

# Recording of dissimulation and denial in the context of the psychosomatic evaluation at living kidney transplantation using the Minnesota Multiphasic Personality Inventory (MMPI)

## Erfassung von Dissimulation und Verleugnung im Rahmen der psychosomatischen Evaluierung bei Lebendnierentransplantation unter Verwendung des Minnesota Multiphasic Personality Inventory (MMPI)

### Abstract

**Objective:** Living organ donation involves interference with a healthy organism. Therefore, most transplantation centres ascertain the voluntariness of the donation as well as its motivation by means of a psychosomatic evaluation. The circumstance that the evaluation is compulsory and not a primary concern of the donor-recipient pair may occasion respondents to present only what they consider innocuous and socially adequate. Thus, the information value of the results can be considerably affected.

**Methods:** In the context of a psychosomatic evaluation prior to living kidney transplantation, 71 donor-recipient pairs were screened at the transplantation centre of Friedrich Schiller University, Jena. Using the validity scales of the Minnesota Multiphasic Personality Inventory (MMPI) ("infrequency" (F), "lie" (L) and "correction-scales" (K)) and the Dissimulation Index according to Gough ("F-K"), we tried to find traits of dissimulation and denial.

**Results:** About 50% of the participants showed an infrequency raw score of zero. This means that at least half of the sample is apprehensive which may cause a cautious and controlled attitude towards the examination. The K-value ( $T \geq 59$ ) and the Dissimulation Index ( $F-K \leq -15$ ) indicated dissimulation in 29% and 26% of the overall sample. Moreover, it affects the score of 11 respondents (8%) so profoundly that any significance regarding the personality traits is lost.

**Conclusion:** In the setup of the examination situation as well as in the interpretation of test-psychological findings, the occurrence and possible influence of dissimulation should be considered. The validity scale of the MMPI can help to obtain an objective clinical impression of dissimulation in problem cases.

**Keywords:** validity scales, dissimulation, denial, psychosomatic evaluation, living-kidney transplantation, Minnesota Multiphasic Personality Inventory (MMPI), response set

### Zusammenfassung

**Hintergrund:** Mit der Lebendorganspende ist der Eingriff in einen gesunden Organismus verbunden. Die Freiwilligkeit des Spendewunsches und seine Motivation werden deshalb in den meisten Transplantationszentren durch eine psychosomatische Evaluierung abgeklärt. Der Umstand, dass die Evaluierung vorgeschrieben ist und keinem primären Anliegen der Spender-Empfänger-Paare nachkommt, kann dazu führen, dass in der Untersuchung vor allem das präsentiert wird, was für unver-

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fänglich und sozial angemessen gehalten wird. Die Aussagefähigkeit der erhobenen Befunde kann dadurch erheblich beeinträchtigt sein.

**Methode:** Im Rahmen der psychosomatischen Evaluierung im Vorfeld einer Lebendnierenspende wurden am Transplantationszentrum der Friedrich-Schiller-Universität Jena 71 Spender-Empfänger-Paare vorgestellt. An Hand der Validitätsskalen des Minnesota Multiphasic Personality Inventory (MMPI), der „Fehler-Skala“ (F), der „Lügen-Skala“ (L) und der „Korrektur-Skala“ (K), sowie dem Dissimulationsindex nach Gough („F-K“) wurde versucht, testpsychologische Merkmale von Dissimulation und Verleugnung nachzuweisen.

**Ergebnisse:** Der Befund, dass ca. 50% der Teilnehmer einen Fehlerrohwert von 0 aufweisen, spricht dafür, dass mindestens die Hälfte der Stichprobe Ängste hat, die zu einer vorsichtigen und kontrollierten Haltung gegenüber der Untersuchung führen können. Der K-Wert ( $T \geq 59$ ) zeigt bei 29% und der Dissimulationsindex ( $F-K \leq -15$ ) bei 26% der Gesamtstichprobe das Vorliegen von Dissimulation an. In 11 Fällen (8%) ist das Testergebnis durch Dissimulation derart beeinträchtigt, dass es bezüglich der Persönlichkeitsmerkmale der Testperson keine Aussagefähigkeit mehr besitzt.

**Diskussion:** Bei der Gestaltung der Untersuchungssituation wie auch bei der Interpretation der testpsychologischen Untersuchungsbefunde sollte das Vorkommen und der mögliche Einfluss von Dissimulation bedacht werden. Bei Problemfällen können die Validitätsskalen des MMPI dabei helfen, den klinischen Eindruck über das Vorliegen von Dissimulation zu objektivieren.

**Schlüsselwörter:** Lebendnierenspende, Minnesota Multiphasic Personality Inventory (MMPI), Validitätsskalen, Dissimulation, Verleugnung, psychosomatische Evaluierung, Antwortverhalten

## Introduction

For ethical reasons as well as for the protection of the donor, the necessity of psychosomatic evaluation in preparation of living kidney transplantation has been internationally recognized [1], [2] and is practiced by most transplantation centres. The transplantation law implemented in Germany in 1997 stipulates voluntariness of donation and the existence of an emotional tie between donor and recipient as prerequisites for transplantation [3]. Therefore, the majority of transplantation centres have established a pre-operative psychosomatic screening of the donor-recipient pair. Various proposals concerning its practical execution have been made [4], [5], [6], [7], [8], [9]. The basic assumption is that donor and recipient are willing to talk openly about psychological and psychosocial problems that surfaced during the illness and ultimately led to the pro-donation decision. Yet, on the other hand, coping with terminal kidney insufficiency and haemodialysis necessitates complex strategies of coping which may pose difficulties for example in the evaluation of compliance, motivation for a donation or the relationship of donor and recipient [10], [11], [12], [13].

The psychosomatic evaluation of donor-recipient pairs in preparation of a living kidney transplantation was conducted according to a specifically developed program for the transplantation centre of Friedrich Schiller Universität, Jena [14], [15]. In addition to two consultations with the

pair, it comprises single consultations with donor and recipient as well as various tests. Among these is for example the German abbreviated version of the Minnesota Multiphasic Personality Inventory (MMPI-K) [16]. Contrary to our expectations, the donor-recipient pairs regarded the consultations with apprehension and even aversion. Many focussed mainly on the obvious problems resulting from the kidney disease, problems that they consider harmless and socially acceptable. This impression is supported by the elevated scores of the validity scales that resulted from the scoring of the MMPI.

