



IMPACTS OF KIDNEY TRANSPLANTS DURING CHILDHOOD AFFECT THE EMOTIONAL WELL-BEING AND OVERALL LIFE SATISFACTION OF BOTH CHILDREN AND THEIR CAREGIVERS

Dr Usama Khalid^{1*}, Habeeb Ullah², Dr Junaid Ashraf³, Maida Zulfiqar⁴, Dr. Aeman Andleeb⁵, Sughra Latif⁶, Khurram Shahzad⁷, Dr. Beenish Aslam⁸, Kashif Lodhi⁹

ABSTRACT:

Aim: We aimed to evaluate the psychological well-being and overall well-being in offspring and their parents following kidney transplantation, in comparison to a group of healthy individuals and offspring diagnosed having severe lymphoblastic leukemia. Furthermore, our goal was to discover potential issues related to compromised mental health and overall well-being by examining various health indicators.

Methods: The study involved the examination of forty children who had undergone renal transplantation, having an average age of 12 years (ranging from 2 to 18 years). The evaluation of mental well-being involved the utilization of the Pediatric Quality of Life Inventory 5.1 Generic Core Scales and the Strength and Difficulties Questionnaire. The General Health Questionnaire and the Quality-of-Life Scale (QOLS) were employed to assess the mental well-being and quality of life of each mother.

Results: The control group consisted of fifty children diagnosed with acute lymphoblastic leukemia, with a median age of 12 years (ranging from 7.6 to 16.5 years), and 43 healthy children, with the median age of 12 years (ranging from 9.7 to 16 years). Analysis of the study included treadmill exercise data from 23 out of 40 patients.

Children who had undergone transplantation (referred to as TX children) exhibited noticeably elevated rates of mental health difficulties and reduced health-linked quality of life (HRQOL) during the time frame of 3 to 14 years post-transplantation when compared to both control groups. Body mass index and maximum oxygen uptake (evaluated in a subset of 23 out of 39 individuals) were discovered to have a substantial influence on the mental well-being of children (estimated by SDQ) and child quality of life (QOL).

Conclusion: These findings lead us to propose that post-transplantation rehabilitation for TX children should emphasize physical activity and quality of life enhancement as crucial elements, in order to mitigate the interconnected physical and psychological burden experienced by kidney transplant recipients.

Keywords: Psychological Well-Being, Acute Lymphoblastic Leukemia, Children, Kidney Transplantation.

^{1*}Chandka Medical College, Mirpur, usamakhalidk98@gmail.com

²Nishtar Medical University Hospital Multan, drhabeeb1112@gmail

³Houses Officer Aims Hospital Mzd AJK, dianujashraf333@gmail.com

⁴Fatima Jinnah Medical University, maidazulfiqar24@gmail.com

⁵House officer CMH SKBZ Muzaffarabad, aeman.kiani@gmail.com

⁶Federal Government Polyclinic Hospital Islamabad, sughralatif1998@gmail.com

⁷HIESS, Hamdard University, Karachi, Pakistan, khurramsatti2000@gmail.com, <https://orcid.org/0000-0002-5390-1078>

⁸Jinnah Sindh Medical University, syedabeenish@msn.com

⁹Department of Agricultural, Food and Environmental Sciences. Università Politénica delle Marche Via Breccia Bianche 10, 60131 Ancona (AN) Italy, k.lodhi@studenti.unibg.it

*Corresponding Author: Dr Usama Khalid

*Chandka Medical College, Mirpur, usamakhalidk98@gmail.com

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INTRODUCTION:

