

# Adherence to Oral Chemotherapy in Pediatric Oncology: A Scoping Review of Challenges and Strategies

Aylin Akca Sumengen\*, Remziye Semerci\*\*, Munevver Erkul\*\*\*, Ilcim Ercan Koyuncu\*\*\*\*, Ayse Ay\*\*\*\*, Eysan Hanzade Savas\*\*\*\*\*

\*Capstone College of Nursing - University of Alabama  
 \*\*Koc University, School of Nursing, Department of Pediatric Nursing  
 \*\*\*Antalya Bilim University, Faculty of Health Sciences, Department of Nursing

\*\*\*\*Baskent University, Faculty of Health Sciences, Department of Pediatric Nursing  
 \*\*\*\*\*Regina Margherita Children's Hospital, Pediatric Oncology Department

## Introduction

Recent advancements in precision medicine have fundamentally transformed pediatric cancer management, facilitating a massive shift toward targeted oral chemotherapy agents (Patel et al., 2023). While this transition allows for greater patient autonomy, eliminates the need for parenteral lines, and reduces hospitalizations, it places the heavy burden of complex medication management onto families in the home setting (Walsh et al., 2016). Non-adherence remains a severe threat to treatment efficacy, with studies showing that up to 60% of adolescents struggle to maintain their prescribed regimens (McGrady & Pai, 2019). Poor adherence, specifically falling below a 90% threshold, has been shown to increase relapse risk with a hazard ratio of 3.9 (Bhatia et al., 2014). Consequently, oncology nurses play a critical role in mitigating these risks through individualized education, continuous monitoring, and tailored psychosocial support (Harvey et al., 2019).

### This study aims to:

- Comprehensively identify and synthesize evidence across pediatric oncology populations (ages 0–20) to:
- Identify the perceived challenges, including emotional, behavioral, and logistical barriers, experienced by patients and caregivers.
- Determine empirically supported factors (e.g., demographic, socioeconomic, and clinical variables) that influence adherence outcomes.
- Analyze the effectiveness of interventions and strategies designed to improve oral chemotherapy adherence in home settings.