From a psychoanalytical view, the phenomenon has been already described as a combination of dissimulation and denial [13], [15]. Denial, in this case, indicates an unconscious intrapsychical defence mechanism directed against an apperception of the ambivalences, anxieties and risks associated with transplantation [17]. It constitutes an important psychic mechanism during the time prior to the operation. This mechanism enables donors and recipients to go on with the transplantation despite the existing risks and anxieties attached to it [18], [19].

In contrast, dissimulation constitutes a more conscious interpersonal behaviour. Existing anxieties, ambivalences and conflicts are either concealed or downplayed during the examination situation. Thereby, patients try to avoid potential difficulties and conflicts concerning the acceptance of the donation request by the examiner so as not to put the desired transplantation to risk [4], [12], [14]. In essence, dissimulation is acting a negative transfer-

ence on the interviewer and the interview setting. On a phenomenological level, denial and dissimulation cause a false self-representation. This inhibits the diagnostic process as well as the interpretation of the test results. On this level, the extent of both methods of resistance can be ascertained by means of the validity scales of the MMPI.

Using the validity scales of the MMPI-K, the present paper examines whether our subjective impression can be confirmed, to which extent the behaviour of donor-recipient pairs is influenced by dissimulation and denial and furthermore, whether there are differences between recipient and donor.

## Methods

### The application of the MMPI for investigating dissimulation and denial

The 1963 MMPI-Saarbrücken (MMPI-SB) [20] is the first German adaptation of the original American Personality Inventory [21]. In Germany, it was standardized on a healthy control group in 1961. The German abbreviated version (MMPI-K) was developed by selecting the statistically most important items for the scale profile of the MMPI-SB [16]. Mathematical and statistical evidence was provided that the selected items of the MMPI-K furnish raw scores which highly correlate with the profiles of the MMPI-SB [16]. The standardization of the MMPI-K is based on that of the MMPI-SB.

The revision of the American original of the MMPI [22] prompted a revision and re-standardization of the MMPI-SB in Germany. The “MMPI-2” is available since 2000 [23].

In all its versions the MMPI contains three validity scales which are of importance for the identification of dissimulation and denial: lie scale (L-score), infrequency scale (F-score) and correction scale (K-score).

Elevated scores of the *correction scale* (K-score) are indicative of individuals who may be trying to choose answers that suggest mental health. The items assess the willingness of the individual to disclose information that he/she does not want to acknowledge in her/his family in order to appear normal and avoid conflicts (e.g.: “I don’t care what others say.”)

The *lie scale* (L-score) aims at detecting the patient’s attempt to present herself/himself in a favourable light. Therefore, it consists of items that deal with minor flaws and weaknesses that most people are willing to admit (e.g.: “At times I feel like swearing.”).

The *infrequency scale* (F-score) is usually elevated when a respondent exaggerates or responds randomly to the items (e.g.: “Something is wrong with me.”). Vice versa, a low F-score may be indicative of respondents answering the items in a careful and controlled way and may be underreporting or downplaying the prevalence of symptoms. A dissimulating patient will undertake the test in a very controlled way (low F-score). Also, he/she will

downplay or deny mental problems (elevated K-score). The thus triggered effects upon the infrequency scale and the correction scale are consolidated by the *Dissimulation Index*, by finding the difference between the two scales (F-K) [24]. A low Dissimulation Index suggests defensive responding by the respondent.

Thus, the test offers four variables that are indicative of defensive responding. However, the Dissimulation Index itself cannot be understood as an independent variable.

### Data collection and description of sample

We conducted a retrospective analysis of the MMPI-data of all living kidney donors who presented themselves for psychosomatic evaluation at the Department of Internistic Psychotherapy at the Klinik für Innere Medizin I, Friedrich Schiller Universität, Jena (FSU).

The MMPI-K was employed right from the beginning in the psychosomatic evaluation of the donor-recipient pairs because the MMPI-SB was used routinely in the psychosomatic department as a personal inventory. The abbreviated form was chosen because the 221 items instead of 506 needed less time to complete. Thus, the physical and mental strain for patients requiring haemodialysis was reduced considerably.

All donor-recipient pairs were given an in-depth introduction to the inventory. They were asked to select their answers freely during the test as they apply to themselves. The patients have been informed by the investigators about the scientific interest of the collected data and the ensuing privacy protection. All donor-recipient pairs agreed with the use of their data for the present study. In order to avoid interaction or collusion during the test, donor and recipient were placed in separate rooms.

For the present analysis 69 reports by recipients and 71 reports by donors (71 donor-recipient pairs) were used. Two under aged recipients did not think they were equal to taking the test. Therefore, their reports could not be included in the survey.

The donor group is an average of ten years older than the recipient group. The sample shows the typical gender distribution in living kidney donation: women as donors are represented in a ratio of 2:1, whereas men dominate the recipient group with 70% (see Table 1) [25].

### Procedure and motivation for test analysis and the interpretation of data of the German abbreviated version of the MMPI

The raw score of the validity scales of the MMPI-K were converted into the corresponding raw score of the MMPI-SB [20] according to the manual.

Unlike the MMPI-SB, the MMPI-K was validated by a sample that is not representative of the average population due to the highly disproportionate share of test persons with psychiatric diseases [16]. When converting, we

Table 1: Description of sample

Characteristics		Donor	Recipient	Overall
Number of respondents		71	69	140 (71 Pairs)
Average age: M $\pm$ SD; (Min.; Max.) in years		52 $\pm$ 11 (32; 83)	41 $\pm$ 13 (25; 64)	47 $\pm$ 13 (15; 83)
Sex (number and percentage)	male	20 (28%)	47 (68%)	67 (48%)
	female	51 (72%)	22 (32%)	73 (52%)
Donor-recipient-relationship (number and percentage)	related	37 (52%)	35 (51%)	37 Pairs (52%)
	unmarried	29 (41%)	29 (42%)	29 Pairs (41%)
	neither related nor married	5 (7%)	5 (7%)	5 Pairs (7%)

(Regarding a detailed description of the sample, e.g. respecting the existing donor-recipient-relationships, see Wutzler et al. [47]).

can therefore assume an inherent bias with a tendency to elevated raw scores, especially when dealing with lower scores. In the context of our particular question, this is relevant especially for the interpretation of the infrequency score because the patient's control and caution are mirrored in low scores. In order to avoid this error the F-scale was interpreted on the basis of the raw scores of the MMPI-K.

