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INTEGRATIVE REVIEW ARTICLE

LIVING DONORS ABOUT LIVER TRANSPLANTATION: AN OVERVIEW OF THE NATIONAL AND THE INTERNATIONAL PUBLICATIONS

DOADORES VIVOS NO TRANSPLANTE HEPÁTICO: PANORAMA DE PUBLICAÇÕES NACIONAIS E INTERNACIONAIS

DONANTES VIVOS ACERCA DEL TRASPLANTE HEPÁTICO: UN RESUMEN DE LAS PUBLICACIONES NACIONALES E INTERNACIONALES

Ana Cristina Mancussi e Faro¹, Lincoln Vitor Santos², Ana Paula Lemos Vasconcelos³, Genilde Gomes de Oliveira⁴, Fabio Henrique Peixoto Menezes⁵

ABSTRACT

Objective: analyzing studies in online journals that addressed living donors in liver transplantation. **Method:** an integrative review, from the question << *What are the subjects and objects of study that addressed live donors in liver transplantation?* >> with data collection in the MEDLINE and LILACS databases, with the descriptors *liver transplantation and/or living donors*. There were included articles published in the decade 2001-2011 in full, in Portuguese, English or Spanish. **Results:** the sample consisted of 15 studies. There were built five categories for analysis: evaluation of clinical and surgical donor; surgical technique and procedures; psychosocial aspects and quality of life; nursing care to the donor and his family; ethical aspects. **Conclusion:** mostly, the searches were directed to biological, clinical and surgical aspects of liver transplantation, with a quantitative approach in 94,4% of the studies and publications in the medical field, predominantly. **Descriptors:** Living Donors; Liver Transplantation; Transplant.

RESUMO

Objetivo: analisar estudos em periódicos *online* que abordaram doadores vivos no transplante hepático. **Método:** revisão integrativa, a partir da questão << *Quais os temas e objetos de estudo que abordaram doadores vivos no transplante hepático?* >> com coleta de dados nas bases de dados MEDLINE e LILACS, com os descritores *liver transplantation and/or living donors*. Foram incluídos artigos publicados na década 2001-2011, na íntegra em Português, Inglês ou Espanhol. **Resultados:** a amostra foi constituída por 15 estudos. Foram construídas cinco categorias para a análise: avaliação clínica e cirúrgica do doador; técnica cirúrgica e procedimentos; aspectos psicossociais e qualidade de vida; assistência de enfermagem ao doador e sua família; aspectos éticos. **Conclusão:** em sua maioria, as pesquisas foram voltadas aos aspectos biológicos, clínicos e cirúrgicos do transplante hepático intervivos, com uma abordagem quantitativa em 94,4% dos estudos e publicações na área médica, predominantemente. **Descritores:** Doadores Vivos; Transplante de Fígado; Transplante.

RESUMEN

Objetivo: analizar estudios en periodicos en línea que enfoquen los donantes vivos en el trasplante hepático. **Método:** revisión integradora, desde la pregunta << *¿Cuáles son las materias y objetos de estudio que abordan a los donantes vivos en trasplante de hígado?* >> con la recopilación de datos en las bases de datos MEDLINE y LILACS, con los descriptores *para el trasplante de hígado y/o donantes vivos*. Se incluyeron los artículos publicados en la década 2001-2011, totalmente en portugués, inglés o español. **Resultados:** la muestra estuvo constituida por 15 estudios. Se construyeron cinco categorías de análisis: evaluación clínica y quirúrgica del donante; técnica quirúrgica y procedimientos; aspectos psicossociales y calidad de vida; atención de enfermería para el donante y su familia; aspectos éticos. **Conclusión:** en la mayoría de los casos, la investigación tuvo como objetivo aspectos biológicos, clínicos y quirúrgicos del trasplante de hígado de donante, con un enfoque cuantitativo en el 94,4% de los estudios y publicaciones en el campo de la medicina, en su mayor parte. **Descriptores:** Donantes Vivos; Trasplante De Hígado; Transplante.