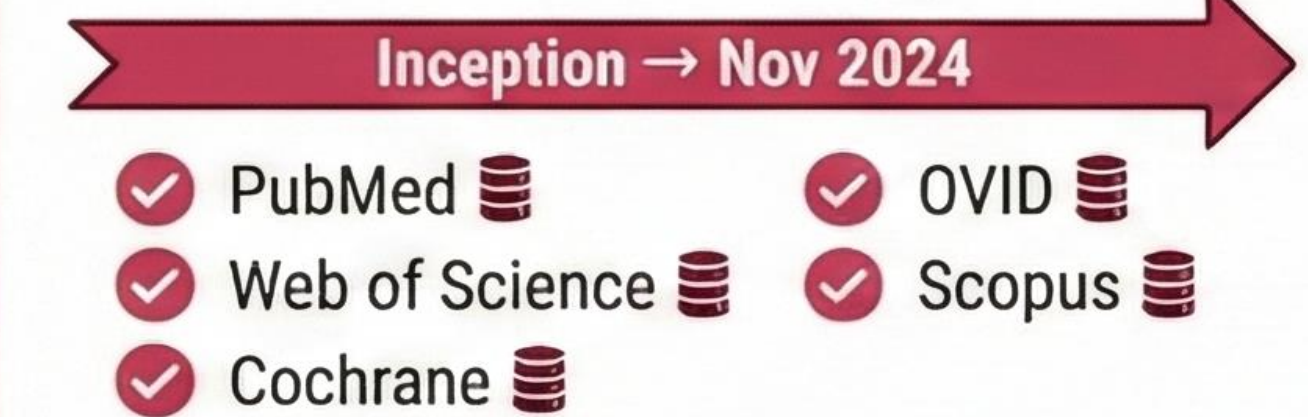
## Method

### STUDY DESIGN & SEARCH STRATEGY

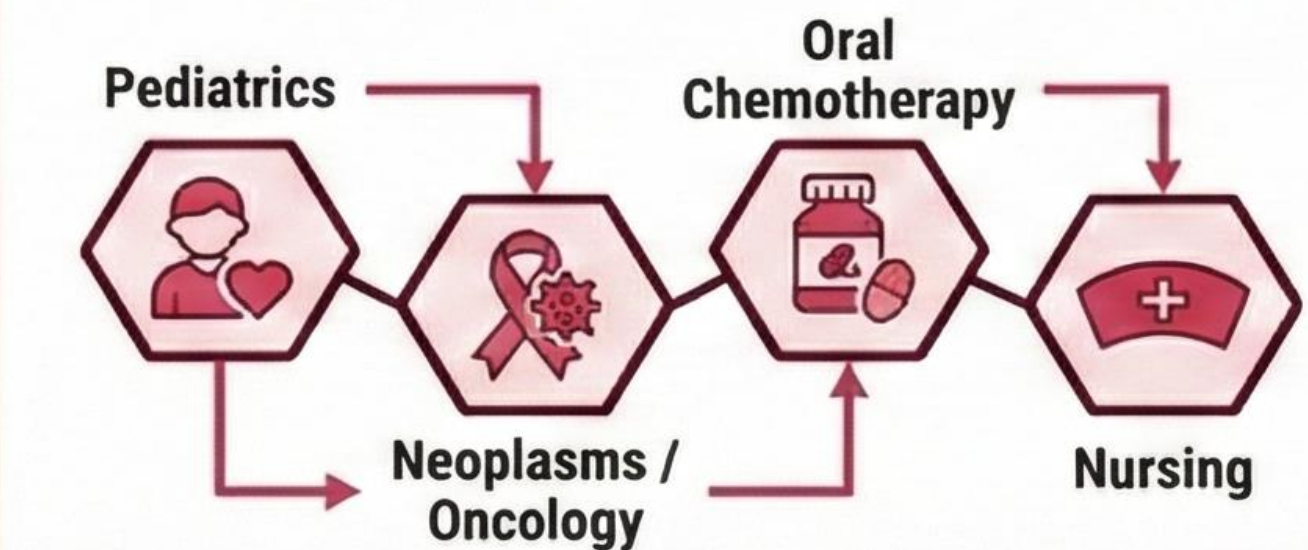
