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Determinants of Lack of Consent for Deceased Organ Donation Among Nurses and Physicians: A Cross-Sectional Study

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Background: Deceased organ donation is the principal source of transplantable organs; however, organ shortages remain a major public health challenge. Healthcare professionals play a pivotal role in shaping societal attitudes toward transplantation. This study aimed to identify sociodemographic, psychological, and attitudinal factors independently associated with lack of willingness to consent to deceased organ donation among nurses and physicians working in dialysis units.

Material/Methods: A nationwide cross-sectional survey was conducted in Poland between February 2023 and June 2024 among 850 nurses and 243 physicians. Data were collected using paper-based and online questionnaires, incorporating sociodemographic variables, donation-related attitudes, and validated psychometric scales assessing life satisfaction, self-esteem, self-efficacy, and empathy. The primary outcome was lack of willingness to consent to deceased organ donation. Group comparisons were performed using Mann-Whitney U and chi-square tests. Multivariable logistic regression identified independent determinants.

Results: Overall, 35.2% of participants either declined or did not clearly express willingness to consent to deceased organ donation. Higher levels of personal distress were associated with increased odds of lack of willingness to consent ($B = 0.05$; $OR = 1.05$; 95% CI, 1.00-1.10; $P = 0.04$), whereas higher empathic concern was associated with decreased odds ($B = -0.06$; $OR = 0.94$; 95% CI, 0.89-0.98; $P = 0.01$). Belief in the safety of blood donation was linked to lower odds of lack of willingness to consent ($B = -0.28$; $OR = 0.76$; 95% CI, 0.63-0.91; $P < 0.001$). The strongest association was observed for acceptance of organ donation from a deceased close family member ($B = -2.36$; $OR = 0.09$; 95% CI, 0.07-0.13; $P < 0.001$). Donation-related beliefs demonstrated stronger associations with consent attitudes than sociodemographic characteristics.

Conclusions: Unwillingness to consent to deceased organ donation among dialysis staff was associated with empathy dimensions and donation-related beliefs. These findings may inform future research and the development of educational and supportive strategies aimed at improving confidence in organ donation and transplantation procedures among healthcare professionals.

Keywords: Transplantation • Attitude of Health Personnel • Organ Transplantation

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Introduction

Organ transplantation remains the most effective treatment for end-stage organ failure, offering substantial survival benefits and improved quality of life compared with alternative therapeutic options [1-3]. Deceased organ donation constitutes the primary source of transplantable organs worldwide and therefore represents a cornerstone of contemporary transplantation systems [3,4]. Despite substantial progress in transplant medicine, including advances in surgical techniques, immunosuppressive therapy, and donor management, the shortage of organs available for transplantation remains one of the most critical global public health challenges [4,5].

The effectiveness of organ donation and transplantation systems depends not only on legal frameworks and healthcare infrastructure but also on public trust and societal acceptance of deceased organ donation [6]. Consent for deceased organ donation is influenced by multiple factors, including cultural and religious beliefs, ethical concerns, knowledge about transplantation, and attitudes toward death and the human body. Because decisions regarding organ donation are often made in emotionally difficult circumstances, healthcare professionals play a particularly important role in the donation process. Physicians and nurses are frequently involved in identifying potential donors, communicating with patients' families, providing information about donation procedures, and supporting decision-making [7]. Their personal attitudes toward organ donation may therefore influence both clinical practice and broader public perceptions of transplantation.

Previous studies conducted in different countries indicate that healthcare professionals generally demonstrate more favorable attitudes toward organ donation than does the general population; however, a substantial proportion still refuses consent for deceased organ donation or remains undecided [8,9]. Importantly, these attitudes differ across professional groups and healthcare settings and may also vary according to cultural, religious, and social contexts [10]. Understanding the reasons underlying lack of consent among healthcare professionals is therefore essential, as reluctance toward donation within this group may negatively affect communication with families, confidence in the donation process, and ultimately organ donation rates.

