International Medical Society
http://imedicalsociety.org

International Archives of Medicine
Section: Cardiac Surgery & Transplantation
ISSN: 1755-7682

2017
Vol. 10 No. 87
doi: 10.3823/2357

Influence of the Conditioning Factors of Cardiac Transplant Patients to the Self-Care Engagement Profile

ORIGINAL

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Abstract

Background: This study aimed to identify the conditioning factors that influence the self-care practice of heart transplant patient after discharge and relate the conditioning factors to the Engagement Profile of Self Care.

Methods: Cross-sectional study, undertaken at a transplantation unit of one *public* hospital, in Fortaleza-Ceará. There was the participation of 63 heart transplant patients.

Results: The majority of the patients were men (88.9%), aged 40-59 years (68.3%), catholic (81.0%), married (77.8%), elementary school (71, 4%), retired or not working (82.5%); income below minimum wage (47, 6%); diagnosis to transplantation was chagasic cardiomyopathy (28.6%), post-transplant time between one and three years (39.7%). The determinant for self-care had significant difference ($p<0.05$) was the time of transplantation, because patients who have higher scores on Engagement Profile Self-Care had performed transplantation between 3 and 5 years.

Conclusion: The professional team of heart transplant should consider the conditioning factors of patients transplanted cardiac in establishing strategies for promoting self-care.

Keywords
Nursing; Self-Care; Heart Transplant.

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Introduction

Heart transplantation is a therapeutic modality of high complexity for patients with heart failure. In recent decades, had been observed several advances in this area, especially with the incorporation of new surgical techniques such as immunosuppressants, new diagnostic methods and other approaches of the multidisciplinary team in the preoperative and postoperative and late heart transplantation [1, 2].

In Brazil, the number of heart transplants performed is increasing, principally among patients with heart failure caused by Chagas disease, overcoat guiding conducts that are incorporated worldwide [1]. From January 2008 to December 2015, 1549 cardiac transplants were performed in Brazil. In Northeastern region, the number of proceedings totalized 303, 151 of them in Ceara state [2].

In 2012, procedures of heart transplants had amounted to 227, operating 27 teams distributed in nine brazilian states. Evaluating transplant active teams in 2014, it can be *verified* that there are sufficient teams of kidney (one for 1.4 million of population, the need is one for 1.5 to 3 million) and of liver (one for 3 million, the need is one for 3 to 5 million), perhaps unevenly distributed. However, even existing an adequate number of heart transplant teams (one to 6.2 million) and of pancreas (one to 9.1 million) and insufficient teams of lung (one for 31.8 million), perhaps there is the need for improvement, because the forecast is one for every 5 to 10 million habitantes for these organs [3].

Brazil has a well solidified transplant program, however must be *ensured* for its growth to be sustained, because it depends on the performance of various professionals in sequence, from the identification of potential donors to the realization of transplants and their outpatient *monitoring* [3].

Because of the complexity in the management of heart transplanted people and the high number of transplants, is evidenced the need for nursing team trained and specialized, providing technical and scientific *assistance*, which is specific and *qualified* to cardiac transplant patient. Such assistance can be performed from the systematized nursing consultations, individualized, fomented by an Health permanent Education and *encouraging* self-care practices, aimed at disease prevention and health promotion [4].

Because of the need for self-care practice of the transplanted patient, this study was based on the theoretical model of Dorothea Orem [5], because it determines that self-care is related to personal care required by people daily, to regulate their own functioning and development as well as the practice of activities which people personally initiate and do for themselves, to maintain life, health and well-being. The origins in the *evaluation* of self-care requirements makes possible direct assistance actions made by nurses, as well as providing therapeutic communication between the professional and the patient, adapting to his problems [6,7].

Nevertheless, it is essential that nurses, while enabling people to practice self-care, especially those who have submitted to a heart transplant, understand their behavior, perceptions and attitudes, such as feelings and emotions shown in different situations. In addition, the nurse should have a special concern with the need for patients to operate self-care, provide and manage self-care into your routine so that he can continue his life, recover from illness or injury and live with its effects.

Thus, the pretension of this study was to improve nursing *assistance* to cardiac transplant patient, from the strict and directed monitoring to self-care; especially providing subsidies to nursing in the early diagnosis of risk factors, which may interfere with the recovery and quality of life of patients as well as the realization of strategies directed to self-care, making important ways to prevent, reduce and avoid complications after transplantation and promote health.