¹Nurse, Professor of Sciences, Medical-Surgical Department, School of Nursing/USP. São Paulo (SP), Brazil. Email: rafacris@usp.br; ²Nurse, Master of Parasitic Biology, Emergency Specialist Nurse and Family Health Nurse. Aracaju (SE), Brazil. Email: lincoln_vitor@hotmail.com; ³Nurse, Master of Health Sciences, University Hospital/UFS. Aracaju (SE), Brazil. Email: anaplv@gmail.com; ⁴Nurse, Master of Health Sciences, University Hospital/UFS. Aracaju (SE), Brazil. Email: genilde.gomes@gmail.com; ⁵Egressed Nurse, Federal University of Sergipe/UFS. Aracaju (SE), Brazil. Email: fhpm@msn.com

INTRODUCTION

The donor liver transplantation (THIV) was established in Brazil, similar to what happens in many countries as an alternative to meet the shortage of cadaveric organs. It is a technique widely used by pediatric transplant centers, first described in Brazil in 1988, where child receiver receives 20-25% of the liver of an adult donor.¹ Mortality rate is about 0,3% and the procedure does not require blood transfusion. We also emphasize that the regeneration of the body in the donor is completed in about 30 days, as well as the graft used in the receiver will grow to normal size liver.¹⁻²

A universal aspect to be considered in the liver donor transplantation is the possibility of the receiver having a related living donor, ie, the level of kinship and close to the receiver (up to fourth level)³; a fact that has some important ethical issues to be discussed.

From the guiding question << What are the subjects and objects of study that addressed living donors in liver transplantation? >> There was traced the aim of this study:

- Analyzing the national and the international studies addressing living donors in liver transplantation.

METHOD

The integrative review is the construction of research knowledge of the synthesis of a particular area or phenomenon to be studied, incorporating the applicability of the results of significant studies that can be experimental and non-experimental.⁴

For the construction of this integrative review there were followed six stages, namely: 1. Selection of the matter for review; 2. Establishment of criteria for inclusion and exclusion of studies to determine the sample; 3. Definition of information to be extracted from the selected studies; 4. Evaluation of the studies included in the review; 5. Interpretation of results; 6. Presentation of the review, providing a critical examination of the findings.⁴⁻⁵

The search for articles in national and international literature was conducted in databases from access by the Virtual Health Library. This study included scientific articles that were about living donors in liver transplantation, in the last ten years (from 2001 to 2011).

To perform the electronic search, the terms of descriptors/subject of mesh: liver transplantation, liver transplantation and/or liver transplantation, living donors, living donors, donor donation, donors.

For the refinement of the sample, it was used as inclusion criteria articles in Portuguese, English and Spanish indexed in databases Latin American and Caribbean Health Sciences (LILACS) and Medical Literature Analysis and Retrieval System Online (MEDLINE) published between 2001-2011, and available online in full text; research on human beings and that addressed the theme living donors in liver transplantation/liver.

Studies did not show such as publishing results were excluded, letters to the editor, literature review articles, or who were surveyed twice in information sources.

When selecting articles limits there were used: articles, living donors as main subject; languages English, Portuguese and Spanish, humans; year of publication from 2001 to 2011. We found 120 works in the databases Latin American and Caribbean Health Sciences (LILACS) and Medical Literature Analysis and Retrieval System Online (MEDLINE), and of these, 11 articles were included in the study.

In MEDLINE, there were initially established subareas (subheadings) search term liver transplantation (ethics, history, nursing, psychology, statistics and numeral date, utilization), with no choice of sub-areas for the term living donors. Applying the search limits: only items with links to full text, humans, clinical trial, review, meta-analysis, practice guideline, randomized controlled trial, English, Spanish, Portuguese, published in the last 10 years, were found 200 publications in full text of which four met the inclusion criteria.

The publications found were initially evaluated for the title and summary, and when presented compatibility with the inclusion criteria was read in full, totaling 15 posts. For the categorization of selected articles were certain information extracted and organized in a spreadsheet, using an adaptation of already validated instrument of data collection.⁶ There were identified items: year of publication, title of the study, city/country, language, area publication, the object of research, objectives, methodological approaches and results.

