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Hemodialysis Patients' Information and Associated Characteristics

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ABSTRACT

Introduction: of this study was to explore characteristics associated with hemodialysis patients' degree of information. **Material and Methods**: The sample of the study included 650 patients undergoing hemodialysis. For data collection a questionnaire specially designed for the needs of the research was used. More specifically, socio-demographic, clinical and other patients' characteristics were associated with the degree of information as it was reported by patients. **Results**: of the 650 participants, 55.4% was men while 58.6% of the sample was aged over 60 years. Regarding information level, results showed that only 9.8% was "little" or "not all" informed about their health problem, 61,7% was "enough" informed whereas 28.5% were "very" informed. Statistically significant association was observed between degree of information and age (p=<0.001), family status (p=0.005), education (p=0.001), job (p=0.005) and number of children (p=0.019). In terms of clinical characteristics, statistically significant association was observed between the degree of information and whether patients had other disease or not (p=0.037), whether patients reported adherence to treatment guidelines (p=<0.001). Finally, statistically significant association was observed between the degree of information and relations with nursing staff (p=<0.001), doctors (p=0.007) and other patients (p=0.003), and whether patients faced difficulties in social (p=0.001) and family environment (p=0.002). **Conclusion:** Health professionals when planning information interventions for orienting hemodialysis patients is increasingly important to evaluate socio-demographic, clinical and other patients ' characteristics and incorporate them in their project.

Keywords: Information level, hemodialysis patients, socio-demographic and clinical characteristics.

1. INTRODUCTION

Hemodialysis patients experience various physical and psychological problems in their daily life. Interestingly, there is growing awareness of this staggering burden within multidisciplinary health care teams when providing information. (1, 2). Understanding in-depth that patients on dialysis require elaborate and accurate information has important clinical implications. Expanding patients' knowledge about disease management will facilitate long-term treatment success and patients' adjustment to illness mainly through enhancing self-efficacy (3, 4, 5). Given that information is a fluctuating need for hemodialysis patients, it is essential for health care professionals who address this need to be aware about characteristics that influence information in order to engage patients' active participation in their health care (6). Finally, providing sufficient knowledge about hemodialysis is identified as a key challenge for clinicians involved in the care of this sensitive group.

To the best of our knowledge, there are noticed in literature several gaps regarding factors associated with information to hemodialysis patients, possibly because health care professionals focus on the biological aspect of the disease.

2. AIM

The aim of this study was to explore characteristics associated with hemodialysis patients' degree of information.

3. MATERIAL AND METHODS

The sample of the study included 650 hemodialysis patients (360 men and 290 women) during the study period January 2016 to December 2016. This sample was a convenience sample. All patients who met the inclusion criteria participated in the study. Criteria for enrolling a patient in the study were: a) good comprehension of Greek language, b) being under hemodialysis, and c) have

no cognitive impairment.

Ethical considerations: The study was approved by the Ethical Committee where the study was conducted. Patients who met the entry criteria in the study were informed by the investigator for the purposes and the conduct of this research. All patients participated only after they had given their written consent. Data collection guaranteed anonymity and confidentiality. All subjects had been informed of their rights to refuse or discontinue participation in the study, according to the ethical standards of the Declaration of Helsinki (1989) of the World Medical Association.

Data collection was performed by the method of the interview using a questionnaire developed by the researcher so as to fully serve the purposes of the study. The data collected for each patient included: socio-demographic characteristics (e.g. gender, age, marital status, number of children, etc.), clinical characteristics (e.g. years undergoing hemodialysis, other disease, adherence to treatment guidelines, etc.) and other self reported patients' characteristics (e.g. relationship with the medical -nursing staff, etc.).

Initially information degree as reported by patients was categorized in three Likert scale as following: very, enough and little/not at all. After analysis, the variable of information degree was divided into two groups: a) patients who reported "very" informed about their health, and b) patients who reported "not at all up to enough" informed about their health. This variable was associated with patients' characteristics.

4. RESULTS

4.1. Sample description

Socio-demographic, clinical and other characteristics of patients are presented in Table A1, A2, A3 and Appendix.

