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The autogenic training on dialysis as a mental place of serenity and well being

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ABSTRACT

Background: Chronic kidney failure (CKF) and consequent haemodialytical treatment envolve a particular viewpoint that has to include not only the purely physical and medical range, but also the psychological one. The complexity of sensations and feelings caused by this chronic condition are loss, wear, commitment, fear, resignation, rage, compulsion for a totally machine depending life. These factors create a considerable psychological damage that cannot be underrated because they express the whole body–mind involvement so much to affect, heavily, all lifestyle.
Methods: The autogenic training (AT) is a method to reduce psychological sensations such as anxiety, depression and distress. Introducing it in the two haemodialysis units belonging to the same private hospital has been an innovation.
Results: The great number of the treated persons has given us widely convincing results and a proved efficacy. As a matter of fact, the psychological symptoms of anxiety, depression and distress have significantly decreased in the experimental group [p<0,001], on the contrary they have increased in the control group [p<0,050]. The comparison between the groups has also pointed out this statistically meaningful data [p<0,001]. The present research project includes the psychological therapies into the nephrological context, and it verifies and analyses the previous projects which developed Psycho-nephrology.
Conclusions: The psycho-neuro-endocrine-immunology (PNEI) and the World Health Organisation (WHO) support these knowledges and invite health workers to do this experience (with the convinced evolvement of multidisciplinary team) preferring the holistic approach to the person considering his/her remarkable psychic pain. The use of the AT method reduces a lot not only the psychological pain but also the physical one. This is a kind of pain therapy for the patient well-being.

Keywords: *Autogenic Training; Hemodialysis; Psycho-Nephrology; Psychological Pain; Psychological and Physical Wellness; Holistic Approach*

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Introduction

A careful and thorough bibliographic research showed that the autogenic training (TA) holds scientific validity in respect of reduction of symptoms in subjects with medical conditions of different types including: oncological diseases, HIV, migraines and headaches, essential hypertension, coronary heart disease, functional disorders of sleep, open angle glaucoma, somatoform pain disorder, Raynaud's disorder, atypical eczema, idiopathic infertility (Stetter, Kupper, 2002).

It's the first time that it is used to find the reduction of symptoms such as anxiety, depression and distress in patients who carry out the hemodialysis treatment.

The only existing work has considered this treatment, exclusively, for the reduction of blood pressure in dialysis (Lucarelli, Di Landro, 1982).

The chronic renal failure is a clinical condition characterized by an irreversible loss of renal function which forces the patient to a permanent dependency on renal substituted therapy (dialysis), alternatively there is only the transplant. This substitute treatment is performed in clinic with an average frequency of three times a week and it has a duration of 4 hours. The patient affected by chronic renal failure, who is forced to go into dialysis *conditio sine qua non* to continue to live, is having to face an experience that is a real cognitive-emotional catastrophe, which breaks the rhythm of life, upsets personal resources, put the emotional bonds through an ordeal and destroys the plans for the future. The sense of constraint, obligation, the impossibility to choose and, sometimes, the resignation are almost always present in patients who undergo haemodialysis.

Chronic diseases, such as nephropathy, can lead next to a possible psychosomatic response a similar important expression somatopsychic, represented by the influence that the presence of an organic pathology has on mindset. In the chronic nephropathic patient, then, this aspect is so important to build, with the passing of time, a psychological distress superstructure that possesses typical characteristics, generated by the state of health and the consequent variations. This discomfort shows the emotional cost of dialysis treatment so its consequences become, over the time, an important economic cost of mental resources that is expressed through:

- symptoms: pain, hypo- or hypertension, insomnia, psychosomatic disorders, etc. ...
- behaviors: that go from liabilities to the refusal, to the negativism, need to control, forms of self-heterodirected aggressiveness; the latter in extreme cases can lead to case of withdrawal that is the voluntary abandonment of the dialysis treatment.
- compliance: patients that don’t respect the diet, don’t control the increase of interdialytic weight, fluid intake, medications, lack of perseverance, demotivation, little cooperation, etc...

- Adaptation: the emergence of anxiety, depression, anguish, feelings of abandonment, reduced energy, etc...

