

The feeling of gratitude, satisfaction with life, and the level of empathy: an analysis of a comparative study of variables in kidney transplant recipients and healthy people

Ewelina Pustkowska¹, Dagmara Szypulska-Koziarska^{2,A}✉, Jacek Różański^{3,B}, Joanna Stępniewska^{3,C}, Malwina Szpitalak^{4,D}, Aleksandra Wilk^{2,E}

¹SWPS University, Faculty of Psychology and Law in Poznan, Kutrzeby 10, 61-719 Poznań, Poland

²Pomeranian Medical University in Szczecin, Department of Histology and Embryology, Powstańców Wlkp. 72, 70-111 Szczecin, Poland

³Pomeranian Medical University in Szczecin, Clinical Department of Nephrology, Transplantology and Internal Medicine, Powstańców Wlkp. 72, 70-111 Szczecin, Poland

⁴Jagiellonian University, Institute of Psychology, Ingardena 6, 33-332 Kraków, Poland

^A ORCID: 0000-0002-7392-7902; ^B ORCID: 0000-0001-5772-3347; ^C ORCID: 0000-0002-0801-7582; ^D ORCID: 0000-0003-4928-5556; ^E ORCID: 0000-0002-1542-8371

✉ dagmara.szypulska.koziarska@pum.edu.pl

ABSTRACT

Introduction: The study aimed to perform a comparative analysis of the level of the following variables: sense of gratitude, life satisfaction, and empathy in its 3 subscales: empathic care, personal discomfort, and taking perspective.

Materials and methods: The analysis was performed in 2 independent groups among patients after kidney transplantation (n = 46) and healthy people (n = 46). The following psychometric tools were used in the survey: Polish adaptation of the Gratitude Questionnaire GQ-6, Satisfaction with Life Scale, and SWE Questionnaire.

Results: People after kidney transplantation experience statistically significantly higher levels of personal discomfort (M = 23.74; SD = 4.69) than healthy individuals (M = 21.59; SD = 6.37, U = 1008.50; p = 0.024), respectively. Analysis of the Mann-Whitney U-test for independent samples showed that the

means of the studied variable, gratitude, did not differ statistically significantly between groups of people after kidney transplantation (M = 30.78; SD = 5.57) and healthy people (M = 32.89; SD = 5.21, U = 855.00; p = 0.944), respectively. There were also no statistically significant differences between the kidney-transplant recipients and healthy people for the satisfaction with life (M = 21.17; SD = 5.39 and M = 24.50; SD = 6.13, U = 818.00; p = 0.061), respectively.

Conclusions: Since personal discomfort is a negative feeling directed towards ourselves at the sight of another person's suffering, people after kidney transplantation, spending numerous days in the hospital with other patients, may be particularly susceptible to experiencing unpleasant affect at the sight of suffering in others.

Keywords: transplantation; thankfulness; life satisfaction; compassion; psychotransplantology.

INTRODUCTION

Kidney transplantation and kidney transplant recipients

Currently, transplantations are performed in over 80 countries worldwide [1]. Statistics covering the whole world show that the frequency of people living with transplanted kidneys aged ≥18 years is 279 per million inhabitants [2].

The first successful kidney transplantation (KTX) in Poland took place in 1996, and since then, the number of KTXs has increased yearly. In Poland, like in other countries, there is a trend that most donated kidneys come from deceased donors [3].

The role of the psyche and emotions in the transplantation process

Dysfunctional factors that often accompany people undergoing renal replacement therapy are anxiety and stress [4]. Their feelings may be influenced by the fact that patients often feel dependent on life-supporting equipment, people (physicians, family), or on taking medications [4]. In people who are waiting for a transplantation and are undergoing dialysis, several

stages can be distinguished on the path to adaptation to the disease. The first stage is the rejection phase, when the patient does not accept the fact that he or she is chronically ill and rejects or denies the diagnosis. Lack of acceptance of the disease is very characteristic at this stage [4].

The next stage is the rebellion and anger phase, when the patient feels resentment and anger towards the environment and often blames the closest ones or the physician for not taking good care of him or her. The sick person is then characterized by outbursts of anger or a feeling of irritation. In this phase, the previously mentioned fear and feeling of increased anxiety intensify [4]. The third stage is the phase of agreements and negotiations, during which the person seeks contact and understanding with therapists, and if they are religious, even with God. Often, so-called negotiations with fate and higher powers take place. The patient believes that they will receive "miraculous help" from them, in exchange for at least a promise of good behavior [4]. Prayer is often a strategy for coping with the stress that accompanies the patient [5].

The fourth stage is the depressive phase. During this time, the patient is confronted with the fact that he or she is suffering

from an incurable disease. At this stage, there is a real chance to say goodbye to the previous framework of life in which the patient functioned [4].

The last stage is the acceptance phase, when the sick person accepts the diagnosis and tries to adapt to the new situation and treat it as a challenge. It is worth emphasizing that not every person struggling with a chronic disease has to go through the indicated stages because the environment in which the sick person lives plays a huge role in the process of accepting the disease [4].