Articles were classified as level of evidence: Level 1 - of multiple controlled studies meta-analysis; Level 2 - individual study with experimental design; Level 3 - study of quasi-experimental design, as study without randomization with one group pre and post-test, time series or case-control; Level 4 - study with a non-experimental design, as correlational and descriptive qualitative research or case studies; Level 5 - report

cases or data obtained in a systematic, verifiable quality or program evaluation data; and Level 6 - opinion of respected authorities based on clinical competence or opinion of expert committees, including information interpretations not based on research.

Data were analyzed according to their content, using descriptive statistics and data regarding the relationship with the object of interest in each study. After reading the articles and instruments were organized in a folder and cataloged for future reference.

The presentation of results and discussion of the data was done descriptively, allowing the reader the applicability of the results of the elaborate integrative review and the possibility of replicating the methodological steps.

RESULTS

In the present integrative review there were analyzed 15 articles that met the inclusion criteria. Among the articles selected four (26,5%) surveys were conducted in Brazil, three (20%) in Germany, two (13,3%) in Korea and one (6,7%) respectively for the United States, the Netherlands, Japan, China, Taiwan and Turkey. This shows a distribution of work by transplant centers with experience in this procedure, including Brazil who first described the surgical technique of donor transplantation.¹

Only one (6,7%) of the articles did not identify where the study was conducted, but six (40%) were developed in university hospitals, six (40%) in hospitals and two (13,3%) multicenter research. Regarding the language 12 (80%) articles were published in English and three (20%) in Portuguese.

From the 15 selected articles, 11 (73,4%) were authored by physicians, two (13.3%) of nurses and 02 (13,3%) of professionals from other areas of health without career specification. For the year of publication, four (26,8%) articles were 2009, three (20%) of 2007 and the years 2005, 2006, 2010 and 2011 showed an equacy with two (13,3%) articles each year, and from 2001 to 2004 there were no publications related to the topic in question.

With respect to the methodology employed in reviews articles, it is noted that seven (46,7%) articles used in the quantitative statistical analysis method and seven (46,7%) showed articles exploratory studies, and no descriptive analysis or tests statistical. Only one (6,6%) item used a qualitative methodology with theoretical and methodological framework phenomenology.

After reading and analysis of the research objects we opted for the grouping into categories according to similarities contained in the subject, as shown in Figure 1:

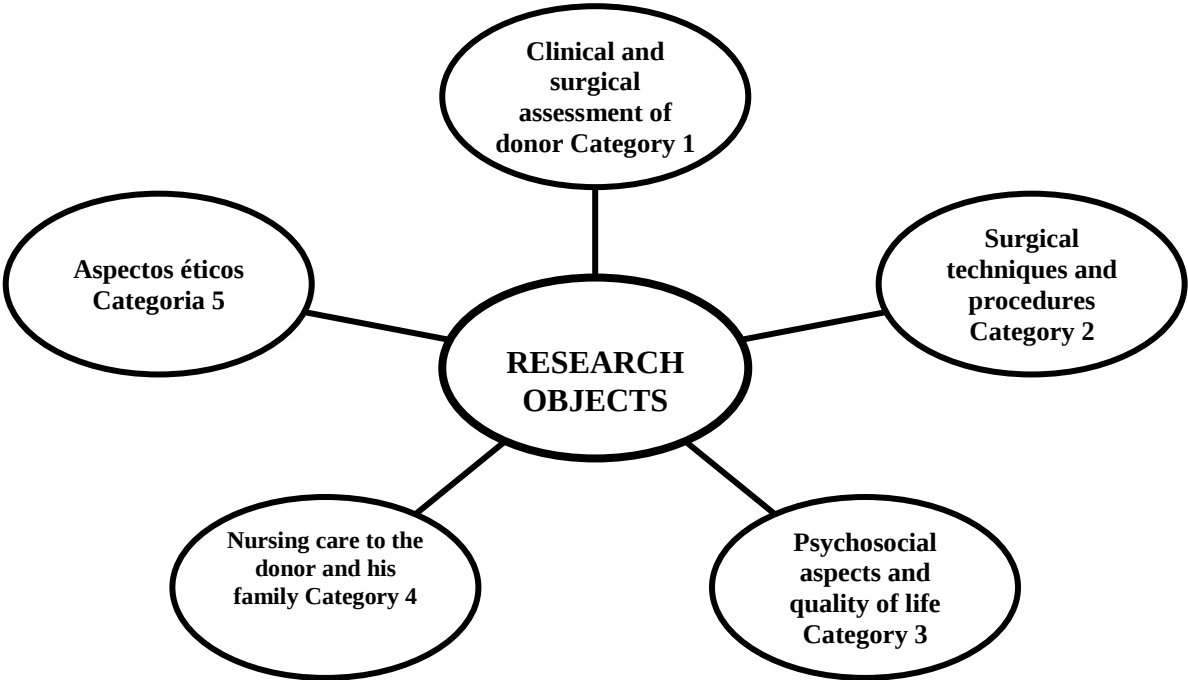


Figure 1: Research objects according to the categories found. 2011

The categories presented the following distribution: clinical and surgical evaluation of the donor (seven items), surgical techniques and procedures (two articles), psychosocial and quality of life (three studies), nursing care to the donor and his family (two articles) and ethical aspects (an article). Observing this distribution we observed a higher frequency of

articles in the biological sphere and technique of transplantation, while their psychosocial and ethical issues related to donors just been addressed.

Thus, the 15 studies were reported in Figure 2, containing a summary of the analysis items and arranged according to the chronological order.

Count ry/Year	Authors/Title	Research object	Objectives	Methodology	Results	Level of evidence
China 2005	Liu et al. Safety of donor right hepatectomy without abdominal drainage: a prospective evaluation in 100 consecutive liver donors.	The safety of hepatectomy right of the donor without abdominal drainage.	Evaluating the safety of the hepatectomy procedure without abdominal drainage.	Exploratory, descriptive study	With detailed study of biliary anatomy and a meticulous surgical technique, the hepatectomy right with live donor can be carried out safely without abdominal drainage.	2
Brazil 2005	Coelho JCU, Parolin MB, Baretta GAP, Pimentel SK, Freitas ACT, Colman D. Donor quality of life after living donor liver transplantation.	The quality of life of the donor after this type of transplant.	Evaluating the quality of life of the donor after this type of transplant.	Non-experimental quantitative	Almost all of the donors have good recovery and returns completely to their normal activities a few months after the donation. The most negative aspect of the donation is postoperative pain. Postoperative complications are frequent.	3
Brazil 2006	Soares et al. Anatomy of the biliary tract in donors and recipients of liver transplantation inter alive.	The Anatomy of the biliary tract in donors and recipients of liver transplantation inter vivos.	Evaluating the anatomy of the biliary tract in donors and recipients of liver transplantation donors held at Hospital das Clínicas.	Exploratory, descriptive study	The prevalence of abnormalities in the biliary tract is high in donor transplant liver and some anomalies are not diagnosed in preoperative imaging studies.	1
Germany 2006	Wietzke-Braun P, Braun F, Müller D, Lorf T, Ringe B, Ramadori G. Adult-to-adult right lobe living donor liver transplantation: Comparison of endoscopic retrograde cholangiography with standard T2-weighted magnetic resonance cholangiography for evaluation of donor biliary anatomy.	The comparison of the value of endoscopic retrograde cholangiography (ERC) and the standard T2-weighted magnetic resonance cholangiography (MRC) in the process of evaluation of living donor liver transplant.	Comparing the value of endoscopic retrograde cholangiography (ERC) and the standard T2-weighted magnetic resonance cholangiography (MRC) in the process of evaluation of living donor liver transplant.	Exploratory, descriptive study	The ERC is greater than the standard MRC technique for detailed mapping of preoperative biliary intra- and extrahepatic but does not reduce the incidence of postoperative complications bile.	1
Korea 2007	Kwon et al. Complications in living liver donors after partial liver procurement: an illustrative radiologic review.	The radiological analysis of postoperative results and illustrative of several postoperative complications in living liver	Presenting a radiological analysis of postoperative results and illustrative of several postoperative complications in living liver donors.	Exploratory, descriptive study	Radiological studies may reveal various postoperative complications of living donor liver after partial hepatic resection.	1