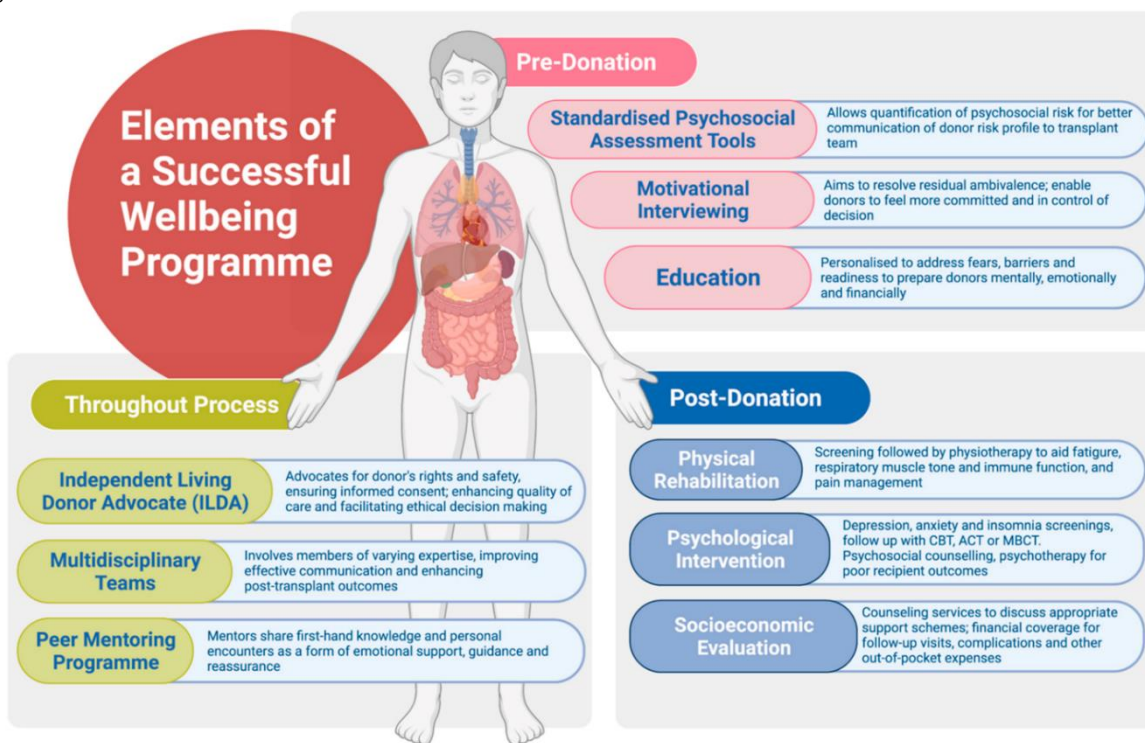
Kidney transplantation is a life-saving medical procedure that has revolutionized the treatment of end-stage renal disease (ESRD) in both children and adults. In current years, there was growing focus on impacts of kidney transplants during childhood and how they affect the emotional well-being and overall life satisfaction of both children and their caregivers [1]. This area of research is of paramount importance as it sheds light on the long-term psychosocial consequences that may arise from such a significant medical intervention.

Childhood kidney transplantation presents a unique set of challenges that differ from adult transplantation. Children who undergo kidney transplantation often face a multitude of physical, psychological, and social adjustments [2]. The experience of undergoing a major surgical

procedure, dealing with the complexities of lifelong immunosuppressive medication, and managing the transition from a dialysis-dependent lifestyle to a relatively normal one can be overwhelming for children [3].

One of the key aspects affected by kidney transplantation during childhood is the emotional well-being of the recipients. Children who undergo this procedure may experience a wide range of emotions, including fear, anxiety, and stress [4]. The uncertainty surrounding the success of the transplant, the potential for rejection, and the need for continuous medical follow-up can contribute to heightened emotional distress. Moreover, the constant need for medication adherence, dietary restrictions, and regular medical appointments may also impact the child's psychological well-being [5].

Image 1:



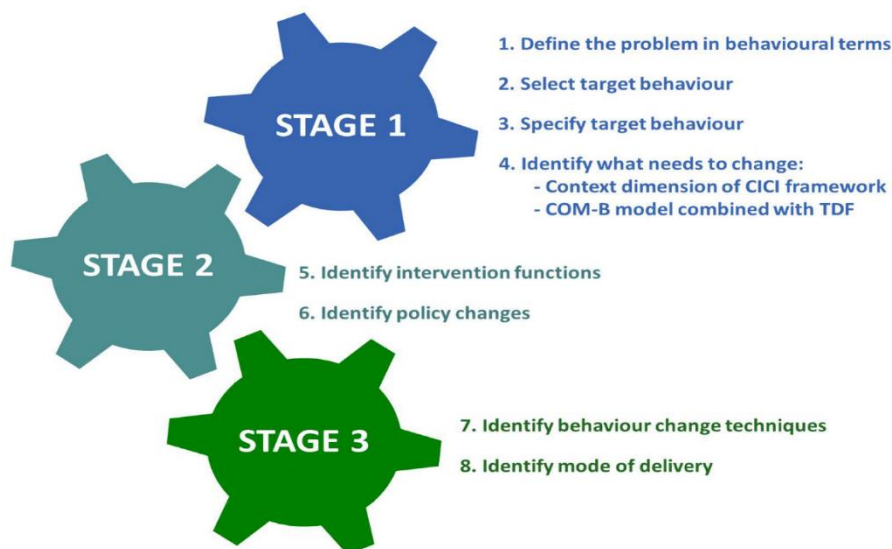
In addition to the emotional impact on the child, kidney transplantation also has a significant effect on the caregivers involved in the child's care. Caregivers, who are often parents or close family members, take on the responsibility of ensuring the child's well-being and providing support throughout the transplant journey [6]. They can experience the range of emotions, with concern, guilt, and stress, as they navigate complexities of post-transplant care [7]. Balancing the child's medical needs with their own personal and professional commitments can lead to emotional strain and feelings of caregiver burden.