However, we used raw scores of the F- and K-scale converted to the MMPI-SB for the calculation of the Dissimulation Index (F-K) to facilitate a comparison with other studies. Due to the systematic error, the K-score must be higher, so that the amount of the difference (F-K) can indicate dissimulation. Therefore, it is likely that the proportion of dissimulating patients in the sample is higher than that recorded by the calculated Dissimulation Index. Already a difference of  $(F-K) \leq -12$  is proof of dissimulation [20] according to the manual. Yet, a number of studies have proven that in order to positively discriminate dissimulating answers from normal answers, a cut-off of  $-11$  or  $-12$  is insufficient [26], [27]. Hence, we used a conservative marginal value of  $-15$  as applied by other authors [28], [29].

Elevated scores on the lie and correction scale are considered secure indicators of dissimulation [26], [30], [31], [32], [33]. The re-standardization of the MMPI-2 is based on the updated age and gender distribution as well as on the specific demographic characteristics of Germany. Thus, we transferred the MMPI-SB-raw scores of the L- and K-scale into T-score-equivalents of the MMPI-2 by using the MMPI-2 manual [23]. The error occurring due to the different reference samples when converting the raw scores of the MMPI-SB into T-score-equivalents of the MMPI-2 is marginal because only 2 of the 15 items of the L-Scale and 4 of the 30 items of the K-scale were

rephrased during the revision of the MMPI-SB (see also Blake et al. [34]).

Following American studies of dissimulation we set a T-score of  $\geq 59$  as the marginal value for dissimulation on the K-scale [35]. The comparability of our data to that of American studies is backed by the fact that concerning the K-scale, differences between the American and German reference samples are almost non-existent [23]. According to the specifications of the MMPI-2 manual [23] the overall sample was divided into three groups on the basis of the L-score:

1.  $T(L) < 60$  = normal co-operative attitude towards the test;
2.  $60 \leq T(L) < 70$  = denying response style;
3.  $T(L) \geq 70$  = dissimulating response style (sensitivity and specificity of the marginal value see Bear et al. [31]).

In addition to dissimulation, we thereby attempt to detect the occurrence of denial in our sample. It is important to bear in mind that the MMPI considers the difference between denial and dissimulation merely as a quantitative effect of the same response style. A dissimulating respondent, who wants to gain an imagined advantage, will negate all social problems or conflicts much more consciously and consistently than a respondent who disavows social problems out of a more subconscious denial mechanism. Thereby, the existence of qualitative differences between denial and dissimulation that make the equal co-existence of both defence mechanisms possible is disregarded. Thus, it is possible that hybrids of dissimulation and denial are recorded. They are subsumed according to their rating either under "dissimulation" or "denial".



## Statistical methods

Winstat 2007.1 was used for statistical computation. To allow for comparison of the samples regarding differentiation in one parameter (e.g. comparison of the sample with a L-score  $T \geq 70$  with the sample  $T(L) < 60$  with respect to its differentiation regarding the K-score), we employed the t-test. Significant differences could be identified with  $p < 0.05$ , whereby we checked beforehand for normal distribution. The three L-groups differentiated according to the T-score were tested for differences by using the Bonferroni Correction [36]. We used the Mann-Whitney U Test for the comparison of samples not normally distributed (e.g. comparison of the scores of the L- and the K-scales for the overall sample). The Spearman Rank Correlation has been applied to correlation tests of samples because a non normal distribution has to be assumed and a non-linear correlation cannot be excluded, which is compensated at least by rank correlation in case of monotonous data pairs.

## Results

### Frequency of dissimulation in the overall sample

The validity scales of the MMPI provide an indication of the existence of dissimulation for 57% of the overall sample.

In the case of 11 persons (8% of the overall sample) four features that indicate the existence of dissimulation are positive (see Figure 1). The significance of the MMPI-K for these persons is considerably limited. Six out of the 11 persons have a strongly elevated correction raw score and/or a strongly elevated Lie raw score ( $K=20$  of 22 items and  $L=10$  of 11 items). Simply because of the parameter value the clinical scales of the MMPI-K lose any significance.

The K-score of 29% of the overall sample (40 respondents) indicates dissimulation [ $T(K) \geq 59$ ]. This concerns  $\frac{1}{4}$  of all donors (27%) and a third of all recipients (30%) (see Figure 2). Regarding the level of the K score, the Spearman Rank Correlation evinces a significant relationship between donor and recipient of a pair [correlation coefficient ( $r$ ):0.39; significance ( $p$ ): $\leq 0.01$ ], suggesting that donor and recipient of a pair show an identical dissimulation tendency.

50% of the sample have an infrequency raw score of 0 (see Figure 2). Furthermore, 49% of these respondents evince a K-, L- or (F-K)-score typical of dissimulation. Vice versa, a K-, L- or (F-K)-score typical of dissimulation is associated with an infrequency raw score of 0:82% of the respondents with  $T(L) \geq 70$ , 77% of the respondents with  $T(K) \geq 59$  and 83% of the respondents with  $(F-K) \geq -15$  (see Figure 3). Only 6 respondents indicated dissimulation by the remaining validity scales without  $F=0$ .

Regarding the overall sample, the Spearman rank correlation proves a highly significant relation between the score of the Correction scale and the parameter value of the other validity scales or that of the Dissimulation Index, respectively (all  $p \leq 0.01$  between the K- and the F-scale with correlation coefficient ( $r$ ): $-0.51$ ; between the L-scale and the F-scale with ( $r$ ): $-0.29$  and between the Dissimulation Index (F-K) and the F-scale with ( $r$ ): $0.71$ ).

