibia and fibula; 48 days' hospitalisation.	High	111	High	108
Case 8.	A 33 year-old male, driver, cohabiting, socioeconomic stratum 3. Educational level: completed high school. Suffering fractured right femur; 5 days' hospitalisation.	High	105	High	106
Case 9.	A 23 year-old male, pedestrian, single, socioeconomic stratum 2. University level education. Suffering polytrauma; 10 days' hospitalisation.	Moderate	97	High	104

Case 10. A 35 year-old male, pedestrian, single, socioeconomic stratum 3. Educational level: incomplete primary school. Suffering fractured left tibia; 4 days' hospitalisation.	Low	88	Moderate	93
Case 11. A 21 year-old male, driver, single, socioeconomic stratum 3. Educational level: completed high school. Suffering a fractured hip; 7 days' hospitalisation.	High	107	Moderate	93

The scores for six of the 11 cases reported here (cases 1,2,3,4,5 and 9) represented moderate coping and adaptation ability when CAPS was used on admission (1), increasing to high ability on discharge (2). Four of these 6 cases concerned males (2 females), the 34-48 year-old age group (the exception being a 23 year-old) and people ranked as socioeconomic stratum 2 (except for an adult in socioeconomic stratum 1). Condition during an accident, type of injury, educational level and length of hospital stay varied for these 6 cases.

Active, problem-focused coping was observed in the forgoing 6 cases where patients had been interested in finding information concerning what to do to permanently eliminate their problems by making use of alternative solutions and resources⁽³⁵⁾. This type of coping is characterised by looking at the current situation in a positive way, making one feel good about knowing that a situation has been handled as best as possible, leading a person to use re-evaluation for modifying or tolerating a particular situation, favouring adaptation⁽³⁶⁾. Active coping is characterised by the behavioural (adaptive) domain, involving the search for and gathering information, being aware of anything related to the situation from the beginning, identifying possible solutions, developing a plan for achieving the perceived objectives and proposing new solutions to resolve it⁽³⁶⁾. Such cognitive process involving the taking of direct action, planning the future, managing the systematic use of resources and experience can affect adaptive responses regarding high self-esteem, role transition and adopting healthy attitudes⁽³⁷⁾.

Three of the six cases (cases 1,2 and 9) made use of solutions which had worked for others in resolving difficult situations or problems, resulting in an active coping strategy focused on problem-solving, characterised by behaviour implying learning from past experience, remembering solutions and things which had served and helped in previous situations and learning from solutions which had worked for others in resolving their own problems⁽³⁶⁾.

Two of the 11 cases were rated as having high coping and adaptation ability on admission (1) but dropping to moderate level on discharge (2) (cases 6 and 11); these 2 cases involved 40 and 21 year-old males who shared similar data as they were driving at the time of the accident and were single (the other sociodemographic data was variable).

In spite of these two cases' coping and adaptation ability not improving (i.e. becoming reduced), a type of problem-focused coping was observed, manifest by behaviour involving the search for and compiling information, developing a plan for achieving objectives and proposing fresh solutions. However, from responses having a negative tendency it can be deduced that cases 6 and 11 could have adopted escape-avoidance behaviour, minimising the present threat (Buckelew *et al.*, 1990, 1991)⁽²³⁾, having difficulty in relating difficult situations to past experience and future plans and

using solutions which have worked for others in resolving their difficult situations, thereby hampering the development of problem solving capability since one's cognitive subsystem enables one to create new knowledge based on memories, the new experience⁽³⁸⁾ and solutions which have worked for others in resolving their own problems.

Cases 6 and 11, having responded positively on admission (1) to the CAPS question, "Do I see difficult situations or problems as an opportunity or as a challenge?", then replied on discharge (2) that they never or almost never saw difficult situations as an opportunity or challenge. This could lead to behaviour lacking adaptability, so that people for whom events pose a challenge become more likely to see many more advantages for themselves, in terms of functioning and health, than those who easily feel threatened⁽³⁹⁾.