In addition to anxiety and stress, organ recipients may struggle with a somatopsychic disorder consisting of a lack of acceptance of a foreign organ in their own body. During transplantation, the integrity and image of the patient's body are violated by both recipients and donors. The process of accepting the transplanted organ in recipients struggling with the described disorder is very complicated and long-lasting. De Pasquale distinguishes the following stages of integrating a foreign organ in the recipient: the first phase is the foreign body phase, in which persecutory fear or, on the contrary, idealization may occur, caused by the implantation of an organ from another person into the body. The next phase is the partial incorporation phase. At this stage, the patient begins a slow, partial acceptance of the foreign organ in his or her body. The last is the complete incorporation phase, during which the recipient spontaneously assimilates the transplanted organ [6]. Another serious comorbidity that kidney transplant recipients (KTR) often struggles with is depression. The occurrence of this disease in people waiting for transplantation or in those after this surgery can be influenced by many factors, such as loss of full salary due to the inability to be at work, and weight gain in people on dialysis. Depression in KTR is often accompanied by concerns about the risk of death, premature rejection of the implanted organ, infection, or repeated hospitalization [7].

People struggling with chronic kidney failure, in order not to die, undergo renal replacement therapy in the form of dialysis. One of the forms of dialysis is hemodialysis. This method of treatment causes many patients to have functional disorders and a decrease in the quality of their life in the physical, mental, and social areas. The dialysis procedures are time-consuming, as they take about 4–5 h, and the patient must be dialyzed several times a week. This undoubtedly deprives such a person of the possibility of free, spontaneous planning of any life activities, which can include, e.g., meetings with friends and loved ones. In addition, dialysis patients struggle with decreased blood pressure, headaches, lack of vitality, and physical strength, as well as gastrointestinal and gastric problems [8]. Another problem among dialysis patients is often the professional area. Patients very often have to limit, change, or completely give up work, which is primarily caused by a lack of sufficient mobility, but often also by a lack of strength. The functioning of hemodialysis patients in psychological, physical, and social areas significantly determines the length of time that has passed since the procedure. Patients 1 year after KTX assessed their functioning as the highest in the physical and

social areas. In the psychological area, after 6 years from the transplantation [9].

Psychotransplantology as a new field of psychology

Psychotransplantology is a new, not very often used concept that has been in use in Poland for about 10 years [10]. Zatorski describes this term as an approach in which a psychologist accompanies patients and medical personnel during the transplant process (before, during, and after the procedure). In addition, Zatorski also indicates that for transplant patients, a critical sphere, in addition to the process of physical recovery, is the issue of emotional support. The role of a psychotransplantologist is therefore, among others, to learn about the donor's motivation, or more precisely, whether the motivation of the person who decided to donate their organ results from a conscious decision dictated by the desire to help another person, or perhaps the decision to be a donor is dictated by external factors, such as family pressure. Another task of a psychotransplantologist is to provide assistance and emotional support in the individual stages of the difficult process of transplantation [10]. In situations where the donor is to be a deceased person, it often happens that it is psychologically overwhelming for the family or other close circle of the deceased potential donor. In such cases, the psychotransplantologist can contact such people to provide support [10].

Gratitude – definition of the tested variable

Gratitude researchers define this construct in many different ways. Some believe that it is an emotion that appears in people due to receiving help. However, this help, from the point of view of those to whom it was provided, must be altruistic and at the same time costly. Following this understanding of the concept, some scientists have understood gratitude as a type of emotion, always resulting from the appreciation of receiving help from third parties. However, this is not a full understanding of gratitude, as gratitude is not limited to an emotional reaction resulting from receiving help from others, but is also a feeling evoked without the participation of benefactors. In a broader sense, gratitude is the ability to notice and appreciate positive elements in life and the world. This ability is understood as a trait, not a state [11].

Researchers also point out that gratitude can be understood as an element of a broadly understood life orientation focused on noticing and appreciating positive aspects in the world around us [11]. Currently, there are 3 most popular psychometric tools for measuring gratitude: the single-factor GQ-6 Scale by McCullough et al. [12], the multifactor Appreciation Scale by Fagley [13], and the multifactor Gratitude, Appreciation, and Resentment Test [14]. Each of the scales mentioned above creates a collective definition of gratitude based on life orientation. Eight different spheres of gratitude can be distinguished from them, i.e.: (i) individual differences in the experience of grateful affect, (ii) appreciation for other people, (iii) focusing on what a person has, (iv) a feeling of delight when encountering beauty, (v) behaviors expressing gratitude, (vi) focusing on the positive in the present moment, (vii) gratitude resulting from the

understanding that life is short, (viii) focusing on the positive in the present moment, and (ix) positive social comparisons [11].

