

## Inter-Family/Intercultural Group/and Acquired Brain Injury

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### Abstract

**Introduction:** Acquired brain damage (ACD), highlights the need for multidisciplinary work and family intervention. However, the inclusion in the rehabilitation service of a public hospital of the figure of the clinical psychologist is relatively recent. The social brain must be taken into account and not focus only on traditional neurorehabilitation tasks. Interfamily/intercultural groups are demonstrating benefits in adapting these, both for patients and their families.

**Objective:** To analyze the benefits that occur in 10 sessions of interfamily/intercultural therapy within the (DCA) in adults.

**Patient and Methods:** 55 users who have attended from 2017 - 2019. 60% patients and 40% family members. Different nationalities.

After neuropsychological evaluation by clinical psychology they are included in the cognitive stimulation groups and in parallel in the TIFI groups. We assessed depression (BDI), and the post-traumatic growth, before and after one year; an ad hoc survey to assess satisfaction.

**Results:** Patients show great satisfaction with attending TIFI therapy. They present significant differences in depression ( $p < 0.001$ ) and post-traumatic growth is favored at a significant level  $p < 0.005$  (e subscale relation to the others).

**Conclusion:** TIFI groups promote adaptation, acculturation, and generate feelings of group belonging that help to face new challenges beyond the disease. It is necessary to include at the public level, interfamily therapy without forgetting the cultural aspect of its members in DCA.

**Keywords:** Accidental Injuries; Acquired Brain Damage; Traumatic History; Interpersonal Psychotherapy; Psychological Stress; Family Therapy

### Abbreviations

ACD: Acquired Brain Damage; TIF: Interfamily Therapy; TIFI: Interfamily/Intercultural Therapy; PC: Clinical Psychologist; RN: Neuropsychological Rehabilitation; NYC: New York; WHO: World Health Organization; ToM: Theory of Mind; TBI: Traumatic Brain Injury; STROKE: Cerebral Infarction; BDI: Beck's Depression Inventory; HUVA: Virgen de la Arrixaca University Hospital, Murcia

### Introduction

"Brain damage is an injury that occurs in brain structures suddenly" [1].

Most are young people who have suffered an autobiographical breakdown due to the diversity of physical, emotional, behavioral and/or cognitive sequelae, which may alter interpersonal relationships, autonomy, arising a certain dependence on the main caregivers and imbalances in almost all cases. facets of the individual.

Hence, Lezak already spoke of Brain damage is a family affair, 1988 [2].

### Cognitive rehabilitation

Cognitive rehabilitation is defined as the set of procedures to improve various capacities and abilities. Prigatano (1999) [3], pointed out the importance of 13 principles for neuropsychological rehabilitation (RN). The 1<sup>st</sup> and 13<sup>th</sup>, establishes the need to know the scientific advances without forgetting the phenomenological aspects. Principle 3 focuses on the solution of higher brain disorders and their management in interpersonal situations. RN is an educational intervention that is based on potentiality, self-control and self-sufficiency, it is structured and plans are designed based on evaluation, it includes improvements in cognitive and behavioral skills, compensation and restoration [4].

In Psychology, phenomenology designates the study of the phenomena of consciousness as subjective experience. Welcoming personal baggage is important for coping. Not forgetting the work of false expectations from which they generally start.

In RN, the traditional should give rise to new healthcare paradigms, being faithful to the main objective (promoting the recovery of altered brain functions, improving functional capacity (despite the existence of neuropsychological alterations) and dealing with the experiences of loss, while treating to reduce emotional distress). In other words, helping people with neuropsychological deficits regain meaning in their lives [5].

### Family and acquired brain damage

The intervention with families in DCA is collected in the scientific literature. In the onset and course of a serious neurological disease, the family weakens and a certain predisposition is generated to develop generalized anxiety and/or post-traumatic stress disorder, among other symptoms. This has repercussions on the care provided to the patient, on dysfunctional relational dynamics and on the “burned out” caregiver syndrome.

The NR must have as its ultimate objective “to reestablish the person for their proper insertion into autonomous and independent life and social integration” [6].

Family intervention shows its maximum effectiveness when it is included as one more component of the complete Psychosocial Rehabilitation program [7].

It is from the Rehabilitation service of the HUVA, when we consider that covering only with cognitive rehabilitation, the entire social, emotional and family range of the patient was not covered, going on to design inter-family groups in acquired brain damage, taking into account two main experiences:

1. Our contact with the Interfamily Therapy Center, in Elche, and with the creators of Interfamily therapy (TIF), we managed to provide guidance and frame within its theoretical framework our work with families and patients, based on the principles of TIF (promote group cohesion, promote open and polyphonic dialogue, enhance emotional support in group members and promote flexibility in group communication [8]).
2. Our personal experience lived in Manhattan, NYC, at the Roberto Clemente Center (a center dependent on the Gouvenir Hospital) with the “Grupo de la Plaza”, led by the psychotherapist Óscar Ocasio, taking into account the family, from the point of view systemic, and promoting the cultural aspects (immigrants and different generations who had suffered some alteration in their mental health after the immigration process) we began the experience in a public health environment, and with original brain-based pathology (head injuries, stroke, brain tumors, sequelae of acute myocardial infarction).