Therefore, the following objectives were established: to identify the conditioning factors that interferes in the self-care practice of the cardiac trans-

plant patient after hospital discharge and relate the conditioning factors to the engagement profile of Self Care.

Methods

Transversal and quantitative study, developed in Transplantation and Heart Failure Unit (UTIC) of a public hospital which maintains an agreement with Unified Health System (SUS), in Fortaleza, main city of Ceará, Brazil.

The population consisted of 142 patients who underwent heart transplantation and use the cited clinic for assistance purposes. The sample consisted of 63 patients who attnded the following inclusion criteria: age over 18 years; attend nursing consultations at the clinic in the period of data collection; present physical, psychological and cognitive conditions to answer the questions asked. As exclusion criteria *documented*: had performed heart transplants, without having been discharged yet; and be readmitted after heart transplantation.

The data were collected through individual interview, on pre or post-nursing consultation. The interview guide was composed based on the theory of Orem's Self-Care [5] and the Brazilian Guidelines for Cardiac Transplantation [8]. The *intention* was to collects not only the information about self-care activities, but also those relating to the conditioning factors which interfere in the self-care practice of cardiac transplant patient after hospital discharge, considering the indicators: gender, age, education, family income, state civil, religion, *profession*, illness time and surgery. The authors also developed and used a self-care evaluation scale, focusing on universal, developmental and health deviation requirements of the cardiac transplant patient, seeking to evaluate the Engagement Profile Self-Care, which is in validation course.

The scale has 25 items, distributed as follows: universal (17 items): oxygenation/breathing, body hygiene, home environment hygiene, fluid intake, food intake, elimination, activity/work, physical exercise, sleep and rest, social interaction, emotional behavior, disease prevention/health promotion, smoking, consumption of alcohol, illicit drugs and sexual activity, cancer prevention (breast, cervical, prostate); "Developmental" (2 items): participation of educational activities for heart transplantation, adaptation to changes after heart transplantation; health deviation (6 items): regular use of medication, attendance at health team consultations, basic immunization, use of disposable surgical mask, contact with people and pets; and knowledge.

Thus, each one of the 25 assessment´s items of self-care practices owned five classes ranging from 1 to 5, as follows: 1- patient does not perform self-care; 2- patient rarely performs self-care; 3- patient sometimes performs self-care; 4 - patient often performs self-care; and 5- patient always performs self-care. Indeed, if the patient did not perform any self-care activity, received 25 points in the Self-Care Engagement Profile, and if performed all properly, the patient received 125 points.

In this manner, patients who achieved scores between 105 and 125 Self-Care Engagement Profile were included in the class of those who "always performs self-care"; those who achieved scores between 85 and 104 were included in class which "often performs self-care"; those who had scores between 65 and 84 were included in the class which "sometimes perform self-care"; those who obtained from 45 to 64, remained in the class "rarely performs self-care"; and patients who have achieved between 25 and 44 scores were included in the class "does not perform self-care".

The data was stored in the database made in Excel and processed and analyzed in a statistical and descriptive way, tabulated in tables in the Windows XP Professional Excel program. The quantitative variables calculated were: average, standard deviation and standard error of the average. To compare the averages of two variables, it was used t for *student*, and comparing three or more variables, it was used

F for Snedecor. If F has been obtained a statistically significant difference, the Tukey test for multiple comparisons was applied. The results were organized and expressed in tables.

This study was approved by CEP nº 109/11. All study participants were instructed about their goals.

Results

The results of the conditioning factors for patient self-care after heart transplantation are described, both non-modifiable and modifiable. Thus, it was noted the predominance of male sex (88.9%), the age range was 40 to 59 years (68.3%) related to adulthood, but has varied from 23 to 72 years, which the average was 50 + 10 years. About participants, most of them (74.6%) had non-white skin color (brown and black), the most prevalent religious practice was Catholic (81.0%), 77.8% were married, 49.2% were from the interior of Ceará, 71.4% had level of schooling in elementary school and marked the fact that they have studied at least ten years, 82.5% were retired or not working, and 47.6% receive a wage minimum, at most.