Germ any 2007	Erim et al. Psychological strain in urgent indications for living donor liver transplantation.	donors. The psychological suffering of donors in cases of hepatocellular carcinoma or acute liver failure assessing the health quality of life, anxiety and depression before the procedure.	Investigating the psychological suffering of donors in cases of hepatocellular carcinoma or acute liver failure.	Quasi-experimental quantitative	The psychological load was temporary in nature, and that the family is addressed. Demonstrating that the procedure is not emotionally damaging to donors in emergency conditions.	3
Brazil 2007	Freitas ACT, Godoy JL, Matias JEF, Stadnik LG, Coelho JCU. Comparison of pre-operative exams and per-operative findings in living donor liver transplantation.	The comparison between the findings of preoperative imaging tests with surgical findings at donors for liver transplantation interviews.	Determine the anatomical variations of the portal triad and liver drainage system observed in liver transplantation donors interviews and correlate the findings with the preoperative surgical findings.	Exploratory, descriptive study	The discrepant findings between the anatomy of Portal vein, hepatic artery, bile ducts and hepatic venous drainage are frequent in the preoperative analysis for donor liver transplantation interviews in relation to perioperative findings.	1
Germ any 2009	Schulz et al. Mental and physical quality of life in actual living liver donors versus potential living liver donors: a prospective, controlled, multicenter study.	The quality of life in actual and potential liver donors before and three months after liver transplantation.	Investigating the quality of life in actual and potential liver donors before and three months after liver transplantation.	Experimental quantitative case control	The real donors showed a better mental quality of life and higher self-esteem postoperatively than potential donors. Because of the surgery, the aggravation of physical symptoms in 3 real donors was expected, but a psychological benefit related to the fact that they were able to help the receivers.	3
Korea 2009	Ko et al.. Intrathecal morphine combined with intravenous patient-controlled analgesia is an effective and safe method for immediate postoperative pain control in live liver donors.	The efficacy and safety of intrathecal morphine in pre-op (ITM), combined with intravenous patient-controlled analgesia (IV PCA) with PCA-IV alone.	Comparing donor patients after hepatectomy right, the efficacy and safety of intrathecal morphine in pre-op (ITM), combined with intravenous patient-controlled analgesia (IV PCA) with PCA-IV alone.	Experimental quantitative case control	The ITM preoperative combined with IV-PCA can be regarded as a regime effective and safe treatment of pain in living liver donors.	3
Nethe rlands 2009	Knibbe M; Verkerk M Making sense of risk. Donor risk communication	The communication of risk to donate by health professionals	Reflecting on the communication of risk to donate to the donor.	Exploratory Descriptive Study	Transplant teams and other relevant professionals must expand their role and responsibility of risk communication that exists in the donation, addressing the	5