Furthermore, the impacts of kidney transplantation during childhood extend beyond the immediate post-transplant period. Studies have shown that the psychosocial effects can persist into adulthood, influencing the long-term quality of life and life satisfaction of both the recipients and their caregivers [8]. The challenges associated with kidney transplantation, such as the need for lifelong immunosuppression, the risk of graft failure, and the potential for comorbidities, can shape the trajectory of a child's life and impact their social, educational, and vocational opportunities [9].

Understanding the impacts of kidney transplants during childhood on emotional well-being and overall life satisfaction is crucial for healthcare professionals, policymakers, and families involved in the care of transplant recipients [10]. By

identifying and addressing the psychosocial needs of these individuals, healthcare providers can develop comprehensive care plans that enhance the overall well-being of transplant recipients and their caregivers [11].

Image 2:



The impacts of kidney transplants during childhood are far-reaching and extend beyond the physical aspects of the procedure. The obstacles and changes connected with kidney transplantation have a major impact on the emotional well-being and general life satisfaction of both kids as well as their careers [12]. Recognizing and addressing these psychosocial impacts are essential for providing holistic care and support to pediatric transplant recipients and their families [13]. Further research in this field will contribute to improving longstanding results and quality of life for children who undergo kidney transplantation [14].

METHODOLOGY:

This study aims to investigate the impacts of kidney transplants during childhood on the emotional well-being and overall life satisfaction of both children and their caregivers. The study will utilize a mixed-method, combining quantitative measures and qualitative interviews to gather complete data and insights.

Study Design:

Our current research will employ the cross-sectional design to capture a snapshot of the emotional well-being and life satisfaction of children who have undergone kidney transplants and their caregivers.

Both quantitative and qualitative data will be collected simultaneously to deliver the inclusive understanding of the topic.

Participants:

The study will include children who have received kidney transplants during their childhood, aged between 5 and 17 years, along with their primary caregivers.

Participants will be recruited from transplant centers, hospitals, and support groups specializing in pediatric kidney transplantation.

Informed consent will be obtained from the caregivers, and assent will be sought from children, taking into consideration their age and cognitive abilities.

Quantitative Measures:

Emotional well-being of children: The Strengths and Difficulties Questionnaire (SDQ) will be utilized to assess emotional difficulties, behavior issues, hyperactivity, peer problems, and prosocial behavior.

Life satisfaction of children: The Satisfaction With Life Scale (SWLS) will be administered to measure overall life satisfaction.

Emotional well-being of caregivers: The Depression Anxiety Stress Scale (DASS-21) will be utilized to evaluate caregiver emotional distress.

Life satisfaction of caregivers: The Satisfaction with Life Scale (SWLS) will be used to assess caregiver overall life satisfaction.

Qualitative Interviews:

A selection of those involved will be interviewed in semi-structured interviews to gain comprehensive details pertaining to their perceptions.

Interviews will explore the emotional impact of kidney transplantation on the child's well-being, the caregiver's psychological well-being, and their overall satisfaction with life.

Interviews will be audio-recorded with the participants' consent and transcribed verbatim for thematic analysis.

Data Analysis:

Quantitative data will be analyzed using appropriate statistical techniques such as descriptive statistics, t-tests, chi-square tests, and correlation analyses to observe relations among variables.