It was observed that Chagas disease was the predominant factor for indicate cardiac transplantation (28.6%), followed by idiopathic (19.0%), dilated (15.9%), ischemic (15.9%), alcoholic (11.1%) and 9.5% another myocardiopathies, in which three patients presented valvular cardiomyopathy, a case by viral, another by congenital and another by amyloidosis (restrictive) **(Table 1)**.

Table 1. Relation between conditioning factors for self-care with Engagement Profile Self Care. Fortaleza-CE-Brazil, 2012.

Caracteristics of patientes	Engagement Profile Self Care 80 a 104 (n=36)		Engagement Profile Self Care 105 a 125 (n=27)		Total (n=63)	Average + EPM	p-value
	N	%	N	%	N		
Sex							
Female	5	71.4	2	28.6	7	101.5 + 2.83	0.418*
Male	31	55.4	25	44.6	56	104.2 + 0.69	
Age							
23 – 39	5	50	5	50	10	103.8 + 1.35	0.871†
40 – 49	12	63.2	7	36.8	19	102.1 + 1.40	
50 – 59	14	58.3	10	41.7	24	104.7 + 1.12	
60 – 72	5	50	5	50	10	105.4 + 1.59	
Skin color							
White	10	62.5	6	37.5	16	103.3 + 1.61	0.616*
Nonwhite	26	55.3	21	44.7	47	104.1 + 0.75	
Religious practice							
Catholic	31	60.8	20	39.2	51	103.5 + 0.77	0.229*
Other religion	5	41.7	7	58.3	12	105.3 + 1.55	
Marital Status							
Maried/Stable union	27	55.1	22	44.9	49	104.4 + 0.71	0.414*
Single/Separate/Divorced	9	64.3	5	35.7	14	101.1 + 2.40	
Origin							
Fortaleza	10	50	10	50	20	105.05 + 1.35	0.222†
Diferent cities of Ceará	21	67.7	10	32.3	31	102.6 + 0.96	
From different states of Brazil	5	41.7	7	58.3	12	105.4 + 1.24	

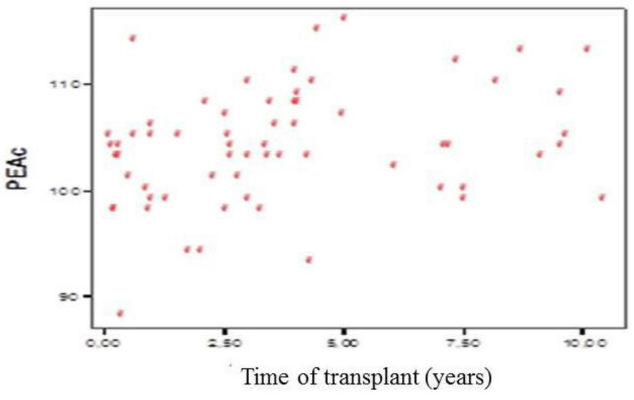
Caracteristics of patientes	Engagement Profile Self Care 80 a 104 (n=36)		Engagement Profile Self Care 105 a 125 (n=27)		Total (n=63)	Average + EPM	p-value
	N	%	N	%	N		
Level of schooling							
Basic education	13	72.2	5	27.8		102.2 + 1.24	0.278†
Elementary School	11	55	9	45		103.5 + 1.05	
High School or college education	12	48	13	52		105.4 + 1.19	
Occupation							
Retired/not working	29	55.8	23	44.2	52	104.2 + 0.75	0.632*
Works	7	63.6	4	36.4	11	102.5 + 1.78	
Family income (Minimum wage)							
1	18	56.3	14	43.8	32	103.9 + 1.01	0.560†
1-2	9	69.2	4	30.8	13	103.3 + 1.39	
2-9	9	50	9	50	18	104.3 + 1.32	
Heart transplant time							
< 1 year	9	75	3	25	12	101.9 + 1.75	0.031‡
1-3 years	16	64	9	45.8	25	102.4 + 0.84	
3-5 years	2	18.2	9	81.8	11	107.8 + 1.86	
> 6 years	9	60.0	6	40.0	15	105.1 + 1.30	

* T student. †F Snedeco. ‡ Tukey test and Pearson's Chi-Square Test.