Research suggests that attitudes toward deceased organ donation among healthcare professionals are shaped by multiple interacting factors. These include sociodemographic and professional characteristics, transplant-related knowledge, previous clinical experience, and beliefs regarding the safety and effectiveness of transplantation procedures [11]. Studies also highlight that lack of experience and training affect staff confidence levels in facilitating donation [12]. In addition,

positive attitudes toward organ donation are strongly associated with belief in the value and effectiveness of transplantation. Given their professional role and direct contact with patients and families, healthcare professionals may transfer their own beliefs and attitudes to relatives involved in donation decisions [13]. In recent years, increasing attention has been given to psychological determinants of organ donation attitudes, including empathy, emotional responses to death and suffering, and the ability to adopt the perspectives of others [14-16].

Dialysis unit staff constitute a distinctive professional group within the transplantation system. These healthcare professionals provide long-term care to patients with advanced organ failure and remain in continuous contact with transplantation-related issues. Their clinical experience, close therapeutic relationships with patients, and regular exposure to the consequences of organ shortages may shape unique attitudes toward deceased organ donation. Nevertheless, the determinants of lack of consent for deceased organ donation within this professional group remain insufficiently explored [17,18].

The issue is particularly relevant in the context of the current situation in Polish transplantation medicine. According to national organ donation statistics published by Poltransplant, the year 2025 marked a record high for transplantation activity in Poland. A total of 781 deceased organ donors were recorded, corresponding to 20.8 per million population, representing the highest donation rate in the country's history. These donors enabled 2254 organ transplant procedures from deceased donors, reflecting a substantial increase compared with previous years [19].

Despite this progress, Poland continues to report lower deceased donation rates than many Western European countries and remains below the European leaders in organ donation activity [5,20]. Therefore, identifying factors that may limit willingness to consent to deceased organ donation, including those present among healthcare professionals, remains an important public health priority.

Given the central role of healthcare professionals in the organ donation process and the limited evidence regarding dialysis unit staff, a better understanding of the determinants of lack of consent for deceased organ donation in this group is needed. Therefore, the aim of this study was to identify sociodemographic, psychological, and attitudinal factors independently associated with lack of consent for deceased organ donation among nurses and physicians working in dialysis units.

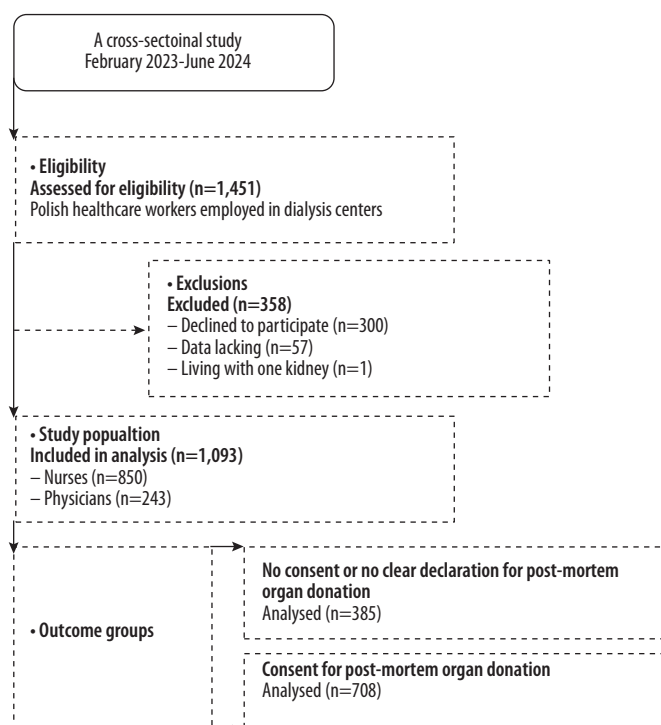


Figure 1. Study flow diagram of participant recruitment and inclusion.

