The level of illness acceptance among haemodialysis and peritoneal dialysis patients

(Stopień akceptacji choroby wśród pacjentów leczonych hemodializami i dializami otrzewnowymi)

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Abstract – Introduction. Chronic kidney disease in Poland affects 16% of the general population. At present, over two million people in the world receive kidney-replacement therapy. In 2007, nearly 17,000 people were treated with dialysis in Poland. The aim of this study is to assess the level of acceptance of illness among haemodialysis and peritoneal dialysis patients.

Material and methods. The study was conducted at the Independent Public Clinical Hospital no. 2 of the Pomeranian Medical University in Szczecin. An analysis was performed based on the information collected from 50 haemodialysis patients and 25 peritoneal dialysis patients. The instrument employed in the study was the Acceptance of Illness Scale (AIS).

Results. A high level of illness acceptance was observed in few respondents: one-fourth of haemodialysis patients and one-sixth of peritoneal dialysis patients. Most patients in both groups obtained average results (19-20 points, with the possible score ranging from 8 to 40 points). Some 32% of haemodialysis patients and 24% of peritoneal dialysis patients did not accept their health status. The respondents felt very dependent on their families and medical staff. They complained of low self-esteem and harboured negative emotions towards their disease. The mean AIS score obtained by haemodialysis patients was 23.52, and by peritoneal dialysis patients – 23.2.

Conclusions. 1. Dialysed patients were characterised by an average level of illness acceptance. 2. The general level of illness acceptance was slightly higher among haemodialysis patients. 3. Peritoneal dialysis patients demonstrated a higher level of illness acceptance in relation to their self-sufficiency and independence from others.

Key words - haemodialysis, peritoneal dialysis, patient.


Celem pracy była ocena stopnia akceptacji choroby wśród pacjentów leczonych hemodializami i dializami otrzewnowymi.


 Wyniki. Wysoką akceptację swojego stanu zdrowia zaobserwowano u niewielkiej części respondentów: jednej czwartej hemodializowanych i jednej szóstej dializowanych otrzewnowo. W obydwu analizowanych grupach wynik średni, w przedziale od 19 do 20 punktów, otrzymało najwięcej badanych (zakres wyników od 8 do 40 punktów). Brak akceptacji obecnego stanu zdrowia wyraziło 32% pacjentów hemodializowanych i 24% dializowanych otrzewnowo. Chorzy mieli duże poczucie zależności od rodziny oraz personelu medycznego. Uskarżali się na niski poziom własnej wartości oraz przejawiali negatywne emocje w stosunku do choroby. Średni uzyskany wynik w kwestionariuszu AIS u osób hemodializowanych wynosił 23,52, a u dializowanych otrzewnowo 23,2 punktu.

Wnioski. 1. Pacjenci leczeni za pomocą dializoterapii charakteryzowali się średniim stopniem akceptacji swojej choroby. 2. Pacjenci hemodializowani wykazali nieco wyższy ogólny poziom akceptacji choroby niż osoby dializowane otrzewnowo. 3. Wśród pacjentów dializowanych otrzewnowo w porównaniu do hemodializowanych wyższy stopień akceptacji choroby dotyczył obszarów związanych z niezależnością od innych i większym stopniem samowystarczalności.

Słowa kluczowe - hemodializa, dializa otrzewnowa, pacjent.

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INTRODUCTION

In the United States, there are over 400,000 dialysis patients and their average age exceeds 60 years. In the year 2020, the number of patients subjected to dialysis therapy will exceed 600,000 [1]. In Poland, chronic kidney disease affects 16% of the general population. In 2004, among people suffering from kidney disease, 29.5% lived with a transplanted kidney and the number of dialysis patients was 17,500. Patients subjected to haemodialysis (HD) constitute 91.4%, whereas patients subjected to peritoneal dialysis (PD) account for 8.6%. At present, over two million people in the world receive kidney-replacement therapy [2].

In Africa and Latin America, where the gross national income is very low, mortality as a result of end-stage kidney injury reaches 95% [2]. In the chronic dialysis programme, the annual mean mortality ranges from 12% to 20% [3].