Interpersonal Neurobiology establishes five principles to promote brain plasticity in a group therapy context:

1. The brain change requires rich environments, with an adequate emotional charge and optimal levels of activation.
2. Experience above explanation (a new neurological organization occurs through interpersonal relationships and moments of intersubjectivity (moments of encounter or attunement [9]). Group therapy would constitute the establishment of regulatory linking networks, aimed at stabilize physiology and emotions and review the emotional memory of group members' attachment patterns.
3. Strong attachment bonds prepare the brain for change [10]. According to the brain systems of the members of a group in therapy they stimulate each other in the group space, towards higher levels of integration (the neurons that are activated connect to each other) [11].
4. The brain is social and programmed for cooperation, caring and to be fair [12,13]. The understanding of the emotions of others are processed through mirror neurons that generate the necessary empathy to produce changes and generate the empathy that is at the basis of satisfactory interpersonal relationships. It is necessary that the conductor of interfamily therapy not only of understanding and affection, but also provides an environment that favors the repair of inevitable ruptures and betrayals that occur in authentic relationships [13].
5. The initial changes in the brain are only temporary: hence the advantages of long-term therapy [14]. Familiarity, intensity, and long duration are necessary for an attachment relationship to be able to provide stability and modification of the central nervous system that results in long-term brain change [15].

### Culture

We consider it essential to add cultural value to inter-family groups in DCA.

The hodgepodge of cultures enriches the group. We have had different members in it (a Nicaraguan, an Iranian couple, a Cuban girl, a Bolivian, a Portuguese and a girl married to a gypsy, a Honduran).

In Spain, and more specifically the Murcian Health Service (SMS) serves 1,378,000 people with an Individual Health Card, according to the latest available data, and of them 177,359 are immigrants in an irregular situation and/or others with a residence permit. Murcia. Source: Ministry of Health and Social Policy - [08/31/2012] [16].

Acculturation is a process by which groups of diverse cultures (generally a minority group versus a majority group) adjust to each other, with physical and psychosocial consequences, especially on the part of members of minority groups [17].

Talking about our land, favors adaptation processes and the resolution of unresolved and unprocessed griefs.

### Sense of belonging

Belonging constitutes a basic human need, in the words of Maslow, 1954 and is defined as the sense of personal involvement in a social system, in such a way that the person feels that he is an indispensable and integral part of that system [18].

The essential elements to develop a sense of belonging are: the experience of feeling valued, needed and accepted, and the perception by the person that their characteristics are similar or complement those of the people who belong to the system, through shared or complementary characteristics [19]. The sense of belonging, "interpersonal links", constitutes one more facet of social identity [20].

“Social Empathy” refers to the level of, acceptance and solidarity of the therapist with the human, historical, material and social reality of the immigrant” [21].

Feeling like a member of a group allows you to cover two basic needs: the first, to cover the fear of isolation from the reality of seeing yourself as a member of something; the second, to define oneself from the characteristics that define the group to which one feels to belong and with which one identifies [22]. Loneliness is one of the most stressful factors so that some experimental animal studies are subjected to isolation as the first method to induce stress [23]. Patients with ACD are frequently isolated and are likely to attempt to confine themselves at home as a mechanism to safeguard and hide deficits. If we favor decentralization and contact with people with similar alterations although not completely homogeneous, the process of social comparison will be facilitated, and uncertainty in these areas will be reduced. Self-evaluation includes 4 aspects. Advances in theory have led to personal improvement being one of the four reasons for self-evaluation: together with self-evaluation, self-confirmation, and self-improvement [24].

Capacities such as identification, evaluation, recognition and strengthening of capacities in individuals, families, groups and communities and formal systems are becoming a permanent objective of social intervention [25]. Therefore, it is resilience that allows the individual to endure adversity and emerge stronger. The concept of “post-traumatic growth”, which refers to the positive change that an individual experiences as a result of the process of struggle that he undertakes from the experience of a traumatic event, is present in these groups in front of DCA [26]. Specifically focusing on the immigrant population:

- The family system will influence the adaptation or maladjustment to new values and cultures, for which it is necessary to go through the duels that have been described in the migration process: family, language, culture, land, status, group of belonging and risks for physical integrity [27].

Each immigrant: brings a life project: a dream, a hope, a personal and family mission to fulfill.

