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Factors Impacting Organ Transplant Outcomes

Katelyn Grubich
Dominican University of California

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Factors Impacting Organ Transplant Outcomes

Katelyn Grubich

Nursing Department, Dominican University of California

NURS 4500: Nursing Research and Senior Thesis

Dr. Patricia Harris

May 12, 2022

Abstract

Organ transplants are crucial to the survival of those on the receiving end. With medicine advancing, so has transplantation. Health care providers are becoming more aware of the strategies necessary to prolong the transplanted organ and how to obtain better outcomes. Heart, lungs, kidney, liver, pancreas, and some where more than one organ are involved, are the types of organ transplants performed.

Providing patients information will allow them to be a part of their treatment and can help to ease their anxiety knowing what is being performed and what can be expected. Health care providers must ensure that patients and their families are knowledgeable about the procedure, care in the hospital, and how to care for themselves in order to aid in a positive outcome.

Using meta-analysis, randomized control trials, as well as other methods there were factors found to be beneficial as well as harmful toward the outcome of receiving an organ transplant. Depression and anxiety were a factor in the morbidity and mortality of transplants. The use of tobacco after receiving an organ transplant aids in poorer transplant outcomes.

Factors that were beneficial to transplant outcomes included mindfulness-based stress reduction, during this trial it was proven that stress and anxiety in patients was reduced. Video training before transplantation also showed to produce positive outcomes.

Providing patients with more information before an organ transplant can help generate positive outcomes. Making sure all questions are answered fully, as well as giving the patient and family members ways to reduce stress and anxiety should be included in all pre-operative appointments.

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Problem Statement

Organ transplants are crucial to the survival of those receiving the organ or those on the wait list. When organ transplants were first being performed, they would result in a high rate of death and rejection, but now have become “an effective therapeutic intervention in terminal diseases of other organs such as heart, lung, liver, pancreas and intestine, besides tissues and cells” (Silvério, et al. 2015, 556). With medicine advancing, so has transplantation. Health care providers are becoming more aware of the strategies necessary to prolong the lives of the fragile organs within their new bodies. However, there could be more that is done to increase the survival of transplanted organs and patients.

There is a multitude of factors that play a role in the success rates of transplantation. Some of those factors may fall on health care providers, and some may fall on the patients. “It is known that the donation and transplantation of organs and tissues depend on factors related to the physical, technological, and sufficiency of qualified professionals to meet the needs of patients and their families” (Silvério, et al. 2015, 560). Health care providers must be certain that patients and their families are knowledgeable about the procedure, care in the hospital, and how to care for themselves at home in a manner that aids in a positive outcome. “Providing patients with necessary information about pre-operative procedures increases compliance with the treatment and healthcare practices, improves physical and mental well-being, reduces anxiety and stress and accelerates postoperative recovery” (Kapikiran, et al. 2021. paras 2). Giving patients information will allow them to be a part of their treatment and can help to ease their anxiety knowing what is being performed.

Research Questions

Which factors impact transplant efficacy rates for patients, including before, during, and after hospitalization for transplantation?

How can nurses assist during the transition to improve outcomes?

Literature Review

The research questions being reviewed evaluate the factors that lead to the efficacy of organ transplants. In this review the articles will examine various factors that lead to positive or negative outcomes for transplant patients. Also included in this literature review are some ways that health care providers can aid in the transition of receiving an organ transplant.

The articles used in this literature review were found within the Dominican Library Databases. Search terms that were used include: transplant, organ, nursing, anxiety, outcomes, and others related. The databases searched for this review were PubMed, PubMed Central, and CINHALL. Using the search terms listed above there was a wide variety of articles and studies done to support the research questions.

Positive Impacts on Transplant Outcomes

In the study, “The Effect of Video Training before Organ Transplant Surgery on Patient Satisfaction and Anxiety”, patients are evaluated based on answers they provided to the given questionnaire at a university hospital in Turkey. This was a randomized controlled study consisting of 120 patients set to receive a liver transplant. Those patients were placed into two groups of 60. One group was the experimental group, and the other was the control group. “The patients in the experimental group were educated using virtual reality glasses, and those in the control group were given routine verbal clinical information” (Kapikiran, et al., 2022). During this study all patients were in the pre-operative stage of the transplant process.