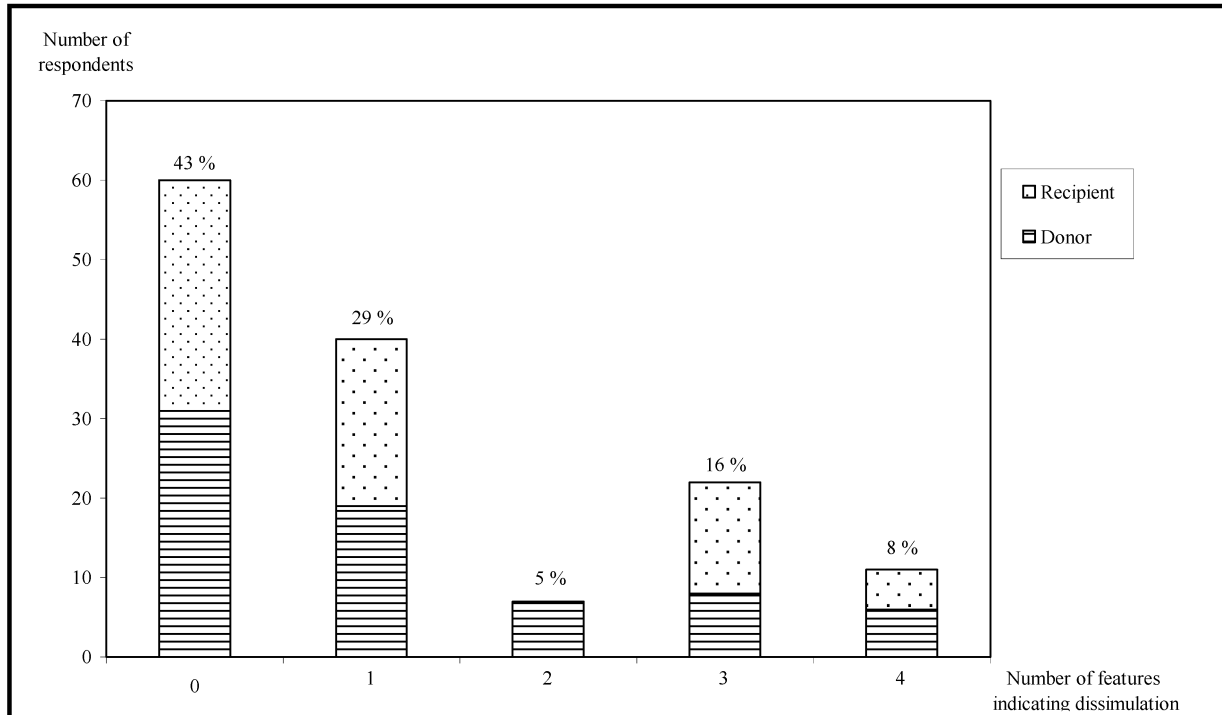
The mean of the Dissimulation Index (F-K) is  $-10.6$  (median: 12) (see Table 2). 82 respondents have a (F-K)-score of  $\leq -12$  (41 donors and 41 recipients, altogether 58.6% of the overall sample). This is of particular interest, because the manual of the MMPI-SB already counts a (F-K)-score of  $\leq -12$  as evidence of dissimulation [20] as opposed to the marginal value of  $-15$  as used in the present study.

Regarding the mean of the F-, L- and K-scale as well as the Dissimulation Index (F-K), the donor group does not differ significantly from the recipient group (see Table 3). Also, the t-test does not indicate a significant difference for the comparison of the respective validity scales between women and men, between male and female recipients and between male and female donors as well as between the group of related and unrelated respondents (see Table 3).

### The specification of dissimulation and denial by the Lie Scale

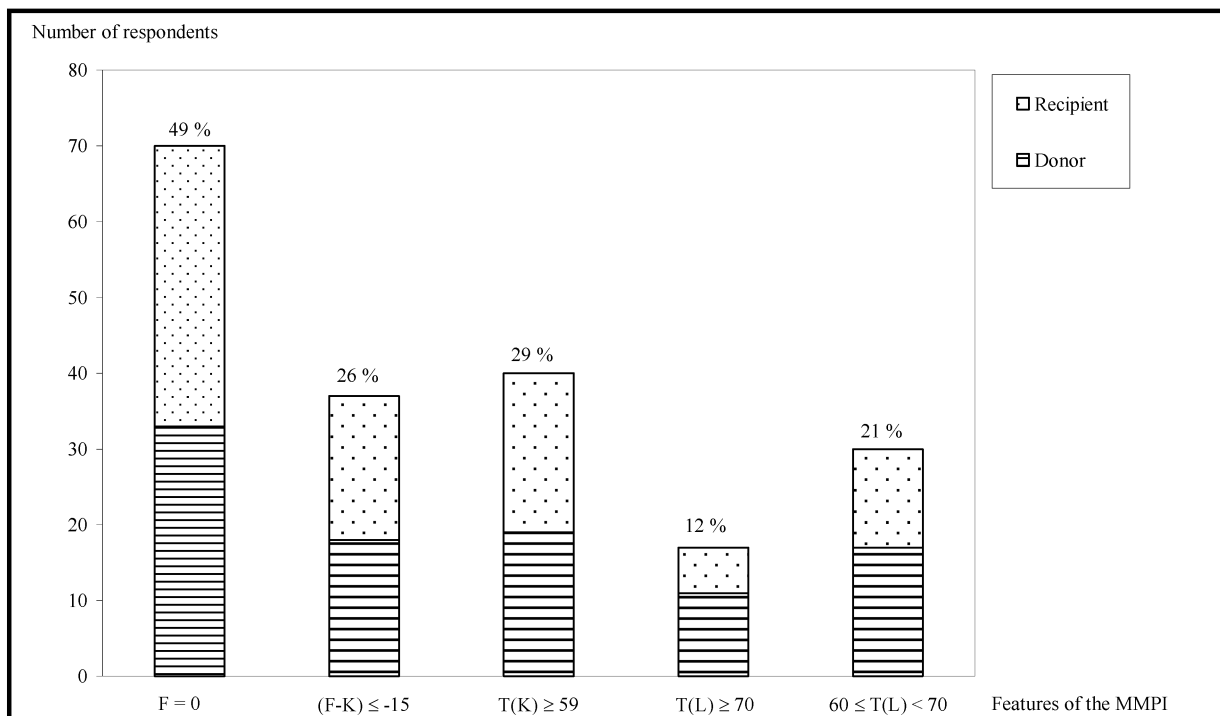
On the basis of the T-scores of the lie scale three groups were identified (see Table 4). Accordingly, 94 patients display normal scores (67% of the sample), 29 (21%) display a denying response style and in the case of 17 respondents (12%) the L-score indicates dissimulation. In the dissimulating sample the number of recipients is nearly twice as high as that of the donors (11:6).

By means of the U-tests we examined whether the three groups also differ in the parameter value of the other items for dissimulation. There are significant differences between the control group and the dissimulating group. Between the control group and the group with the denying response style we could find a significant difference only regarding the K-score and the Dissimulation Index. Strikingly, we could not ascertain significant differences between the denying group and the dissimulating group.