4.2. Associations between patients' characteristics and the degree of information

Table 1 presents the association between patients' demographic characteristics and the degree of information. Statistically significant association was observed between the degree of information and age ($p<0.001$), family status ($p=0.005$), education ($p=0.001$), job ($p=0.005$), place of residence ($p=0.002$) and number of children ($p=0.019$). More specifically, younger patients (below 40 years old and patients aged 41-50 years old) were very informed at a statistically significant higher percentage (46.4% and 40.2% respectively) than older patients, especially those of 61-70 years old (19.9% were very informed). Single patients were very informed at a higher percentage (34.4%) than married or divorced patients (31.1% and 19.3% respectively). Patients studied in University were very informed at a higher percentage (42.9%) than patients with primary or high school level of education (17.0% and 30.4% respectively). Employees were very informed at a higher percentage (36.8%) than those unemployed (22.2%) and those in pension (25.8%). Lastly, patients having none (33,1%) or one child (33%) were very informed at a higher percentage than other patients.

Table 2 presents the association between patients' clinical characteristics and the degree of information. Statistically significant association was observed between the degree of information and whether patients had other disease or not ($p=0.037$) and whether patients were reported to be adherent to treatment guidelines ($p=<0.001$). More specifically, patients

	Degree of information		
	Very Informed	Not at all Up to Enough Informed	
Characteristics	N(%)	N(%)	p-value
Gender			0.259
Male	96 (26.7%)	264 (73.3%)	
Female	89 (30.7%)	201 (69.3%)	
Age			<0.001
≤40	39 (46.4%)	45 (53.6%)	
41-50	41 (40.2%)	61 (59.8%)	
51-60	26 (23.9%)	83 (76.1%)	
61-70	34 (19.9%)	137 (80.1%)	
71-80	45 (24.5%)	139 (75.5%)	
Family Status			0.005
Married/living together	107 (31.1%)	237 (68.9%)	
Single	43 (34.4%)	82 (65.6%)	
Divorced/widowed	35 (19.3%)	146 (80.7%)	
Education			0.001
Primary school	44 (17.0%)	215 (83.0%)	
High school	63 (30.4%)	144 (69.6%)	
University	78 (42.9%)	104 (57.1%)	
Job			0.005
Unemployed/Household	34 (22.2%)	119 (77.8%)	
Employees	70 (36.8%)	120 (63.2%)	
Pensioners	78 (25.8%)	224 (74.2%)	
Children			0.019
0	53 (33.1%)	107 (66.9%)	
1	63 (33.0%)	128 (67.0%)	
≥2	69 (23.1%)	230 (76.9%)	

Table 1. Associations between patients' characteristics and Degree of Information

that did not have other disease were very informed at a statistically significant higher percentage (31.9%) than patients who also have another disease (24.5%). Furthermore, patients who reported to adhere very much to their treatment guidelines were very informed at a higher percentage (61.3%) than patients who adhered enough or not at all to treatment guidelines.

Table 3 presents the association of other patients' characteristics and the degree of information. Statistically significant association was observed between the degree of information and relations with nursing staff ($p=<0.001$), medical staff ($p=0.007$) and other patients ($p=0.003$) and whether patients faced difficulties in social ($p=0.001$) and family environment ($p=0.002$). More specifically, patients who reported to have very good relations with nursing staff, doctors and other patients were very informed at a statistically significant higher percentage (34.2%, 32.8% and 36.0% respectively) than patients who had good or below moderate relations. Furthermore, patients who did not face any difficulties in their social and family environment were very informed at a higher percentage (43.5% and 33.5% respectively) than patients who faced a little or very difficulties.

4.3. Estimation of the effect of patients' characteristics

	Degree of information		
	Very Informed	Not at all Up to Enough Informed	
Characteristics	N(%)	N(%)	p-value
Years having the problem			0.161
<6	96 (32.0%)	204 (68.0%)	
6-10	54 (24.5%)	166 (75.5%)	
>10	35 (26.9%)	95 (73.1%)	
Other disease			0.037
Yes	74 (24.5%)	228 (75.5%)	
No	111 (31.9%)	237 (68.1%)	
Adherence to treatment guidelines			<0.001
Very	114 (61.3%)	72 (38.7%)	
Enough	53 (19.3%)	222 (80.7%)	
Little/Not at all	18 (9.5%)	171 (90.5%)	

Table 2. Associations between patients' clinical characteristics and Degree of Information

