

# The Efficacy of Telemedicine Interventions in promoting Drug Adherence among Solid Organ Transplant recipients compared with usual care: A Network Meta-Analysis

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## Introduction

Medication adherence plays an essential role in organ transplant recipients, where clinical outcomes rely highly on post-transplant care to prevent risks of graft rejection. Telemedicine has long been used to facilitate interactions and promote clinical adherence. However, only a few studies have examined these interventions in terms of their efficacy in raising patients' adherence compared to standard care, especially in organ transplantation; therefore, we have conducted this research aiming to meet the aforementioned gap of knowledge.

## Objective

To compare the medication adherence-enhancing efficacy (1) amongst telemedicine interventions and (2) between telemedicine interventions and usual care

## Method

This network meta-analysis was conducted using papers from PubMed and Embase published between 2012 to April 2022. Randomized controlled trials that applied telemedicine intervention in solid organ transplant recipients with immunosuppressant administrations were included. The analyses of adherence-promoting efficacy were done with direct comparisons of interventions within the RCTs and indirect comparisons across trials based on a common comparator measured 6 months after the operation. The primary outcome was medication adherence using BAASIS, TAQ, and HHS as parameters.

## Result

A total of six RCTs consisting of 604 patients were eligible. The analysis showed that education via telemedicine appears to be the most effective comparing to other interventions (i.e. reminder & education and reminder & monitoring - OR 2.56 [95%CI: 1.26-5.19] and OR 2.47 [95%CI: 1.42-4.27], respectively). Contrarily, the difference between all interventions and usual care is insignificant (OR 0.94 [95%CI: 0.57-1.54],  $p = 0.800$ ).

## Conclusion

Education was suggested to be the most effective telemedicine intervention in promoting medication adherence, however, the difference between standard care and every intervention altogether is insignificant. With further studies, we believe that telemedicine could be potentiated in becoming an ideal adherent tool.

## Key Words

*telemedicine, medication adherence,  
immunosuppressants, transplantation,  
solid organ transplantation*