Cases 7 and 8, having a high coping and adaptation ability score on admission and discharge (1 and 2), concerned 24 and 33 year-old men, socioeconomic stratum 3 and who had completed high school and who were driving when their accidents occurred. Case variations in sociodemographic data concerned civil status, type of injury and length of hospital stay. Active coping was observed as both individuals used alternative solutions and resources to resolve their problems⁽³⁵⁾, using planning, analysis and accepting the reality of the stressful event, trying to change it to obtain positive effects⁽⁴⁰⁾. Such style of coping is characterised by being attentive to anything related to the situation from the beginning and being willing to change to overcome problems. Such cognitive process involving taking direct action, planning the future, managing the systematic use of resources and experiences can affect adaptive responses regarding high self-esteem, role transition, feeling and healthy attitudes⁽³⁷⁾. Case 10 was analysed by itself as it represented the only case of low coping ability on admission rising to moderate coping ability on discharge. It concerned a single, 35 year-old male pedestrian who was in socioeconomic stratum 3 and who had incomplete primary education; he had suffered a fractured left tibia and was hospitalised for 4 days.

A positive tendency was observed in most of his responses to the CAPS' questions on discharge; however, an evasive, less successful, coping style was also noted; he attempted to deny the situation, ignoring the critical event's reality and/or disregarding it⁽⁴¹⁾. Passive coping strategy and style were found, characterised by the behavioural domain; this was apparent in his inability to handle complex problems, handle low stress situations, rapidly analyse the situation, use planning to face the situation and a lack of readiness to change aimed at overcoming problems.

DISCUSSION

This study's findings revealed a tendency to maintain high coping ability or to rise from a moderate to high coping and adaptation ability level from hospital admission to discharge for eight of the eleven cases. This agreed with findings in the pertinent literature, suggesting that humans have great capability for adapting and finding meaning in the most difficult traumatic experiences and that a high percentage of people have great resistance and emerge from stressful events psychologically undamaged or having suffered minimum damage. Optimistic models suggest that people are active and strong, having natural capability for resisting and remaking themselves in spite of adversities⁽⁸⁾. Theories defending the possibility of post-traumatic growth or learning adopt the premise that adversity can sometimes lose

some of its severity through cognitive adaptation, thereby managing to restore adaptive visions of oneself, others and the world (which may initially have been distorted) and foster the conviction that one has become better than one was before the traumatic event⁽⁸⁾. Denholm⁽¹⁹⁾ has stated that the experience of having suffered trauma has produced both positive and negative effects; however, experiencing difficult situations leads to developing empowering thinking and skills.

This study's findings were similar to those in a study by Flórez⁽⁴²⁾ about coping and adaptation ability regarding patients discharged from an intensive care unit (ICU); some of them suffered polytrauma, 63.2% of participants having high coping ability, 19.9% moderate and 1.2% low coping and adaptation ability. Such findings highlighted high coping and adaptation ability in patients discharged from an ICU regarding focal, contextual and residual stimuli characteristic of being hospitalised, reflecting a style of coping focused on cognitive strategies seeking meaning in the traumatic event and directly resolving the situation.

Analysing the responses, a positive tendency was found in 8 of the 11 cases (cases 1,2,3,4,5,7,8 and 9) regarding their coping ability as time elapsed, maintaining problem-focused, active coping, characterised by looking at the current situation in a positive way and using re-evaluation to modify or tolerate the traumatic situation. Such characteristics agreed with that reported in a qualitative study by Gustafsson⁽²⁴⁾ concerning coping strategies used by patients suffering acute traumatic hand injury; Gustafsson identified strategies such as *relying on personal capacity*, *accepting the situation as it is* (comparing with something worse or trying to do the best, turning a negative experience into something positive), *maintaining control* and *solving practical problems by oneself*.

Similarities were also found with a qualitative analysis by Tan *et al.*,⁽⁴³⁾ stating that patients who had been involved in traffic accidents used various coping strategies to survive such trauma. Some participants had the support of their families and friends; others relied on their spiritual beliefs whilst past experience of trauma helped some on their journey to recovery, concluding that prior life experience is related to a victim's coping capability when experiencing later trauma.

It is worth noting variations regarding a tendency for patients to improve their coping and adaptation ability as time elapsed in 7 of the 11 cases (cases 1,2,3,4,5,9 and 10). This can be related to the pertinent literature supporting the idea of coping as a dynamic process which becomes modified in response to a person's changing needs⁽²³⁾ (i.e. complex, individualised and non-linear⁽⁴⁴⁾) as reported by a study on people suffering whiplash-related disorders, highlighting patients' greater use of coping strategies as time elapsed⁽²⁵⁾. Trauma literature also ratifies such idea, stating that the period immediately following trauma is fundamental and that most coping occurs within the first weeks and months following a traumatic (Brewin, Andrews, Rose, and Kirk 1999; Shalev 2002)⁽²¹⁾.