#### 1. STUDY DESIGN & FRAMEWORK



#### 2. DATABASES SEARCHED & TIMELINE

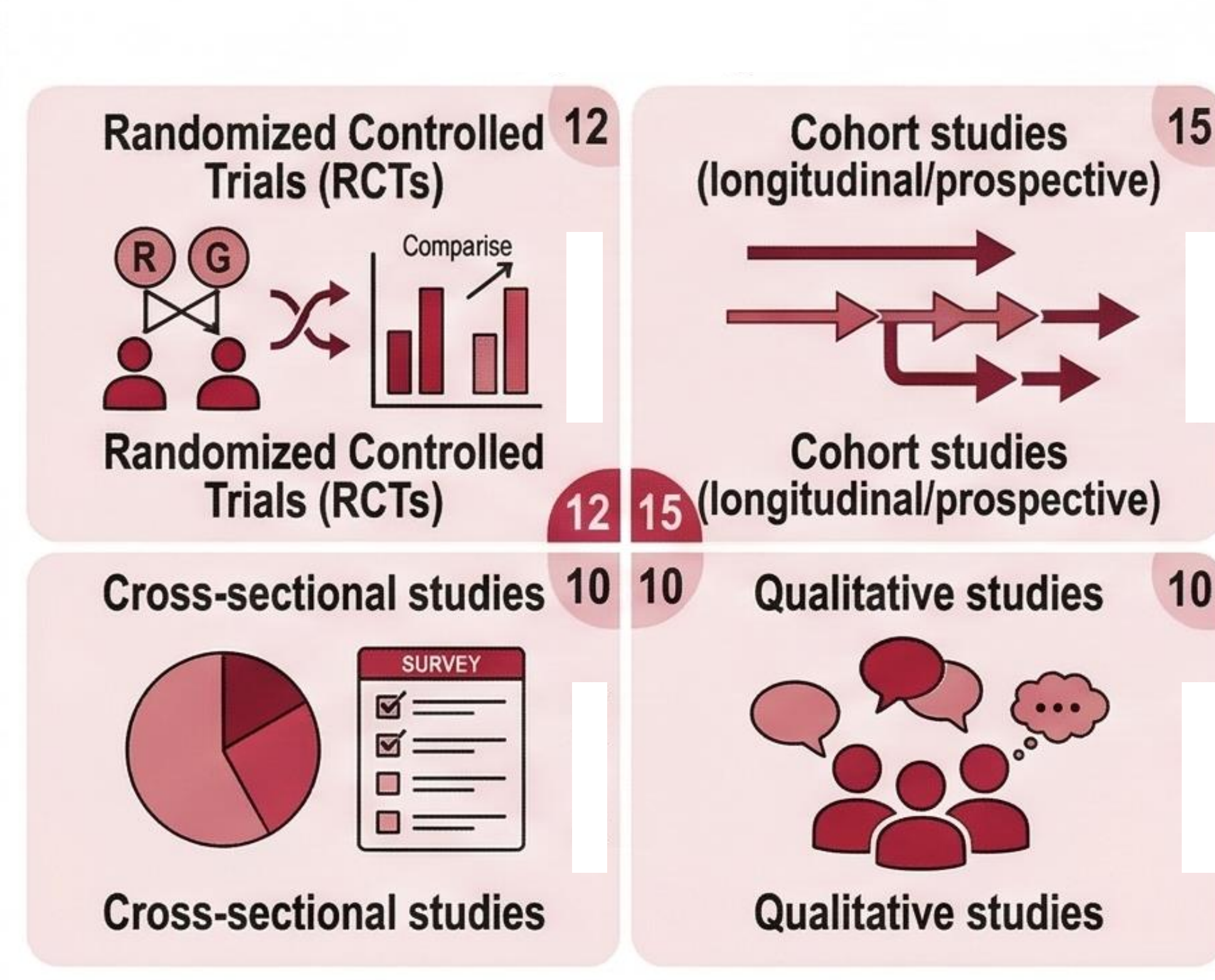


#### 3. SEARCH STRATEGY HIGHLIGHTS

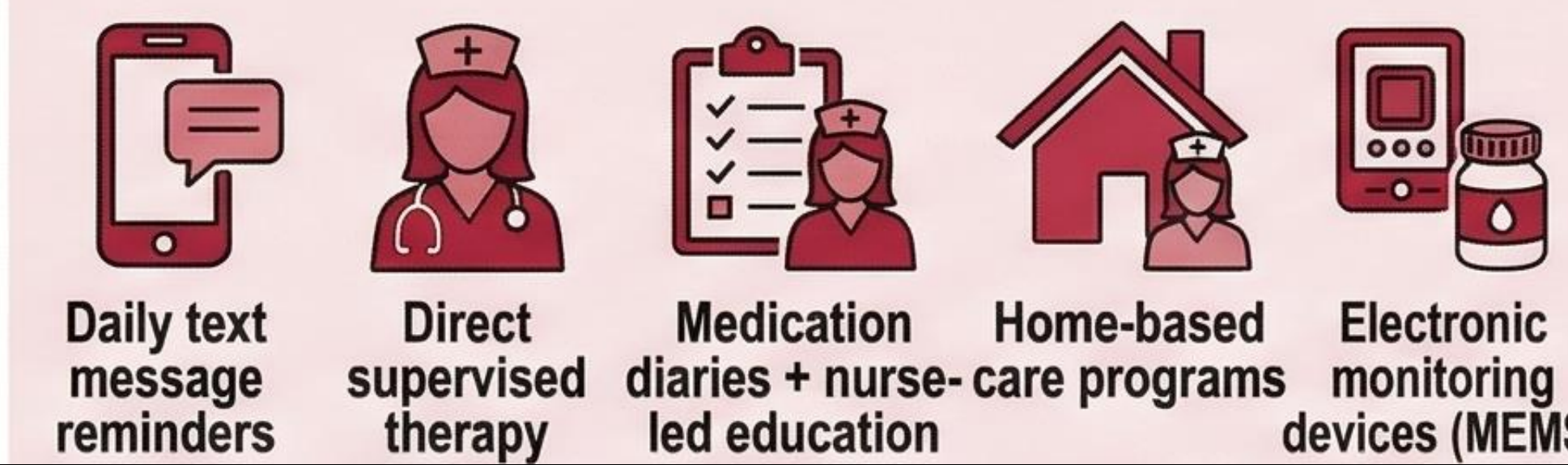


