Psycho-social assessment of patients with chronic renal diseases undergoing dialysis.

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Abstract

Our study focused on patients undergoing dialysis, in order to assess the relations of influence between self-efficiency, anxiety, depression and compliance to treatment for these patients. Research group: 72 patients, both sexes, aged between 45 and 70, from Gral Dialysis Center in Bucharest, (under treatment 2 to 7 years).

Methods: Self-Efficiency Scale (SES), HADS, SF-36. Results were interpreted psycho-clinically and statistically-mathematically. We identified differences between groups of age and sexes – considering the period of time under treatment. Results confirmed our hypotheses; the information we got became rules of conduct for the patients with renal chronic diseases - the role of the family proved important in reaching bio-psycho-social balance in the life of the sick.

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1. Introduction

Besides the chemical treatment for clinical renal diseases, as well as for acute renal failure (ARF), we also use dialysis. Dialysis uses the diffusion and convection physical-chemical process across a semi-permeable membrane that separates the patient’s blood from a hydro-electrolytic solution, in order to purge the retention substances.
In Romania, during the last decade, it was noted a significant growth of the prevalence and incidence of terminal renal failure (TRF), that needs initiating of renal replacement therapies. Following a recent study, the incidence and prevalence of TRF increased 3 to 6 times between 1995 and 2003 respectively (Budurca, Delia, 2011). The chronic renal disease is 11.4% prevalent for the general population in Romania, but it expands at a 50% rate for approximately 10 years, as the Romanian authorities are not preoccupied with evaluating this disease during the incipient stages of development.

1.1. Dialysis

It is a method of extracorporeal removal of waste products from the blood and it offers the hydro-electrolytic and acido-basic balance required. Nevertheless, this method cannot replace the endocrine and metabolic functions of the healthy kidney.

1.2. Quality of life and management of chronic diseases.

The concept of “quality of life”, viewed from all perspectives that can be open in the context of treatment of the chronic patient, as described by Paul L. Kimmel (2001), represents the way patients adjust to a certain medical conditions; the researchers are interested in evaluating the patient’s perception on the effects of the therapy, while organizations offering medical services are interested in evaluating the patients’ satisfaction with the services they received. Recent studies, as the author observes, have as priority the measurement of the quality of life, as result only or as a predictor of other results deriving from the treatment of the chronic patient. When distinguishing between measurements of the quality of life for the general population and that of patients with chronic diseases, it is necessary to individualize a notion linked specifically to the experience of the disease, notion that is named “the quality of life directly linked to healthiness” – Health Related Quality of Life (Kimmel, P.L., 2001).

Due to the significant changes of life style determined by the dialysis treatment of the patient, individual distress is high. To its intensity we have to add the fact that the patient is confronted with an incurable disease, which means irreversible. Moreover, as some older studies pointed out, the anxiety of the patients confronted with the procedure of the treatment is increased due to this being an invasive procedure and there is always the risk of some accidents or mistakes that could accompany it (Nichols, Springford, 1984).

As for the latest researches concerning compliance, some variables were identified, variables that influence it: the patient’s specifics, the relationship between the patient and medical staff, the structure of health system. The characteristics of the disease and its treatment were less studied, especially from the patient’s point of view, considering that the patient is, ultimately, the key that describes and explains the degree of compliance of the patient (Rundall, & Weiss, 1998).

1.3. The Objectives of Our Study

They are the following:

- Identification of the factors inherent to the quality of life and that are influenced by the levels of self-efficiency;
- A description of the relations of influence between self-efficiency, anxiety, depression and compliance to treatment;
- Our special objective is to propose a design for intervention for increasing self-efficiency, in order to diminish the symptoms of anxiety and depression and of the lack of compliance to the treatment for the patients undergoing dialysis.

The study of self-efficiency and compliance to treatment of the patients undergoing dialysis was intended to identify how self-efficiency and compliance to treatment are influenced by general conditions of life and the characteristics of our group. For this reason, the main objective of our study is to identify the relations of partial determination between quality of life, personal aspects of the patients and presence of signs of anxiety or depression, as well as self-efficiency and compliance to treatment.
1.4. The Hypotheses of Our Study:

a) There is a relationship of influence between the level of self-efficiency and anxiety, as well as depression. A high level of self-efficiency is associated with a low level of anxiety and depression;
b) There is a relationship of influence between the duration of treatment and the level of compliance to the treatment;
c) There is a relationship of influence between self-efficiency and the dimensions of the quality of life. The quality of life is better when self-efficiency is higher;
d) There is a relationship of influence between the level of self-efficiency and that of compliance to treatment. A high level of self-efficiency determines a high degree of compliance to treatment;
e) A high level of self-efficiency is a good predictor for greater compliance to treatment and a better quality of life;
f) Self-efficiency, anxiety and depression are predictors for compliance to treatment, for the patients undergoing dialysis.

