Health related quality of life of diabetic and chronic renal failure patients

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Abstract

Health related quality of life is one of the best predictors for morbidity-mortality for chronic patients and one of the main indicators of medical treatment effectiveness. Diabetic and chronic renal failure patients had significantly lower scores on physical and mental health (SF-36 Health Survey), which means that they self-reported a significant limitation of domestic, professional and social activities. It also obtained significant interaction effects between group variable and two socio-demographic variables and two biomedical variables. Because quality of life is a subjective variable, we emphasize the importance of clinical psychologist should intervene to modify the cognitive and affective moderator factors.

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1. Introduction

The extension of life and the improvement of a few functional parameters of the body represent the fundamental objectives of the pharmacological treatment. However, despite the remarkable progress in the field of medicine these objectives have become reductionist, especially in the case of chronic illnesses. For this reason, the clinical research had to analyse the relationship between medical objectives and more general concepts such as the quality of life in relation with health HRQoL (Fallowfield, 1994). HRQoL represents a multidimensional concept, an overall quality of life that is determined primarily by health status which can be modified by medical interventions (Juniper, 1992). This indicator reflects the effects

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of a disease and the medical treatment for it perceived by the patient (Roebuck et al., 2001). Self-evaluation of this concept is influenced by several factors: age, gender, level of expectations, concerns about health status, the severity of symptoms, type of illness and disabilities associated with it, financial situation, social support, family relationships, effects of treatment, spirituality, etc.

Although there is a general agreement regarding the fact that HRQoL represents a multidimensional concept, made of physical, psychological and social factors which require complex measuring instruments, the modality in which every multiple aspect influences the global score of HRQoL for each individual is still unclear.

The conceptual model that was at the basis of SF-36 Health Survey is based on two health dimensions: physical health (physical functioning, mobility, effects of pain, intensity of pain, role limitation due to level of physical health, tiredness, sleep disorders, psycho-physiological symptoms, social functioning, role functioning, etc.) and mental health (psychological distress: anxiety and depression, psychological wellbeing: positive emotions and feeling of belonging (lineage), cognitive functioning, role limitation caused by emotional problems) (Hays et al., 1994).

Diabetes mellitus (DM) affects to some extent the level of HRQoL (Alonso et al., 2004). The magnitude of the impact of diabetes mellitus on HRQoL has been considered to be equivalent to that of heart diseases, cancer and respiratory disorders (Sprangers et al., 2000). Moreover, diabetics with other comorbidities have a lower HRQoL than diabetics who do not present these comorbidities (Visser et al., 2002). For example, Loyd’s study (Loyd et al., 2001) pointed out that diabetics who also presented coronary diseases, peripheral sensory neuropathy or peripheral vascular disorders, have obtained a significantly lower general score of HRQoL than those suffering from diabetes with no complications.

Additionally, the quality of life of the patient with chronic renal failure (CRF) can be altered by the various side effects of dialytic therapy (low blood pressure, muscular cramps, headaches, thoracic or lumbar pain, heavy bleeding, acute haemolysis) and associated treatments, as well as several psycho-social factors (change of professional role, level of self-sufficiency and family relationships). A mental health aspect that is frequently met in dialysed patients is the severe depression symptomatology, which represents an excluded condition from our study.

It is worth noticing that there is not a direct relationship between illness and quality of life, this relationship is mediated by psychological factors which can be influenced by therapeutic interventions. The coping processes imply a realistic evaluation of change of life circumstances, the need to re-evaluate faith and expectations at general and situational level and also involve the adjustment of new expectations and validated goals in day to day practice.

Rose et al. (1998) draws the attention to the fact that, if the patient possesses mature coping strategies, he/she will avoid having negative psychological states like depression, by accepting the illness, applying the action oriented coping; behaviour which relates to a high QoL. Moreover, improvement of QoL is not only a goal itself, but according to the research of Testa and Simonson (1996), it relates to a good adherence to treatment.

2. Present Study

2.1. Purpose of the study

Taking into consideration the variety of side effects related to the Diabetes Mellitus (type 1 and type 2) and CRF treatment, we aim to evaluate the effect of health state on the quality of life of chronic patients. We will also analyse the influence of a few socio-demographic variables (gender, age, level of studies) as well as biomedical ones (chronic or/and acute complications) on the HRQoL of chronic patients.
2.2. Participants

Three groups of patients have been taken into consideration: 82 type 2 diabetics, 32 haemodialysed patients who come from three big university hospitals in Southern and Eastern Romania. For methodology reasons, a control group has been used and it contained 103 clinically healthy participants. The patients were between 40 and 60 years old and they have been selected according to medical data which has been obtained from observation files and based on the screening tests for dementia and depression. 76.8% of type 1 diabetic patients, 63.4% of type 2 diabetic patients and 75% of the haemodialysed patients present at least a chronic complication of the disease (neuropathy, retinopathy, osteodystrophy, cardiovascular disease).