	n in families considering living liver donation to a child.	ls.			impact of various psychosocial conditions on the interpretation and evaluation of risks for potential donors and in the family.	
Taiwan 2009	Chou, CY; Chen, CL; Chen YC; Chen JL; Mu PF. Family experience of waiting for living donor liver transplantation: from parental donor perspective.	The essence of experience of the family during the period of waiting for a liver transplant with living donor.	Investigating parents' perspectives from donors of children with biliary atresia, the essence of the family's experiences during the period you expect from liver transplant with living donor.	Qualitative Phenomenology	It has been shown that the experiences of parents included a variety of domains: the hope of rebirth, the negotiation history of mental illness in time to decide on the surgery and the choice of the donor, dealing with the preparation for surgery and the potential impact on the family. These findings indicate that nursing professionals should provide family-centered care.	4
USA 2010	LaPointe Rudow D; Cabello CC; Rivellini D. Quality improvement in the care of live liver donors: implementation of the Designated Donor Nurse.	Implications for nursing in the care of living liver donors during his hospitalization.	Developing a program of nursing care for the nursing care of donor hospitalized after surgery for liver transplantation	Exploratory, descriptive study	Establishes the concept of the nurse assigned to donors in order to care for and protect the living liver donors during the hospitalization, serving also as a resource for his colleagues.	4
Brazil 2010	Macedo et al. Donor age as a predictor of risk for short-term outcomes after liver transplant.	The association between short-term mortality and the age of the donors in the worst results in liver transplant.	Investigating the association between short-term mortality and the age of the donors in the worst results in liver transplant.	Quasi-experimental quantitative	The age of the donors is a key factor for the liver transplant having positive impact on prognosis of the patients.	1
Turkey 2011	Dayangac et al. Utilization of Elderly Donor sin LivingDonor Liver Transplantation: When More is Less?	The comparison of age and the impact of hepatectomy right on the postoperative results of donors.	The comparison of postoperative results of live donors for age (ation loal of 50 years 50 versus <) and (2) evaluation of the impact of the extension of hepatectomia right on the results of the donors.	Quasi-experimental quantitative	There is a clear link between the donor's age and the type of his surgery on the outcome of the donor after the transplantation. Receptors who received the donor's liver above 50 years old possessed greater mortality at 30 days and a lower survival rate in year 1, increasing the rates of complication.	1
Japan 2011	Ogawa et al. Donor screening algorithm for exclusion of Thrombophilia during evaluation of living donor liver transplantation	The study of the usefulness of new criteria for screening for thrombophilia in Intervivos transplant	Determining the usefulness of new criteria for screening for thrombophilia in Intervivos transplant donor candidates.	Quasi-experimental quantitative	We were able to detecting thrombophilia and avoid thrombosis in the donor using additional selection criteria and our algorithm.	1

n.	donor candidates.
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Figure 2: Identification of articles and analysis, according to the object of research, the objectives, methodology and results. November / 2011. Source: BVS, PUBMED.

DISCUSSION

Most studies in this review (46,5%) were included in the category clinical and surgical donor. These studies set out to evaluating the donor in the pre-, intra- or postoperative through examinations and procedures.

Two publications assessed that the anatomy of the biliary tract in donors and recipients of living donor liver transplantation is essential to the success of transplantation. However, the prevalence of abnormalities in the biliary tract proved to be high in this procedure, and these often were not properly diagnosed by imaging tests preoperatively, generating several postoperative complications.⁷⁻⁸

In addition, the anatomic variations of the portal triad and hepatic drainage system observed in donors can be very disparate, when correlated preoperative findings with perioperative surgical findings.⁹ Thus, meticulous radiological monitoring is mandatory for living donors during the immediate postoperative period, because your safety is the main concern in living donor liver transplantation.¹⁰

Another point discussed was the direct correlation between donor age and the type of surgery interfering with the health of the donor and recipient. The donor graft recipients that over 50 years had a higher mortality rate at 30 days and a lower survival rate at 1 year. Therefore, extending the age limit of the donor, the results for the receptor may be involved, together with higher complication rates.¹¹

Thus, the donor's age appears to be a key factor for liver transplantation be successful, demonstrating the need for careful monitoring of the elderly donor grafts of recipients for at least 1,5 years after liver transplantation.¹²

In surgical techniques and procedures category, the safety of hepatectomy was assessed without performing the abdominal drainage.¹³ A detailed study of the biliary anatomy, if accompanied by a meticulous surgical technique makes it unnecessary to the mandatory abdominal drainage procedure.

Another study performed in donors after right hepatectomy compared the efficacy and safety of intrathecal morphine preoperatively (ITM), combined with intravenous patient-controlled analgesia (IV-PCA). This procedure

was considered a safe and effective procedure for the treatment of pain in liver donors who possessed low tolerance for pain and coagulation disorder postoperatively.¹⁴

In the category dedicated to psychosocial aspects highlighted studies on the quality of life of the donor¹⁵⁻⁷, to evaluate it, it was observed that the main motivation for the donation was, in 59% of cases, save the recipient's life, however only three donors (8%) reported that the pre-donation clarification was insufficient. These donors mentioned the desire to have had more information on the results of transplantation; two of them on the risks of donation and the pain and postoperative pain.