2. Methods of Research:

Participants: 72 persons with chronic renal disease undergoing dialysis treatment participated in the study. They all have been informed about the study procedures and signed the consent form. They all were patients of the “Gral Medical” Private Dialysis Center in Bucharest. 65% of the patients were men and 35% women; most patients were aged between 56 and 65 years of age (47%) and we had only 15% patients aged between 46 and 55 years of age. As for the time span they underwent dialysis, 21% of the patients were following it for 2 years or less, 44% at least 2 years, but not more than 6 years, and 35% followed it for more than 6 years.

Experimental design: it is a simple one, with only one group of participants that were participating in all the measures.

Procedure: after the informed consent have been signed, the patients participating in the study were visited by the research operator during the treatment dialysis period. The first session of discussion with the patients was approved by the medical care staff and aimed to connect with the patients, to establish a communication connection, to get to know his life and disease story if the patients wanted to self disclose. In the next session the purpose of the study was recalled and the operator asked the patients the items of the three research instruments. From the medical records the operator gained the information about the age, the exact treatment length and the compliance indicator, in order to be correlated with other variable resulting from the scales.

Self-Efficiency Scale – it was created to evaluate the general image of self-efficiency observed for a person, in order to become a predictor of the fight against daily problems, but also to measure the adjustment after surpassing different stressful life events. This instrument was built by Ralf Schwarzer and Matthias Jerusalem in 1979, in the German version and today it is available in 33 languages.

MOS-SF-36 – Medical Outcome Study – Short Form 36. It is a generic instrument for the measurement of health, developed and tested at New England Center, Medical Outcome Studies. It is a multidimensional concept measuring the quality of life, covering important fields in health, all grouped in 8 scales: the physical function, the social function, the physical role, the emotional role, mental health, vitality, somatic pain, general state of health.

HADS – Hospital Anxiety and Depression Scale. It was developed by AS Zigmond and RP Snaith in 1983, in order to detect the anxiety and depression symptoms of a patient in a hospital environment. It has proved to be a useful self-evaluation instrument, comfortable for the patients with somatic and mental difficulties.
3. Results

In order to capitalize the relationship between self-efficiency and anxiety, depression respectively, we used the **Pearson-2 tailed correlation**. The results for all patients in our group indicate there are statistically significant relationships (Sig=0.000 – compared to 0.05 materiality threshold) between self-efficiency and anxiety, as well as between self-efficiency and depression.

Absolute values of the correlation factors indicate an average power of the relationship between self-efficiency and anxiety (P=-0.405) for women and a slightly more powerful relationship (P=-0.666) for men, which means that **men’s self-efficiency is more damaged by anxiety symptoms than women’s self-efficiency**.

**Table 1:** The relationship between self-efficiency and anxiety for the women group:

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>Anxiety</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>-.405</td>
<td>.045</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

Absolutes values of factors indicate a more powerful relationship for women, between self-efficiency and depression (P=-0.702) and a weaker relationship for men (P=-0.475), which means that **depression damages in a more significant way women’s self-efficiency, as compared to men’s self-efficiency, in this case**.

**Table 3:** The relationship between self-efficiency and depression for the women group:

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>Depression</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Women</td>
<td>-.702</td>
<td>.000</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

**Table 2:** The relationship between self-efficacy and anxiety for the men group:

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>Anxiety</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>-.405</td>
<td>.045</td>
<td>25</td>
<td></td>
</tr>
</tbody>
</table>

**Table 4:** The relationship between self-efficiency and depression for the men group:

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>Depression</th>
<th>Pearson Correlation</th>
<th>Sig. (2-tailed)</th>
<th>N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Men</td>
<td>-.475</td>
<td>.001</td>
<td>47</td>
<td></td>
</tr>
</tbody>
</table>
For the group of patients aged between 46 and 55, Pearson 2-tailed Test indicates a significant relationship between self-efficiency and anxiety, for a materiality threshold of 0.05 (Sig=0.000). The value of the factor is negative, which means that self-efficiency decreases with higher levels of anxiety. The absolute value of the factor is 0.607, fact that indicates a **moderate relationship between self-efficiency and anxiety, for this group of age.**

**Table 5:** The relationship between self efficacy and anxiety for the 46-55 years of age group:

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>Men</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Pearson Correlation: -.475</td>
</tr>
<tr>
<td></td>
<td>n: 47, Sig. (2-tailed): .001</td>
</tr>
</tbody>
</table>

The results of Pearson 2-tailed Test applied in order to identify the relationship between depression and self-efficiency for each group of patients - taking into account that they were under treatment for less than 2 years – show us that they have the greatest risks of being affected by depression. The absolute value of the factor P=-0.946 show that the influence of depression on self-efficiency for this group of patients is quite powerful.