Considering gratitude as a life orientation focused on perceiving and experiencing positive aspects, it can be assumed that it correlates with many adaptive correlates, such as personality traits or some indicators of well-being. Therefore, it was examined how gratitude is related to 30 personality traits encompassing the Big Five Model included in the NEO-PI-R Questionnaire [11, 15]. The results of 2 studies showed that taking into account only the results in which there was an analogy, gratitude was correlated with traits indicating positive emotionality and positive social interactions. Grateful people showed lower levels of depression, emotional sensitivity, and hostility. They experienced positive emotions more often [11]. Other studies on the correlation of gratitude with the Big Five traits based on the NEO-FFI Questionnaire have shown that there is a relationship between the described variable and agreeableness and extraversion, which may indicate that sociable, expressive people may experience a higher level of gratitude than, for example, introverted people [16].

Satisfaction with life – definition of the tested variable

Satisfaction with life is also called life satisfaction, which can be defined as “an overall assessment of the quality of life related to self-selected criteria”. The described variable is 1 of the 3 components of well-being. In addition to life satisfaction, well-being also includes positive feelings and the absence of negative emotions. To evaluate life satisfaction, a certain comparison of one’s life situation is made with subjectively understood standards. When, after making the aforementioned comparison, it is possible to feel satisfied, then a feeling of life satisfaction occurs. Life satisfaction can also be defined as a feeling of satisfaction resulting from one’s achievements and the represented possibilities of achieving them [17, 18]. It was found that the Satisfaction with Life Scale positively correlates with a sense of self-worth and efficacy, and dispositional optimism. A negative correlation was demonstrated between neuroticism, perceived stress [19], and the control of emotions of anger, depression, and anxiety [17, 18].

Empathetic sensitivity – definition of the tested variable

Empathy is a construct that is studied by many researchers. Some of them understand empathic sensitivity as care, sympathy, co-feeling, and understanding the point of view of another person. The common denominator of many definitions of empathy is an active, genuine interest in the problematic situations of other people. Active interest can be understood as real helping actions directed towards other people to improve their quality of life. Empathy can also be understood as “sensitivity to another person’s needs, with respect for their dignity and compliance with the principles of social justice.” [20].

Empathetic care

Empathic care is 1 of the 2 components of the Empathetic Sensitivity Scale [20]. Initially, however, this scale consisted of 4 factors: the Perspective Scale, the Empathic Care Scale, the

Personal Pain Scale, and the Fantasy Scale. The Empathetic Sensitivity Scale is a shortened version of the Interpersonal Reactivity Index, which was created by Davis [21].

Empathic care concerns feelings that are directed towards other people. This concept means the ability to sympathize and show care towards people who have experienced some kind of failure or crisis [20]. It was shown that empathic care correlates positively with various types of measures of anxiety or emotional sensitivity. This may mean that a person who emotionally participates in other people’s problem situations may feel emotionally overloaded. It was also found that empathic care positively correlates with the warmth factor, distinguished in the Personality Questionnaire 16 PF-5, authored by Raymond B. Cattell. [22], in the Polish adaptation by Kucharski [23]. People characterized by a high level of warmth show a great need for close contact with other people. A positive correlation was also found between the Empathic Care Scale and enthusiasm as a given behavior, or spontaneity (as factor F in the Personality Questionnaire 16 PF-5). A negative correlation was found, among others, between empathic care and loneliness and the trait of egotism [20].

Perspective taking

Perspective taking is the second of the 3 components that make up the Empathetic Sensitivity Scale. This concept means the ability to spontaneously adopt another person’s point of view, so it can be said that it is a kind of ability to go beyond “one’s self”. Perspective taking is a cognitive component of empathy that allows for adaptive functioning in the social environment. It positively correlates with factor A – warmth distinguished in the Personality Questionnaire 16 PF-5 (similarly to empathic care). It has been shown that people who are characterized by a high level of perspective taking are characterized by kindness in contact with others and also communicate with others with a great deal of understanding. In addition, a positive correlation was found between perspective taking and social boldness, marked as factor H in the Personality Questionnaire 16 PF-5. The aforementioned social boldness is understood as courage and expressiveness in interpersonal contacts. Perspective taking, on the other hand, correlates negatively with secretiveness, defined as reluctance to open up to others and independence in action (factor N and Q2 in the Personality Questionnaire 16 PF-5). People with a high level in the perspective taking scale are characterized by a desire to experiment in life and a lack of fear of taking action, leading to change [20].