All donors reported adequate clarification of voluntary donation and none felt any form of pressure to do it. Only one (2%) mentioned that there would donate again, this being the only patient who presented severe postoperative complications, multiple organ failure and secondary systems to the perforated duodenal ulcer.¹⁵

Another study addressed the psychological suffering of donors in cases of hepatocellular carcinoma or acute liver failure evaluating the quality of life (QOL), anxiety and depression before the procedure, noting that the psychological burden suffered by donors was temporary. Through regular psychosomatic questionnaires and monitoring, psychosocial result of donor transplantation can be compared under different conditions and centers.¹⁶

When the quality of life of actual and potential donors was compared, there was a decrease in physical QoL of the actual donors, while potential were not affected. However, actual donors showed a better quality of mental life in the postoperative period and higher self-esteem than the potential donors, possibly due to the psychological benefit of having the ability to help the receivers. Due to surgery, the deterioration of physical symptoms in real donors was expected. But although the actual donors still show a physical QOL limited to 3 months after surgery in both groups, can be observed a similar reduction in anxiety.¹⁷

In the category of nursing assistance to the donor and his family there were showed studies describing some implications of nursing and experiences of care. In an effort to improving care for living liver donors by

providing them with safety and quality care during their hospitalization, a nurse who would be appointed to look after the living liver donors when they were in the units was established, serving also as a support resource to their colleagues in times of need.¹⁸

As for assistance to families, two studies investigated the essence of family experiences during the time waiting for a liver transplant with living donor, in other studies that experience was addressed in about 42% of the publications.^{19, 20}

It is also shown that parents' experiences included a variety of areas: the hope of rebirth, negotiation skills when deciding on surgery and the choice of the donor, dealing with preparation for surgery and the possible impact on the family. These findings indicate that nursing professionals should provide family-centered care in order to help her with the necessary steps to proceed to surgery and consider the patient's family transplanted as part of such assistance, also in line with Resolution 292 of the Council Federal Nursing that regulates the nursing work in organ transplantation.²¹⁻²

A publication points out that one of the controversial aspects of donor transplantation refers precisely to the involvement of healthy persons in major surgery to donate part of liver to a loved one. Therefore, it is required, from an ethical point of view, that candidates for donation are fully understood, the risks of morbidity and mortality of surgery, the multidisciplinary team.²³

In this sense, the ethical aspects are implicit in research with living donors in liver transplantation, becoming an important category of objects of study. The communication to the donor of the risks to donate part of his liver tissue deserves special attention of professionals. Therefore, transplantation and other relevant professional teams should expand its role and responsibility in the donation risk communication, going beyond the information for the real explanation of the potential donor, because the impacts and risks to it, and consequently the your family will be many.²⁴

CONCLUSION

The donor donation proved to be a very current topic, as despite the search include the last ten years, most had been published in the last four years, including Brazilian studies. The objects of the selected studies were aimed mostly for a focused approach to biological, medical and surgical-related living donor liver transplantation in. The research

had a quantitative approach in 94.4% and with publications in the predominantly medical field.

The preservation of donor's health is essential in this type of transplant, as this is always a healthy person who undergoes a major surgery. Thus, for successful living donor transplant program is essential a careful evaluation of the donor so that the complications and mortality are minimal. Added to this, the transplant should minimally affect the quality of life of the donor, allowing him to return as quickly to his daily activities.

It should be noted that other donor dimensions should also be explored as the care of the human being and his family, as well as ethical, legal and human dimension involving transplants.

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Corresponding Address

Ana Paula Lemos Vasconcelos
Cond. Villaggio di Venezia
Edifício Ducalle
Avenida Paulo Silva, 2222 / Ap. 1104
Bairro Farolândia
CEP 49032-500 – Aracaju (SE), Brazil