Material and Methods

Study Design and Setting

A nationwide cross-sectional study was conducted between February 2023 and June 2024 following approval from the Bioethics Committee of the Andrzej Frycz Modrzewski Cracow University (approval No. KBKA/3/O/2023). The study population consisted of 1093 healthcare professionals—physicians and nurses—employed in both the public and private dialysis centers throughout Poland.

The study protocol complied with the ethical principles of the Declaration of Helsinki (World Medical Association, 2013), adhered to the STROBE (Strengthening the Reporting of Observational Studies in Epidemiology) reporting guidelines [21], and was conducted in accordance with the General Data Protection Regulation (GDPR) requirements [22]. The study was prospectively registered at ClinicalTrials.gov (identifier: NCT05797337). All participants provided informed consent prior to participation (Figure 1).

Participants

We conducted a nationwide cross-sectional survey among physicians and nurses working in dialysis centers throughout Poland. Participation was voluntary, and eligibility required adequate command of the Polish language to complete the

questionnaire. Before data collection, participants were fully informed about the study aims and procedures. Incomplete questionnaires were excluded from the analysis.

Instruments

To maximize nationwide coverage and reduce sampling bias, data collection was conducted simultaneously using paper-based and online questionnaires. Questionnaires were distributed across dialysis centers located in different regions of Poland. Respondents were further encouraged to inform colleagues about the study, which helped increase recruitment reach. A total of 1451 healthcare professionals received invitations to participate in the study through direct questionnaire distribution in dialysis centers and online dissemination. Of these, 1093 complete questionnaires were included in the final analysis, corresponding to a response rate of 75.3% among individuals who received study invitations directly from the investigators or participating centers.

The self-administered questionnaire consisted of several thematic sections. The initial part captured sociodemographic and professional characteristics. Subsequent sections explored prior experiences with blood donation, attitudes toward the donation of cells, tissues, and organs, and beliefs concerning the safety and benefits of transplantation procedures. Additionally, standardized psychometric instruments were used to evaluate selected psychological traits of the respondents.

Life satisfaction was measured using the Polish adaptation of the Satisfaction with Life Scale [23,24]. This instrument includes 5 statements rated on a 7-point Likert scale ranging from “strongly disagree” to “strongly agree.” Aggregate scores range from 5 to 35, with higher values reflecting greater life satisfaction. The Polish version demonstrates good psychometric reliability (Cronbach’s $\alpha = 0.86$).

Self-esteem was assessed with the Polish adaptation of the Rosenberg Self-Esteem Scale [25,26]. The scale includes 10 items evaluating global self-worth through positively and negatively phrased statements. Responses are scored on a 4-point Likert scale, yielding total scores between 0 and 30, where higher scores indicate higher self-esteem. The Polish validation shows good internal consistency (Cronbach’s $\alpha = 0.81$ -0.83).

General self-efficacy was evaluated using the Generalized Self-Efficacy Scale developed by Schwarzer and Jerusalem and adapted for Polish populations by Juczyński [23]. The tool contains 10 items forming a unidimensional structure. Total scores range from 10 to 40, with higher scores indicating stronger perceived self-efficacy. The Polish version demonstrates satisfactory reliability (Cronbach’s $\alpha = 0.85$).

Empathy was measured using the Polish version of the Interpersonal Reactivity Index [27]. The instrument consists of 28 items grouped into 4 subscales: perspective taking, empathic concern, personal distress, and fantasy. Items are rated on a 5-point Likert scale from 0 (“does not describe me well”) to 4 (“describes me very well”). Higher subscale scores (range: 0-28) reflect greater intensity of the respective empathy dimension.

Outcomes

The primary outcome of the study was lack of willingness to consent to deceased organ donation, defined as either explicit refusal or absence of an unequivocal declaration of consent.

Secondary outcomes included sociodemographic, psychological, and attitudinal factors examined in relation to consent for deceased organ donation.