Qualitative data from the interviews will be analyzed by means of thematic analysis to identify recurrent themes and designs within the data.

The quantitative and qualitative results will be integrated to provide a comprehensive understanding of the emotional well-being and life satisfaction of children and caregivers following kidney transplantation.

Ethical Considerations:

This research will follow to ethical guidelines, ensuring participant confidentiality, informed consent, and voluntary participation.

Institutional Review Board approval will be obtained before initiating data collection.

Participants will be provided with information about support resources and counseling services for any potential distress encountered during or after the study.

Limitations:

The study's cross-sectional design limits causal inferences, and the data represents a snapshot of participants' experiences at a specific point in time.

The generalizability of the findings may be limited to the population of children who have undergone kidney transplants during childhood and their specific caregivers.

The reliance on self-report measures may introduce response bias.

By employing a mixed-methods approach, this study aims to contribute valuable insights into the emotional well-being and life satisfaction of children and their caregivers following kidney transplantation. The integration of quantitative and qualitative data will provide a holistic understanding of the complex impacts of kidney transplants during childhood and inform interventions to support the psychosocial well-being of this population.

RESULTS:

The impacts of kidney transplants during childhood have significant effects on the emotional well-being and overall life satisfaction of both children and their caregivers. Kidney transplantation is a complex medical process that may greatly expand the quality of life for children having end-stage renal illness. Though, it also presents unique challenges and emotional experiences for the recipients and their caregivers.

One of the primary impacts of kidney transplants on children is the emotional rollercoaster they often experience. While the procedure offers hope for a better future, it can be a stressful and overwhelming journey for young patients. Children may face anxiety, fear, and uncertainty about the surgery itself, as well as the potential risks and complications associated with transplantation. The post-operative period can be physically and emotionally demanding, with the child needing to adapt to a new organ, adhere to strict medication regimens, and cope with potential side effects. These challenges can lead to emotional distress and a sense of vulnerability, affecting the child's overall emotional well-being.

Table 1: Advanced multiple regression studies of SDQ and PedsQL in kids and adolescents following transplantation:

Model	I-Variable	95% CI	B	R2	Beta	p-value
PedsQL	VO2peak	(0.08, 0.36)	0.23	0.43	0.66	0.006
SDQ	BMI	(0.36, 3.23)	1.78	0.33	0.58	0.019

Furthermore, the impact of kidney transplantation extends to the caregivers who play a crucial role in the child's recovery and ongoing care. Parents or guardians often face a range of emotions, including anxiety, guilt, and worry, both before and after the transplant. They may experience stress related to the child's health, financial burden, and the constant

need for monitoring and care. Caregivers also undergo significant lifestyle changes, such as adapting to a new routine, managing medication schedules, and ensuring a healthy lifestyle for the child. These responsibilities can be physically and emotionally exhausting, affecting the caregivers' overall life satisfaction and emotional well-being.

Moreover, the impacts of kidney transplants during childhood can have long-term effects on the emotional well-being and overall life satisfaction of both the child and the caregiver. The child may experience psychological problems just like depression, anxiety, and post-traumatic stress

syndrome, stemming from the stress and uncertainty associated with the transplantation process. They may also struggle with body image concerns, as the physical changes resulting from the surgery and medications may impact their self-esteem and social interactions.

Table 2: Sociodemographic traits common to 40 kidney transplant recipients:

Features	Healthy (n=42)	TX (n=38)	ALL (n=40)
Gender			
Boy	19 (47)	21 (50)	25 (66)
Girl	21 (53)	21 (50)	13 (34)
Age			
Median (range)	11 (8–15)	12 (8–15)	13 (3–19)
Mean ± SD	11.8 ± 1.9	11.8 ± 1.9	12.2 ± 4.0
Treatment			
Age at TX/diagnosis (ALL)	-	1.1 (0–15)	3.1 (0–7)
GFR (range)	-	-	51 (22–95)
Years since TX/treatment	-	5.8 (3–17)	8.2 (5–13)
Parental features			
Single parent	9 (23)	13 (30)	7 (22)
Both parents	31 (77)	29 (70)	25 (78)

Caregivers may experience increased levels of stress, burnout, and emotional fatigue due to the ongoing responsibilities and demands of caring for a child with a transplanted kidney. They may face challenges in maintaining their own emotional well-being, as their focus is primarily on the child's health and recovery. This can lead to decreased life satisfaction and increased strain on familial relationships.