Personal discomfort

Personal discomfort is the third component of the Empathetic Sensitivity Scale and is used to measure feelings that appear in the area of one’s self, which accompany a given individual while another person experiences a difficult situation, or suffering. The aforementioned measurement concerns negative affect, such as the tendency to experience fear, anxiety, or discomfort [16]. It is believed that personal discomfort is a reaction to the suffering of others, and these emotions are directed at the self and oneself, i.e., in an egocentric way. People characterized by a high level of

personal discomfort may experience some dysfunction in social functioning, and these difficulties may be caused by long-term anxiety. This hypothesis was positively verified by studies of correlations between the Personal Discomfort Scale and factor Q4 in the Personality Questionnaire 16 PF-5, which is tension understood as a tendency to experience feelings of emotional agitation. The aforementioned relationship between variables showed a positive correlation. On the other hand, personal discomfort negatively correlates with emotional stability, marked as factor C in the Personality Questionnaire 16 PF-5 [16, 17, 19]. A negative correlation was also shown between personal discomfort and social boldness, i.e., factor H in the Personality Questionnaire 16 PF-5 [16, 17, 19]. Based on the presented literature review covering the theoretical approach to the topic, the study aimed to perform a comparative analysis of the following variables: gratitude, satisfaction with life, and empathetic care, with 3 subscales: empathetic care, personal discomfort, and perspective taking. Therefore following research questions were formed:

1. Do KTRs have a higher level of gratitude than healthy people?
2. Do KTRs have greater satisfaction with life than healthy people?
3. Do KTRs have a higher level of empathy than healthy people?
4. Is the level of satisfaction with life in KTR decreasing as the time elapsed since transplantation increases?
5. With the increase in the time that has passed since transplantation, does the level of gratitude in KTR increase?
6. With the increase in the time that has passed since transplantation, does the level of empathy KTR increase?

MATERIALS AND METHODS

Study groups

The study involved 120 participants, including 60 KTR and 60 people who had never undergone a kidney transplant, referred to as the control group (C). The assumed age of the study groups was 18–67 years. The average time since transplantation for the study group was 8.67 years ($M = 23.74$; $SD = 4.69$, $min. = 0.25$, $max. = 23$). People who did not complete all the questionnaires were excluded. Finally, 46 KTR and 46 people from the C group (24 women and 22 men in each of the study groups) were enrolled in the study for the analyses. First, the KTR group was collected, and then pairwise selection according to the age and sex criteria of the person from group C was applied.

Psychometric tools used during the study

Polish adaptation of the questionnaire for examining gratitude GQ-6 – in original: Gratitude Questionnaire GQ-6

The Polish adaptation of the Gratitude Questionnaire GQ-6 [14] consists of 6 items, of which 2 of these items are reversed. The test items refer to the perception of life situations in the context of gratitude. To examine the reliability of the Polish adaptation of the described questionnaire, Cronbach's alpha coefficient was used, which for 6 items was 0.71.

A 7-point response scale was used for each test item, where 1 means the answer: "I strongly disagree", and 7: "I strongly agree".

Polish adaptation of the Satisfaction with Life Scale Questionnaire

The Polish adaptation of the Satisfaction with Life Scale Questionnaire consists of 5 test items that refer to the subjective assessment of various components of well-being.

These statements are assessed on a 7-point response scale, where 1 means: "I completely disagree", and 7: "I completely agree". The reliability of the described questionnaire was tested and, using the Cronbach's alpha index, established based on a study in which 371 participants took part, the result was 0.81 [11].

SWE Questionnaire

The SWE Questionnaire consists of 28 statements concerning the perception and ability to experience life situations in an empathetic way, among which 3 factors can be distinguished: empathetic concern (11 items), perspective taking (9 items), and personal discomfort (8 items). The responses to each of the statements were arranged on a 5-point scale, where 1 means: "I completely disagree", and 5: "I strongly agree". To calculate the reliability of the 3 scales, Cronbach's alpha coefficient was used. The reliability was 0.78 for empathetic concern, 0.78 for personal discomfort, and 0.74 for perspective taking [20].

Procedure

Before beginning the research, an application was submitted to the Research Ethics Committee at SWPS University, Faculty of Psychology and Law in Poznan. The application received a positive opinion (opinion number 2024 – 247).

The survey was conducted at the University Clinical Hospital No. 2, Pomeranian Medical University in Szczecin, Poland (UCH-2). The procedure included 2 groups – KTR and C (understood for this study as those who have never undergone KTX). All respondents who voluntarily participated in this study completed 3 questionnaires: the KTR group during follow-up visits at the Nephrology Clinic at UCH-2, and the C group at their current residence. Before starting the study, it was ensured that both study groups were thoroughly familiar with its procedure and voluntarily consented to participate. Volunteers were informed about the purpose of the study and that the collected data was confidential.

Statistical analysis

For all the variables studied (the time that has passed since KTX, gratitude, satisfaction with life, and empathetic sensitivity measured in its 3 subscales: empathetic care, personal discomfort, perspective taking), the descriptive statistics were performed, taking into account: mean – M , median – M , standard deviation – SD . To assess the normality of the distribution of the tested variable, the Shapiro–Wilk test was applied. As all the studied variables did not show features of normal distribution, the nonparametric Mann–Whitney U-test was used to analyze statistical significance, and Spearman's test was used to check the correlation with the analyzed variances over time.