2.3. Measure

Medical Outcomes Study Short form-36 Health Survey (SF-36), a short form QoL scoring system with 36 items is a self-administered questionnaire that was constructed to fill the gap between much more lengthy surveys and relatively coarse single-item measures of the QoL. It consists of 36 questions, 35 of which are compressed into eight multi-item scales: physical functioning, role-physical, bodily pain, general health, vitality, social functioning, emotional role and mental health. Hence, in the SF36 scoring system, the scales are assessed quantitatively, each on the basis of answers from two to ten multiple choice questions. A score between 0 and 100 is then calculated on the basis of well-defined guidelines, with a higher score indicating a better state of health. The scales of SF36 are summarized into two dimensions: physical health and mental health.

The SF36 is a well-documented scoring system that has been widely used and validated as a QoL assessment tool for the general population as well as patients with CRF (Lowrie et al., 2003).

2.4. Results

We have analysed the effect of the independent variable called medical condition (CRF, DM1, DM2 versus control group) on the quality of life in relation with health. The One–Way Anova Test was applied, comparing the performances of the four groups regarding the two generic dimensions: physical and mental health.

Table 1. Differentiation of HRQoL dimensions in chronic patients versus control group

<table>
<thead>
<tr>
<th>Mean difference</th>
<th>Values</th>
<th>pQoL</th>
<th>Sig.</th>
<th>mQoL</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MdiΔm1-control</td>
<td>-4.42</td>
<td>.004</td>
<td>-3.80</td>
<td>.035</td>
<td></td>
</tr>
<tr>
<td>MdiΔm2-control</td>
<td>-6.21</td>
<td>.000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MdiΔcrf-control</td>
<td>-5.14</td>
<td>.000</td>
<td>-4.05</td>
<td>.004</td>
<td></td>
</tr>
</tbody>
</table>

An effect of the medical condition appeared in the results obtained for mental health and physical health, in the way that there are significant differences in physical health area (pQoL) between the control group and the three groups of chronic patients. This means that patients self-report a significant limitation of household and professional activities comparing to the clinically healthy participants.
As far as the area of mental health (mQoL) is concerned, significant differences resulted between the control group and groups of dialysed patients and the insulin-dependent patients. This signifies that patients relate themselves to a significant rise of limitations of activities from the social area.

Interaction effects between medical condition variable and three socio-demographic (gender, age, studies) variables have been analysed. The following important results have been reached:

- The interaction between medical condition and gender regarding mental health: in the men’s group, dialysed patients and those who are not insulin-dependent but type 2 diabetic patients; presents a significantly lower score comparing to the men from the control group.

- The interaction between medical condition and age concerning the physical health: dialysed patients non-insulin-dependent (type 2) diabetics under the age of 50 get a significantly lower score than the control group from the same age category. The insulin-dependent (type 1) patients aged over 50 have a significantly poorer performance than the control group of the same age.

We also analysed the interaction effects between medical condition variable and biomedical variables (haemoglobin, glomerular filtration rate, proteinuria, coma, retinopathy, cardiovascular diseases) and one important result was obtained: the interaction between medical condition and the presence of retinopathy concerning the area of physical health: in the group of participants with retinopathy, the insulin-dependent (type 1) patients obtain a significantly poorer performance than the non-insulin-dependent (type 2) diabetics.

3. Conclusion and discussions

As far as the quality of life is concerned, the chronic patients have obtained significantly lower scores regarding the area of physical health, thing than means they self-reported a significant limitation during the last month of household and professional activities. This was caused by their physical health state (somatic pain, tiredness) and emotional problems (of depressive and anxious kind). DM1 patients also obtained a significantly lower score comparing to the clinically healthy subjects in the area of mental health, thing that means the type 1 diabetics self-report a significant rise in limitations of social activities. This is mainly caused by rise of negative emotions’ level (depression and anxiety) and secondly, by the significant decrease of the positive emotions’ level (tranquillity, happiness). We noticed the fact that the lowest level of the physical area is met in insulin-dependent diabetics and the dialysed ones, based on the increase of the somatic pain and decrease of vitality (lack of hope). When associated with an emotional negative state (emotions of depressive and anxious kind, without pathological intensity), this psychological complex seems to be the most corrosive for the well being of chronic patients. This result is in accordance with various studies which noticed the high prevalence of emotional disorders in diabetic patients as well as dialysed ones, even if the relation between the two variables is still unclear (of psychogenetic or/and neurogenetic nature of depression) and also the significant decrease of level of quality of life (Goldney et al., 2004).

There is several data which confirms that fact that the level of satisfaction regarding the various aspects of the life of a person correlates positively with his/her emotional state. Some theories from the field of quality of life also support the fact that the fundamental element which determines the general level satisfaction is represented by some personality factors. In other words, even though some past events can temporarily modify the wellbeing of the individual, he/she tends to come back to a previous homeostatic level of his own. If we apply this theory to the case of chronic patients, we could understand the fact one of the strongest predictors of the chronic illness, the quality of life, is determined to a great extent by factors which can partially be modulated by psycho-therapeutic interventions and clinical counselling. At the same time, one could understand that coping mechanisms, activated by chronic
patients during the adaptation to the diagnosis process do not do anything else but help the person to get closer to the general level of satisfaction.

From what we have presented above, we can conclude that in Romania, the clinical psychologist should also be a member with full rights in the multidisciplinary team which offers treatment to the diabetic or chronic renal failure patient. This professional can bring a great support in the realization of secondary and tertiary prophylaxis.

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