Possible features are:  $T(L) \geq 70$ ,  $(F-K) \leq -15$ ,  $T(K) \geq 59$ ,  $F=0$   
 Five variants are shown: either none of the features for dissimulation is positive ("0") or the test indicates dissimulation by one ("1"), two ("2"), three ("3") or four ("4") features.  
 Percentages above the column refer to the overall sample.

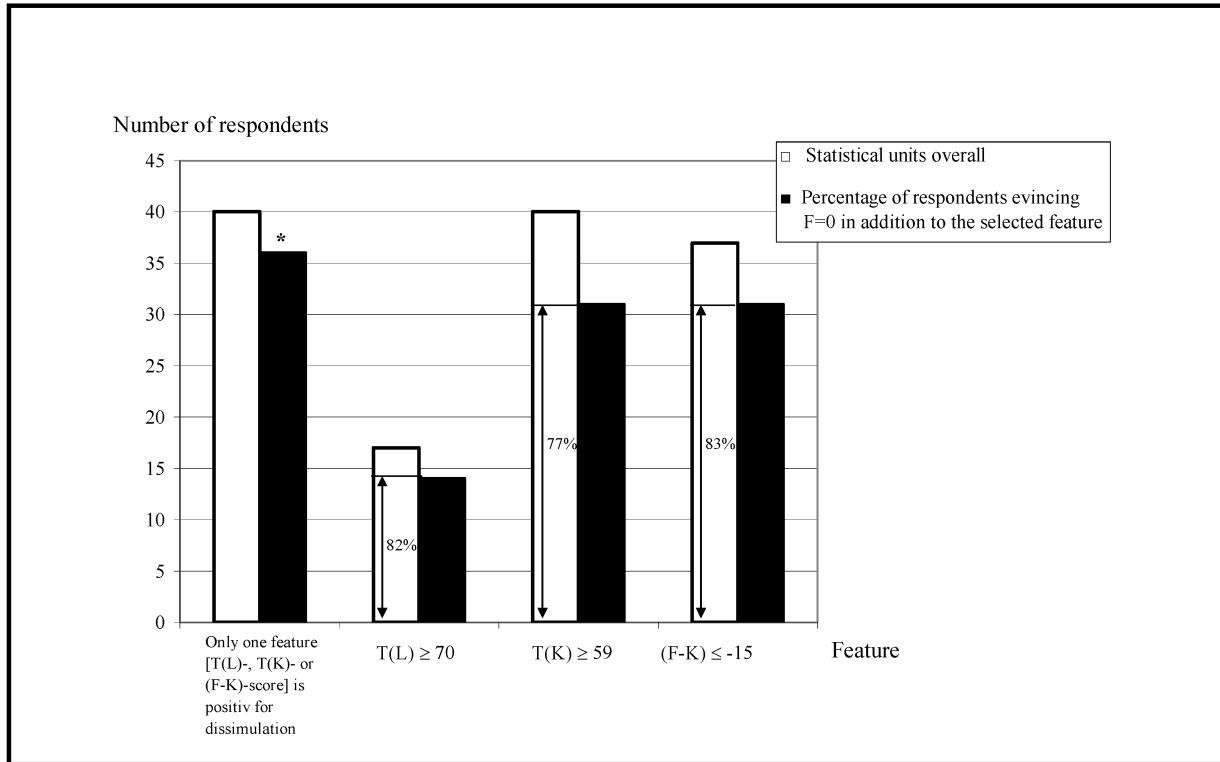
Figure 1: Frequency of the number of features for dissimulation in the overall sample



Percentages above the columns refer to the overall sample.  
 For the calculation and specification of the marginal value the following were used:

- the raw scores of the MMPI-K for the F-scale
- regarding the L- and the K-scale the T-score equivalents of the MMPI-2 for the corresponding raw scores of the L- and K-scale of the MMPI-K
- for the Dissimulation Index (F-K) the raw scores of the F- and K-scale of the MMPI-K converted into the MMPI-SB

Figure 2: Frequency of features for dissimulation and denial in the sample



\* 90% of the respondents indicating dissimulation by only one feature on the L-, K-scale or by their (F-K)-score also exhibit an Infrequency raw score of 0.

For the calculation and the specification of the marginal value the following were used:

- regarding the L- and the K-scale the T-score equivalents of the MMPI-2 for the corresponding raw scores of the L- and K-scale of the MMPI-K
- for the Dissimulation Index (F-K) the raw scores of the F- and K-scale of the MMPI-K converted into the MMPI-SB

Figure 3: Depiction of the percentage of respondents showing an infrequency raw score of 0 in addition to the selected feature

Table 2: Mean ± Standard Deviation (sd) for the validity scales of the MMPI and the Dissimulation Index (F-K)

	Overall sample	Women	Men	Donor	Recipient
Number of respondents	140	73	67	71	69
<b>Infrequency Scale</b> (Mean ± sd)	1.05±1.64	1.07±1.79	1.03±1,47	1.06±1.57	1.04±1.72
<b>Lie Scale</b> (Mean ± sd)	54.18±11.26	55.07±11.35	53.21±11.17	55.66±10.67	52.65±11.72
<b>Correction Scale</b> (Mean ± sd)	52.75±9.37	52.37±9.53	53.16±9.25	52.80±9.18	52.70±9.63
<b>Dissimulation Index (F-K)</b> (Mean ± sd)	-10.58±5.58	-10.71±5.93	-10.43±5.22	-10.77±5.33	-10.38±5.86

Infrequency scale = raw score of the F-scale of the MMPI-K; lie and correction scale = T-score equivalent of the MMPI-2 for the corresponding raw score of the L- and K-scale of the MMPI-K; (F-K) = the raw scores of the F- and K-scale of the MMPI-K converted into the MMPI-SB

**Table 3: Parameters for the calculation of the t-test for independent samples: t- and p-scores as well as the amount of degrees of freedom (df)**

Samples to be compared	Inferential statistical parameters	F	T(L)	T(K)	F-K
Donor/recipient	t	0.047	-1.59	-0.067	0.42
	p	0.96	0.11	0.95	0.67
	df	138	138	138	138
Donor: women/men	t	0.19	1.32	-0.43	-0.07
	p	0.85	0.19	0.67	0.94
	df	67	69	69	69
Recipient: women/men	t	0.002	-0.67	-0.38	-0.19
	p	0.998	0.51	0.70	0.91
	df	65	67	67	67
Donor and recipient: related pairs/unrelated pairs	t	-0.45	0.88	0.74	-0.65
	p	0.65	0.38	0.46	0.51
	df	134	138	138	138
Women/men	t	0.14	0.98	-0.50	-0.29
	p	0.89	0.33	0.62	0.77
	df	134	138	138	138

