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## Reduction of anxiety in pediatric patients: effects of a psychopedagogical intervention programme

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### Abstract

A psychopedagogical intervention programme is used as a resource to improve childrens' life in hospital and to prevent the negative effects of hospitalization. One of those negative effects is the childrens' anxiety. The statistical analysis showed the effectiveness of this programme in order to reduce and prevent the emergence of anxiety symptoms. Therefore, its generalization and use are recommended.

*Keywords:* Anxiety; Hospitalization; Pediatric patient; Psychopedagogical intervention programme

### 1. Introduction

When a child suffers from an illness, conflicts are generated. If the illness is severe enough to warrant hospitalization, the child must be integrated into a new environment and a new system, giving rise to a new set of tensions and conflicts [1]. The patient must become adapted to the physical changes brought on by treatment, surgery, and immobilization, and to the new daily routines affecting eating and sleeping habits and which include, among other things, medical treatment. Contact with family and friends is restricted and new relationships with hospital personnel and other patients in a totally new environment come into play.

Hospitalization, however, involves much more than just the forced absence of family life and normal affectivity. There are also the added factors of cultural and academic deprivation, along with the subsequent decrease in social interaction which is imposed by the new environment. The following can be cited to be among the principal alterations that occur:

- Behavioural changes (regression, aggressiveness, uncooperative behaviour, refusal to cooperate with medical treatment, changes in sleeping and eating habits, rejection responses and even muteness)
- Lack of attention and difficulties in concentration
- Anxiety, stress, fear
- Depression, sadness and lack of interest

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On the basis of the foregoing, it can be claimed that child hospitalization involves both the child and his family in a stressful situation.

Other factors contributing to the presence of psychological alterations in the hospitalized child, include a lack of information with respect to what will happen during the hospital stay and a perceived lack of control over medical events. These factors aspects constitute risk to the mental health of pediatric patients. However, the effects of hospitalization are dependant on a wide range of factors: (1) the individual differences of each child; (2) the child's age and temperament; (3) the nature and seriousness of the illness itself (the effect on the child's physical, psychological and social development, implicit in chronic illness, will not be treated outside of the hospital context, being as they are, the subject of another theme); (4) the length of hospitalization. An average hospital stay of more than one week, or repeated short periods of hospitalization, are associated with a significant increase in behavioural changes; (5) the characteristics and organization of the hospital centre; (6) any previous hospital experience. Children hospitalized for the first time undergo more severe emotional alterations than those who have experienced previous hospitalization. However, subjects with previous negative hospital experiences showed higher levels of anxiety than those with no experiences in this regard; and (7) the response of parents, siblings, friends, hospital personnel and other professionals in contact with the child.

The absence of orientation and support for the hospitalized child, offered by teachers, psychologists, parents and hospital staff, poses an added risk for the onset and course of psychopathological manifestations. All of this necessitates to the elaboration of orientation and in-hospital follow-up programmes. Although such programmes require specialized personnel, material and economic resources, returns are realized by reducing the negative psychological effects of hospitalization.

The preparation of children for hospitalization has received considerable attention in recent psychology, health and behavioural medical publications. Abundant research shows that preparation for hospitalization reduces adverse psychological effects [2–5].

Undeniably, a new awareness exists of the need for special attention for hospitalized children, in order to counteract the adverse psychological effects which frequently occur. To this end, the design of orientation programmes for hospitalization and the implementation of various behavioural procedures and strategies, are considered to be imperative. The majority of the research carried out in the fields of medicine and psychology shows that behavioural techniques reduce emotional and behavioural alterations that frequently occur in hospitalized children [6–8].

This paper proposes a series of steps for the design of a programme of preparation for hospitalization and the psychopedagogical follow-up of the hospitalized child. The programme is an attempt to reduce the anxiety of the hospitalized child, to adjust and adapt him to the reality of his hospitalization, to develop a series of social skills in the pediatric patient, and to prevent the emergence of anxiety symptoms. Our study was designed to examine if this programme reduces anxiety in the hospitalized child.

## 2. Materials and method

### 2.1. Subjects

Forty children, between 8 and 12 years of age, admitted to the pediatric ward of Clinica Universitaria of Navarra, Spain, were divided into two groups: an experimental group who received our programme and a control group. Each group was composed of 20 children (10 females and 10 males), with a variety of diagnoses and severity of physical illness. Children were randomly selected for both groups.