The patients were selected at random to either be a part of the experimental group or the control group. The experimental group viewed a 34 minute training video about “intestinal and skin preparation, premedication, pre-operative fasting and postoperative balanced nutrition, deep breathing and coughing exercises, in-bed rotation exercises, information about surgery,

introduction of the operating room and intensive care environment, postoperative complications and symptom management, postoperative drains and dressings, immunosuppressive therapy and discharge training” (Kapikiran, et al., 2022). The patients in this group had to view the video 24-72 hours prior to their transplant.

The control group also received training/instruction about what to expect and other aspects relating to transplant surgery. This group however received it by verbal instruction by a clinical nurse and did not watch any video material. In this control group the auditory memory was addressed. Data was collected from both groups “using a patient information form developed by the researchers, the anxiety specific to surgery questionnaire (ASSQ) and the Newcastle Satisfaction with Nursing Care Scale (SNCS)” (Kapikiran, et al., 2022). The questionnaires were filled out by both groups at various times throughout their stay in the hospital.

The results from the two groups were then compared. “No statistically significant difference was found between the control and experimental groups in terms of sex, marital status, occupation, place of residence, donor type, income level and education level” (Kapikiran, et al., 2022). In fact, the hospitalization stay within the experimental group showed to be lower than that of the control group. The patients in the experimental group had a higher rate of satisfaction with nursing and other care-related interventions compared to the control group. They also experienced a lower level of anxiety.

Anxiety and stress surrounding surgery and hospitalization is something that most patients will experience. Some of the anxiety may be relieved based on how a patient is able to handle the given situation. Based on this study, the video training proved to be beneficial in

providing patients with information, answering questions, and providing a sense of comfort before they undergo their procedure.

Providing patients with nonpharmacologic methods on reducing stress and anxiety surrounding illness and transplantation is proving beneficial. In the study, “Mindfulness-Based Stress Reduction for Solid Organ Transplant Recipients”, the objective was to evaluate the effectiveness of mindfulness-based stress reduction (MBSR) and how that affects anxiety, depression, and poor sleep habits. This was a randomized controlled trial. The transplant recipients were of kidney, liver, heart, lung, or kidney/pancreas. The patients were put into three groups: MBSR, health education, or waitlist.

The MBSR and health education groups received eight weekly 2.5-hour classes. The MBSR group also went on a day retreat between the weeks of 6 and 7, where the health education group did not go. “MBSR students learn four formal techniques to foster mindful awareness: (1) body scan, (2) sitting meditation, (3) gentle Hatha yoga, and (4) walking meditation. As a preface and foundation for these techniques, students are introduced to diaphragmatic or “belly” breathing” (Gross, et al., 2011). The health education group was educated on problem solving, personal goals, and action plans led by peers.

Anxiety, depression, and sleep quality was assessed at baseline, 8 weeks, 6 months, and then again at 1 year. “Within the MBSR group, anxiety, depression, and sleep symptoms decreased and quality-of-life measures improved by 8 weeks, and benefits were retained at 1 year. Initial symptom reductions in the health education group were smaller and not sustained. Comparisons to the waitlist confirmed the impact of MBSR on both symptoms and quality of life, whereas health education improvements were limited to quality-of-life ratings” (Gross, et al., 2011). The benefits of MBSR were sustained over one year, resulting in reduced anxiety,

depression, and improved sleep quality. The health education group did not see effects as sustainable. This study proved to be beneficial to the research questions by providing a relatively inexpensive and effective method at relieving stress and anxiety surrounding the transplant process.

The time following a transplant is also crucial to outcomes and how patients can manage their health. The aim of the study conducted to form a fitness support group for organ transplant recipients was to help them to have better health outcomes, and improved self-management behaviors. This study used a cross-sectional descriptive design involving 20 participants during a training session in 2006. Data was collected using a questionnaire answering questions regarding self-management, self-efficacy, and health status. The participants in this study were voluntary.