The following were used: F = raw score of the F-scale of the MMPI-K; T(L) and T(K) = T-score equivalents of the MMPI-2 for the raw scores of the L- and K-scale of the MMPI-K; (F-K) = the raw scores of the F- and K-scale of the MMPI-K converted into the MMPI-SB

**Table 4: Depiction of mean and standard deviation (sd) of the groups identified on the basis of the L-score for the correction scale (raw score of the MMPI-K), the Dissimulation Index (raw scores after conversion to the MMPI-SB) and the K-score (T-score equivalents of the MMPI-2 for the raw scores of the MMPI-K) Depiction of the results of the group comparison using the U-tests**

		F	(F-K)	T(K)	
Sample	Number	Mean (sd)			
A	T(L)<60	94	1.38 (1.88)	-8.69 (5.49)	49.37 (8.67)
B	60≤T(L)<70	29	0.55 (0.74)	-13.52 (3.66)	57.93 (6.88)
C	70≤T(L)	17	0.18 (0.39)	-16 (2.06)	62.59 (4.95)
Sample comparison by means of the U-test		P			
A vs. B		0.03	3x10 <sup>-6</sup> **	5x10 <sup>-6</sup> **	
B vs. C		0.08	0.03	0.03	
C vs. A		0.001 *	9x10 <sup>-8</sup> **	7x10 <sup>-8</sup> **	

Indication of the significance using the Bonferroni-Correction: \* = p<0.017 significant; \*\* = p<0.00033 highly significant

## Discussion

A number of expectations are related to psychosomatic evaluation prior to living kidney transplantation. The screening is supposed to evaluate the mental state of

health and the health behaviour of donors and recipients, characterize the relation between the pair and make a statement regarding the donation motive. The starting point for the present analysis is the observation of the authors that a number of pairs applied, where we found



it hard to meet this task. They are anxious and sceptical of the examination and deny or conceal existing conflicts and problems [4], [14], [15].

The present paper examines, whether it is possible to show the observed phenomena of dissimulation and denial, based on the validity scales of the MMPI. It turned out that half of the sample proceeded carefully and controlled when taking the test in order to avoid mistakes. In addition to a lowered infrequency raw score 1/3 of the overall sample evinces signs of dissimulation and denial by the level of the lie and correction score. That matches the data known from cadaveric transplantation: Using the validity scales of the American MMPI, Putzke et al. [37] proved that in preparation of a cardiac transplantation 40% of the potential recipients have a highly negative Dissimulation Index [(F-K)  $\leq$  -15] and an elevated K-score [T(K)  $\geq$  59]. Similar findings were recorded prior to lung transplantation. In a study by Williams et al., 28% of a sample comprising 39 patients displayed a Dissimulation Index of  $\leq$  -15 [29]. In another study by Putzke et al. [28] 37% of a sample of 75 patients with lung disease displayed the same result.

By comparing the scores of the clinical scales of the MMPI in the defensive group [T(K)  $\geq$  59] with those of the complying group, Putzke et al. were able to prove that a defensive response style minimizes symptoms of depression and matches a tendency to appear involved [35]. The defensive behaviour indicated by an elevated K-score, correlated significantly with the tendency to underreport or downplay psychological problems in the self-assessment. When transferring this finding to the group characterized by an elevated K-score [T(K)  $\geq$  59] in our sample, our results demonstrate that in the test situation about 1/3 of the donors and recipients represent themselves, their relationships and their social environment as harmonious and free of conflicts. In our sample, this type of dissimulation is furthermore characterized by a high degree of controlledness and caution in the completion of the test indicated by a lowered infrequency score.

This behaviour might be caused by the lack of interest of the donors and recipients in the examination as well as resiliency in acknowledging their fears and anxieties [14]. On the contrary, it seems necessary to establish a stable and well functioning defence in order to best possible adapt to the risks and circumstances of the examinations as well as surgery. Transplantation itself may be seriously called into question, if the defence against existing fears is weak. Recent studies state an increase of the anxiety level prior to surgery [38] and connected therewith, the wish for psychosocial care [39]. Thus, it is the task of the psychosomatic counsellor to stabilize the patient and strengthen his defence prior to surgery. On the other hand, it is well possible that in special cases the donation must be declined for psychological or ethical reasons. Concern that psychosomatic evaluation may prevent the realisation of the desired living kidney transplantation and thus endangers the hope for a better life may be one cause for the defence phenomena recorded in our sample.

In 8% of the sample the informational value of the Clinical scales of the MMPI is seriously called into question by the pronounced dissimulating and denying response style. Hence it becomes apparent that these defence phenomena may cause distorted test results with part of the donor-recipient pairs. Therefore, it seems necessary to evaluate the extent of dissimulation and denial of an applying pair. In such a context, the validity scales of the MMPI or the openness scale of the Freiburg Personality Inventory (FPI) may prove useful as screening methods. Cassisi und Workman [40] demonstrate that the abbreviated form of the MMPI exclusively containing the items of the validity scales are as efficient in identifying a defensive response style of the patient as the use of the full version of the MMPI. Building on that, it would be conceivable to integrate the items of the validity scales in an inventory that focuses specifically on problems connected with transplantation. There were efforts to create a joint test defence score [41], [42] using the validity scales of the MMPI, of the Freiburg Personality Inventory [43] and the Gießen-Tests [44]. However, the marginal value for the validity scales of the MMPI-K was set at very low scores. Thus, it is questionable whether a dissimulating response style was detected.

In our analysis we could not detect differences regarding the score of the validity scales between donor and recipient sample. On the contrary, we found a significant relation between the value of the K-score of the donor and the recipient of a pair. At first, this contradicts the findings of Köhn et al. [45], which were collected by means of the openness scale of the Freiburg Personality Inventory. Here, the openness score of the recipient was found to be significantly lower prior to kidney donation. Possibly, the openness scale of the FPI records different defence behaviour than the validity scales of the MMPI. At present, there are no comparative studies available.