### 2.2. Materials

State-Trait Anxiety Inventory for Children (STAIC) was used in a validated Spanish version: 'Cuestionario de Ansiedad Infantil (CAI)'; TEA Ediciones, Madrid. The STAIC developed by Spielberger [9] is a self-report measure designed to assess anxiety in children. There are two types of questions on this inventory which attempt to distinguish between trait symptoms and state symptoms [10–13]. Spielberger differentiated between two kinds of anxiety: transitory anxiety state (A-State) and anxiety as a personality trait

(A-Trait). To provide a measure of these two aspects of anxiety, Spielberger developed the State-Trait Anxiety Inventory for Children. Both scales consist of 20 items and the child is instructed to choose one of three answers to describe how he is feeling at present (State), or to describe how he typically feels (Trait). A score of 1, 2 or 3 is obtained for each item (3 being assigned to the most severe choice), and these scores are summed to obtain a total A-State and a total A-Trait score. Reliability and validity data on the STAIC, generally support construct validity. The test-retest reliability coefficient was 0.65 and the coefficient for internal consistency was 0.82.

### 2.3. Procedure

On the first day of admission to the hospital, all patients completed the STAIC. The psychopedagogical programme was then commenced with the children from the experimental group (Fig. 1).

The psychopedagogical programme begins on the very first day of hospitalization. The first objective of the programme is to establish a good rapport between the person in charge of administering the programme and the child. This is achieved by means of an interview. The child will go to the interview alone and the conversation will last approximately 15 min. A meeting with the parents and the child will have already taken place.

At this point a tour of the hospital takes place, beginning at the entrance, and including the area dedicated to medical consulting, the offices and the admissions section. The child is then shown the

lifts, their locations and the various hospital wards. Each ward is toured briefly, along with the X-ray section and the rehabilitation sections and their purposes are explained. The pediatric ward is given special attention.

The person in charge of the programme will inform the parents of the regulations and routines of the clinic. A copy of the European Charter of the Rights of the Hospitalized Child (approved in 1986 by the European Parliament), is given to the parents. Parents are encouraged to participate in the child's hospital experience and to maintain a close contact with him. They are informed of the importance of their attitudes in helping the child to cope with anxiety, which will in turn contribute to a better recuperation and a lessening of the psychological trauma.

Likewise, parents are advised as to the importance of their own psychological reactions and responses, as decisive influences on their child; their own fears and anxieties can easily be transmitted to the child, to his detriment [14,15]. Finally, parents are introduced to some of the nurses on the ward who will come into direct contact with their child. They are encouraged to maintain a daily contact with both their child and the person in charge of the programme.

Families who don't cope adequately with the illness of a child, are in most cases, those who experienced adaptation problems even before the illness occurred. A good communication between parents is associated with a better adaptation to the illness. Similarly, the good adaptation of one parent is the best way to change the other parent's attitude. It is very important to note that the atmosphere within the family is considered to be a significant variable in the adaptation and adjustment of a child to his illness.

Parental influence on a child depends on two factors: the general characteristics of the relationship between the parents and the child, and the parental attitudes about the child's hospitalization. Anxious parents transmit this emotion to their child. We must not forget that parents, and especially mothers, are the principal companions of the pediatric patient during his hospitalization period.

The aim of our intervention strategy is to obtain an effective adaptation of the whole family and, of

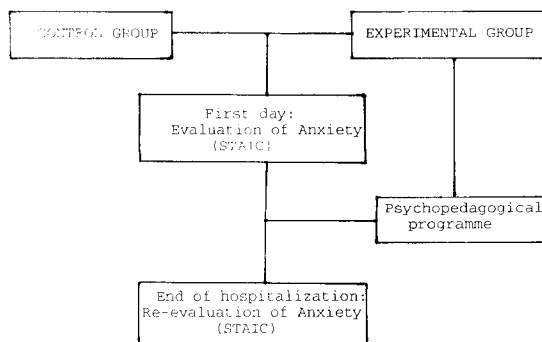


Fig. 1. Evaluation design.

course, of the pediatric patient. Everybody in the family must be informed about the illness and its implications, thereby making each one responsible for the child's treatment and care. Parents must work together in order to get a good control of the illness.

After the first part of our programme (the interview and the hospital tour) the children were asked to complete the Anxiety-State Scale, in order to re-evaluate it. We wanted to discover whether any significant changes had taken place after the administration of the programme, to prepare children for hospitalization.

#### 2.4. Follow-up stage

For the purpose of reducing the stress, the anxiety and the physical pain that medical treatment can produce in the child, three intervention techniques are applied.

(a) Relaxation. The person in charge of the programme will show the child certain relaxation techniques. This will help him to cooperate more actively, and will also help to lower his pain threshold. (b) Cognitive approaches. The imagination is controlled or guided so that the patient can reinterpret pain as something agreeable. These two techniques are applied together six times a week, in sessions which do not last longer than 30 min.

(c) Three times a week, social behaviour training is performed. For each child target skills are chosen, which are seen to be the most needed skills for that particular child (complaining and being complained to, asking favours, saying no, asking why, relating to persons of a different social status, conversations, etc).

