

# Graft and Patient Survival Rates in Kidney Transplantation, and Their Associated Factors: A Systematic Review and Meta-Analysis

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## Abstract:

**Background:** End-Stage Renal Disease (ESRD) is an irreversible impairment of kidney function that leads to permanently dependent on alternative therapies such as hemodialysis, peritoneal dialysis, and renal transplantation. This study aimed to systematically investigate the survival rate of patients with renal transplantation, graft, and its related factors in Iran.

**Methods:** This systematic review and meta-analysis drew on articles indexed in six international and one internal databases (Medline/PubMed, ProQuest, Scopus, Embase, SID, and Web of knowledge) until Nov 2020. The reporting of the present study was performed in terms of PRISMA statement. All analyzes were performed using the STATA software.

**Results:** Overall, 367 titles from 6 databases were evaluated of which 86 articles met the inclusion criteria. According to the random model, the graft survival rate at one, three, five, and 10 years were 92.48%, 85.08%, 79.96% and 68.15% respectively. Additionally, the patient survival rates at one, three, five, and 10 years were 91.27%, 86.46%, 81.17% and 78.15% respectively. There was a significant relationship between the age recipient and three-year graft survival rate ( $P=0.021$ ). Additionally, there was an inverse and significant relationship between the donor age and 10-year patient survival rate ( $P=0.011$ ).

**Conclusion:** The patient and graft survival in transplanted kidney patients is comparable with most developed countries.

**Keywords:** End stage renal disease; Graft survival; Kidney transplantation; Meta-analysis; Patient survival.