Hope for life as before the kidney disease is important for many donors and recipients to compensate the required haemodialysis and overcome anxieties concerning transplantation. Therefore, the ambivalent attitude and emotions towards transplantation have to be denied. We attempted to elicit denial as a defence mechanism during the test situation by means of the Lie-scale of the MMPI. With 20% of the sample denial of defects and flaws could be ascertained. Accordingly, denial is used as a defence mechanism less frequent than dissimulation. This assertion has to be analyzed critically, because the MMPI proves vague in differentiating between dissimulation and denial. This might also be a reason for the lack of significant differences regarding the other validity factors [F, T(K), (F-K)] between the dissimulating sample and the denying sample.

As mentioned before, the interpretation of the data was complicated by systematic errors resulting from the transformation of the scores of the MMPI-K into equivalents of the MMPI-SB and MMPI-2. Because of our selection of criteria for the recording of dissimulation, it is likely that the percentage of dissimulating donors and recipients is higher than the data presented suggests. In order

to obtain more precise data, a prospective study applying the MMPI-2 directly would be desirable.

The personal interview dealing directly with transplantation and focussing on anxieties and reservations of the patients themselves differs from the impersonal test situation. Possibly, the acquiescence effect described in professional literature is of importance to/for it [46]. Further research is planned allowing for a more direct evaluation of dissimulation and denial in the interview situation as well as for a comparison with the results of the validity scales of the MMPI.

## Notes

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## Conflicts of interest

None declared.

## Declaration of ethical no objection of the study

The present results are based on a retrospective analysis of clinically collected data in the context of psychosomatic evaluation prior to living kidney transplantation. They are not based on an at-patient study.

The results of the evaluation of each pair were presented regularly to the Ethical Review Board of the Thuringian Medical Association.

## References

1. Danovitch GM. Impact of commercialized kidney transplantation on the doctor/patient relationship. *TxMed*. 2007;19:42.
2. Society TECoT. The consensus statement of the Amsterdam Forum on the Care of the Live Kidney Donor. *Transplantation*. 2004;78(4):491-2. DOI: 10.1097/01.TP.0000136654.85459.1E
3. Deutsche Stiftung Organtransplantation (DSO). Gesetz über die Spende, Entnahme und Übertragung von Organen. *Transplantationsgesetz*. Neu-Isenburg: DSO; 1997.
4. Muthny FA, Breuker D, Brockmann J, Senninger N, Suwelack B, Wiedebusch S. Medizinpsychologische Abklärung und Betreuung bei Lebendniere spende (LNS) – 7 Jahre Erfahrung im Rahmen des Münsteraner Modells. *TxMed*. 2007;19:98-103.
5. Erim Y, Malago M, Valentin-Gamazo C, Senf W, Broelsch CE. Guidelines for the psychosomatic evaluation of living liver donors: analysis of donor exclusion. *Transplant Proc*. 2003;35(3):909-10. DOI: 10.1016/S0041-1345(03)00159-3
6. Kasiske BL, Ramos EL, Gaston RS, Bia MJ, Danovitch GM, Bowen PA, et al. The evaluation of renal transplant candidates: clinical practice guidelines; Patient Care and Education Committee of the American Society of Transplant Physicians. *J Am Soc Nephrol*. 1995;6(1):1-34.
7. Kasiske BL, Ravenscraft M, Ramos EL, Gaston RS, Bia MJ, Danovitch GM. The evaluation of living renal transplant donors: clinical practice guidelines; Ad Hoc Clinical Practice Guidelines Subcommittee of the Patient Care and Education Committee of the American Society of Transplant Physicians. *J Am Soc Nephrol*. 1996;7(11):2288-313.
8. Leo RJ, Smith BA, Mori DL. Guidelines for conducting a psychiatric evaluation of the unrelated kidney donor. *Psychosomatics*. 2003;44(6):452-60. DOI: 10.1176/appi.psy.44.6.452
9. Mori DL, Gallagher P, Milne J. The Structured Interview for Renal Transplantation - SIRT. *Psychosomatics*. 2000;41(5):393-406. DOI: 10.1176/appi.psy.41.5.393
10. Fricchione GL. Psychiatric aspects of renal transplantation. *Aust N Z J Psychiatry*. 1989;23(3):407-17. DOI: 10.3109/00048678909068299
11. Hillebrand GF, Schmeller N, Theodorakis J, Illner WD, Schulz-Gambard E, Schneewind KA, et al. Renal transplantation from an unrelated living donor: experiences in Munich. *TxMed*. 1996;18:101-10.
12. Schauenburg H, Biller-Andorno N. Decision-making capacity and informed consent in living organ donation – difficult constellations in the psychosomatic and medico-ethical assessment of potential donors. *Z Psychosom Med Psychother*. 2003;49(2):164-74.
13. Wutzler U, Venner M. Behandlungsbedürftige Patienten ohne Therapieanliegen. In: Schlösser AM, Gerlach A, editors. *Psychoanalyse mit und ohne Couch*. Gießen: Psychosozial; 2003. p. 497-506.
14. Venner M, Wutzler U. Procedere, bisherige Ergebnisse und Probleme der Integration der psychologischen Untersuchung von Spender-Empfänger-Paaren zur Lebendniere spende. In: Johann B, Teichel U, editors. *Beiträge der Psychosomatik zur Transplantationsmedizin*. Lengerich: Pabst Science Publishers; 2000. p. 9-21.
15. Venner M, Wutzler U. Psychologische Aspekte der Lebendniere spende. *Ärztebl Thüringen*. 2000;11(4):195-7.
16. Gehring A, Blaser A. *Minnesota Multiphasic Personality Inventory: MMPI; Deutsche Kurzform für Handauswertung*. 2nd corr. ed. Bern, Göttingen, Toronto, Seattle: Huber; 1993.
17. Köhle K, Gaus E. Psychotherapie von Herzinfarktpatienten während der stationären und poststationären Behandlungsphase. In: von Uexküll T, editor. *Psychosomatische Medizin*. 4th ed. München: Urban Schwarzenberg; 1990. p. 697-718.
18. Götzmann L. Empathie und Abwehr in der Transplantationsmedizin - am Beispiel psychosozialer Interventionen vor Organtransplantation. *Z Klin Psychol Psychiatrie Psychother*. 2003;2:113-20.
19. Venner M, Wutzler U. Aggressive und kannibalische Triebimpulse im modernen Gewand der Lebendorgantransplantation. In: Schlösser AM, Gerlach A, editors. *Gewalt und Zivilisation*. Gießen: Psychosozial; 2002. p. 415-27.
20. Spreen O. *MMPI Saarbrücken*. Handbuch zur deutschen Ausgabe des MMPI von S.R. Hathaway and J.C. McKinley. Bern: Huber; 1963.
21. Hathaway SR, McKinley JC. *Minnesota Multiphasic Personality Inventory*. Revised edition. New York: Psychological Corporation; 1951.

