Hemodialysis Patients’ Information and Associated Characteristics

Maria Polikandrioti1, Ioannis Koutelekos1, George Vasilopoulos1, Fotoula Babatsikou1, Georgia Gerogianni1, Sofia Zyga2, George Panoutsopoulos2

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=0.005), 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). 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 whether patients had other disease or not (p=0.037), whether patients reported adherence to treatment guidelines (p=<0.001). 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 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

DOI: 10.5455/msm.2017.29.182-187
Received: 26 May 2017; Accepted: 19 August 2017
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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 who faced little or very difficulties.

| Characteristics | N(%)     | N(%)     | p-value |
|-----------------|----------|----------|---------|
| Gender          |          |          |         |
| 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 on the degree of information

| Characteristics                  | Degree of information | 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                   |            |         |
| Adherence to medical staff       |                       |            |         |
| Very                              | 1.08 (0.33, 3.54)    | 0.901      |         |
| Good                             | 0.86 (0.27, 2.46)    | 0.732      |         |
| Below moderate                    | Ref                   |            |         |
| Relations with other patients    |                       |            |         |
| Very                              | 0.72 (0.25, 2.09)    | 0.543      |         |
| Good                             | 1.35 (0.51, 3.57)    | 0.549      |         |
| Below moderate                    | Ref                   |            |         |
| Difficulties in social environment|                       |            |         |
| Very/Enough                       | 0.94 (0.46, 1.93)    | 0.872      |         |
| A little                          | 0.48 (0.23, 1.98)    | 0.840      |         |
| Not at all                        | Below moderate        | Ref        |         |
| Difficulties in family environment |                       |            |         |
| Very/Enough                       | 0.54 (0.24, 1.26)    | 0.148      |         |
| A little                          | 1.78 (0.71, 4.45)    | 0.216      |         |
| Not at all                        | Below moderate        | Ref        |         |

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

| 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 3. Associations between other patients’ characteristics and Degree of Information

| 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%) |          |
Hemodialysis Patients’ Information and Associated 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.

| 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
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 of 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 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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