The results of patients who practice more the self-care, which are included in the class that always performs self-care, because they achieved scores between 105 and 125 on Engagement profile in self-care, they were: patients of male sex (44.6%); in age groups 23-39 and 60-72 years old, realizing that young adults and the elderly practice more self-care; non-white skin color (44.7%); patients who practice different religious faiths (evangelical, spiritualist and Jewish) (58.3%); Single patients (55.6%), indicating that this conditioning factor denoted significant difference (p <0.05); patients from different states of Brazil (Rio Grande do Norte, Piaui, Bahia, Goiás and São Paulo) (58.3%); whose level of schooling is High School or college education (52%), determining that schooling influenced directly in the self-care practice; retired patients or those who do not work (44.2%); patients who receive two to nine times the minimum wage (50%).

The results related to heart transplantation time, patients who were at the time slots higher than three and less than six years (81.8%) are the ones who most practiced self-care. This conditioning factor expressed significant difference (p <0.05). As the value of *r* was positive, and p<0.05, we can say that the longer the time of transplant, the greater the value of the Engagement Profile Self Care **(Figure 1)**.

Figure 1: Relationship between time of transplant and the value of the Engagement Profile Self-care. Fortaleza-CE-Brazil, 2016.



It also noticed that after the evaluation obtained in each self-care requirement, Engagement Profile Self-Care was at high levels of self-care, because patients were included in the classes that oten perform self-care (57.1%) and always performed self-care (42.9%), as shown in **Table 2**.

Table 2. Distribution of patients in relation to Self-Care Engagement Profile. Fortaleza-CE-Brazil, 2012.

Engagement profile in self-care	f	%
Always perform Self-care	27	42.9
Oten perform self-care	36	57.1

Discussion

It was observed, in relation to the conditioning factors for self-care, that the highest percentage of heart transplant patients were male, which result was similar in other studies [9, 10]. In relation to the age, there was a prevalence of the range of 50 to 59 years (38.1%). And, when relating this conditioning factor to the Engagement Profile Self Care, the age ranges which indicated higher percentage in the class always performs self-care were the extremes of age, that is to say from 23 to 39 and 60 to 72 years. Study was found with similar results in relation to age range [11].

In a research conducted to correlate the self-care actions developed by patients who underwent through myocardium´s revascularization however, the predominant age was above 65 years and found that advanced age favored the practice of self-care [12]. Age is one of the factors which often determine the achievement´s level of self-care activities that a person can perform, in addition to the standards established which resulted from external and internal stimuli [5].

Most of the heart transplant patients have non-white skin color (brown and black). Different result was found in a study [13], which participants have revealed homogeneous according to ethnicity, showing higher prevalence of Caucasians. Another documentary study, otherwise, performed to trace the epidemiological and clinical profile of effective donors of organs and tissues in the State of Ceará determined that, in relation to the skin color of organ donors, the majority of the sample was brown skin color (47%), followed by white (20%) [14].

The predominance of religious practice was Catholicism. By comparing religious practice with Engagement Profile Self Care, however, it was found that patients who have in other religions practiced more self-care. It is confirmed that religion faith influences health-related actions, because the self-care actions are apprehended according to the beliefs and habits, practices which characterize the lifestyle of the social group to which the person belongs. Therefore, religious beliefs should be considered for the practice of self-care in the pursuit of health promotion [5].

Regarding marital status, most heart transplant patients were married, but when relating with the Engagement Profile Self Care, it was realized that the single practiced more self-care, having noticed that the evaluated group, the self-care´s practice was dependent on marital status, confirming that the single people were more dedicated to self-care actions, perhaps because they have more time, attention and better conditions for the practice of a healthy lifestyle.

It is also worth highlighting that the fact that single people living with their family (father, mother, siblings) and received the support of these people. It is corroborated tha the notion which determines that marital status can be an indicator of social, instrumental and emotional support for recovery from surgeries, particularly in the recovery of heart transplant surgery, because it involves high complexity in processes, characterized by anxiety and distress, requiring the support from a trusted person who assume the position of the health team´s interlocutor. This person is called a caregiver and is often a family member or spouse [15]. Furthermore, heart

transplantation entails changes, crises and disruption times, and that not only the person is shaken, but also the family that strives to adapt to the new situation [16].

In a study realized to describe the self-care behavior and demographic factors associated with an effect on the behavior of patients with heart failure, it was observed that participants who were married and had better confidence in maintaining self-service and self-care than those who were single, especially, confidence in the self-service was a determinant of self-care maintenance [17].