Additionally, an analysis was performed to confirm the assumption of homogeneity of variables. For this purpose, Levene's test analysis was used.

RESULTS

The analysis of the significance of Gratitude, satisfaction with life, and empathy in the KTR and the C group

Analysis of the Mann-Whitney U-test for independent samples showed that the means of the studied variable, gratitude, did not differ statistically significantly between KTR ($M = 30.78$; $SD = 5.57$) and healthy people ($M = 32.89$; $SD = 5.21$, $U = 855.00$; $p = 0.944$), respectively.

There were also no statistically significant differences between the KTR and the control group for the satisfaction with life ($M = 21.17$; $SD = 5.39$ and $M = 24.50$; $SD = 6.13$, $U = 818.00$; $p = 0.061$), respectively.

In current research, we have noticed that the KTR group experienced statistically significantly higher levels of personal discomfort than healthy individuals ($M = 23.74$; $SD = 4.69$), ($M = 21.59$; $SD = 6.37$, $U = 1008.50$; $p = 0.024$), respectively. Results are presented in Table 1.

TABLE 1. The analysis of the significance of gratitude, satisfaction with life, and empathy in the kidney transplant recipients group and the control group

Variable	AM		SD		p	
	KTR	C	KTR	C		
Gratitude	30.78	32.89	5.57	5.21	0.944	
Satisfaction with life	21.17	24.50	5.39	6.13	0.061	
Empathetic sensitivity	EC	40.28	39.91	5.57	6.67	0.351
	PD	23.74	21.59	4.69	6.37	0.024*
	PT	33.67	34.50	4.76	4.83	0.823

AM – arithmetical mean; SD – standard deviation; p – the p-value; KTR – kidney transplant recipients group; C – control group; EC – empathic care; PD – personal discomfort; PT – perspective taking

* statistically significant

The performer analyses showed no statistically significant correlation between the time elapsed since transplantation and the variables studied, i.e. satisfaction with life ($\rho(44) = 0.00$; $p = 0.499$), gratitude ($\rho(44) = -0.16$; $p = 0.146$) nor empathetic sensitivity assessed in its 3 subscales: (i) empathic care ($\rho(44) = -0.13$; $p = 0.406$), (ii) personal discomfort ($\rho(44) = 0.02$; $p = 0.892$), (iii) perspective taking ($\rho(44) = -0.04$; $p = 0.794$).

DISCUSSION

Discussion of the results

The results indicate that KTR are not characterized by a higher sense of gratitude compared to healthy people. The topic of gratitude in solid organ recipients is still very unpopular in the

scientific literature. We also did not find comparative studies in which one of the groups would be transplant patients and the main variable would be gratitude, so it is extremely difficult to discuss the results obtained. According to Nowacka the recipient receiving an organ from a donor feels a strong desire to repay for the donation, but at the same time is aware that there is no adequate way to do so because the donation is a heroic act. In the opinion of some theoretical researchers in the field of ethics, accepting an organ by the recipient is even a kind of burden, which is why this strong need to repay the donor has been called the "tyranny of the gift". Nowacka states that the strong need to repay the debt of donation by the recipient occurs regardless of the circumstances in which the organ was donated. The "tyranny of the gift" occurs both in recipients who received an organ from a deceased or living donor, and regardless of whether the organ was obtained legally or not [24].

Perhaps the lack of statistical significance in terms of the difference in the feeling of gratitude between transplant patients and healthy people results from the fact that if we treat gratitude as a trait and not as a state, i.e., as a permanent factor in someone's nature, it will not depend on the state of illness or health.

Another possible explanation for the result is perhaps – the occurrence of a situation in KTRs, in which social support and support from relatives and loved ones in the process of adaptation to life with a chronic disease, is an experience that somehow alleviates the negative feelings in transplant recipients and at the same time eliminates the differences in the feeling of gratitude between transplant recipients and healthy individuals.

It is worth asking a scientific question whether in KTR, with the time that has elapsed since a surgery, the level of gratitude does not return to the level from before transplantation, and therefore, there are no differences in this respect, comparing patients with a group of people who have never undergone transplantation.

In order to be able to find an answer to the question whether the time elapsed since KTX can have a statistically significant relationship with the level of gratitude, a directional hypothesis was put forward that as the time elapsed since transplantation increases, the level of gratitude decreases in KTR. However, no statistically significant relationship was found. This may be due to the fact that receiving a new kidney, and thus life, in the opinion of the recipients, is such a great gift that the sense of gratitude does not diminish, regardless of the time that has passed since transplantation. This can be justified by the theory quoted in the introduction of this work, treating gratitude as a feature, and therefore a relatively constant factor [11].