- He is an ambassador for his family: they carry a mission and a commitment to their relatives in the country of origin.
- Faces a challenge of adjustment, identity, and security in the new host country.
- He suffers losses (personal, family and ecological): people, places, music, routines, foods, customs and traditions that have formed his identity and sense of security [28].

It must be considered that the responses to the questioning of their ethnic identity, understood as the sense of belonging to their culture of origin, is a key factor for adaptation to changes [29].

Social identity fulfills three functions: cognitive (processes of social differentiation and categorization); emotional (feelings of belonging and acceptance) and evaluative (social comparison process) [30]. When a person suffers from DCA, they need more social support. TIFI groups can generate links that can favor the development of what is called a resilience tutor defined as: “[...] Someone, a person, a place, an event, a work of art that provokes a rebirth of psychological development after the trauma. [...] A meaningful encounter may be enough”. Regarding the necessary aspects to become a resilience tutor, it is the fact of being present and available in moments of crisis, showing affection and being in a position to receive it and share moments beyond our professional role [31].

### Post-traumatic growth

The concept of post-traumatic growth was developed through an extensive review of the literature.

They divided the concept into three main blocks: (a) changes in one's perception of oneself; (b) changes in interpersonal relationships; and (c) changes in the philosophy of life: what you have is appreciated more, details are valued more [32].

### **Mirror neurons**

Mirror neurons were discovered in 1991 by G. Rizzolatti. They are neurons that are activated when an individual performs an action, but also when he observes a similar action performed by another individual.

The observation of movements of the hand, foot or mouth activates the same specific regions of the motor cortex, as if the observer were performing those same movements. This neural system is not only activated when observing movement in the other. The system integrates into its neural circuits the attribution/perception of the intentions of others (that is, the Theory of Mind) [33]. Mirror neurons make it possible to understand the intentions of other people. Put yourself in the place of others, read their thoughts, feelings and wishes.

It would be the neurological substrate that would allow the construction of the Theory of Mind. The fact that mirror neurons capture important aspects of communication make them a useful tool for psychotherapy, because they allow the creation of links, allowing the therapist to penetrate the semantic universe of patients, being able to generate changes in them [34].

Mirror neurons, the insula, and the cingulate cortex work in concert to allow behaviors ranging from asymmetry to symmetry. These actions are combined to achieve behaviors that are complementary to those of the other, seeking, in the best of terms, adaptation in terms of functionality. Mirror neurons are the genesis of relationships, constituting the basis of relational complementarity [35].

### **Examples in the interfamily/intercultural group**

The husband of a patient connects when he took care of his bedridden father for 15 years, with his illness when he was young (the importance of social support in the recovery process of continuing to live) and with his wife's illness when his daughter was 3 years old.

The caregiver of a patient connected with the memory of her "depressed" mother, when a couple who had just completed 50 years of marriage suffered a stroke on their trip to the golden anniversary.

### **Connection with child abuse**

A patient tells us about the psychological abuse she is suffering from her husband and the fear she has of losing her family if she decides to report it. The group connects with the situations of physical abuse in childhood, gender violence and problems of parental dependency (alcoholism).

The group leader ensures that when recounting these traumatic experiences, patients do not go outside their tolerance window to avoid retraumatization.

### **Quality of life**

#### **Group dynamics of cohesion**

Quality of life is understood as a concept that encompasses different aspects, not just the biological one. The O.M.S defines it as "the perception of an individual of her life situation, in the context of her culture and value system, in relation to her objectives, expectations, standards and concerns".

#### **\$ Encompasses different dimensions**

The biological level, the perception that one has about the physical state, the psychological level, where beliefs, personality traits, personal values and expectations are included, the bonding, affective and social level, which implies the perception and development of

the links, from the most intimate to the most superficial and the ecological and cultural level, which includes the level of acculturation, identification and sense of belonging [36].

### Group emergencies

- Discharge from physical rehabilitation
- Envy about the process of others
- Problems of the different groups
- Age of DCA
- Childhood abuse
- Substance abuse in certain cultures.
- Gender violence
- Marital conflicts as a result of the stroke/TCE/DCA.

### Goals

1. Enhance family resilience (the family's own capacity for self-repair).
2. Promote adaptation to the disease process.
3. Promote the process of social comparison
4. Improve user satisfaction.
5. Cognitively stimulate from other perspectives. From the theory of mind (ToM) the ability to understand and predict the behavior of other people, their knowledge, their intentions and their beliefs. How a cognitive system manages to know the contents of another cognitive system different from the one with which said knowledge is carried out [37].
6. Provide new alternatives and models of individual and family coping.
7. Provide an approach to a possible resilience tutor to generate a "post-traumatic growth".

### Methodology

#### Participants

The group is open. All patients who have suffered supervening brain damage and their families as long as they have been referred by the rehabilitating doctor of the HUVA Rehabilitation Service and/or specialist in Neurology to Clinical Psychology, for neuropsychological, behavioral and emotional evaluation of the patient and is included in the treatment of cognitive stimulation, both group and individual and/or family.