	Degree of information		
	Very Informed	Not at all Up to Enough Informed	
Characteristics	N(%)	N(%)	p-value
Relations with nursing staff			0.001
Very good	137 (34.2%)	264 (65.8%)	
Good	38 (18.6%)	166 (81.4%)	
Below moderate	10 (22.2%)	35 (77.8%)	
Relations with medical staff			0.007
Very good	130 (32.8%)	266 (67.2%)	
Good	42 (23.0%)	141 (77.0%)	
Below moderate	13 (18.3%)	58 (81.7%)	
Relations with patients			0.003
Very good	86 (36.0%)	153 (64.0%)	
Good	67 (25.8%)	193 (74.2%)	
Below moderate	32 (21.2%)	119 (78.8%)	
Difficulties in social environment			0.001
Very/Enough	15 (27.3%)	40 (72.7%)	
A little	62 (17.9%)	285 (82.1%)	
Not at all	108 (43.5%)	140 (56.5%)	
Difficulties in family environment			0.002
Very/Enough	20 (20.6%)	77 (79.4%)	
A little	35 (21.2%)	130 (78.8%)	
Not at all	130 (33.5%)	258 (66.5%)	

Table 3. Associations between other patients' characteristics and Degree of Information

on the degree of information

Multiple logistic regression was applied in order to esti-

Characteristics	OR(95% CI)	p-value
Age		
≤40	Ref	
41-50	0.82 (0.37, 1.81)	0.621
51-60	0.77 (0.35, 1.73)	0.533
61-70	0.55 (0.23, 1.27)	0.163
71-80	0.72 (0.29,1.80)	0.488
Family Status		
Married/living together	Ref	
Single	1.53 (0.65, 3.64)	0.327
Divorced/widowed	0.87 (0.48, 1.58)	0.656
Education		
Primary school	Ref	
High school	2.31 (1.29, 4.15)	0.005
University	3.33 (1.65, 6.74)	0.001
Job		
Unemployed/Household	Ref	
Employees	1.20 (0.62, 2.30)	0.584
Pensioners	0.92 (0.48,1.74)	0.807
Children		
0	Ref	
1	1.96 (0.85, 4.55)	0.116
≥2	0.85 (0.36, 2.05)	0.730
Adherence to treatment guidelines		
Very	15.52 (6.37, 37.8)	<0.001
Enough	2.10 (0.93, 4.52)	0.067
Little/Not at all	Ref	
Relations with nursing staff		
Very good	1.08 (0.33, 3.54)	0.901
Good	0.86 (0.27, 2.46)	0.732
Below moderate	Ref	
Relations with medical staff		
Very good	0.72 (0.25, 2.09)	0.543
Good	1.35 (0.51, 3.57)	0.549
Below moderate	Ref	
Relations with other patients		
Very good	0.94 (0.46, 1.93)	0.872
Good	0.48 (0.23, 1.98)	0.840
Below moderate	Ref	
Difficulties in social environment		
Very/Enough	Ref	
A little	0.54 (0.24, 1.24)	0.148
Not at all	1.78 (0.71, 4.45)	0.216
Difficulties in family environment		
Very/Enough	Ref	
A little	1.13 (0.52, 2.43)	0.761
Not at all	0.77 (0.35, 1.70)	0.526

Table 4. Estimation of the effect of patients' characteristics on the degree of information (logistic regression)

Characteristics	N(%)
Gender	
Male	360 (55.4%)
Female	290 (44.6%)
Age	
≤40	84 (12.9%)
41-50	102 (15.7%)
51-60	109 (16.8%)
61-70	171 (26.3%)
71-80	184 (28.3%)
Family Status	
Married/living together	344 (52.9%)
Single	125 (19.2%)
Divorced/widowed	181 (27.8%)
Education	
Primary school	259 (40.0%)
High school	207 (31.9%)
University	182 (28.1%)
Job	
Unemployed/Household	153 (23.7%)
Employees	190 (29.5%)
Pensioners	302 (46.8%)
Children	
0	160 (24.6%)
1	191 (29.4%)
≥2	299 (46.0%)

Table A1: Patients' characteristics (N=650)

Characteristics	N(%)
Years having the health problem	
‹6	300 (46.2%)
6-10	220 (33.8%)
›10	130 (20.0%)
Other disease	
Yes	302 (46.5%)
No	348 (53.5%)
Informed about their problem	
Very	185 (28.5%)
Enough	401 (61.7%)
Little/Not at all	64 (9.8%)
Adherence to treatment guidelines	
Very	186 (28.6%)
Enough	275 (42.3%)
Little/Not at all	189 (29.1%)