Haemodialysis, is an irrepressible constraint, a relentless constant, a priority that dictates times, spaces and ways of life, because life doesn't depend by the subject but by the object. It's easy to see in these patients' feelings of anxiety, fear, tension, they feel perpetually alternate between life and death much more effectively than any other healthy individual. The patient-machine relationship is characterized by ambivalence and conflict, not always recognized. In fact, if it is the medium that allows him to live and towards which are directed feelings of gratitude, at the same time it is what limits and brings suffering. Give relief to the "emotional suffering" of patients with organic disease, so grievous, should request a psychological intervention which is fundamental. In a view of the patient's total care so it allows him to achieve advanced levels of adaptation and to maintain a good compliance.

It is hypothesized that these patients, according to the above implications, require a treatment suitable to their somatopsychic necessity, that autogenic training should perform being a method of choice for these types of issues. In consideration to its characteristics and to its results and through a reduction of the emotional resonance they'll have an existence calmer and more balanced, as is apparent from a detailed analysis of the literature.

According to experts in this technique, Agrò, Bertirotti, Li Petri, Micarelli, Marra, Petruccelli (2011), the benefits arising from its application are: the rapid recovery of energy, self-induction for calm, self-regulation of bodily functions, improvement of the performance, decrease of pain perception, self-determination, introspection. The AT, known and spread in the whole world as a relaxation technique and method of psychosomatic aid, drawn by Schultz, the German neurologist and psychiatry, in 1932, was the result of years of studies and research in the field. The training to the exercises of the AT allow to achieve immediate psychological and physical benefits and a long-term effect. The change of the negative psychological and physical processes has the purpose of achieving a higher harmony with ourselves and with the world. Who has forgotten how to live consciously and thinks continually about tomorrow as a precarious future) or is attached to the past (the one that is no more), who doesn't succeed to seize the *hic et nunc*, the here and now, will be induced, through training, to focus on the present. Direct the attention upon themselves allows to an immediate commutation: the ability to keep calm. The AT, being a method to achieve the self-relaxation with concentration, is an intervention on themselves. Who has learned it, can "disconnect" (the term is used as contrast to having to sit still for hours while attached to a machine) and commute himself, become calm, and remain in this way.

The capacity of the memory to evoke sensations through mental images, advisably chosen, can make real and present these positive feelings, even in the absence of specific stimuli. This opportunity to consciously create a different mindscape, sometimes produced by the mind, makes even more unbearable a life condition that is already so restricting and "ruminated" (physical rumination: the blood in a continuous circulation between body and machine; mental rumination: the need to constantly think that your life depends on a machine automation) from chronic treatment. Through the AT the patient acquires gradually changes in the muscle, vascular function, cardiac and respiratory activity, autonomic balance, and in the level of consciousness. We can well understand how these goals are highly desirable in the life of a dialysate. The purpose of this research, the experimental hypothesis was: verify the effectiveness of autogenic training (AT) through the reduction of symptoms belonging to the psychic and psychosomatic diseases and the reduction of distress.

Method

Participants/Subject

The final sample of this research project is made up of 92 patients receiving regular haemodialysis, at the clinic "Nuova Villa Claudia", located in Rome, Via Flaminia Nuova 280.

The original sample was larger, of 115 subjects, but it occurred a 20% drop-out due to transfers and deaths.

The subdivision of the sample in the two groups has occurred, given the huge number of the sample, using the method R (random).

More than half of the sample, consisted of 52 patients:23 males and 29 females, aged between 35 and 86 years, with an average age of 60 years, has been included in the experimental group.

The remaining number, consisted of 40 patients, 35 males and 5 females, aged between 33 and 91 years (average age 70 years), has been inserted in the control group.

On average, the treatment lasted 61 months, and the school 10 years, in the experimental group, while the treatment lasted 71 months, and the school 10 years, in control group.

All patients have been informed about the modalities of participation in research and they have written informed consent.

Procedure and Measures

Initially all patients have been subjected to the administration of the scales and to the inventories of anxiety, depression, distress.

For the evaluation of anxiety and depression HADS (Hospital Anxiety and Depression Scale, Zigmond and Snaith, 1983) has been administered, a questionnaire specifically developed to recognize anxiety and depression in patients with organic disease.