The participants had to be at least six weeks post-transplant and not in any stage of rejection. The sample of 20 participants were predominantly white (90%), educated (mean education level – university), and had a mean age of 55 years” (Gentry, et al., 2009). The transplant recipients in this study were liver or heart. Throughout, it showed that group participation was consistent. The members walked and were able to participate weekly. The health status within the group enhanced throughout and general health was reported to be at least in ‘good’ health, with some reporting ‘excellent’ health.

The study proved to be beneficial for those who volunteered to participate. “Those who indicated little interference with activities of daily living as a result of the transplantation also expressed greater self-efficacy, reported higher levels of overall health, and participated in more aerobic exercise per week” (Gentry, et al., 2009). Discussed in this study was that the participants were able to spend more time doing activity per week because they perceived that their illness did not interfere much with daily life or activities. Being a part of a support group

was also able to enhance the experience because they were able to discuss comments and concerns with one another and rely on each other.

Aspects Showing Negative Outcomes

As discussed previously in this literature review, anxiety and depression can be associated with transplantation due to the stressful nature of the process. The article titled, “Depression and Anxiety as Risk Factors for Morbidity and Mortality after Organ Transplantation” does a systematic review and meta-analysis of the effects of depression and anxiety and how that relates to the outcomes of receiving a transplant. For this article, four databases were searched between 1981 and 2014 for studies of depression and anxiety and how that impacted post-transplant outcomes.

More than half of the studies examined showed depression as a risk factor, while “44% examined both depression and anxiety” (Dew, et al., 2015). Patients who experienced depression following an organ transplant experienced a greater mortality risk. For this study to determine if anxiety itself was a risk factor of transplant mortality, there needed to be further research done, as the results were inconclusive. The study then examined post-transplant morbidities related to depression and anxiety. “Remaining morbidities were examined relative to depression in only one study each, all with nonsignificant findings: depression did not increase heart recipients’ risk of chronic graft rejection” (Dew, et al., 2015). There were no studies found that related anxiety and post-transplant morbidities. A limitation in this review was that few studies considered morbidities.

Smoking after receiving an organ transplant is examined in the article “Correlates and Outcomes of Posttransplant Smoking in Solid Organ Transplant Recipients” using systematic review and meta-analysis. Databases were searched and 73 studies were investigated to find

correlation and outcome of post-transplant smoking. Of those data bases, 43 were kidney, 17 were heart, 12 were liver, and lastly one had received a lung transplant.

Limitations included in this study is that the patients must self-report all data, leading researchers to believe that there may be some variability in the results. Not related to the outcome but included in the study was that post-transplant smoking was higher in men and younger individuals were more likely to smoke. Hypertension, diabetes, and history of cardiovascular disease did not correlate. “Post-transplant smokers had higher odds of newly developed posttransplant cardiovascular disease, nonskin malignancies, a shorter patient survival time, and higher odds of mortality” (Duerinckx, et al., 2016). Post-transplant smoking is associated with negative outcomes in patients. Although there are some patients that may be more likely to smoke after receiving an organ transplant, all should take precaution.

The final factor included in this literature review is evaluating how resources within a hospital can impact transplant outcomes. A study done in Brazil looked to analyze factors that related to structure, process, and outcomes of transplantation. This study was conducted at six hospitals, three were public, three were private. There were 65 participants. “Data were collected daily through structured script of non-participant observation, checklist type, composed of the following parts: donor characterization; donation structure of hospitals where the donors was hospitalized; process of organ and tissue donation; data on the result of the donation” (Freire, et al., 2015). This was a quantitative study.

This was a crucial study to include in this literature review because it highlights a different hospital system compared to the United States, although what was found in the results could potentially happen anywhere in the world. “In material resources, it was found that eight items were not available in all hospital admissions, especially linens (83.1%), infusion pumps

(75.4%), manual resuscitator (69.2%) and hospital beds (67.7%)” (Freire, et al., 2015). The lack of essential items was a major problem for this study. The lack of resources affected the patients, the donors, and the health care team. Having enough availability of what is essential could result in better outcomes.

