

# REVIEW

of a dissertation on the topic:

**"Level of awareness of patients with chronic kidney disease regarding kidney transplantation and importance of awareness in the choice of renal replacement therapy"**

**of Dr. Aleksandar Aleksandrov Petrov**

for awarding the scientific and educational degree "Doctor"

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The dissertation is discussed and directed to the defense of the Department Council of the Second Department of Internal Medicine at MU, University Hospital "Prof. Dr. P. Stoyanov" Varna. It has 145 pages, 84 figures, 2 tables and 1 appendix. The literature reference includes 233 sources - 11 in Cyrillic and 222 in Latin, sufficient for a complete summary on the topic. The literature review is detailed. The dissertation is completed, properly structured with specific goals and objectives.

Based on data from the World Health Organization, the significance of the incidence of chronic kidney disease (CKD) in the world is presented - frequency 13.4% (11.7-15.1%), as well as the number of patients with CKD - V stage - between 4,902 and 7,083 per million. Patients with CKD-5st. have three treatment options: hemodialysis (HD), peritoneal dialysis (PD), kidney transplantation (KT). Determining KT awareness is important on the overall prognosis of the disease and directly reflects on the quality of life of the recipients. This characteristic is

significant and relevant in determining the purpose of the dissertation, which is precisely formulated. The main tasks are correctly and clearly formulated: 1. Preparation and assessment of the level of awareness regarding CKD; 2. Determining the level of awareness regarding KT; 3. Determining people's awareness of HD as a method of substitution treatment; 4. Measuring the level of awareness about PD as a method of substitution treatment; 5. Development of a plan for Management of patients with CKD and methods of treatment based on which the patient should make an informed choice. A very interesting approach in developing studies is the use of a hypothesis - it assumes that the Bulgarian patient is not sufficiently informed about his disease and needs accurate, synthesized information to help him make an informed choice regarding his treatment. I think that the hypothesis is very much true.

The object of the study are 126 respondents, sufficient to form conclusions, correctly divided into four groups: 1. Healthy controls - 37; 2. Persons in pre-dialysis stage (HBZ 1-4) - 20; 3. Patients performing replacement treatment of renal function (HD and PD) - 47; 4. Patients with kidney transplantation - 22. The examined persons fill in a specially created questionnaire, consisting of five panels - described in detail. The survey of the population awareness was carried out with the permission of Commission of ethics of MU-Varna with Protocol / Decision 106 / 30.09.2021. Documentary and historical methods, well described, as well as the statistical methods used were used correctly. Data were statistically processed using SPSS v.20.

A significant part of the respondents indicate that a person has two kidneys - 97.6%. According to 65.9% of respondents, it is not true that if the kidneys do not hurt, then a person is healthy. A significant difference is established according to the educational level of the surveyed persons ( $p = 0.049$ ), as according to a large part of the persons with primary and primary education, if the kidneys do not hurt, then they are healthy, while a large part of the persons with secondary and higher education do not agree with this statement. Most of the respondents are aware that people suffering from diabetes have an increased risk of developing CKD. In 68.3% of the respondents it is stated that smoking is a risk factor for the development of CKD. There is no difference in the opinion of the surveyed persons according to gender, age and educational level. A large part of the respondents - 76.2%, determine the weight loss in obese patients as a favorable factor for limiting CKD. There is no difference in the



opinion of the respondents according to gender, age and educational level. According to a significant part of the respondents - 79.8%, the frequent use of painkillers can damage the kidneys and a significant difference is found according to the study group -  $p < 0.05$ . Patients with KT have the greatest support for the claim.

There is a significant difference in the opinion of the respondents in the four followed groups ( $p = 0.004$ ), with patients with KT being most informed about the preservation of renal function after kidney donation and transplantation.

Another significant difference was found in terms of educational level ( $p = 0.013$ ) - people with higher education are most aware that the donation of one kidney does not lead to loss of renal function.

According to 55.7% of the respondents, they are informed that KT in Bulgaria is allowed in case of kinship between donor and recipient up to the frontal line or between spouses. Only 29.8% of the respondents know the characteristics of cross-donation. Patients with a transplanted kidney are most aware of the correct significance of cross-donation ( $p < 0.001$ ). Only half of the respondents indicated that the life expectancy of KT patients was longer than that of dialysis patients (53.7%), but no difference in opinion was found according to gender and education.