The development of kidney-replacement therapy was significantly influenced by Graham who in 1854 introduced the notion of “dialysis” to the literature on the subject [4]. B.R. Richardson, an English scientist, presented in 1889 a novel idea of blood dialysis using a semi-permeable membrane [5]. J.J. Abel, B.B. Turner, and L. Rowntree created in 1913 the world’s first haemodialysis apparatus, which they tested on dogs. In 1924, G. Haas performed a dialysis which was the first kidney-replacement therapy method applied to a person, and the second one was performed in 1925 [6]. Three years later he suggested using heparin in the haemodialysis treatment [5]. In 1934, Balazs and Rosenak performed peritoneal dialysis on two patients. In the 1950s, Doolan performed peritoneal dialysis in difficult battlefield conditions [4]. The precursor of haemodialysis was W. Kolff, who performed this treatment in 1943 on patients with chronic kidney disease [7]. N. Alwall created the artificial kidney in 1946. G. Murray as well contributed to the development of medicine because he performed haemodialysis with his own apparatus the same year [6]. W. Quinton and his collaborators created in 1960 an external arteriovenous fistula. In 1961, S. Shaldon inserted a self-made catheter into the femoral vein and femoral artery [7]. In 1966, another arteriovenous fistula was created by K. Appel, J. Cimino, M. Brescia, and B. Hurwich. [6]. As far as Poland is concerned, the first haemodialysis treatments were performed in the year 1958 in Poznań [8].

The most frequent syndromes leading to the diagnosis of kidney disease include: acute kidney injury, chronic kidney disease, acute nephritic syndrome, nephrotic syndrome, urinary tract infection, urethral syndromes, hypertension and asymptomatic changes in urine [9].

Dialysis therapy is a treatment using dialysis whose task is to replace the excretory activity of the kidneys. Kidney transplantation and dialysis are called kidney-replacement therapy because they may help people survive even for many years without kidneys or when their kidneys are completely damaged [10]. The purpose of kidney-replacement therapy is the removal of uraemia symptoms, balancing of metabolic disorders and extending the life expectancy of the person dialysed [11]. The direct indication to start dialysis is the decline in the estimated glomerular filtration rate (eGFR) below 20ml/min in diabetic patients and below 10ml/min in non-diabetic patients. Other indications to initiate this type of therapy are: resistant hypertension, clinical symptoms of uraemia and a high hyperphosphataemia, hyperkalaemia resistant to pharmacotherapy, severe metabolic acidosis, deteriorating malnutrition, and overhydration [12]. Other clinical symptoms include: impaired consciousness, purpura, pericarditis, bleeding from the gastrointestinal track, body weight loss as well as vomiting and nausea [11]. In the entire world, there are three major contraindications to dialysis therapy, i.e. the lack of patient’s consent, metastatic cancer and a co-morbidity of other systems or organs where this type of treatment will not improve the patient’s quality of life [13].

Haemodialysis and peritoneal dialysis are the two basic types of dialysis therapy. The choice is determined by clinical indications and their availability [4]. In the USA and Europe, over 75% of the elderly patients are subjected to haemodialysis [14]. The patient himself, as an active participant in the treatment, may have a considerable influence on the selection of the dialysis method [12].

The level of illness acceptance makes it possible to establish the intensity of negative emotions and reactions affecting the patient, whose source are the disease itself and
the treatment applied. A higher level of acceptance points to a smaller degree of suffering from the negative effects of the disease and treatment. In order to assess illness acceptance among PD and HD patients, the AIS (Acceptance of Illness Scale) created by B.J. Felton, T.A. Revenson and G.A. Hinrichsen and adapted to the Polish conditions by Z. Juczyński has been used. The scale ranges from 8 to 40 points and the higher the score, the greater the level of illness acceptance shown by the patient [15].

II. MATERIALS AND METHODS

The study was conducted at the Independent Public Clinical Hospital No. 2 of the Pomeranian Medical University in Szczecin at the Clinic of Nephrology, Transplantology and Internal Diseases, at the Kidney Disease and Hypertension Clinic, and at the Dialysis Centre. The diagnostic survey method was used to study the dialysed patients. The research technique was a survey and the standard research tool of the Acceptance of Illness Scale was used (AIS), which covers eight tasks reflecting the effects of a poor health. The respondents were requested not only to specify the limitations imposed by kidney disease and dialysis therapy, but also to consider their self-esteem and potential dependence on other people. The respondents were granted full anonymity and data confidentiality, and the results obtained were used for scientific purposes only.

The study had received a positive opinion of the Bioethical Committee at the Pomeranian Medical University in Szczecin.

The survey was conducted in a group of 75 respondents, from whom 50 people (67%) were HD patients, and the remaining 25 (33%) were PD patients. The overall number of men (61%) was greater than that of women (39%). Men subjected to haemodialysis accounted for 64%, whereas women constituted 36% of the entire group. Peritoneal dialysis applied to 56% of men and 44% of women.