Health Care Providers Impact

Throughout the hospitalization of a patient the impact that health care providers can have on them may be able to determine or alter their experience. The article, “Nurse-led self-management support after organ transplantation” evaluates the effectiveness for “intervention in promoting self-management skills among heart, kidney liver and lung transplant recipients in comparison to standard care. The secondary aim is to assess the self-management support skills of nurse practitioners who will deliver the intervention” (Van Zanten, et al., 2022). Following a transplant patients go through a physical, emotional, and social transition in which health care workers may be able to help them prepare for.

The study design for this article was randomized and took place in the Netherlands. The eligible patients were those who had received a liver, kidney, heart, or lung transplant at one of the participating hospitals. The patients must also have been two to thirteen months post-transplant and not experiencing a sign of rejection. This was a unique study because there were also nurse practitioner’s that were involved and had not received the training prior to seeing their patients and assisting them. The NP’s had to also participate in this study but had differing answers compared to the patient’s. “The intervention focuses on a positive approach in order to enhance patients’ intrinsic motivation and self-efficacy to encourage sustainable behavior change” (Van Zanten, et al., 2022). Using evidence-based techniques, the patients were guided through this training with their NP.

In this study patients were placed in an experimental or control group and at three points were asked to fill out an online questionnaire. There were various measures that were being followed in the patients. Those included, self-management skills, self-regulation in the context of transplantation, quality of life, and medication adherence. The NP's were asked about their self-management support skills and need for supportive counselling.

The nurse practitioner's involved were then trained in communication skills and were asked to evaluate patient responses to various questions that they asked. The patients were asked about social support, transport, self-care, finances, lifestyle, activities, and more. This study could produce positive results in patient self-management skills following an organ transplant following the interventions provided by the health care team.

Summary

The outcome of organ transplant varies on patient, overall health, location, decisions made, and health care team. As discussed in this literature review there are positive factors that come into play as well as negative. Some of the positive influences on the efficacy of transplants included patient education. If patients were provided with better education prior to surgery they were shown to have decreased stress and anxiety and therefore experience better outcomes. Another way to help reduce patient stress and anxiety was using mindfulness-based stress reduction tactics, which then led patients to feel more relaxed about the process of organ transplantation. Following a transplant is also a crucial time to avoid rejection. Surveying patients participating in a fitness group not only allowed for better physical outcomes but also the patients were able to support one another and have others to relate to.

The negative factors that were reviewed included the higher rates of depression and anxiety on the outcomes of transplant. Those who experienced higher levels of depression were

seen to have more negative outcomes. Smoking was also seen to play a role in the post-transplant time-period. Those who smoked post-transplant were seen to have a higher rate of mortality. The last negative outcome reviewed was a study that was done in Brazil that saw the lack of material played a role in the efficacy of organ transplants.

Overall strengths included this literature review included that most of the organs that could be transplanted were able to be included in the studies that were found. Some studies focused on a single organ, but most were able to include nearly all. Another strength was that there was a variety of results from each of the studies allowing for an in-depth review of the study. Limitations found in the studies were that there was not always a clear definition of what was being asked of patients within the studies. Some of the reporting in the studies was also done voluntarily which leads researchers to believe that there are some gaps in the results. The last limitation saw was in two of the studies the lack of participants did not allow for a wide variety of results. This literature review supported the research questions. The research supported the need for additional investigation.

Proposal for Further Study

The process of waiting for an organ transplant can be an immensely stressful time for patients and their families. A question that arose during research and in writing a literature review is – what else can be done to help patients before transplant that can help aid in positive outcomes? As seen in the literature review, reducing patient stress and anxiety using various methods has proven to enhance the outcomes of organ transplants. Although an abundance of research was collected, it is evident that a gap remains. Patients could be provided with more support than what is already being provided.