When planning this study, it was assumed that people after KTX are characterized by greater satisfaction with life than healthy people, due to receiving a valuable gift, which is a new kidney, and in connection with this, they receive the opportunity to return to their routine and become independent from long-term and burdensome dialysis. However, it was not confirmed. Perhaps an error was made when designing the survey questions. It was assumed that people from the control group were completely healthy. Probably the question should have been asked whether the person from the control group suffered

from any possible illnesses, had been diagnosed with mental disorders, and whether they suffered from a mental crisis or chronic stress. The occurrence of confounding variables, such as depression or life crises, among the study participants could change the study results [25] compared the level of life satisfaction in 2 groups of patients after transplantation, dividing them into those after liver transplantation and those after KTX. The WHOQOL-BREF tool was used to determine whether there were differences between the perceived quality of life in its various areas, including physical and mental health, and whether life satisfaction was related to sociodemographic factors such as patient age. The cited study found, among other things, that both kidney and liver transplant patients were not satisfied with their physical health. Interestingly, KTR experienced a significantly higher level of quality of life in the area of social and environmental relations than liver transplant recipients, and a significantly lower level in the area of mental health. It was also shown that in kidney recipients, the relationship between age was statistically significant only in the area of physical health, and younger people were characterized by a higher level of satisfaction with this area. In turn, in patients with a liver transplant, no correlation was found between age and any of the examined areas of quality of life [25].

This study did not confirm a statistically significant difference in the level of perceived satisfaction with life with the time elapsed since transplantation. The reason for the lack of such correlation in recipients may be the above-mentioned confounding factors and the probability that life satisfaction is not a linear construct, but changes over time by various life circumstances [18]. Due to the small amount of available literature on life satisfaction in patients after KTX, the topic of this manuscript seems very interesting and suggests that it should be developed.

Moving the discussion to the topic of empathy in KTR, it should be mentioned that we did find a statistically significant difference between the averages of empathetic sensitivity; however, in only 1 out of 3 empathy subscales – personal discomfort. In the current study, the KTR were characterized by a higher level of empathy than healthy people regarding personal discomfort. A possible reason for this may be the fact that personal discomfort is a negative feeling directed towards ourselves at the sight of another person's suffering, and the remaining subscales measure feelings directed towards other people. To sum up, people with chronic kidney disease who undergo dialysis and then undergo transplantation spend a lot of time in the hospital. Therefore, they may be particularly susceptible to experiencing unpleasant affect at the sight of suffering in others. Patients after KTX (and other organs) often witness physical and mental pain in co-patients. This susceptibility may be because they suffer from and feel the physical and psychological suffering caused by chronic illness. Empathic concern and perspective taking are areas of empathy that can be highlighted in people regardless of the nature of the events being observed.

The literature review did not find any study comparing empathy among transplant recipients and healthy individuals; however, a study that showed that a supportive and empathetic relationship between donors and recipients and their

families is positively correlated with a positive subjective experience of psychophysical well-being by recipients seems to be important [26].

Lastly, the current study aimed to assess whether the level of empathetic sensitivity in transplant patients decreases or increases over time since transplantation. As we did not manage to find any statistically significant difference in the empathetic sensitivity over time since transplantation, and due to the fact that little is known about this topic, it is hard to discuss our results. Based on the conversations conducted with kidney recipients, we can only assume that these people have been suffering for so many years, experiencing the enormity of pain, suffering, and fear for their own life, that their empathy can not increase even though they eventually underwent the process of transplantation and started some kind of new life. Moreover, we have met problems in finding any scientific literature regarding the discussed issue.

Development directions and practical implications

The conducted study can be developed in the future by taking into account a larger number of participants and eliminating the weaknesses of the current manuscript, including a lack of questioning regarding mental disorders, depression, or chronic stress.

In the future, it would also be possible to expand the catalog of studied variables to include the sense of attractiveness, which could be tested with the body esteem scale [27]. This seems to be an important variable in the context of the area of acceptance of one's own body by people who have undergone transplantation. It is believed that an interesting direction of future research would be to compare the studied variables between groups of recipients after solid organ transplantation and bone marrow recipients. Patients after solid organ transplantation must take immunosuppressive drugs for the rest of their lives, which reduce the risk of rejection of the transplanted organ, and at the same time, these drugs have numerous side effects. Bone marrow recipients do not experience such extensive pharmacotherapy. In connection with the above, such a research topic seems interesting and necessary in modern psychology. In future studies, it would also be possible to compare whether there are statistically significant differences in the scope of the examined variables between recipients of organs from a living donor vs. a deceased donor. Perhaps then the level of gratitude would be different from that shown in this study.

Methodological limitations

We are aware that the current study has some limitations, which can impact the achieved results. These are among the other small number of volunteers in each of the study groups, and no question was addressed to people who have not undergone KTX, regarding any chronic diseases or mental disorders they potentially suffer from, that may have affected their feeling of gratitude or satisfaction with life. Another limitation was the age limit that was imposed on all those willing to take part in the study. The absence of such a limitation would certainly result in the number of studied groups being higher, and thus the experience itself would be more reliable.