The most numerous age group were people aged from 60 to 74, and the number of respondents declined as the average age did. The greatest number of respondents treated with haemodialysis were aged 75-89 (28% of people), whereas the least numerous group were patients aged 18-25 (2%). As regards peritoneal dialysis patients, the largest were age groups 41-59 and 60-74, each represented by 32%. As opposed to HD patients, not a single patient aged 75-89 belonged to the group subjected to peritoneal dialysis.

Furthermore, a division according to civil status was created. Among the haemodialysis patients, the most populous group were married men who comprised 42% of the respondents. The percentages of single men and widowers were 22% and 4% respectively. Among the PD patients, married men were the largest group again - 28%, and widowers were the fewest (4%). The numbers of married women and single women were similar and they constituted 14% and 12% respectively. Widows were the smallest group (6%). Similar results pertained to female PD patients – the numbers of married women and single women were similar and they comprised 16% and 12% respectively, with widows being the least numerous group.

Based on the study conducted, it may be stated that the people subjected to peritoneal dialysis treatments were somewhat more professionally active than the haemodialysed patients. The numbers of people working and studying among peritoneal dialysis patients were 28% and 8% respectively, and for haemodialysis patients - 24% and 4%. Among the HD patients, the most extensive group were old-age pensioners (38%), whereas disability pensioners were fewer, i.e. 34%. Different results were obtained for peritoneal dialysis patients – the numbers of old-age pensioners and disability pensioners were 32% each.

As regards PD patients, the largest group (32%) were people diagnosed 2 years ago with a disease resulting in the necessity to apply kidney-replacement therapy. As the diagnosis period extended, the number of respondents declined. Respondents diagnosed 5 years ago formed the largest group (24%) among haemodialysis patients.

The analysis of the data has shown that both HD and PD patients are often affected by hypertension. Among the patients surveyed, 14 people (19%) had diabetes. Problems affecting the spine were reported by 16% of the respondents. The presence of other co-morbidities (e.g. asthma, rheumatoid arthritis, HCV, and depression), was reported by 29% of patients. No co-morbidities were diagnosed in 24% of the respondents.

III. RESULTS

The AIS questionnaire applied among dialysis patients made it possible to assess their illness acceptance levels. A high level of illness acceptance (30-40 points) was shown by nearly one-fourth of HD patients and one-sixth of PD patients. In those people, satisfaction with life could be observed as well as a good adaptation to their health status and a low mental discomfort. In both groups analysed, the average result ranging from a score of 19 to 29 was ob-
tained by the most respondents. The lack of acceptance of their present health status (8-18 points) was expressed by 32% of HD patients and 24% of PD patients. Those patients had a strong sense of being dependent upon their families and medical staff. They complained of a low self-esteem and harboured negative emotions in relation to the disease (Figure 1).

Figure 1. Level of illness acceptance among patients treated with haemodialysis and peritoneal dialysis

The average result obtained in the AIS questionnaire by HD patients was 23.52, whereas it was 23.2 points for PD patients. Such a result suggests that dialysed patients evinced an average level of illness acceptance and an average level of adaptation to their present health condition (Table 1).

Table 1. Level of illness acceptance among patients treated with haemodialysis and peritoneal dialysis

<table>
<thead>
<tr>
<th>AIS</th>
<th>Haemodialysis</th>
<th>Peritoneal dialysis</th>
<th>Weighted mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SD</td>
<td>Me</td>
<td>Min.-Max.</td>
</tr>
<tr>
<td>8-18 points</td>
<td>23.52</td>
<td>23</td>
<td>8-40</td>
</tr>
<tr>
<td>19-29 points</td>
<td>23.2</td>
<td>23</td>
<td>12-38</td>
</tr>
<tr>
<td>30-40 points</td>
<td>23.41</td>
<td>23</td>
<td>12-38</td>
</tr>
</tbody>
</table>

SD – mean, Me – median, Min-minimum, Max-maximum

Both in haemodialysis and peritoneal dialysis patients, a conviction has been observed that some limitations are imposed by poor health. More than a half (52% of HD and 56% of PD patients) were people who found it difficult to adjust to the restrictions imposed by illness. Among the PD patients, 20% believed that they had no difficulty adjusting to said limitations, while in the group of HD patients, that number was twice greater. A considerable part of respondents (48% of HD patients and 64% of PD patients) believed that the disease prevented them from doing their favourite activities. Illness did not hinder doing the favourite things for 34% of the HD patients, yet in the case of PD patients that number was almost three times smaller. Haemodialysed patients were better adjusted to the limitations imposed by illness and they coped better with the situation in which they could not engage in their favourite activities. A data analysis carried out using a chi-squared test demonstrated that the differences between the groups of patients subjected to peritoneal dialysis and haemodialysis were not statistically significant (p>0.05). The largest group among the haemodialysed were patients who believed that they were dependent on other people, while this number was somewhat smaller among peritoneal dialysis patients and it constituted 40%. Assistance provided by carers was not required by 34% of those haemodialysed and 44% of peritoneal dialysis patients. PD patients had a lesser sense of dependence. Part of the dialysed (38% of HD and 32% of PD patients) were of the opinion that their poor health contributed to their being a burden on their families. Disagreement with that statement was expressed by 44% of the peritoneal dialysis patients and over half of the haemodialysis patients. The analysis has shown a statistically significant difference between the groups studied in terms of the level of assessment of dependence on others caused by the state of health.