The instrument consists of two scales of 7 items each: one for the evaluation of anxiety and the other for the assessment of depression. The answer to each item is given using a Likert 4-point scale (0-3). An anxiety and depression score are calculated, both variable from 0 to 21.

The instrument showed good psychometric properties and high internal consistency with alpha Crombach variable between 0.83 and 0.85 (Costantini et al., 1999).

State Trait Anxiety Inventory - Form Y (STAI-Y) is a tool made up of two sub-scales to assess separately anxiety: tract (Y-1) and state anxiety (Y-2), each one consisted of 20 items. The items are valued on the basis of a 4-point scale (1 to 4) corresponding to the "Y-1 Form" to: "Not at all", "A little bit" "Enough" "Very much ", for the "Form Y-2 to" Rarely“, " sometimes“, " often”, "almost always ".For each scale, the score can vary from a minimum of 20 to a maximum of 80. The instrument has had a huge spread, so much that it has been translated into over 40 languages and dialects, and it has been widely used for cross-cultural studies.

Beck Depression Inventory (BDI) is a questionnaire made to identify a quantitative assessment of the intensity of depression. The scale has been specifically designed to measure “behavioral manifestations of depression”. Its main feature is that the quantification criteria are well defined for each item. Each severity level corresponds, in fact, to a specific definition. Among these, the patient has to choose the one that best describes his condition.

This instrument scans a relatively narrow range of symptoms, excluding those related to anxiety symptoms and other accessories, therefore it is the most specific self-assessment tool for depression. It consists of 13 items that described core symptoms, those that a depression correlated with the hospitalization can present, characterized by: sadness, pessimism, sense of failure, dissatisfaction, guilt, worthlessness, self-aggression, social withdrawal, indecisiveness, self-change image, difficulties in work, fatigue, anorexia. The answers have a score according to Likert scale from 0 to 3.The range of the total score is 0-39, moreover, if the total is between 10 and 19 points can be in the presence of a mild depression, if it is between 20 and 29 points you could treat moderate depression, while a higher score 30 points indicates a severe depressive symptom.

The stress thermometer is a scale which consists to give a self-assessment of the level of distress or emotional discomfort by a score from 0 to 10 based on a number of statements concerning the presence in the life of the subject of problematics concerning the physical, practical, relational, emotional, spiritual sphere.

After an initial period of assessment related to the compilation of the tests listed above, we proceeded to the application of the treatment (AT) only for the experimental group.

The characteristics, the methods, the historical notes of the technique were explaining. The experimental group performed the AT for nine months. After that, the same assessment tests listed above have been replicated to both the experimental and control groups. The scoring of the tests was carried out by another specialist with the double-blind mode. The plan of research was combined: comparison within the group (experimental and control groups before and after training), comparison between groups (experimental and control group).

Results

Analysis Methods

Categorical variables were expressed as number and percentage, numerical variables such as mean, median, standard deviation, minimum and maximum. The statistical software used was SPSS for Windows, version 17.

Descriptive statistics

The following table 1 describes the number and percentage of subjects in relation to gender belonging to two groups

	Experimental Group		Control Group	
	f(x)	%	f(x)	%
F	29	55.8	5	12.5
M	23	44.2	25	87.5
Total	52	100	40	100

Table 1 - Frequencies for categorical variables in relation to gender in experimental and control group

The table 2 shows descriptive statistics for numerical variables: mean, medium, standard deviation, minimum, maximum of the results of the tests in two different months: February (pre-training) November (post-training) for two groups, experimental and control ones.

These descriptive statistics, moreover, examine the mean, medium, standard deviation, minimum, maximum of the age, years of school, months of haemodialytical treatment, on the month of February.