CONCLUSIONS

Since personal discomfort is a negative feeling directed towards ourselves at the sight of another person's suffering, people after KTX, spending numerous days in the hospital with other patients, may be particularly susceptible to experiencing unpleasant affect at the sight of suffering in others.

REFERENCES

- Garcia GG, Harden P, Chapman J. The global role of kidney transplantation. *Lancet* 2012;379(9820):e36-8. doi: 10.1016/S0140-6736(12)60202-5.
- INS – Global Kidney Health Atlas. International Society of Nephrology. 2023. www.theisn.org/global-atlas (22.04.2025).
- Wałaszewski J, Lao M, Szmidi J, Stryjecka-Rowińska D, Gradowska L, Szczerbań J, et al. Pierwszy przeszczep nerki w Polsce. *Magazyn PULS* 2013.
- Wiśniewska L, Paczkowska B, Białobrzeska B. Zapotrzebowanie na wsparcie emocjonalne wśród pacjentów leczonych nerkozastępczo. *Forum Nefrol* 2010;3:64-7.
- Lindqvist R, Carlsson M, Sjöden P. Coping strategies of people with kidney transplants. *J Adv Nurs* 2004;45(1):47-52. doi: 10.1046/j.1365-2648.2003.02859.x.
- De Pasquale C. Psychopathological aspects of kidney transplantation: Efficacy of a multidisciplinary team. *World J Transplant* 2014;4(4):267. doi: 10.5500/wjt.v4.i4.267.
- Robiner WN, Petrik ML, Flaherty N, Fossum TA, Freese RL, Nevins TE. Depression, Quantified Medication Adherence, and Quality of Life in Renal Transplant Candidates and Recipients. *J Clin Psychol Med Settings* 2022;29(1):168-84. doi: 10.1007/s10880-021-09792-2.
- Wojczyk A. Problemy codziennego życia hemodializowanych pacjentów. *Piel Zdr Publ* 2014;4(2):143-8.
- Gećek M, Nowakowska-Zajdel E, Czech N, Białek A, Muc-Wierzgoń M, Kokot T. Jakość życia pacjentów dializowanych i po przeszczepie nerek. *Ann Acad Med Siles* 2010;64:23-30.
- Zatorski M. Proces transplantacji a rola psychologa. 2015. <https://swps.pl/uczelnia/blogosfera/1314-pomoc-psychologa-przy-pierwszym-w-polsce-przeszczepie-lancuchowym> (22.04.2025).
- Wood AM, Froh JJ, Geraghty AWA. Gratitude and well-being: A review and theoretical integration. *Clin Psychol Rev* 2010;30(7):890-905. doi: 10.1016/j.cpr.2010.03.005.
- McCullough ME, Emmons RA, Tsang JA. Gratitude Questionnaire-6. *PsyCTESTS Dataset*. 2002. doi: 10.1037/t01837-000.
- Fagley NS. Appreciation (Including Gratitude) and Affective Well-Being: Appreciation Predicts Positive and Negative Affect Above the Big Five Personality Factors and Demographics. *Sage Open* 2018;8(4). doi: 10.1177/2158244018818621.
- Watkins PC, Woodward K, Stone T, Kolts RL. Gratitude and happiness: Development of a measure of gratitude, and relationships with subjective well-being. *Soc Behav Pers* 2003;31:431-52. doi: 10.2224/SBP.2003.31.5.431.
- Costa PT, McCrae RR. Domains and Facets: Hierarchical Personality Assessment Using the Revised NEO Personality Inventory. *J Pers Assess* 1995;64:21-50. doi: 10.1207/S15327752JPA6401_2.
- Kossakowska M, Kwiatek, P. Polska adaptacja kwestionariusza do badania wdzięczności GQ-6. *Przegl Psychol* 2014;57(4):501-12.
- Diener E, Emmons RA, Larsen RJ, Griffin S. The Satisfaction With Life Scale. *J Pers Assess* 1985;49:71-5. doi: 10.1207/s15327752jpa4901_13.
- Juczyński Z. Narzędzia pomiaru w promocji i psychologii zdrowia. *Skala Satysfakcji z Życia. Pracownia Testów Psychologicznych Polskiego Towarzystwa Psychologicznego*; 2001. p. 134-8.
- Cohen S, Kamarck T, Mermelstein R. Perceived Stress Scale. *PsyCTESTS Dataset* 2014. doi: 10.1037/t02889-000.
- Każmierczak M, Płopa M, Retowski S. Skala Wrażliwości Empatycznej. *Prz Psychol* 2007;50:9-24.
- Davis MH. Interpersonal Reactivity Index (IRI). *JSAS Catalog of Selected Documents in Psychology* 1980;10:40-6.