In both groups, a similar number of respondents (38% of HD and 36% of PD patients) admitted to feeling unneeded at times due to their illness. Among the haemodialysed, a large portion (44%) was made up of people who did not support that statement, whereas in the case of peritoneal dialysis patients, their number was smaller and accounted for one-third of the respondents. Also one-third of PD patients had difficulty evaluating whether they felt unneeded, whereas that number was almost twice smaller among the HD patients. Based on the arithmetic mean of the results obtained, it has been observed that haemodialysed patients felt unneeded less frequently than patients treated with peritoneal dialysis.

Among HD patients, equal groups agreed (42%) and disagreed (42%) with the statement that the disease affected their self-esteem. Similarly, the percentages were equal for
PD patients: 40% supported that statement and 40% rejected it.

More than a half of HD patients claimed that they would never be self-sufficient to a satisfactory degree. For PD patients, the number of people expressing a similar view was slightly smaller and it amounted to 40%. In both groups, one-third of the ill did not express such an opinion. Peritoneal dialysis patients had a greater sense of self-sufficiency. The largest groups among both HD patients (52%) and PD patients (40%) were composed of individuals who believed that the people around them did not feel embarrassed because of their illness. Among PD patients, one-third of the respondents did not have any opinion on the above-mentioned issue, yet for HD, the number of such respondents was twice smaller. Some patients (34% of HD and 28% of PD) were of the opinion that the people around them were embarrassed.

HD patients, to a markedly greater extent than PD patients, felt dependent on others as a result of their impaired health. In addition, they believed much more often that they would never be able to attain a satisfactory degree of self-sufficiency. PD patients, in turn, significantly more often faced the feeling that their company may be a source of embarrassment for others. (Table 2.).

Table 2. Limitations imposed by illness on haemodialysis and peritoneal dialysis patients

<table>
<thead>
<tr>
<th>AIS</th>
<th>SD</th>
<th>SD</th>
<th>SD weighted mean</th>
<th>Chi²</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Difficulty in adapting to the limitations imposed by illness</td>
<td>2.76</td>
<td>2.4</td>
<td>2.64</td>
<td>0.19</td>
<td>0.244</td>
</tr>
<tr>
<td>Limitation of the ability to do the favourite activities due to poor health</td>
<td>2.7</td>
<td>2.16</td>
<td>2.52</td>
<td>0.2</td>
<td>0.006</td>
</tr>
<tr>
<td>Increased dependence on others due to ill health</td>
<td>2.72</td>
<td>3.08</td>
<td>2.84</td>
<td>0.31</td>
<td>0.377</td>
</tr>
<tr>
<td>Sense of being a burden on your family due to illness</td>
<td>3.28</td>
<td>3.28</td>
<td>3.28</td>
<td>0.17</td>
<td>0.366</td>
</tr>
<tr>
<td>Sense of being unneeded due to illness</td>
<td>3.12</td>
<td>3.04</td>
<td>3.09</td>
<td>0.17</td>
<td>0.0075</td>
</tr>
<tr>
<td>Sense of being an incomplete person due to impaired health</td>
<td>2.98</td>
<td>3</td>
<td>2.99</td>
<td>0.24</td>
<td>0.36</td>
</tr>
<tr>
<td>Conviction that one would never attain a satisfactory degree of self-sufficiency</td>
<td>2.6</td>
<td>2.96</td>
<td>2.72</td>
<td>0.27</td>
<td>0.00</td>
</tr>
<tr>
<td>Sense that the people around the patient are often embarrassed</td>
<td>3.36</td>
<td>3.28</td>
<td>3.33</td>
<td>0.29</td>
<td>0.0015</td>
</tr>
</tbody>
</table>

SD – mean; HD – haemodialysis patients; PD – peritoneal dialysis patients

IV. DISCUSSION

Juczyński validated the AIS questionnaire devised by Felton et al. His study involved 30 female migraine patients and 60 uterine and breast cancer patients as well as 70 people suffering from diabetes, 48 back pain patients, 44 multiple sclerosis patients, 42 patients who had had myocardial infarctions, 32 neuropathic patients and 31 dialysed patients. From the groups analysed, the greatest acceptance of illness was evinced by uterine and breast cancer patients followed by dialysed patients. Scores in excess of 24 have been obtained by diabetic patients, people affected by multiple sclerosis and migraine sufferers. The least acceptance of illness pertained to patients experiencing chronic pain [15].