Less than half of the surveyed persons agree with the statement that in Bulgaria the patient must have started dialysis treatment before he can be transplanted (44.8%), and no significant difference is established according to gender.

The results show that patients with CKD and their relatives are more likely to agree to donate organs to their relatives in the event of brain death than healthy controls. Exactly 74.8% of the respondents believe that KT patients have a better quality of life than patients with HD or PD. This view is shared by all transplant patients and the majority of hemodialysis patients.

Less than half (48.4%) of the respondents were informed that HD does not completely replace the function of a healthy kidney. There was a significant difference between the opinions of the persons in the studied groups ( $p = 0.040$ ), as the most informed were the patients with KT - 68.2%, and the least informed were the patients in the pre-dialysis stage - 36.8% and the

healthy controls - 37.1%. There was a significant difference in the opinion of the respondents about the quality of life in patients with HD ( $p = 0.013$ ) and educational degree ( $p = 0.003$ ). Patients with KT are the most informed.

Over 2/3 (67.0%) of the respondents are not familiar with the advantages of PD. A significant difference in awareness was found according to the study group ( $p = 0.003$ ).

As a result of the research, clear and precise conclusions have been drawn:

1. There is a difference in the levels of awareness of the surveyed persons regarding CKD according to the educational level and the conducted treatment - the most informed are the persons with higher education and kidney transplantation.
2. Healthy controls show the lowest levels of awareness regarding CKD, treatment and factors associated with it.
3. A significant proportion of respondents do not have a realistic assessment of the impact of risk factors, such as smoking, obesity and the use of painkillers on kidney health.
4. The persons with CKD are not fully acquainted with the legislation of the Republic of Bulgaria regarding donation, as more than half of the respondents are not acquainted with the rights of patients with CKD regarding the payment of medical services and medicines.
5. They are best informed about the procedure for donation and transplantation of kidney cancer, patients who are about to have KT or have already undergone such a procedure.
6. The majority of dialysis patients are well acquainted with the procedures related to the preparation and conduct of treatment, but cannot distinguish between HD and PD.
7. Approximately  $\frac{3}{4}$  of the subjects confirm the literature data that KT improves the quality of life of patients with CKD compared to other types of substitution treatment.

In conclusion, CKD is part of the modern pandemic of chronic, non-infectious diseases and occupies one of the leading positions in terms of frequency and cause of death. Increasing the health culture of the population can be achieved through research in this direction. The results of the present work confirm the hypothesis of insufficient level of health literacy of the



population with regard to CKD and the methods for replacement treatment of renal function. The established percentage of ignorance among patients in pre-dialysis and dialysis stages proves the need to take appropriate measures. With the elaboration of the present dissertation work the beginning of the creation of a specialized Guide for these patients for the improvement of their health culture is set.

The dissertation has the following contributions:

Theoretical contributions:

1. A detailed analysis of the nature and importance of CKD in terms of public health and the burden it carries on the health system for patients.
2. An in-depth review of the literature data on the awareness and health literacy of the population about CKD, the risk factors, the applied types of treatments and their role in improving the quality of life is presented.
3. There is a difference in the awareness of those who are directly affected by the disease and those without health problems.

Practical contributions:

1. The main gaps and shortcomings in terms of awareness and health knowledge of the subjects about the nature of CKD, treatment, risk factors, changes in quality of life and the legislation in relation to organ transplantation.
2. An algorithm of guidelines for prevention, diagnosis, treatment and follow-up of patients with CKD has been developed and proposed.
3. The main guidelines of the "Guide for patients with CKD and treatment methods" are formulated, on the basis of which the patient should make the right choice.

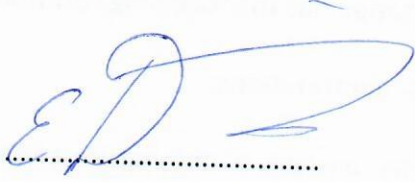
## CONCLUSION

The dissertation is properly structured with a topic that has not been examined in the nephrological aspect in our country, which is an advantage. The tasks are precisely defined and

solved with significant results, the contributions are clearly presented with significant practical characteristics - a guide for patients with CKD. The dissertation has the necessary publications in connection with the dissertation. This gives me a strong reason to vote positively for my dissertation.

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