- Heather EP, Cattell ADM. The Sixteen Personality Factor Questionnaire (16PF). people.wku.edu (23.04.2025).
- Kucharski T. Wprowadzenie do Kwestionariusza 16 PF-5. Toruń: Wyd. Adam Marszałek; 2004. p. 1-170.
- Nowacka M. Etyka transplantacji. *Etyka Transplant* 2008;4:227-8. doi: 10.26106/rpx8-9125.
- Alkatheri A, Al Bekairy A, Aburuz S, Qandil A, Khalidi N, Abdullah K, et al. Exploring quality of life among renal and liver transplant recipients. *Ann Saudi Med* 2015;35(5):368-76. doi: 10.5144/0256-4947.2015.368.
- Pistorio ML, Veroux M, Trigona C, Patanè M, Lo Bianco S, Cirincione G, et al. Psychological and Emotional Aspects in Living Donor Kidney Transplantation. *Transplant Proc* 2019;51(1):124-7. doi: 10.1016/J.TRANSPROCEED.2018.04.085.
- Lipowska M, Lipowski M. Polish normalization of the Body Esteem Scale. *Health Psychol Rep* 2014;1(1):72-81. doi: 10.5114/hpr.2013.40471.

ANNEX A

Form of informed consent to participate in the study

participation is voluntary, and refusal does not entail any consequences. Even after giving consent, during the study, you can withdraw without giving a reason. It is also possible to withdraw consent to the processing of obtained data after the end of participation.

The obtained results are confidential, which means that individual data obtained from the participant will not be distributed in a way that allows for the identification of the person, but only processed for scientific development.

This document, confirming consent to participate in the study, will be stored by the principles of storing confidential documentation.

In case of questions or doubts, at any stage of the study, as well as after its completion, please contact the person responsible for the project. This person can also be informed of the desire to familiarize themselves with the collective results of the project.

Consent to participate in the study

I declare that I have read the information for the person being studied. Of my own and free will, I agree to participate in this study.

I expressly and voluntarily consent to the processing of my data (name and surname) by SWPS University with its registered office at ul. Chodakowska 19/31 in Warsaw (03-815) for my participation in the study and to achieve its objectives.

Name and surname of the subject:

ANNEX B

Information about the study

I am a part-time master's student at SWPS University, Poznań Branch, majoring in Psychology.

The study aims to check whether the level of empathy, gratitude, and life satisfaction is significantly different in people after kidney transplantation compared to healthy people (for this study, defined as people who have never undergone a transplant). In the conducted study, I will also check whether the

time that has passed since the transplantation will be related to a possible change in the intensity of the variables studied.

The results of the study will be used to write my master's thesis under the substantive supervision of dr. hab., professor of the Jagiellonian University – Malwina Szpitalak.

Thank you for your willingness to take part in the study. Before you make a decision, I would like to explain what it will consist of and what I will ask for in it.

The study will last about 20–30 min. During the survey, you will be asked to fill out 3 questionnaires, which include statements regarding your opinion on various aspects of life.

In the initial survey, some questions refer to the topic of organ transplantation, so you can refuse to participate in the study before starting or during it, if the topic of transplantation makes you feel uncomfortable. If discomfort occurs after the survey, below is the phone number for the National Telephone Advice Center for People Experiencing Emotional Crisis – 116 123.

Please bear in mind that there are no right or wrong answers here. Any true answer is good.

I kindly ask you to carefully and honestly refer to the statements contained in the questionnaires. Participation is voluntary, and refusal is not associated with any consequences. Also, after giving consent, during the survey, you can withdraw without giving a reason.

For this purpose, please remember or write down the code of the sheet that you will receive to fill out. This code is located in the upper right corner of the questionnaires, e.g., X000, and when reporting to me the fact of withdrawing consent after the end of the study, please enter the code number placed on the sheet. Because the study is conducted on-site, you will receive a form on which you will express your conscious consent to participate in the study. Signing such a form is equivalent to a declaration that you have familiarized yourself with the above information and that you agree to participate in this study of your own free will.

The data collected will be confidential, which means that individual data obtained from the participant will not be distributed in a way that would allow for the identification of the person, but will only be processed for scientific research. In order to exercise due diligence in maintaining confidentiality, the consent forms filled out by you will be placed in a separate container, which will prevent me from linking the data from the questionnaires to a specific name and surname.

The collected data will be stored for 1 year from the end of the study, in a place protected from access by third parties, and after this period will be destroyed.

In case of any questions, doubts, or need for additional information related to this study, or if you wish to see the final report of the study conducted by me, please contact me, the person responsible for conducting it: Ewelina Pustkowska (epustkowska@st.swps.edu.pl).

Thank you for your participation and valuable contribution to our study.

ANNEX C

A01

1. Please mark your gender

F	M	Other

F – female; M – male

2. Please state your age (in years):

Age:

3. Have you ever had a kidney transplantation? Please select the appropriate answer:

Yes	No

If you answered “yes” to question No. 3, please indicate the number of years that have passed since the date of your last kidney transplantation:

Number of years:

4. Please indicate how many kidney transplantations you have undergone during your lifetime:

0	1	More than 1

5. Please indicate from which donor the transplanted organ (kidney) came:

Living donor	Donor deceased	Not applicable