22. Butcher JN, Dahlstrom WG, Graham JR, Tellegen A, Kaemmer B. Minnesota Multiphasic Personality Inventory (MMPI-2). Manual for administration and scoring. Minneapolis: University of Minnesota Press; 1989.
23. Hathaway SR, McKinley JC, Butcher JN, Dahlstrom WG, Graham JR, Tellegen A, et al. MMPI-2 Minnesota Multiphasic Personality Inventory-2 Manual. Bern: Huber; 2000.
24. Gough HG. The F minus K dissimulation index for the Minnesota Multiphasic Personality Inventory. *J Consult Psychol*. 1950;14(5):408-13. DOI: 10.1037/h0054506
25. Schicktanz S, Rieger JW, Lüttenberg B. Gender disparity in living kidney transplantation: a comparison of global, mid-European and German data and their ethical relevance. *TxMed*. 2006;18:83-90.
26. Baer RA, Wetter MW, Berry DTR. Detection of underreporting of psychopathology on the MMPI: a meta-analysis. *Clinical Psychology Review*. 1992;12(5):509-525. DOI: 10.1016/0272-7358(92)90069-K
27. Bagby RM, Rogers R, Buis T. Detecting malingered and defensive responding on the MMPI-2 in a forensic inpatient sample. *J Pers Assess*. 1994;62(2):191-203. DOI: 10.1207/s15327752jpa6202\_2
28. Putzke JD, Williams MA, Boll TJ. A defensive response set and the relation between cognitive and emotional functioning: a replication. *Percept Mot Skills*. 1998;86(1):251-7.
29. Williams MA, LaMarche JA, Smith RL, Fielstein EM, Hardin JM, McGiffin DC, et al. Neurocognitive and emotional functioning in lung transplant candidates: a preliminary study. *J Clin Psychol Med Settings*. 1997;4(1):79-90. DOI: 10.1023/A:1026236221331
30. Austin JS. The detection of fake good and fake bad on the MMPI-2. *Educational Psychol Measurement*. 1992;52:669-74. DOI: 10.1177/0013164492052003016
31. Baer RA, Sekirnjak G. Detection of underreporting on the MMPI-2 in a clinical population: effects of information about validity scales. *J Pers Assess*. 1997;69(3):555-67. DOI: 10.1207/s15327752jpa6903\_9
32. Bagby RM, Rogers R, Buis T. Malingered and defensive response styles on the MMPI-2: an examination of validity scales. *Assessment*. 1994;1(1):31-8. DOI: 10.1177/1073191194001001005
33. Greene RL. The MMPI: An interpretive manual. New York: Grune Stratton; 1980.
34. Blake DD, Penk WE, Mori DL, Kleespies PM, Walsh SS, Keane TM. Validity and clinical scale comparisons between the MMPI and MMPI-2 with psychiatric inpatients. *Psychol Rep*. 1992;70(1):325-32. DOI: 10.2466/PRO.70.1.323-332
35. Putzke JD, Williams MA, Daniel FJ, Boll TJ. The utility of K-correction to adjust for a defensive response set on the MMPI. *Assessment*. 1999;6(1):61-70. DOI: 10.1177/107319119900600107
36. Sachs L. *Angewandte Statistik*. 7th ed. Berlin: Springer; 1992.
37. Putzke JD, Williams MA, Millsaps CL, J MH, Azrin RL, LaMarche JA, et al. The impact of a defensive response set on the relationship between MMPI and cognitive tests among heart transplant candidates. *Assessment*. 1997;4(4):365-75.
38. Berth H, Petrowski K, Balck F. The Amsterdam Preoperative Anxiety and Information Scale (APAIS) – the first trial of a German version. *GMS Psychosoc Med*. 2007;4:Doc01. Available from: <http://www.egms.de/en/journals/psm/2007-4/psm000033.shtml>
39. Goetzmann L, Klaghofer R, Wagner-Huber R, Halter J, Boehler A, Muellhaupt B, et al. Psychosocial need for counselling before and after a lung, liver or allogenic bone marrow transplant – results of a prospective study. *Z Psychosom Med Psychother*. 2006;52(3):230-42.
40. Cassisi JE, Workman DE. The detection of malingering and deception with a short form of the MMPI-2 based on the L, F, and K scales. *J Clin Psychol*. 1992;48(1):54-8. DOI: 10.1002/1097-4679(199201)48:1<54::AID-JCLP2270480107>3.0.CO;2-G
41. Böhme H, Teusch L. Abwehr in Rating-Skalen und Therapieerfolg. *Nervenarzt*. 1997;68:896-902. DOI: 10.1007/s001150050213
42. Böhme H, Teusch L. Die Auswirkung der Testabwehr in Persönlichkeitsfragebögen auf die Evaluation von Psychotherapieergebnissen. *Psychotherapeut*. 1999;44:36-43.
43. Fahrenberg J, Hampel R, Selg H. Das Freiburger Persönlichkeitsinventar FPI. Revidierte Fassung FPI-R und teilweise geänderte Fassung FPI-A1. Handanweisung. 6th ed. Göttingen: Hogrefe; 1994.
44. Beckmann D, Brähler E, Richter HE. Gießen-Test. 4th ed. Bern: Huber; 1990.
45. Köhn D, Neudert S, Lukaszczk M, Faller H. Psychologische Begutachtung im Vorfeld der Lebendnieren spende - Dissimulieren Spender und Empfänger in dieser Begehrnsituation? *Txmed Suppl II*. 2006;18:129-30.
46. Hinz A, Michalski D, Schwarz R, Herzberg PY. The acquiescence effect in responding to a questionnaire. *GMS Psychosoc Med*. 2007;4:Doc07. Available from: <http://www.egms.de/en/journals/psm/2007-4/psm000039.shtml>
47. Wutzler U, Venner M. Methodische Aspekte der psychologischen Evaluierung vor Lebendnierentransplantation. In: Geyer M, Plöttner G, editors. *Psychodynamische Psychotherapie und ihre Therapeuten. Lebenswirklichkeiten und Identitäten von Psychotherapeuten*. Gießen: Psychosozial; 2008. p. 215-28.

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