## Results

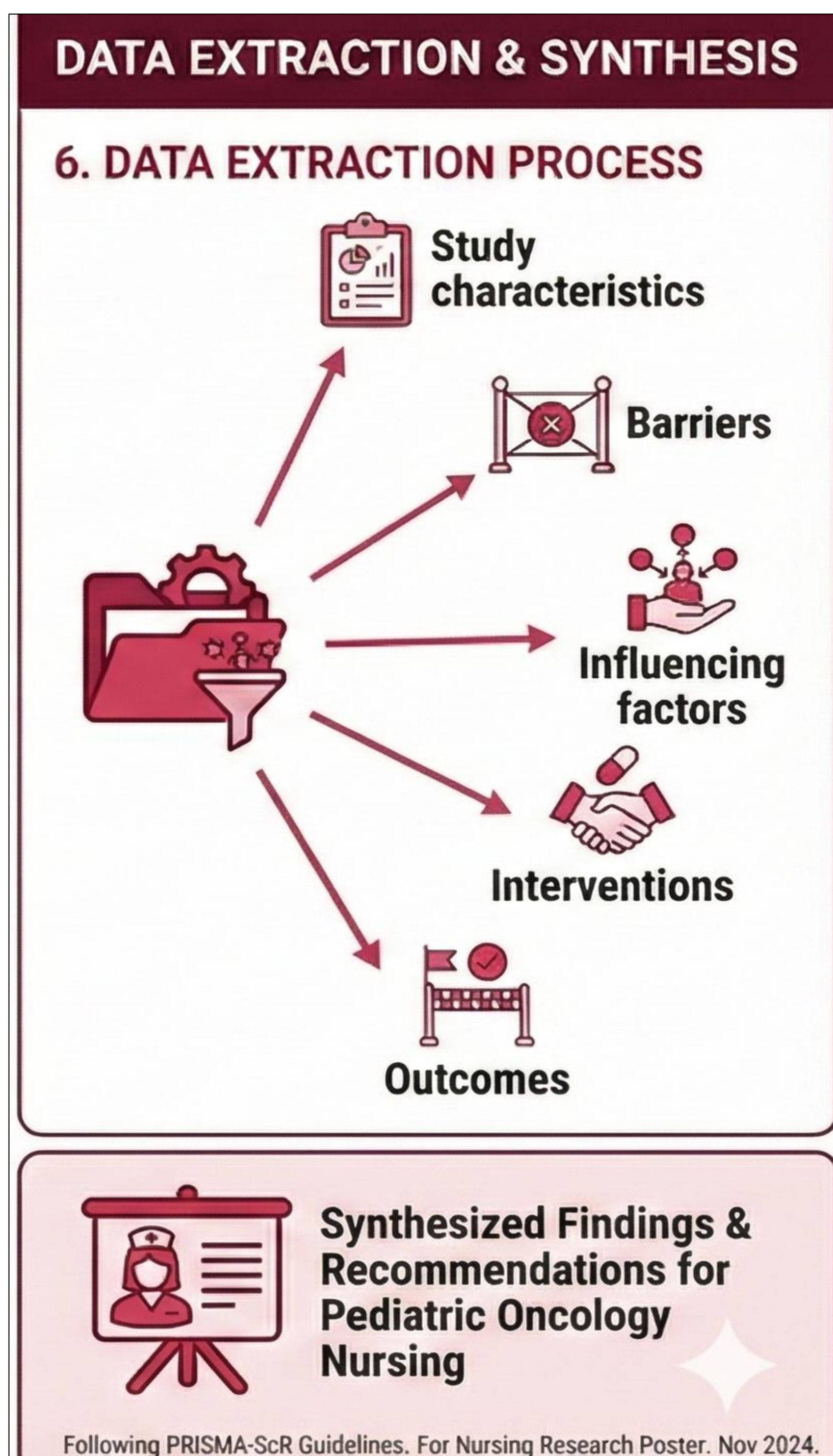
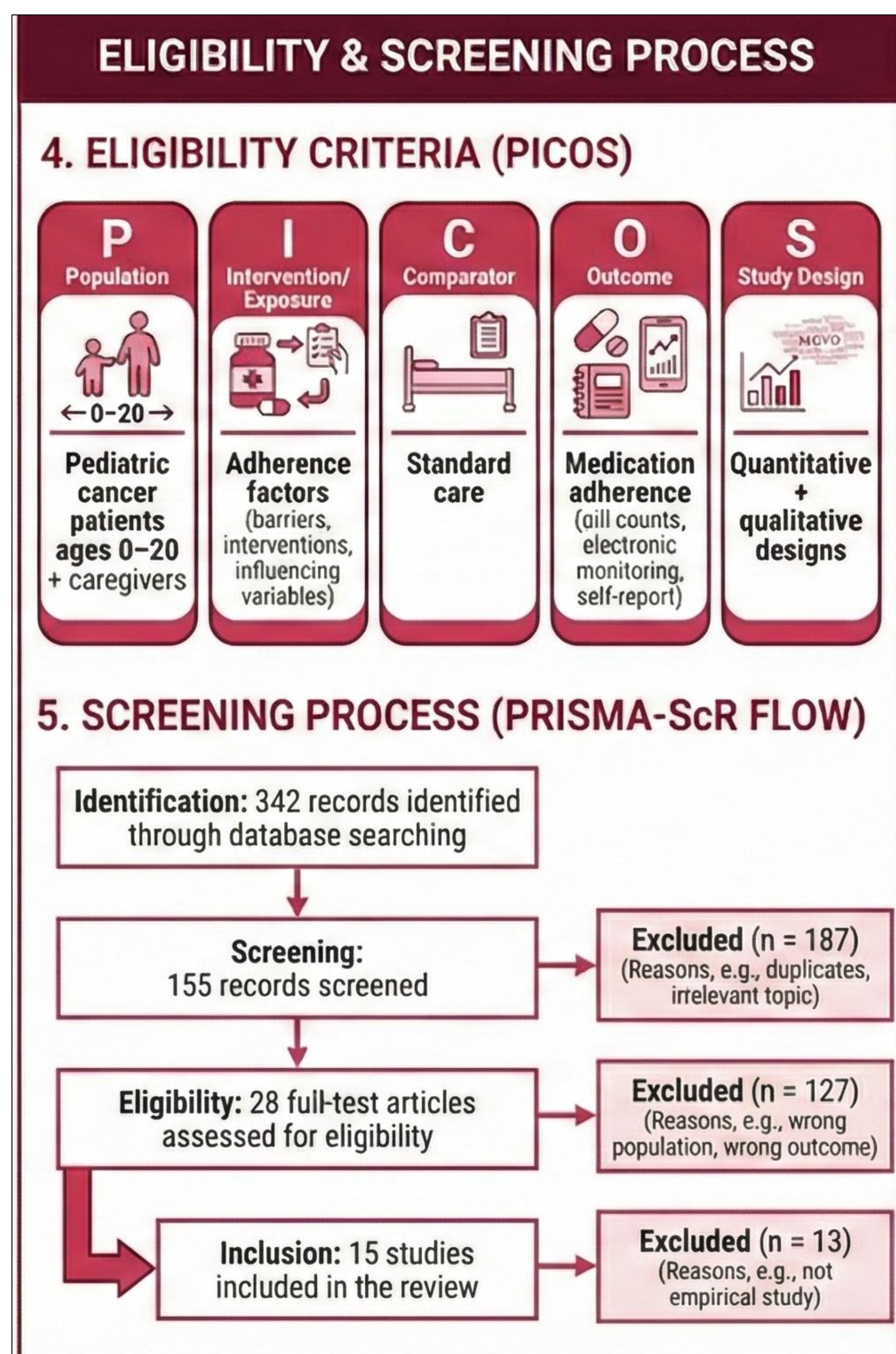
### Countries Represented