Statistical Analysis

Statistical analyses were performed using Statistica software (version 13.3; TIBCO Software Inc, StatSoft Poland, Cracow) and Set Plus (StatSoft Polska Sp. z o.o., version 5.1.0, 2024). Continuous variables were assessed for normality of distribution using the Shapiro-Wilk test. As most continuous variables did not follow a normal distribution, they are presented as medians with lower (Q1) and upper quartiles (Q3). Categorical variables are reported as absolute numbers and percentages.

Comparisons between groups defined by consent for deceased organ donation were conducted using the Mann-Whitney U test for continuous variables and the chi-square test for categorical variables. A 2-tailed *P* value of < 0.05 was considered statistically significant.

To identify factors independently associated with lack of consent for deceased organ donation, multivariable logistic regression analysis was performed. The dependent variable was lack of consent for deceased organ donation (coded as 1), while consent was coded as 0. Independent variables included sociodemographic, professional, psychological, and attitudinal factors that were significant in univariable analyses or considered clinically relevant. All variables showing associations with the outcome at $P \leq 0.10$ in univariable analyses were entered into the initial multivariable model, followed by backward stepwise elimination to obtain the final model. Results of the logistic regression analysis are presented as odds ratios (ORs) with 95% confidence intervals (CIs). Model fit was evaluated using the Hosmer-Lemeshow goodness-of-fit test, and the proportion of explained variance was assessed with Nagelkerke’s R^2 . Multicollinearity among independent variables was examined using variance inflation factors, with values ≤ 1.5 indicating no significant collinearity.

Results

A total of 1451 healthcare professionals working in dialysis centers throughout Poland were screened for eligibility. Following exclusions—refusal to participate ($n = 300$), incomplete or missing questionnaires ($n = 57$), and solitary kidney status ($n = 1$)—the final analytical sample consisted of 1093 individuals. This cohort included 850 nurses and 243 physicians. Within the study population, 385 respondents (35.2%) either declined or did not express a clear willingness to consent to deceased organ donation, whereas 708 individuals (64.8%) declared consent.

Sociodemographic and Professional Characteristics

As shown in **Table 1**, respondents without consent for deceased organ donation were older (median age [IQR], 52 [47-56] vs 50 [39-55] years; $P < 0.0001$) and had longer job seniority (20 [12-27] vs 18 [5-26] years; $P = 0.0002$). Negative attitudes were more frequent among nurses than physicians ($P < 0.0001$), women ($P = 0.02$), and participants with children (82.3% vs 76.3%; $P = 0.02$). Lack of completed specialization training was also associated with negative attitudes (59.0% vs 52.3%; $P = 0.03$).

No significant associations were observed with marital status ($P = 0.64$), having siblings ($P = 0.61$), place of residence ($P = 0.14$), or dialysis center as the main workplace ($P = 0.42$).

Table 1. Sociodemographic and professional characteristics of physicians and nurses working in dialysis units according to consent for deceased organ donation.

Variable	No consent or no clear declaration (n = 385)	Consent (n = 708)	Test statistic	P value
Age (years); median [Q1; Q3]	52 [47; 56]	50 [39; 55]	Z = -4.82	< 0.0001*
Job seniority (years); median [Q1; Q3]	20 [12; 27]	18 [5; 26]	Z = -3.70	0.0002*
Profession, n (%)				
Nurses	338 (87.8)	512 (72.3)	$\chi^2 = 34.54$	< 0.0001*
Physicians	47 (12.2)	196 (27.7)		
Sex, n (%)				
Female	351 (91.2)	612 (86.4)	$\chi^2 = 5.32$	0.02*
Male	34 (8.8)	96 (13.6)		
Marital status, n (%)				
Married	286 (74.3)	535 (75.6)	$\chi^2 = 0.22$	0.64
Other [#]	99 (25.7)	173 (24.4)		
Has children, n (%)	317 (82.3)	540 (76.3)	$\chi^2 = 5.42$	0.02*
Has siblings, n (%)	333 (86.5)	620 (87.6)	$\chi^2 = 0.26$	0.61
Place of residence, n (%)				
City	277 (71.9)	538 (76.0)	$\chi^2 = 2.15$	0.14
Village	108 (28.0)	170 (24.0)		
Completed specialization program, n (%)	158 (41.0)	338 (47.7)	$\chi^2 = 4.52$	0.03
Dialysis center as main workplace, n (%)	269 (69.9)	511 (72.2)	$\chi^2 = 0.65$	0.42