Theoretical Framework

For the research study I plan to use Helen C. Erickson's Contribution to Nursing Theory: Modeling and Role Modeling Theory. Erickson studied the relationship between human, soul, and spirit. The Modeling and Role Modeling Theory follows Erik Erikson's Theory by saying that nurses can care for their patients knowing that each patient is unique, and the care must be altered depending on the situation (Petiprin, 2020). The model also draws on conclusions that care is based on the patient's perceptions of the environment. "This model gives the nurses three main roles. They are facilitation, nurturance, and unconditional acceptance" (Petiprin, 2020). When caring for transplant patients at any course of their treatment, nurses must adapt their care based on how their patient is handling the given situation. Whether that patient needs direction, to be comforted during a long wait process, or acceptance dealing with various hurdles they may face, the nurse and other emotional support may provide exactly what the patient needs.

Patients being able to rely on one another throughout a stressful process such as an organ transplant could be crucial to aid in positive outcomes. Having the support and grounding from other patients who are going through the same process could help relieve some stress and

anxiety, answer common questions or concerns, and have support to fall back on. According to this theory, the patient is the expert of their care. The patient will know what they need. The patient will know how to overcome obstacles and how they can handle the given situation.

Primary Research Aims

This proposed study aims to identify patients concerns and needs in order to establish more effective means of addressing those concerns. Ultimately, the goal of this study is to aid in the positive outcomes for organ transplant patients. This research literature review shows the importance of patient mental health and the impact that can have on their health. The review of the literature showed that there needs to be more studies conducted in order to support the research.

Ethical Considerations

There are several ethical considerations surrounding this study. The patients' participation is completely voluntary. If they want to leave the study, they can do so at any time. Patient identification will remain confidential. Each participant will be assigned a Study ID, and there will be no identifiable factors related to the patients' personal information. This will allow patients to be more open in their participation and responses. Strict confidentiality will be maintained. All study data will be stored on a password protected computer to which only those on the research team will have access. Prior to beginning data collection, this study will be submitted for review and approved by the Dominican University of California Internal Review Board (IRB) and the review boards of San Francisco Bay Area clinics where recruitment takes place. Eligible patients who agree to participate will be provided with more details about the study's purpose and procedure, and they will be provided with a consent form, which will require their signature to confirm informed consent.

Research Method:

Research Design

The design for this research will be a mixed method descriptive and comparative study, using both quantitative and qualitative data. I plan to provide educational and counseling sessions along with a survey and interview that will take place before and after the sessions. Prior to the sessions, a survey will be provided to better understand the stresses and anxiety that the patients are experiencing. The design will be a one-year longitudinal. Collecting data from patients while they are in the process of waiting for their transplant and, also, following up with the patients one year after receiving the transplant ((as applicable).

Research Population and Sample Size

Study participants will be recruited from the population of renal or dialysis patients in the San Francisco Bay Area. A sample size of 50 patients who are in need of a kidney transplant is expected to be recruited for this study. Inclusion criteria will be patients who are on the waiting list for an organ transplant or who are soon to receive one. At any point during the process the participants can decline to participate.

Strategy for Recruitment

Participants will be recruited using online platforms, networking, and through nephrology practice and dialysis clinics located in five San Francisco Bay area counties (Marin, San Francisco, San Mateo, Alameda, and Contra Costa). Prior to recruitment, understanding patient needs will be a priority. The potential participants will be provided with more details about the rationale and procedures for research and asked if they wish to be a part of the study.

Methodology

This study will provide an educational and counseling intervention along with a survey prior to the intervention, and an interview one year after the intervention. Therefore, the study will take place in three phases:

Survey Phase

After asking demographic questions, including age, gender, and county of residence, the following survey questions will be asked:

Quantitative:

- How long have you been waiting for your organ transplant (in months, days)?
- How much longer do you expect to wait (in months, days)?
- Do you feel like your questions and concerns are being answered appropriately?
- (Yes, No, Not Sure)
- Do you have mental health needs related to your kidney disease and anticipation of kidney transplant that you would like to have addressed more fully?
- (Yes, No, Not Sure)

Qualitative

- Describe your feelings about how well your questions and concerns are being answered by your healthcare providers.
- In what ways does the waiting process of waiting initiate stress?
- How do you find that confiding in others can aid in relieving stress?
- In what ways do you find yourself coping with added stress and anxiety during this time?
- Describe any mental health concerns that you may have, which you would like to see addressed.