In research by Rolka et al. into migraine patients, the AIS questionnaire was used, too. From 60 participants in the study, 44% obtained from 30 to 40 points, which pointed to a high level of acceptance of illness and a good adaptation to the present state of health. Scores from 20 to 30 were obtained by 38% of the respondents. In turn, the lowest score range comprised 18% of the respondents who evinced a low degree of acceptance of migraine and experienced acute discomfort. The authors also demonstrated that those patients who complained of multiple migraine bouts accepted their illness to a lesser degree than other respondents.

A high acceptance of migraine characterised people who had less frequent and less intense bouts. In the analysed group of patients, 58% of severe migraine sufferers strongly agreed that they had difficulty adapting to the limitations imposed by the condition [16].

Łuczak-Wawrzyniak et al. studied a group of 26 women with endometriosis. The purpose of the study was not so much to assess the strategies used by the patients but also to find out the patients’ acceptance of the illness. Based on the analysis of the results, the authors demonstrated that women with endometriosis obtained a score of 33.42 points on average, which testified to a high degree of illness acceptance. It was observed that a high degree of satisfaction with life and the lack of depression were correlated with illness acceptance [17].

M. Kaczmarczyk utilised the AIS questionnaire to evaluate the acceptance of illness among the elderly. She conducted her research in a group of 454 people, from whom 51.3% lived at their family home and the remaining 48.7% stayed at a care home. Based on the average results, it was demonstrated that people living at home showed a higher level of illness acceptance than the comparative group – the
results were within the respective ranges of 28.3±8.6 and 23.5±6.7. Kaczmarczyk observed that in terms of adaptation to the limitations, people staying at their family home evinced a lower degree of acceptance than the other group. People living at home with their families were more satisfied with their health status and the ability to engage in their favourite activities. They also enjoyed a greater sense of self-esteem and self-sufficiency, they felt more needed and independent than care home residents [18].

Nowicki et al. conducted a study based on the AIS questionnaire among mastectomy patients. The study covered 25 women who had the surgery 3, 4, 5 or 6 months earlier and were aged from 32 to 70. The authors demonstrated that nearly half of the women did not have any problems with the limitations caused by the illness and they felt self-sufficient. Over half of the respondents did not have difficulty performing their favourite activities nor did they feel unneeded or dependent upon others [19].

Wlazło et al. applied the AIS questionnaire in a study conducted among patients subjected to classic haemodialysis and peritoneal dialysis. Based on the results, the authors demonstrated that PD patients accepted their disease better than HD patients; the results obtained amounted to 24.24±2.20 and 21.5±8.28 respectively [20].

In the present study, the average score obtained among dialysed patients was 23.41±8.28. The result is lower than that obtained by Juczyński among dialysed patients (25.32±6.03). Higher results were also obtained by multiple sclerosis patients, female migraine sufferers, uterine and breast cancer patients, and diabetic patients [15, 21]. Considering the division according to the type of kidney-replacement therapy, haemodialysed patients accepted their illness somewhat more than peritoneal dialysis patients (23.52±8.90 and 23.2±6.84 respectively). The haemodialysed patients studied by Wlazło et al. evinced a lower degree of acceptance than the other group. In turn, PD patients from Szczecin accepted their disease less than the patients in Wroclaw [20]. Based on the results, it has been observed that over 50% of dialysed patients have difficulty adapting to the limitations stemming from illness. Every second HD patient did not view himself as a burden on the close ones, yet felt dependent on others and did not consider himself an complete and self-sufficient person. Among PD patients, more than 50% of the respondents were not able to do what they liked best, yet every second patient did not experience the embarrassment of the people around him or her.

V. CONCLUSIONS

- Patients treated with dialysis therapy were characterised by an average level of illness acceptance.
- Haemodialysed patients demonstrated a somewhat higher overall level of illness acceptance than peritoneal dialysis patients.
- Among peritoneal dialysis patients, as compared to haemodialysed patients, a higher degree of illness acceptance concerned areas related to independence from others and a greater degree of self-sufficiency.

VI. REFERENCES