Continuous variables are presented as medians with lower (Q_1) and upper quartiles (Q_3), and categorical variables are presented as numbers and percentages. [#] Other includes single, divorced, widowed, or widower. Z, Mann-Whitney U test; χ^2 , chi-square test.

* Statistically significant ($P < 0.05$).

Personal Psychological Characteristics

As presented in **Table 2**, respondents without consent for deceased organ donation reported lower life satisfaction (median [IQR], 23 [20-26] vs 24 [20-27]; $P = 0.01$) and lower self-esteem (20 [18-22] vs 20 [18-23.5]; $P = 0.001$). In terms of empathy, lower perspective taking (17 [14-19] vs 17 [15-20]; $P = 0.001$) and empathic concern (16 [14-19] vs 17 [15-21]; $P = 0.0002$), as well as higher personal distress (14 [12-17] vs 14 [11-16]; $P = 0.003$), were observed among respondents without consent. No difference was found for the fantasy dimension ($P = 1.00$) and perceived self-efficacy between groups ($P = 0.07$).

Donation-Related Attitudes in Transplantation

As shown in **Table 3**, respondents without consent for deceased organ donation were less likely to have donated blood at least once in their lifetime (16.9% vs 28.5%; $P = 0.00002$)

and less frequently believed that blood donation is safe (40.9% vs 67.4%; $P < 0.0001$). Registration as a bone marrow donor (10.6% vs 23.6%; $P < 0.0001$) and belief in the safety of bone marrow transplantation (35.1% vs 51.5%; $P < 0.0001$) were also less common in the non-consenting group.

Similarly, respondents without consent were less likely to believe that kidney transplantation improves quality of life (74.0% vs 88.7%; $P < 0.0001$) or that it is superior to dialysis as a therapeutic method (71.2% vs 85.9%; $P < 0.0001$).

Acceptance of organ donation from a deceased close family member (3.2% vs 79.4%; $P < 0.0001$) and willingness to ask family members for consent to organ donation (24.7% vs 40.0%; $P < 0.0001$) were markedly lower among respondents without consent. No significant difference was observed between groups with regard to perceived risk of organ trafficking ($P = 0.91$).

Table 2. Psychological characteristics of physicians and nurses working in dialysis units according to consent for deceased organ donation.

Variable	No consent or no clear declaration (n = 385)	Consent (n = 708)	Test statistic	P value
Life satisfaction (range: 5-35)	23 [20; 26]	24 [20; 27]	Z = 2.56	0.01*
Self-esteem (range: 0-30)	20 [18; 22]	20 [18; 23.5]	Z = 3.41	0.001*
Perceived self-efficacy (range: 10-40)	29 [27; 32]	30 [28; 32]	Z = 1.81	0.07
Empathy (range of each subscale: 0-28)				
Perspective taking	17 [14; 19]	17 [15; 20]	Z = 3.21	0.001*
Empathic concern	16 [14; 19]	17 [15; 21]	Z = 3.67	0.0002*
Personal distress	14 [12; 17]	14 [11; 16]	Z = -2.97	0.003*
Fantasy	14 [11; 17]	14 [12; 17]	Z = -0.004	1.00

Continuous variables are presented as median with lower and upper quartiles. * Statistically significant ($P < 0.05$). Z, Mann-Whitney U test.