- Describe any additional concerns or issues that you would like to express.
- What unique needs do you have, as a nephrology patient awaiting a transplant, that you would like to see better addressed?

Participants answers will undergo a preliminary analysis, including descriptive statistics for the demographic and other quantitative questions, and a content analysis to search for and categorize similar words and phrases for the qualitative questions

Intervention Phase

There are two parts to the intervention phases. For part one, the researchers will provide a series of eight one-hour weekly group educational sessions of five participants in each group. Educational content will include self-care techniques for people with kidney disease. Based upon the analysis of the participants answers, their needs will be identified, and stress management techniques will be offered in the educational sessions to help guide and alter the ways that the participants are handling the given situation.

Part two will take place over the remainder of the year-long study. Ten monthly, individual one-hour counseling with a licensed social worker or registered nurse who is affiliated with the study team and knowledgeable about renal disease will provide further guidance for the participant. In conjunction with the counselor, the participants will be able to discuss their level of stress and anxiety as well as evaluate how well their stress is being handled after the educational intervention. During this time year, it is expected that some of the participants will have received their transplant.

Repeat Survey and Interview Phase

At the end of the one-year period, participants will be asked to repeat the survey provided in the first phase of the study. They also will be placed in the same small group of five each, in

which they shared the educational sessions. A group interview will take place in which the participants will be asked to candidly share their experiences, both positive and negative. For participants who received a transplant, open-ended questions will be asked about their experiences while hospitalized and after returning home. The group interview will be scheduled for 90-minutes at a mutually convenient time for participants after the last counseling session. The session will be recorded and transcribed for analysis purposes. No personal identifiers will be used, so participants identities can be protected. Participants will be advised of the plan for recording in advance and provided with a consent form for the session in advance. Participants may decline to participate if they choose.

Analysis

Data collected during the third phase from the group interviews will be analyzed at the end of the one-year study. The second survey will be analyzed in the same way as the first survey. The quantitative before-and-after answers will be compared using a t-test.

A content analysis will be conducted to explore participants' perspectives of their experience in the educational and counseling sessions. Using the transcribed group interviews, similar words and phrases will be identified and grouped into categories. Participants responses will be evaluated and examined closely for similarities and differences in responses compared to the preliminary assessment of data collected in phase one. Potentially, some of the participants will have received their transplants, and answers given by transplant patients versus those who are still waiting can be compared with each other. The data collected from the participants' group interviews be used to describe the level of stress and anxiety that transplant participants experienced while hospitalized and returning home. The data will be used to explore ways the patients can be helped with mental health issues, coping mechanisms, especially related to any

complications that occurred, and the participants' perceptions of their outcomes after the educational sessions and one year of guidance counseling. Perceptions of outcomes at that one-year mark for the participants who received the transplant are of particular interest to the researcher.

Conclusion

Whether or not a transplant is successful is entirely up to the human body. However, as discussed in the literature there are various factors that can contribute to the success or failure of organ transplants. The proposed study may show that patients who are more prepared prior to surgery, may result in higher outcomes. The patients who experience lower levels of stress and anxiety will therefore have a higher rate of successful transplantation. The original research questions were answered consulting the literature. Factors in play before, during, and after transplantation play a role in the efficacy of the transplant. Health care providers can also play a role in the process and help aid in the higher outcomes.

Moving forward, providing patients with information regarding the process they will endure may help to reduce stress. Therefore, aiding in more positive outcomes. Patients may have to wait years for a transplant. Providing them with all the tools to aid in a positive outcome will help to prevent them from reoccurring on that list in the near future.