Experimental Group										
	T1: February					T2: November				
	M	Me	SD	Min	Max	M	Me	SD	Min	Max
Age	59.60	58.50	12.95	35	86					
Years of school	10.37	10	4.76	2	18					
Months of treatment	61.94	48	59.14	.25	228					
STAI1	48.44	48	9.42	29	71	33.21	32	7.28	21	53
STAI2	48.62	47	12.05	4	75	33.90	33	9.36	20	61
STRESS	6.79	7	2.30	2	10	4.17	5	2.53	.00	10
BECK	8.83	8	5.17	2	25	2.88	2	3.25	.00	14
HADS A	8.25	8	4.04	1	19	3.54	3	3.48	.00	15
HADS D	8.46	8	3.59	3	19	3.44	2.5	2.50	.00	9
Control Group										
	T1: February					T2: November				
	M	Me	SD	Min	Max	M	Me	SD	Min	Max
Age	70	72	14.80	33	91					
Years of school	10.32	9	4.96	2	18					
Months of treatment	71.56	48	76.24	.25	360					
STAI1	38.65	37.5	8.33	22	61	44.5	44	10.77	29	69
STAI2	40.05	38.5	9.84	24	61	42.65	39.5	9.72	23	64
STRESS	5.15	5	2.58	.00	10	6.3	6	2.73	.00	10
BECK	4.1	3	3.38	.00	16	7.1	5	5.4	.00	23
HADS A	5.17	4	3.86	.00	15	7	7	4.53	1	19
HADS D	5.6	5	3.75	1	17	7.75	7	3.56	2	17

Table 2 It shows descriptive statistics for numerical variables in experimental and in control group in February and in November.

Data Analysis

The Wilcoxon test has been used to evaluate, separately within each group, the variation of the indicators in the two instants of observation: February vs. November. Table 3 summarizes the Wilcoxon test results within the two groups separately, values that indicate the variation of the scores in the psychometric tests used (Stai 1, Stai 2, Stress thermometer, Beck depression inventory, Hads A and Hads D) before (February) and after training (November). These tests provide the ability to measure the dependent variables.

Experimental Group				
	Means - T1: February	Means - T2: November	Wilcoxon	p-value
STAI1	48.44	33.21	-6.040	.00000
STAI2	48.62	33.90	-5.561	.00000
STRESS	6.79	4.17	-5.007	.00000
BECK	8.83	2.88	-6.065	.00000
HADS A	8.25	3.54	-5.488	.00000
HADS D	8.46	3.44	-5.936	.00000
Control Group				
	Means - T1: February	Means - T2: November	Wilcoxon	p-value
STAI1	38.65	44.50	-4.364	.0000
STAI2	40.05	42.65	-2.162	.0306
STRESS	5.15	6.30	-3.667	.0002
BECK	4.10	7.10	-4.885	.0000
HADS A	5.17	7	-4.341	.0000
HADS D	5.60	7.75	-4.360	.0000

Table 3 Wilcoxon test for comparing outcomes (February *vs.* November) in experimental and control groups

In reference to all the indicators (STAI 1, ..., HADS-D) in the experimental group were recorded significant decreases between February and November because the p-values of Wilcoxon test are highly significant, namely <0.001. In experimental group, the psychological symptoms, as we can read from the table 3, are decreased for each test used with large statistical significance (p <0.001). While, in control group, the psychological symptoms, as it can be read from the table, are increased in each test used with statistical significance (p <0.050).

As in the control group as in the experimental one, for all indicators (STAI 1, ..., HADS-D) there has been significant differences between February and November being the Wilcoxon test p-value nonetheless significant, p<0.050 and as it can be seen from the analysis of descriptive statistics (table 4).

Experimental Group		
	Means - T1: February	Means - T2: November
STAI 1	48,44	33,21
STAI 2	48,62	33,90
HADS- A	8,25	3,54
HADS-D	8,46	3,44
BDI	8,83	2,88
Stress thermometer	6,79	4,17
Control Group		
	Means - T1: February	Means - T2: November
STAI 1	38,65	44,50
STAI 2	40,05	42,65
HADS- A	5,17	7
HADS-D	5,6	7,75
BDI	4,1	7,1
Stress thermometer	5,15	6,3

Table 4 It shows descriptive statistics in experimental and in control group in February and in November

Even the comparison between the tests indicates a confirmation that it has occurred a change both in the experimental group (in terms of improvement) and in the control (in terms of deterioration). Specifically, the HADS, being a test, which includes in itself the two sub-scales of anxiety and depression, reinforces the results of the other two tests STAI for anxiety and BDI for depression, having the same change trend.

The Mann Whitney test was applied to identify the existence of statistically significant differences between the two patient groups (experimental and control), for all indicators examined.