Table 3. Association of attitudes toward transplantation of cells, tissues, and organs of physicians and nurses working in dialysis units according to consent for deceased organ donation.

Variable	No consent or no clear declaration (n = 385)	Consent (n = 708)	Test statistic	P value
Donated blood at least once	65 (16.9)	202 (28.5)	$\chi^2 = 18.33$	0.00002*
Belief that blood donation is safe	157 (40.9)	477 (67.4)	$\chi^2 = 71.73$	< 0.0001*
Registered as a bone marrow donor	41 (10.6)	167 (23.6)	$\chi^2 = 27.09$	< 0.0001*
Belief that bone marrow transplantation is safe	135 (35.1)	365 (51.5)	$\chi^2 = 27.32$	< 0.0001*
Belief that kidney transplantation improves quality of life	285 (74.0)	628 (88.7)	$\chi^2 = 39.04$	< 0.0001*
Belief that kidney transplantation is superior to dialysis	274 (71.2)	608 (85.9)	$\chi^2 = 34.63$	< 0.0001*
Acceptance of organ donation from a deceased close family member	12 (3.2)	562 (79.4)	$\chi^2 = 581.63$	< 0.0001*
Willingness to ask family for consent to organ donation	95 (24.7)	276 (40.0)	$\chi^2 = 22.77$	< 0.0001*
Perceived risk of organ trafficking	47 (12.2)	88 (12.4)	$\chi^2 = 0.01$	0.91

Categorical variables are presented as numbers and percentages. χ^2 , chi-square test. * Statistically significant ($P < 0.05$).

Factors Associated With Lack of Consent for Deceased Organ Donation

In the multivariable logistic regression model (see Table 4), variables with a positive regression coefficient ($B > 0$) were associated with increased odds of lack of consent for deceased organ donation, whereas variables with a negative coefficient ($B < 0$) were associated with decreased odds of lack of consent. Higher levels of personal distress were associated with increased odds of lack of consent ($B = 0.05$; OR = 1.05 per

1-point increase, 95% CI, 1.00-1.10; $P = 0.04$), whereas higher empathic concern was associated with lower odds ($B = -0.06$; OR = 0.94 per 1-point increase, 95% CI, 0.89-0.98; $P = 0.01$). Among attitudinal variables, belief that blood donation is safe was associated with decreased odds of lack of consent for deceased organ donation ($B = -0.28$; OR = 0.76, 95% CI, 0.63-0.91; $P < 0.001$). The strongest association was observed for acceptance of organ donation from a deceased close family member, which was associated with a markedly lower likelihood of lack of consent ($B = -2.36$; OR = 0.09, 95% CI, 0.07-0.13; $P < 0.001$).

Table 4. Sociodemographic, psychological, and attitudinal factors associated with lack of consent for deceased organ donation.