**Table 6:** The relationship between self-efficacy and depression for the group of patients with the treatment period lower than two years:

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>Less than 2 years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Pearson Correlation: -.946</td>
</tr>
<tr>
<td></td>
<td>n: 15, Sig. (2-tailed): .000</td>
</tr>
</tbody>
</table>

As for the patients under treatment for more than 6 years, the relationship between depression and self-efficiency is statistically significant for a materiality threshold of 0.05 (Sig=0.006). The more powerful depression is, the lower would be self-efficiency but the moderate power of the relationship given by the absolute value of the factor P=0.537 indicates that in this case, besides depression, some other factors might be present, factors that lead to a decrease of self-efficiency.

**Table 7:** The relationship between self-efficacy and depression for the patients under treatment for more than 6 years

<table>
<thead>
<tr>
<th>Self-efficiency</th>
<th>6 years or more</th>
</tr>
</thead>
<tbody>
<tr>
<td>Depression</td>
<td>Pearson Correlation: -.537</td>
</tr>
<tr>
<td></td>
<td>n: 25, Sig. (2-tailed): .006</td>
</tr>
</tbody>
</table>

The second statistically significant relationship for a materiality threshold of 0.05 (Sig=0.016) appears in the group of patients under treatment for 6 years or more. For these patients too, change in one direction (increased or decreased) of the compliance to treatment leads to a change of self-efficiency, but the value of the factor P=0.478 indicates a relationship rather moderate between the two states, which means that the changes affecting the two could also be determined by other factors.

Pearson 2-tailed Test applied to all participants to our study indicates that there is a statistically significant relationship between self-efficiency and healthiness. The absolute value of the factor P=0.395 show a moderate to low relationship, which means a lower influence of one of the indicators over the other one.
The average scores obtained for the dimensions of the quality of life and distribution of scores indicate the following: we had scores above average for dimensions like physical role, somatic pain, social function, emotional role and mental health. By comparison, people with less signs of depression had only the physical function slightly better than the average.

The hypothesis suggesting that a high level of self-efficiency is directly linked to a good quality of life measured by the dimensions we named is partially confirmed by our results. Thus, those with high levels of self-efficiency also have better quality of life, according to the scores registered for each of the investigated dimensions, except for the emotional role, that showed a slightly lower than average score for the entire group.

The results for the groups of age show that the best compliance to treatment is that shown by people aged 66 or more (2.99%), followed by that of the people aged 56-65 (3.21%). The best compliance to treatment was shown by people who underwent dialysis for at least 2 years – 3.15%.

The results obtained after measuring the level of anxiety showed that the best level of compliance to treatment belongs to people who display no signs of anxiety (3.38%) and the lowest level of compliance to treatment belongs to people displaying signs of anxiety – but we cannot say they are truly anxious individuals (4.11%).

4. Conclusions

We noted that there were some situations when self-efficiency correlated with several aspects of the quality of life: the group of patients under treatment for 2 up to 6 years. For the former group, increase of self-efficiency determines an improvement of physical function, of the state of healthiness, of vitality, of the social function, of mental health, but also increase of the score afferent to the somatic pain. As for the latter, we observe that the most powerful relationship is the one between self-efficiency and the physical function.

The force to sustain new patterns of behavior in everyday life, for the chronic patient, depends also on the general self-efficiency, considering the fact that these new patterns should be used daily, in so many different contexts and under the influence of different stressors – and this is one of the most powerful ideas underlying A. Bandura’s theory on self-efficiency (Bandura, 1977).

Our study emphasized the idea that patients participating to dialysis therapy sessions should be combined with a specific medication, in order to control bone-and-joints collateral conditions, cardiac conditions or vascular conditions (control of cholesterol level, of thrombosis), as well as infectious, endocrine, psychiatric, gastro-intestinal conditions, those linked to sleep disorder or the restless legs syndrome (Manley et. al., 2004).

Our study, like other well-known studies, show that the complex treatment applicable to the patients under dialysis is greatly dependent on the responsibility of the patient towards following the treatment. (Federal Register. Conditions for Coverage for ESRD Facilities, 2008).

For our group of study we noted that the new role of the patient in managing his own disease means optimization of the quantity and quality of information and knowledge, together with improvement of abilities to surpass the problems by collaborating with the others, by taking decisions and by changing behavior patterns, as suggested by Lindberg & Lindberg (2008).

As for compliance to treatment, our research indicated that chronic patients who do not benefit from a social support network are subject to a greater risk of not being able to manage the treatment. The same situation applies for those with low income or to those less educated.

Another factor that influences compliance to treatment is depression. This type of behavior is also influenced by the satisfaction the patient gets from interacting with the medical team or with those caring for him.

In order to increase compliance to treatment, we have to take into account the life style of the patients with a chronic renal disease, life style that means being subject to numerous restrictions, thus leading to stress, depression and anxiety, accompanied by a decrease of the quality of life.

References