The follow-up programme is accompanied by training in self-control. The child is instructed to evaluate his own behaviour, with specific actions given which are targeted at either modifying, maintaining or discontinuing the behaviour. To make this self-evaluation, the child is asked to be aware of his own behavioural responses in specific situations: cooperating with the prescribed treatment, relaxation, controlling and reducing fears, putting social skills into practice, etc. For this purpose, each participating child is given a specially prepared score-sheet on which he can note down his behaviour in such circumstances, along with the frequency.

Each time the child successfully manages to carry out self-controlled behaviour, he permits himself a reinforcement which consists of a previously selected gratification. Autry and Langenbach [16] showed that children who were subjected to a programme of self-regulation, increased their internal locus of control.

A chip economy system is practiced for the regulation of reinforcements. For each three responses considered to be positive, which the child will have noted down on the score-sheet, he will receive one chip. When he has won three chips, he may trade them for one of the previously chosen reinforcements (sweets, specific objects, leisure activities, a privilege, etc).

The children in the control group are treated in the same way as the children in the experimental group, the only difference being that the control group don't receive the intervention techniques (interview, tour, relaxation, cognitive approaches, social behaviour training in self-control, chip economy system). In both groups, the children spend the morning studying (when this is called for), reading, doing craft work, going on walks (when and if this is possible) and playing games with other hospitalized children.

The children in the experimental group do not receive special treatment from the hospital staff because the nurses and doctors are unaware of our study and programme.

### 3. Results

For the purpose of verifying the effectiveness of the follow-up stage of the intervention programme at the end of its application, the Trait-Anxiety is re-evaluated to discover if any significant changes have taken place during hospitalization. The effects of our programme were examined using an analysis of covariance (ANCOVA) for the variable anxiety. We wanted to test if there were statistically significant differences between the group of children who received the programme and the children from the control group.

As expected, because of the group assignment procedure, an analysis of covariance conducted on the STAIC scores revealed a significant group effect.  $F(1,37) = 22.4$ ,  $P \leq 0.01$ ;  $F(1,37) = 12.58$ ,  $P \leq 0.01$ . The differences between the experimen-

tal group and the control group were statistically significant. These results clearly indicate that the children who received the programme of preparation for hospitalization and the psychopedagogical follow-up, had lower rates of anxiety symptomatology than the children who did not receive such a programme. Children from the control group described themselves as more anxious than children from the experimental group.

#### 4. Practice implications

The present study was designed to examine if a programme for the preparation for hospitalization and a psychopedagogical follow-up, reduces the anxiety in hospitalized children. For the purpose of verifying the effectiveness of our programme of intervention, the level of anxiety is evaluated at the beginning of the child's stay and re-evaluated at the end, to discover whether any significant changes have taken place during hospitalization. The instrument used for the comparison between the groups was the *Stait-Trait Anxiety Inventory for Children* [9]. The results of this research suggest that the children from the experimental group who received the intervention programme, suffer lower levels of anxiety than the children from the control group who didn't receive this programme. In the experimental group the anxiety was reduced, but in children from the control group, a major anxiety disorder was shown on their last day of hospitalization which was not present on the day of admission.

The finding that pediatric hospitalization raises a child's anxiety is consistent with previous investigations [13,17–19]. Hospitalization may have many effects on a child; emotional and behavioural alterations are frequent in hospitalized children. The child often tends to interpret his hospitalization as a punishment for something he has done. Along with the separation from his parents, the physical pain caused by the illness and its treatment reinforce such impressions. Anxiety, depression, sadness and a lack of interest are among the principal alterations caused by pediatric hospitalization.

In this research, the fact that the control group shows a major anxiety disorder after the hospitalization period, concurs with the idea that hospital-

ization causes anxiety feelings in pediatric patients. On the other hand, the fact that the experimental group shows a reduction of anxiety feelings after the period of hospitalization, is a positive result for the applied psychopedagogical programme. The relative magnitudes of the state-anxiety reductions observed, indicates the effectiveness of the interview and the hospital tour as strategies to prepare children for hospitalization. The results also corroborate the effectiveness of the relaxation technique and the cognitive approaches used, for the purpose of reducing the anxiety and stress that medical treatment can produce in the child. This kind of procedure has the great advantage that it does not need expensive videotapes or require filmed peer models.

Despite the advantages of personal preparation, some hospitals may not be able to offer it to all children because of a shortage of personnel. However, several studies [20] that have compared different methods of preparing children for hospitalization, have demonstrated that a programme composed of extensive information with extended personal contact and opportunities for participation, was more effective than a videotape.

#### 5. Conclusion

Health care for hospitalized children should be of a multi-dimensional nature and it requires the best possible combination of methods and strategies for intervention. Most of the intervention guidelines described can be readily adapted to specific situations. Thus there is a need to know the procedures and techniques as well as the comparison and evaluation of the various approaches used. This will permit us to design and carry out appropriate programmes of intervention and psychopedagogical treatment, in order to reduce anxiety in hospitalized children [21].

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