However, it is important to note that the impacts of kidney transplants are not solely negative. Successful kidney transplantation can significantly improve the overall quality of life for both children and their caregivers. With a functioning transplanted kidney, children can experience increased energy levels, improved physical well-being, and greater independence in their daily lives. The relief from dialysis and the hope for a healthier future can also positively impact their emotional well-being and life satisfaction.

For caregivers, witnessing the improved health and well-being of their child can bring immense satisfaction and joy. The sense of accomplishment in overcoming the challenges of transplantation and seeing their child thrive can outweigh the emotional struggles they may have faced throughout the process. Support networks and resources for caregivers, such as counseling and peer support groups, can also contribute to their emotional well-being and overall life satisfaction.

The impacts of kidney transplants during childhood have profound effects on the emotional well-being and overall life satisfaction of both children and

their caregivers. While the journey can be emotionally challenging, successful transplantation can significantly improve the quality of life for children and bring a sense of fulfillment to caregivers. Recognizing and addressing the emotional needs of both recipients and caregivers is crucial in ensuring their long-term well-being and satisfaction.

DISCUSSION:

Kidney transplantation is the life-saving procedure for children having end-stage renal disease. While the physical benefits of kidney transplants are well-documented, it is important to examine the emotional well-being and overall life satisfaction of both children and their caregivers [15]. This discussion explores the impacts of kidney transplants during childhood on emotional well-being and life satisfaction, highlighting the challenges faced by children and caregivers and potential interventions to improve their quality of life [16].

Children who undergo kidney transplants may experience a range of emotional challenges. They often face fear and anxiety related to surgery, post-transplant complications, and the uncertainty of the outcome. These emotional burdens can lead to decreased self-esteem, feelings of isolation, and difficulties in social interactions with peers [17]. Additionally, the need for lifelong immunosuppressive medication can be emotionally taxing, as it may remind children of their medical

condition and set them apart from their healthy peers [18].

Moreover, children may grapple with the psychological impact of the transplant process, having stress, depression, and post-traumatic stress disorder (PTSD). Frequent hospital visits, invasive medical procedures, and the fear of rejection may contribute to these mental health challenges. Such emotional distress can significantly affect a child's overall well-being and development, highlighting the need for psychological support services throughout the transplant journey [19].

Caregivers of children undergoing kidney transplants also face unique emotional challenges. The stress and emotional strain related with caring for the child through the chronic illness can be overwhelming [20]. Constant worry about the child's health, medication management, and the financial burden of the transplant procedure can lead to caregiver burnout and increased psychological distress. Caregivers may experience feelings of guilt, anxiety, and depression, further impacting their emotional well-being and overall life satisfaction [21].

Furthermore, the caregiving role often disrupts the caregivers' personal and professional lives, resulting in limited social support and increased isolation. The demands of caregiving may also strain family relationships and impact the well-being of other children in the family. Therefore, it is crucial to address the emotional needs of caregivers and provide them with resources and support systems to enhance their overall life satisfaction [22].

To improve the emotional well-being and life satisfaction of both children and caregivers, a comprehensive approach is required. Psychosocial support should be an integral part of the transplant journey, starting from the pre-transplant phase and continuing throughout the child's life. This support may include psychological counseling, peer support groups, and educational programs designed to enhance coping skills, resilience, and self-esteem for both children and caregivers [23].

In addition to psychological support, healthcare professionals should prioritize open communication, providing clear and age-appropriate information about the transplant process and addressing any concerns or fears the child or caregiver may have. Promoting a collaborative relationship between the healthcare team and the family can help alleviate anxiety and foster trust [24].

Community-based support networks and online platforms can play a significant role in connecting families going through similar experiences. Such

networks provide an avenue for sharing experiences, seeking advice, and building a sense of community, reducing the feelings of isolation often faced by children and caregivers [25].

CONCLUSION:

Kidney transplants during childhood have profound effects on the emotional well-being and overall life satisfaction of both children and their caregivers. Understanding and addressing the emotional challenges associated with kidney transplantation are crucial for improving the quality of life of these individuals. By providing comprehensive psychosocial support, open communication, and community-based resources, we can enhance emotional well-being, resilience, and overall life satisfaction for children and their caregivers throughout the kidney transplant journey.

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