The predetermined level of significance is $\alpha = 0.050$; therefore, the p-value considered statistically significant were lower than 0.050 ones, for the two-tailed test.

The application of the Mann Whitney test helps to highlight the existence of significant differences between the experimental and control group, with reference to all the indicators examined. By examining the descriptive statistics, in fact, it is known as the average values of the subjects in the experimental group are higher than in control subjects on February, whereas on November this values reverse. This relationship is statistically significant, as demonstrated by the p-values of the test (table 5) which are all highly significant ($p < 0.001$). This means that the change between the two groups was statistically significant between February and November.

	T1: February		T2: November	
	U di Mann-Whitney	p-value	U di Mann-Whitney	p-value
STAI1	440	.0000	394.5	.0000
STAI2	575	.0002	513.5	.0000
STRESS	655	.0022	614.5	.0007
BECK	425	.0000	447.5	.0000
HADS A	547.5	.0002	525	.0000
HADS D	547.5	.0001	322	.0000

Table 5 The Mann-Whitney test compares the two groups, on February and November, as regards the measurement of dependent variables through psychometric tests.

Comments and Conclusion

To improve the compliance of patients is necessary to start a project of preparation for setting on medical and paramedical staff. This is necessary to obtain an effective interdisciplinary collaboration in the interests of the maximum effectiveness of the treatment. The design of a collaboration between Psychology and Nephrology, can then take place where there is an interest in the management of the patient's suffering in a holistic way, in accordance with the dispositions of WHO (World Health Organization) and that "The autogenetic training on dialysis as a mental place of serenity and wellbeing" wanted to reflect.

The quality of life is defined by WHO as "the perception operated by an individual of his position in life, in the context of the culture and of its value systems and in relation to its objectives, expectations, to its standards and its concerns (WHO, 1993). It conceives the health not as the absence of disease, but as full functionality achieved through integration of medical, psychological and social dimension of disability.

The dimensions of the quality of life according to the WHO are shown in the following table 6.

From these considerations and from the results reported above, it is clear how and how much important it is to continue, at international level, in the wake of this project to fulfill the WHO

guidelines and the Association of Kidney Patients ones, considering the psychological support as a essential right of dialysis patient.

Areas	Aspects
Physics	Pain discouragement Energy Weakness Sleep Rest
Psychological	Positive feelings Thought Learning Concentration Self-Esteem Body Image Exteriority Negative feelings
Level of Independence	Mobility Daily activities Dependence on treatments and cares Working capacity
Social relations	Interpersonal relations Social care Sexual Activity
Environmental	Physical security Domestic environment Financial resources Accessibility and availability ofhealth care and social opportunities of new knowledges Participation and availability toentertainment and free time Physical environment (pollution, noise, traffic, climate) Transportation
Spiritual	Spirituality Religion Personal conviction

Table 6 - The size of the quality of life according to the WHO.

In the present study, we have examined the consequences on the psychophysical structure of patients suffering from chronic renal failure who underwent haemodialysis treatment. It has also been hypothesized to examine these characteristics with a suitable psychophysical technique, such as autogenic training to be able to evaluate their effectiveness on aspects such as depression, anxiety and distress. The results show that the training is an effective technique to evaluate these problems and these characteristics of the patients. In fact, thanks to the combined research plan, it was possible to examine the trend of psychological characteristics (state and trait anxiety, depression, distress) in the two independent groups (control and experimental) and in the two compared groups. Looking at the data and statistical analysis, we can see that in the control group these aspects got worse and in the experimental group improved. Also, the comparison between these two groups

shows significant differences, for all these psychological aspects mentioned above and examined through sensitive tools. In fact, even with regard to the choice of instruments and methodologies, a test that investigates together depression and anxiety, like the HADS, was able to give an additional confirmation of the results obtained by the other two instruments that evaluated these two variables separately.

Despite some drop-outs, the sampling plan was not altered, such that the control method of the disturbance variables remained the R.

A limit still present consists in not having been able to extend the search to other clinics or hospital to ascertain their external validity.

Being a longitudinal search, another element that will be considered is the possibility to carry out follow-up phases. Evaluations are in progress to improve the limits of this research.

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