Table A2: Clinical characteristics

Characteristics	N(%)
Relations with nursing staff	
Very good	401 (61.7%)
Good	204 (31.4%)
Below moderate	45 (6.9%)
Relations with medical staff	
Very good	396 (60.9%)
Good	183 (28.2%)
Below moderate	71 (10.9%)
Relations with patients	
Very good	239 (36.8%)
Good	260 (40.0%)
Below moderate	151 (23.2%)
Difficulties in social environment	
Very/Enough	55 (8.5%)
A little	347 (53.4%)
Not at all	248 (38.2%)
Difficulties in family environment	
Very/Enough	97 (14.9%)
A little	165 (25.4%)
Not at all	388 (59.7%)

Table A3: Other characteristics

mate the degree of information that patients reported. Factors that were statistically significant associated with degree of information in the univariate analysis (Tables 1-3) were entered in the model. Table 4 presents these results. We conclude that, patients studied in a university or those having high school level of education have 3.33 and 2.31 more chances respectively to be very informed than patients having primary school level of education (OR=3.33, p=<0.001 and OR=2.31, p=0.005, respectively). Lastly, patients who reported to adhere very much with treatment guidelines have 15.52 more chances to be very informed than patients who reported to adhere not at all.

Appendix: (tables A1-A3).

5. DISCUSSION

The present study showed that very informed were patients below 40 years old or those aged 41-50 years old. According to a prior study by Xhulia et al., (7) who explored the needs of 141 hemodialysis patients, the need of information was important to patients aged 61-80 years old. Possibly health professionals pay more attention on younger patients between 30 and 45 years of age, who still maintain their ability to cope with their life situation (8) though their aspirations are often constrained by illness (9).

Results showed that single participants, those having none or one children and those who studied in University were very informed. Indeed, one significant challenge to provide information is the issue of educational barriers. Possibly, patients with high level of education achieve deeper understanding of the therapeutic regimen, thus performing more easily, the self-management tasks on a daily basis. Additionally, single patients or those having no children who consequently lack support may be more willing to be informed about handling this complex medical condition.

Analysis of the data also showed that very informed about their health problem were patients with no other disease and those reporting to be adherent very much to treatment guidelines. According to the literature, lack of information is strongly associated with non adherence to medication or fluid and diet restrictions (10, 11). Patients with chronic illness having insufficient knowledge about disease management often eliminate or stop the prescribed medication (12-15). Neri et al., (16) showed 48% of 1238 hemodialysis patients were adherent to medication which was largely due to the amount of tablets receiving daily. Adherence to phosphate medication is about 22–74% with elderly patients to be more likely to be adherent (17).

Failure to adhere to medication might be intentional or unintentional. More in detail, intentional nonadherence is referred to patients' choice to ignore prescribed medication treatment while unintentional non adherence, is referred to patient's failure to understand healthcare providers (15). It should be stressed that nonadherence consists a major secret among patients who frequently show reluctance to report it because they may consider it will be perceived by health professionals as a lack of trust. Information is obviously one of the most effective ways to promote negative patients' perceptions of treatment or negative attitudes toward medications (18).

Patients reporting very good relations with medical-nursing staff and other patients were informed. Accurate information is essential when developing an individualized therapeutic plan which includes realistic objectives, promotes health-related behaviour change thus strengthening self-care in chronic illness (19). However, effective communication between health professionals and patients seem to share a strong interacting bond. For example, health professionals need precise information from patients in order to implement an effective care including monitoring of health status, identifying patients' needs or potential complications. On the other end of the spectrum, good relation with health professionals, enables patients to comply with the therapeutic regimen and generate adherence to treatment plans.

Furthermore, very informed were patients who reported not to face any difficulties in their social and family environment. Support reinforces information and consequently the implementation of care plan (20, 21, 22). Given that dialysis affects function of family, patients usually consult family members (spouse, children, siblings). On the other hand family members try to acquire all necessary skills to care their loved persons. Finally, hemodialysis does pose some additional adversities, but it can also enrich relationships (22).

Limitations of the study

The study sample was not representative of hemodialysis patients in Greece, but a convenience sample. The relevant sampling method limits the generalizability of results. Also, the fact that the study was cross-sectional is not allowing the emergence of a causal relation between degree of information and socio-demographic, clinical or other variables. However, the present study has a significant strength and this is the number of patients (650).

6. CONCLUSION

The present study showed that very informed were, single patients, patients who studied in University, employees, patients having none or one child and younger patients below 40 years old and those aged 41-50 years old. Regarding patients' clinical characteristics very informed were patients that did not have other disease and those reporting adherence to treatment guidelines. Finally, very informed were patients who had very good relations with nursing staff, doctors and other patients and those who did not face any difficulties in their social and family environment.

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