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Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Dew, M., Rosenberger, E., Myaskovsky, L., DiMartini, A., DeVito Dabbs, A., Posluszny, D., Steel, J., Switzer, G., Shellmer, D., & Greenhouse, J. (2015). Depression and Anxiety as Risk Factors for Morbidity and Mortality After Organ Transplantation: A Systematic Review and Meta- Analysis. <i>Transplantation</i> , <i>100</i> (5), 988-1003. 10.1097/TP.00000 00000000901	To evaluate the effects of depression and anxiety related to the outcomes of organ transplants.	Across all the studies included in the meta-analysis, over the span of 33 years there were a total of 53,000 patients. The transplants that were included in this study were heart, liver, kidney, lung, pancreas, and mixed.	Meta-analysis.	Four databases were searched ranging from 1981 until 2014 searching for studies examining the effect of depression and anxiety relating to the effect of post-transplant mortality, rejection, infection, and rehospitalization. A systematic review and meta-analysis was followed in this study.	Mortality was found to be the most common outcome. 24 studies were related to depression and 10 studies related to anxiety. Morbidity also played a role in rejection.	Most of the transplantable organs were included so there was a wide variety of patients that were able to be followed. Therefore, generalizability was enhanced. Longitudinal study design allowed for examination of endpoints over time, providing more opportunities to observe changes.	One limitation in meta-analysis is operationalizing definitions for specific modifiable risk factors that were related to the risk of depression and anxiety and how that related to the outcomes of the transplants.

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Duerinckx, N., Burkhalter, H., Engberg, S., Kirsch, M., Klem, M., Sereika, S., De Simone, P., De Geest, S., & Dobbels, F. (2016). Correlates and Outcomes of Posttransplant Smoking in Solid Organ Transplant Recipients: A Systematic Literature Review and Meta-Analysis. <i>Transplantation</i> , 100(11), 2252-2263. 10.1097/TP.0000000000001335	To examine the outcomes of tobacco use related to organ transplants. Tobacco use continues to be one of the leading causes of preventable deaths. Tobacco use after an organ transplant proves to be even more harmful.	73 studies were included in this analysis; 43 were kidney, 17 heart, 12 liver, and 1 on lung transplants.	Systematic review and meta-analysis	Databases were searched from June 2012 until January 1, 2016. Data was extracted from studies which included sample design, sample size, sample size calculation, transplant population, age, sex, race, and time post transplantation.	The odds of post-transplant smoking was 1.33 times higher in men than in women. Cardiovascular disease (new onset) was 1.41 times higher in subjects who smoked post-transplant compared to those who did not.	Most of the transplanted organs were included. Some subjects were also followed for a decent period of time, allowing for appropriate data collection.	Smoking was not clearly defined to the sample, the sample size also needed to report more details than what they did. There was no data pre transplant compared to after the transplant occurred.

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Freire, I. L. S., Vasconcelos, Quinidia Lúcia Duarte de Almeida Quithé de, Torres, G. d. V., Araújo, E. C. d., Costa, I. K. F., & Melo, Gabriela de Sousa Martins. (2015). Estrutura, processo e resultado da doação de órgãos e tecidos para transplante. <i>Revista Brasileira De Enfermagem</i> , 68(5), 837-845. 10.1590/0034-7167.2015680511i	To analyze the factors that relate to the structure, process, and outcomes of organ and tissue donation related to transplantation. Analyzes the effectiveness of donation and considers the various actions that must be performed to achieve a positive outcome.	65 cases in Brazil were included; six hospitals were involved between August 2010 and February 2011. Three were public hospitals, and three were private hospitals.	Longitudinal, analytic, and quantitative analysis	Data was collected using checklist involving characterization, donation structure of the hospital, process of donation, and data on the results of the transplant.	Lack of resources showed poorer outcomes for patients, some of those findings were lack of linens, glucometers, infusion pumps. All of which are considered essential to the care of a post transplant patient.	Surveying six different hospitals, allowing for a variety of care settings. Public hospital versus a private hospital.	Location of the study. Physical limitations regarding temperature control, materials, human resources and lack of care protocols< limiting generalizability.

