

An Assessment of Barriers and Interventions to Improve Treatment Adherence in Child and Adolescent Kidney Transplant Recipients

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INTRODUCTION

- For kidney transplant recipients, anti-rejection medication therapy and adequate fluid intake are necessary to maintain graft health and prevent rejection.
- Adolescents are particularly **vulnerable to suboptimal medication adherence**
- 44%** of graft loss in adolescents is associated with medication non-adherence (Nguyen et al, 2019).
- Identifying the **most common barriers to treatment adherence** in a clinic population is a necessary first step to tailoring interventions that are effective at improving adherence to treatment.

OBJECTIVES

- Identify **barriers to treatment adherence** for child and adolescent kidney transplant recipients and **effective interventions** for improving adherence in the current literature.
- Identify medication-taking barriers encountered by pediatric kidney transplant recipients at Primary Children's Hospital (PCH).

The review of literature finds that **forgetting** and a **lack of knowledge or education** are the most common barriers to treatment adherence. Interventions for improving adherence are **multimodal**, including psychosocial support, education, self-management promotion and various technologies.

Barriers to Following Treatment Regimen							
	Hooper et al, 2022	Wurm et al, 2022	Nguyen et al, 2020	Kullgren et al, 2015	Nerini et al, 2016	Jamieson et al, 2016	Low et al, 2017
Quality Rating	5A	5C	2A	1B	5B	3A	2A
Forgetting	X		X	X	X	X*	X*
Side effects	X						
Taste	X						
Anxiety/emotional distress		X		X			
Denial of illness		X					
Lack of supervision		X	X		X		
Lack of knowledge/understanding/education		X	X	X		X*	
Scheduling			X				
Burdensome routine						X*	
Financial barrier						X*	
Burnout						X*	
Not wanting others to know/lack of social support		X					X*

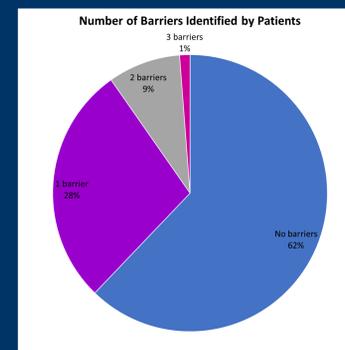
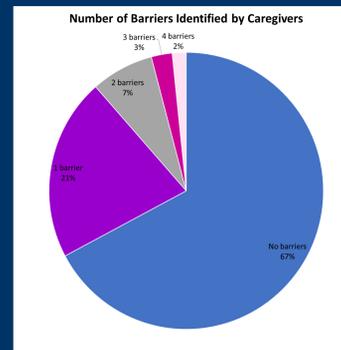
*Adult study population

Interventions to Improve Adherence to Treatment Regimen							
	Hooper et al, 2022	Wurm et al, 2022	Nguyen et al, 2020	Kullgren et al, 2015	Nerini et al, 2016	Jamieson et al, 2016	Low et al, 2017
Support Groups						X*	
Technology	X		X	X	X		X*
Self-Management Skills			X			X*	X*
Medication Adherence Promotion System (MAPS)	X						
Education	X		X		X	X*	
Psychosocial Support	X	X			X	X*	X*

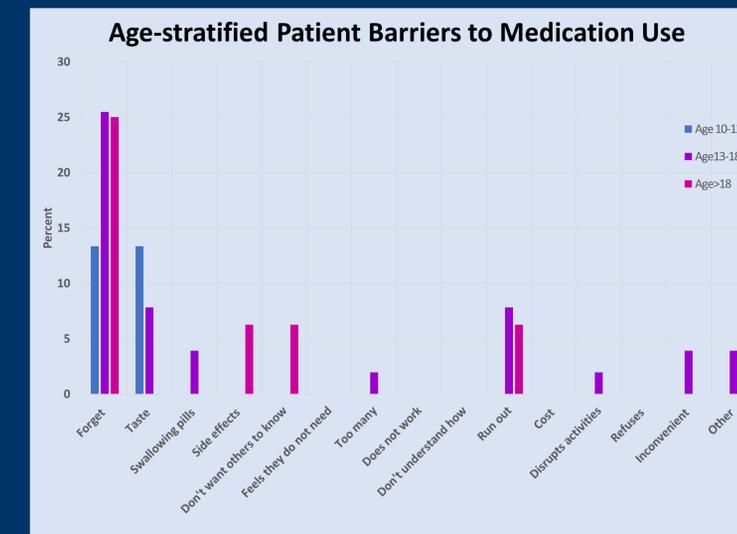
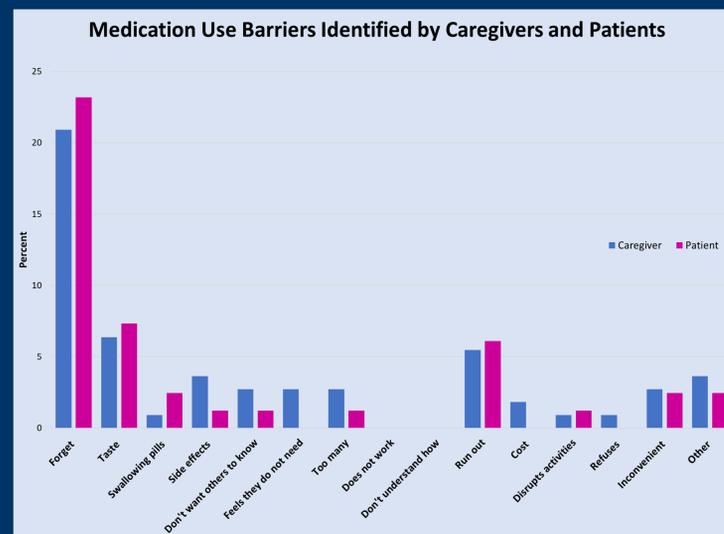
Technology interventions: ePillBox, cell phone alarms, online educational materials, interactive water bottle text reminders, online communication, smart phone applications



The Medication Adherence Promotion System from Hooper, et al., 2022.



Among patients at PCH, **forgetting** is the most common barrier to medication adherence, followed by **taste** and **running out**. Approximately **2/3 of patients and caregivers** identify at least one barrier to medication adherence.



METHODS

Literature Review Strategy

- EBSCO and PubMed using search terms related to kidney transplant, adolescents/young adults and adherence.
- Inclusion criteria: published in English, years 2012-present.
- Seven articles included.
- Quality appraisal done using the Johns Hopkins Evidence-Based Practice Model.

Barriers Assessment Strategy

- The kidney transplant clinic at PCH administers an adherence barriers checklist to all caregivers, regardless of patient age, and patients aged 10+ years at routine follow-up clinic visits.
- Data is stored in the Improving Renal Outcomes Collaborative (IROC) registry.
- Adherence barrier data from 2022 was gathered and analyzed.

KEY TAKEAWAYS

- Forgetting** is the most common barrier identified by pediatric kidney transplant recipients at PCH.
- Primary interventions for improving adherence should focus on **developmentally appropriate strategies** to reduce forgetting, especially among adolescent patients.
- Text reminders, cell phone alarms** and **smart phone applications** may be effective, low-cost interventions for improving treatment adherence behaviors.