Variable	B	SE (B)	Wald test	P	OR (95% CI)
Simple logistic regression					
Age	0.03	0.01	23.01	< 0.001	1.03 (1.02-1.04)
Sex: Male vs Female	-0.24	0.10	5.24	0.02	0.79 (0.64-0.97)
Profession: Nurses vs Physicians	0.51	0.09	32.77	< 0.001	1.66 (1.39-1.97)
Has children	0.19	0.08	5.39	0.02	1.20 (1.03-1.41)
Donated blood at least once	-0.34	0.08	17.95	< 0.001	0.71 (0.61-0.83)
Belief that blood donation is safe	-0.55	0.07	69.56	< 0.001	0.58 (0.51-0.66)
Registered as a bone marrow donor	-0.48	0.09	25.78	< 0.001	0.62 (0.52-0.75)
Belief that bone marrow transplantation is safe	-0.34	0.06	26.97	< 0.001	0.71 (0.63-0.81)
Belief that kidney transplantation improves quality of life	-0.51	0.08	37.19	< 0.001	0.60 (0.51-0.71)
Belief that kidney transplantation is superior to dialysis	-0.45	0.08	33.43	< 0.001	0.64 (0.55-0.74)
Acceptance of organ donation from a deceased close family member	-2.39	0.15	241.88	< 0.001	0.09 (0.07-0.12)
Willingness to ask family for consent to organ donation	-0.33	0.07	22.41	< 0.001	0.72 (0.62-0.82)
Life satisfaction	-0.03	0.01	5.21	0.02	0.97 (0.95-0.99)
Self-esteem	-0.05	0.02	10.38	0.001	0.95 (0.92-0.98)
Empathy: perspective taking	-0.07	0.02	11.92	0.001	0.94 (0.90-0.97)
Empathy: empathic concern	-0.06	0.02	12.70	< 0.001	0.94 (0.91-0.97)
Empathy: personal distress	0.05	0.02	9.95	< 0.001	1.05 (1.02-1.08)
Multiple logistic regression model					
Empathy: personal distress	0.05	0.02	4.36	0.04	1.05 (1.00-1.10)
Empathy: empathic concern	-0.06	0.02	7.31	0.01	0.94 (0.89-0.98)
Belief that blood donation is safe	-0.28	0.10	8.39	< 0.001	0.76 (0.63-0.91)
Acceptance of organ donation from a deceased close family member	-2.36	0.16	230.80	< 0.001	0.09 (0.07-0.13)

B, regression coefficient; SE, standard error; OR, odds ratio; and CI, confidence interval. Multivariable logistic regression model: R^2 Nagelkerke = 0.65; Hosmer-Lemeshow = 2.93; P = 0.94; variance inflation factor $\leq$ 1.1.

The model demonstrated excellent fit (Hosmer-Lemeshow χ^2 = 2.93, P = 0.94) and high explanatory power, accounting for 65% of the variance in lack of consent (Nagelkerke R^2 = 0.65). No multicollinearity was detected (variance inflation factor $\leq$ 1.1).

Discussion

The present study demonstrated that lack of consent for deceased organ donation among healthcare professionals working

in dialysis units was associated primarily with selected psychological characteristics and donation-related attitudes identified in the multivariable logistic regression model. Higher levels of personal distress were associated with greater odds of lack of consent, whereas higher empathic concern, belief that blood donation is safe, and acceptance of organ donation from a deceased close family member were associated with lower odds of non-consent.

Personal distress, as measured by the Interpersonal Reactivity Index, reflects self-oriented emotional discomfort in response to the suffering of others. In the present study, higher levels of this variable were associated with lower willingness to consent to deceased organ donation. Previous studies have suggested that emotionally aversive reactions related to illness, death, or medical procedures may be associated with less favorable attitudes toward organ donation [15,28]. Our findings are consistent with these observations; however, they should not be interpreted as evidence of broader constructs such as impaired emotional coping or psychological readiness, which were not directly assessed in this study.

In contrast, higher empathic concern, defined as reflecting feelings of compassion and concern for others, was associated with lower odds of lack of consent. Previous research has indicated that empathy-related traits may be linked with greater support for prosocial health-related behaviors, including organ donation [28]. The opposite directions of association observed for personal distress and empathic concern may indicate that different measured dimensions of empathy are related to attitudes toward organ donation in distinct ways. Nevertheless, due to the cross-sectional nature of the study, no conclusions can be drawn regarding the direction or mechanisms of these relationships.

Attitudinal variables related to donation practices also showed significant associations with consent for deceased organ donation. Respondents who believed that blood donation is safe were less likely to report lack of consent for organ donation. Although blood donation and organ donation involve different procedures and contexts, previous studies suggest that favorable attitudes toward one form of medical donation may coexist with positive attitudes toward other donation-related behaviors [29]. The present findings may therefore reflect broader trust in medical donation procedures and transplantation practices, although trust itself was not directly measured.