Low coping and adaptation ability on admission rising to a moderate level on discharge was reported for 1 of the 11 cases. As mentioned above, an evasive coping strategy was identified here, such passive, less successful, form consisting of a lack of coping ability or engaging in evasive- and negation-type behaviour. This could have been counterproductive, representing an individual's way of making no attempt to alter threatening surroundings or responses to the immediate environment, in the long-term

rendering victims unable to translate a threat into something which is controllable (Bryant & Harvey, 1995; Rachman, 1990)⁽⁴⁵⁾.

The present study's results were similar to those found in research such as that by Rueda and Aguado⁽²³⁾ who reported coping ability being more characterised by active, problem-solving strategies, having greater acceptance and cognitive restructuring than emotive strategies in individuals suffering spinal cord injuries. Active, problem-focused coping has also been mentioned in a study by Hepp *et al.*,⁽⁴⁴⁾ as a coping strategy which is predominant shortly after an accident.

Limitations and recommendations

The type of case study design impeded extrapolating the results to the large population of adults who have suffered musculoskeletal trauma; a larger sample size would thus be advisable to obtain statistically significant results. Another limitation was the participants' average hospital stay in the institution involved in this study as this hampered measuring the evolution of coping and adaptation ability/strategies regarding a time longer than 4 days.

CONCLUSIONS

1. This study enabled the evolution of coping and adaptation ability/strategies regarding 11 cases of adults suffering traffic accident-related musculoskeletal trauma to be explored. More than half the cases improved from moderate to high coping and adaptation ability levels during hospital stay;
2. Most cases involved problem-focused coping and adaptation ability, un type of active coping;
3. The lapse of time turns is a variable to be taken into account regarding coping and adaptation. This research revealed that coping improved as time elapsed in 9 of the 11 cases studied here, showing how people can modify their initial strategies;
4. Coping strategies/ability is a variable enabling understanding how individuals cope with their difficulties and how this occurs naturally;
5. Although some cases shared similar sociodemographic characteristics, each coping and adaptation strategy/ability was unique, implying that two people may have suffered the same traumatic experience but have different reactions to it and engage in different forms of coping with it;
6. Suitable coping ability was seen in most cases; this highlighted the fact that human beings can adapt to the traumatic experiences in which they have been involved and find meaning in them. This becomes an opportunity to learn from experience, remain balanced, look towards the future, believe that one can influence events happening around one and learn from both positive and negative experiences, managing to develop thinking and empowering skills leading to adaptation.

The following hypotheses/research questions emerged from this research work:
Do pain and impaired mobility influence the coping and adaptation ability of adults having suffered traffic accident-related musculoskeletal trauma? ;

Can nursing intervention improve coping and adaptation ability as time elapses? ; and Which nursing interventions could improve the coping and adaptation ability of adults having suffered traffic accident-related musculoskeletal trauma?

Recommendations

- Motivate nurses to begin identifying the coping and adaptation ability level of the adults they have in their care through empathy, the relationship of trust with them, encouraging the expression of feelings, evaluating previously-experienced difficult situations and using useful strategies which can serve as input for resolving or minimising the impact of new situations, with the participation of the family;
- Design early interventions aimed at reducing the risk of trauma-related physical and psychological changes through individualised care of people according to their needs, using active coping strategies aimed at problem-solving, learning, positive re-evaluation and conflict-resolving orientated behaviour since this type of coping is usually more adaptive;
- Future studies should consider pain and immobility as variables which can affect the coping and adaptation ability of people who have experienced musculoskeletal trauma;
- Qualitative research should be carried out enabling the experiences of people who have suffered such traumatic, unexpected events to be discovered/related;
- It would also be interesting to carry out research enabling people's coping and adaptation ability to be related to the degree of responsibility regarding the people involved in an accident;
- Longitudinal studies should be carried out facilitating how coping and adaptation strategies are described, as well as the variations involved in them as time elapses.

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