Related to the origin of the patients, it was found that 49.2% are of the diferent cities of Ceará. This most expressive percentage is justified by the fact that the study of the hospital has modern facilities for diagnosis and treatment of cardiac transplantation, and it is also a reference to heart transplant in the city of Fortaleza and in the State of Ceará. Ceará stands in rank to have effective potential donors, which could contribute to the survival of a person which shows low expectations of life. Thus, the State stands out for having one of the largest transplant references in North/Northeast regions [14].

It was evident in the level of schooling that heart transplant patients have at least primary education. When however, compared this conditioning factor to the Engagement Profile Self Care, it was found that the patients who had high school and college education practiced more self-care. Regarding the level of education, it was observed similarity to different studies [12-18], confirming that education is important for the accession and continuity of the treatment. It is vital that the patient could be able to understand and assimilate guidelines, which requires a minimum of reasoning that is acquired through schooling.

In respect of occupation, it was found that most patients are retired or not working. The results also showed that most of the family income expressed by the transplant patients was to a minimum wage, at most, however, when compared this conditioning factor to the Engagement Profile Self-Care, it was demonstrated that in patients who receive from two to nine times the minimum wage present na increased average in the practice of self-care. A similar result about the family income was found in a study about heart transplanted people, where was verified that the majority of interviewed patients had family income corresponding to a minimum wage [4].

Were considered in the clinical charaxtetistics of the patients, the medical pre-transplant diagnosis and cardiac transplantation time. Thus, the medical diagnosis the had as consequence the performing of cardiac transplantation, can be highlighted Chagas disease (28.6%), which is consistent with some different studies [9, 19, 20] and differ from others [21, 22]. Additional cardiopathies which can lead to heart transplantation are the following ones: chagasic cardiomyopathy which originates from a transmitting agent as an external condition and can develop into a cardiogenic shock and viral and post-radiotherapy cardiopathies [23].

About the heart transplantation time, the majority of patients had from one to three years. A study to evaluate the patients survival after heart transplantation found that survival in the first year is around 80% to 90%, over five years 60% to 70% and 60% in ten years, after the operation [24] and 50% of heart transplanted patients are still alive ten years after the procedure, which expected survival is 10.4 years, because survival rates can be for the reduction of mortality in the first six months after the procedure and, after the first year, mortality rates tend to fall [25, 26].

In this study, the relation between heart transplantation and the Engagement Profile Self-Care, patients in the time ranges higher than three and less than six years are the ones who practice more the self-care, indicating a significant difference ($p<0.05$). It can be said, then, that the longer the transplantation time, the higher the Engagement profile in self-care value.

Despite the patients who have higher heart transplantation time practice more self-care, is demanded the need for monitoring from the heart transplant team more rigorously, since improving client performance for self-care is decisive for their health state. The specificity of cardiac transplantation requires from the professionals of the team, especially nurses, an exclusive assistance, assessing in an objective and directed way the real needs of patients and their family members, with individualized and systematized guidance, and also guidelines for self-care in the education process, promoting, then, a successful rehabilitation [27, 28]. The rehabilitation nurse should have the competence to teach, enable, guide and motivate patients to practice self-care in their daily activities, to achieve greater levels of independence, as well as their family members, in the rehabilitation process [29].

Conclusion

Identify the conditioning factors that interfere in the self-care practice of the cardiac transplanted patient after hospital discharge hás a fundamental importance for the professionals of the heart transplant team, especially nurses, because often they are not evident and can interfere negatively in self-care practice.

Relate the conditioning factors to the Engagement Profile Self Care highlighted that the conditioning factors - single status and transplant time higher than three and less than six years demonstrate a significant difference ($p<0.05$), showing that these factors interfere in the Self-Care Engagement Profile.

Thus, can be emphasized the importance of nurses knowledge in relation to self-care deficits, based on Orem's theory, because it allows to establish a therapeutic self-care demand, which involves the self-care action, based on the real transplanted patients needs, allowing the fact, then, that they become participative in the treatment and also contribute to a multi-professional work, quintessentially.

Although patients maintain an effective assistance performed by qualified professionals, the results showed the need for intervention strategies for more satisfactory self-care behaviors, aiming to avoid the emergence of complications and grievances in these patients health.

The study had as limitation the small number of patients in the research sample, because of the fact that they were from other states of Brazil or from the diferent cities of Ceará, where the study was performed.

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