There is an average of 12 family units per group shows attendees since 2017 have been 55 where 60% have been patients and 38.3% family members. 61.8% men and 38.2% women. The most frequent marital status was married (78.2%) followed by single (14.5%), and 7.3% separated or divorced. The most frequent pathology has been ischemic stroke (14 cases), followed by TBI (9), hemorrhagic strokes (5), ruptured aneurysms (3) and brain tumor (2).

54.4% were in the age range 30 to 60 years and 43.6% from 61 to 90. Only one case from 15 to 30 years.

The nationality of the group members was mainly Spanish in 52.7% (29 cases), the rest of the cases were from: Ecuador, Nicaragua, Iran, Cuba, Bolivia, Portugal, Honduras, and wife of gypsy ethnicity.

36.4% had completed primary studies, 41.8% studied secondary, 18.2% university and only 3.6% had no studies.

In turn, 47.3% attend single-family sessions from relational systemic family psychotherapy, offered by the Rehabilitation Service.

Frequency/Temporality.

The group attends biweekly sessions, being led by clinical psychology.

### Place

It is carried out in a space of the Rehabilitation Service/hospital teaching classroom, to be able to include more family units.

### Method

The work was carried out in accordance with the WHO code of ethics (Declaration of Helsinki). The patients signed the informed consent to be included in the group treatment.

### Psychological instruments

- Post-traumatic growth questionnaire [38].

### Evaluate 5 subscales

1. Relationship with others
2. Changes in life
3. Self-perception
4. Beliefs
5. Meaning of life

\*Beck's Depression Inventory (BDI) [39].

\*Satisfaction survey prepared by the HUVA Quality Care Service.

### Process

The basic group norms of all group work in therapy.

In the context of groups (TIFI), the cultural approach of its members is prioritized.

### Results

The mean satisfaction of the Interfamily groups stands at 8.70 measured on a numerical scale of 0 - 10.

Feeling that the groups have transforming power, we found an average of 8.62 and feelings of feeling capable of counting on others at an interpersonal level to solve their problems an 8.50.

Feelings of feeling capable of facing the situation, an average of 8.27 is obtained, all this measured on a numerical scale of 1 - 10.

Patients and relatives found attendance to the TIFI groups satisfactory in 95.3%.

Regarding the levels of depression, there are significant differences, seeing that there has been a significant decrease, with the mean value of pre (12.3) + - 5.6 and having decreased by almost 4 points in the post, being 8, 5 + -5.2. Significance  $p = 0.001$ .

The subjects assessed that the group had transforming power, with a mean of higher when compared with group attendance of 6 to 10 sessions (9.08 (SD90) and with attendance higher than 10 groups, they present a mean of 8.60 and SD 1.29), although no significant differences were observed.

This is related to the significant differences found in the Post-traumatic growth questionnaire, in the scale of “relationship with others” based on attendance to 6 groups (TIFI) (being able to count on people, greater closeness, improvement in expression emotional, compassion for others, accepting that someone else is needed).

Analyzing the data according to the number of sessions attended by patients and relatives, we found that significant differences were obtained p. 005, according to the number of sessions they attend, obtaining improvements at the level of interpersonal relationships from 6.

### Discussion

Interfamily/intercultural groups within the public health system are demonstrating their importance in disabling pathologies. Patients cannot be viewed only from the biologist’s perspective of the disease.

Recovering from brain damage or other disabling pathologies constitutes a challenge, being necessary to work on expectations and leave the asymmetric patient-expert framework, generating a polyphonic dialogue, where others become figures that generate a scaffolding similar to the Vigostskian one, where you can navigate within the actual development zone and the potential development zone.

The “other groups” become tutors of resilience, in a secure base to be able to face different challenges, counting on group support.

People from different cultures are listened to with respect and curiosity, to be able to be helped by others, generating spaces for group belonging, to favor the adaptive process to their illness in an environment that they feel is theirs.

The group conductor, within the hospital context, is seen as a figure with greater resources and they await psychoeducational sessions. It is necessary to dismantle this expectation and not assume the role of an expert, because interfamily therapy, paraphrasing Sempere and Fuenzalida, is a “therapy for everyone and made together”.

We consider it relevant to continue investigating these aspects, because although certain brain injuries negatively predispose to interaction with others, or a deficit of empathy can make it difficult to attend them, favoring this comprehensive stimulation in ACD and Stimulation of the social brain favors the feeling of belonging, acculturation and relationships among others.

### Conclusion

TIFI groups promote adaptation, acculturation, and generate feelings of group belonging that help to face new challenges beyond the disease. It is necessary to include at the public level, interfamily therapy without forgetting the cultural aspect of its members in DCA.

### Conflict of Interests

There is no conflict of interest.

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