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
<p>Gentry, A. C. S., Belza, B., & Simpson, T. (2009). Fitness support group for organ transplant recipients: self-management, self-efficacy and health status. <i>Journal of Advanced Nursing</i>, 65(11), 2419-2425. 10.1111/j.1365-2648.2009.05107.x</p>	<p>To manage post-transplant behaviors with the patients who participated.</p>	<p>Twenty participants were followed.</p> <p>They must have received an organ transplant from 1986-2006.</p> <p>The patients must be at least 6 weeks post-op and not in any stage of graft rejection.</p>	<p>Cross sectional study design.</p> <p>Quantitative</p>	<p>The participants were training for a half marathon to help promote fitness after their transplant.</p> <p>They were evaluated based on demographic data and filled out a questionnaire.</p> <p>The patients were asked to measure their self-management behaviors which included physical well-being, work, marriage, relationships, and others.</p>	<p>Group activity was consistent and showed participation weekly.</p> <p>The self-management among patients also showed to be high.</p> <p>Most of the health status of the patients was either rated as good or excellent.</p>	<p>The participants were in good health following a transplant.</p> <p>It was voluntary for participants.</p>	<p>The limited number of participants.</p> <p>The study was conducted during the final five weeks of their training and not throughout.</p>

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Gross, C. R., Kreitzer, M. J., Reilly-Spong, M., Wall, M., Winbush, N. Y., Patterson, R., Mahowalk, M., & Cramer-Bornemann, M. (2011). Mindfulness-Based Stress Reduction Versus Pharmacotherapy for Chronic Primary Insomnia: A Randomized Controlled Clinical Trial. <i>Explore (New York, N.Y.)</i> , 7(2), 76-87. 10.1016/j.explore.2010.12.003	To evaluate the effectiveness of mindfulness-based stress reduction (MBSR) and how that can aid in reducing symptoms of anxiety, depression, and poor sleep habits in patients after an organ transplant.	Recipients of kidney, kidney/pancreas, liver, heart, or lung transplants. The mean age was 54 years old (age ranged 21-75 years).	Randomized control trial.	Involved by a clinician referral, brochures, or direct mailings. They had to meet specific criteria, and attend classes. The patients were separated based on the type of transplant, a type 1 diabetic, or on any medications for anxiety, depression, or sleep.	The study concluded that MBSR was able to reduce anxiety and help sleep after one year compared to a health education tactic. MBSR helped to improve the quality of life in post transplant patients.	They were able to place the participants into three groups, the MBSR, health education, and the waitlist. This allowed for a variety of results and a comparison that other studies do not provide.	It was self reporting. Whether patients reported exactly how they were doing would be entirely up to them. There would be no intervention based on how the patients were doing in this self reporting method.

Authors/Citation	Purpose/Objective of Study	Sample - Population of interest, sample size	Study Design	Study Methods	Major Finding(s)	Strengths	Limitations
Kapikiran, G., Bulbuloglu, S., & Saritas, S. (2022). The Effect of Video Training before Organ Transplant Surgery on Patient Satisfaction and Anxiety: Head Mounted Display Effect. <i>Clinical Simulation in Nursing</i> . 62, 99-106. 10.1016/j.ecns.2021.09.001	To evaluate the effect that video training had on patients before undergoing a transplant. To help with patient satisfaction and anxiety.	The sample consisted of 120 patients. The patients in this study were between ages 18-60. 60 patients were placed into the experimental group and 60 patients were placed in the control group.	Randomized controlled study	Two groups were formed. One experimental group and one control group. The experimental group was educated using virtual reality glasses and the control group was given the routine surgical and transplant information verbally.	The patients in the experimental group experienced a lower level of anxiety and greater satisfaction compared to those who were placed in the control group. The education that was provided to the patients in the experimental group significantly reduced their anxiety and increased their level of satisfaction.	There was a defined line between the two groups and they were evenly split - in half.	The patients were selected from a single transplant center. It was only performed using liver transplant patients. This limits generalizability.