The strongest association in the multivariable model concerned acceptance of organ donation from a deceased close family member. Participants who declared acceptance of donation in a family context were substantially less likely to report lack of consent themselves. Similar associations have been reported in previous studies examining reciprocity and family-related attitudes toward organ donation [18]. This finding suggests that personal attitudes toward donation within close relational contexts may be strongly linked with one's own declared willingness to consent to post-mortem donation.

Several sociodemographic and professional variables, including age, sex, profession, and work experience, were associated with lack of consent in descriptive analyses; however, these associations did not remain significant in the final multivariable

model. Similar inconsistencies regarding demographic predictors of organ donation attitudes have been reported in previous studies among healthcare professionals and the general population [7,8,11]. The present findings may suggest that donation-related attitudes and selected psychological characteristics are more strongly associated with consent decisions than structural demographic factors, although causal relationships cannot be established.

The findings may have practical relevance to educational activities related to organ donation among healthcare professionals. Because nurses and physicians participate in communication and decision-making processes related to transplantation, understanding factors associated with donation attitudes may help in designing educational and institutional interventions aimed at improving knowledge, communication skills, and confidence in donation procedures. However, the present study does not allow conclusions regarding whether modification of the identified factors would directly increase consent rates.

Implication for Clinical Practice

The present findings suggest that attitudes toward deceased organ donation among healthcare professionals may be associated not only with transplantation-related knowledge, but also with empathy-related characteristics, emotional responses, trust, and personal beliefs. Therefore, educational and supportive initiatives aimed at healthcare professionals working in dialysis settings may benefit from combining factual knowledge about transplantation with elements addressing communication, emotional coping, and ethical reflection.

Because empathic concern was associated with greater willingness to consent to deceased organ donation, future research may further explore whether approaches focused on perspective-taking and compassionate engagement are related to more favorable donation attitudes. Potential educational approaches could include communication skills workshops using simulated donor-family conversations, narrative medicine or patient-story formats illustrating transplant outcomes, and interdisciplinary ethics seminars focused on ethical and relational aspects of organ donation.

Recognizing the potential role of psychological and emotional factors in shaping donation-related attitudes may help healthcare organizations better understand factors associated with willingness to consent to deceased organ donation among healthcare professionals.

Strengths and Limitations

The study's strengths lie in its large sample size and the use of standardized instruments. Several limitations should be

acknowledged. First, the cross-sectional design does not allow for causal inference. Second, the study relied on self-reported data from healthcare professionals, which may introduce response bias or social desirability bias. Third, not all components of attitudes toward organ donation were analyzed, particularly the cognitive component and sociodemographic factors, including religiosity [30]. Fourth, not all potential determinants of attitudes toward organ donation were examined, such as religiosity and cultural factors. Finally, because the study was conducted among nurses and physicians working in dialysis units, the findings may not be fully generalizable to other healthcare professionals or to the general population.

Overall, the present study indicates that selected psychological characteristics and donation-related attitudes are associated with lack of consent for deceased organ donation among nurses and physicians working in dialysis units. These findings may contribute to a better understanding of factors related to organ donation attitudes in healthcare professionals and may support future research aimed at identifying potentially modifiable determinants of donation-related decisions.

Conclusions

Lack of consent for organ donation among dialysis unit staff was independently associated with selected psychological characteristics and donation-related attitudes. Higher personal

distress was associated with greater likelihood of negative attitudes, whereas empathic concern, belief in the safety of donation procedures, and acceptance of donation within the family were associated with greater willingness to consent.

The findings suggest that attitudes toward deceased organ donation among healthcare professionals may be associated not only with professional experience, but also with selected emotional and attitudinal factors. However, due to the cross-sectional nature of the study, no causal relationships can be established.

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Data Availability Statement

The authors will make the raw data on which the conclusions in this article are based available without undue reservation upon request.

Declaration of Figures' Authenticity

All figures submitted have been created by the authors who confirm that the images are original with no duplication and have not been previously published in whole or in part.

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