### Effective Interventions Identified



## Method



## Discussion

**Socioeconomic Vulnerability Requires Targeted Care:** Adherence is heavily dictated by a family's socioeconomic status (Bhatia et al., 2014; De Oliveira et al., 2004; Khalek et al., 2015). Interventions must move beyond simple instruction and provide tangible support for socioeconomically disadvantaged and single-parent households (Farberman et al., 2021; Hoppmann et al., 2021).

**Nurses are the Anchor of Adherence:** Oncology nurses are vital in bridging the gap between hospital prescription and home administration (Harvey et al., 2019). Nurse-led, family-centered models providing psychosocial counseling and regular follow-ups are proven to mitigate emotional burdens and improve medication safety (Phillips et al., 2011).

**Digital Tools are Essential but Must be Accessible:** Integrating electronic Medication Event Monitoring Systems (MEMS), daily text reminders, and tracking diaries into standard care is highly recommended to counteract forgetfulness and monitor real-time adherence (Bhatia et al., 2020; Landier et al., 2017; Sitaresmi et al., 2013)

### References

Akca Sumengen, A., Semerci, R., Erkul, M., Koyuncu, I., Ay, A., Savas, E. (2024). Adherence to Oral Chemotherapy in Pediatric Oncology: A Scoping Review of Challenges and Strategies. *Journal of Pediatric Oncology Nursing*, 39(1), 1-15.

Bhatia, S., et al. (2014). Parental experiences with home-based oral chemotherapy prescribed to a child diagnosed with acute lymphoblastic leukemia: A qualitative study. *Current Oncology*, 28(6), 437-439.

Bhatia, S., et al. (2012). Nonadherence to oral mercaptopurine and risk of relapse in Hispanic and non-Hispanic white children with acute lymphoblastic leukemia. *Journal of Clinical Oncology*, 30(17), 2094-2101.

Bhatia, S., et al. (2014). BMP adherence in a multiracial cohort of children with acute lymphoblastic leukemia: a Children's Oncology Group study. *Blood*, 124(15), 2345-2353.

Bhatia, S., et al. (2009). Effect of a daily text messaging and directly supervised therapy intervention on oral mercaptopurine adherence in children with acute lymphoblastic leukemia: a randomized clinical trial. *JAMA Network Open*, 3(8), e2014205.

Carroll, Jaime-Perez, J., et al. (2009). Random serum methotrexate determinations for assessing compliance with maintenance therapy for childhood acute lymphoblastic leukemia. *Leukemia & Lymphoma*, 50(11), 1583-1587.

De Oliveira, B., et al. (2004). Clinical and laboratory evaluation of compliance in acute lymphoblastic leukaemia. *Archives of Disease in Childhood*, 89(8), 785-788.

Farberman, D., et al. (2021). Adherence to oral antineoplastic agents in pediatric oncology: A multicenter study. *Arch Argent Pediatr*, 119(1), 44-50.

Harvey, C., et al. (2019). The evaluation of nurse navigators in chronic and complex care. *Journal of Advanced Nursing*, 75(8), 1752-1804.

Hoppmann, A. L., et al. (2021). Individual prediction of nonadherence to oral mercaptopurine in children with acute lymphoblastic leukemia: Results from COG AALL03N1. *Cancer*, 132(20), 3830-3839.

Landier, W., et al. (2011). A grounded theory of the process of adherence to oral chemotherapy in Hispanic and Caucasian children and adolescents with acute lymphoblastic leukemia. *Journal of Pediatric Oncology Nursing*, 26(4), 203-223.

Landier, W., et al. (2017). Comparison of self-report and electronic monitoring of 6MP intake in childhood ALL: a Children's Oncology Group study. *Blood*, 129(14), 1919-1926.

McGrady, M. E., & Pai, A. L. (2019). A systematic review of rates, outcomes, and predictors of medication non-adherence among adolescents and young adults with cancer. *Journal of Adolescent and Young Adult Oncology*, 8(5), 485-494.

Page, M., et al. (2021). The PRISMA 2020 statement: an updated guideline for reporting systematic reviews. *BMJ*, 372, e4398.

Phillips, B., et al. (2011). A home-based maintenance therapy program for acute lymphoblastic leukemia—practical and safe? *Journal of Pediatric Hematology/Oncology*, 33(6), 433-438.

Sitaresmi, M. N., et al. (2013). A medication diary-book for pediatric patients with acute lymphoblastic leukemia in Indonesia. *Pediatric Blood & Cancer*, 60(10), 1593-1597.

Tang, N., et al. (2022). Perceptions of parents of pediatric patients with acute lymphoblastic leukemia on oral chemotherapy administration: a qualitative analysis. *Pediatric Blood & Cancer*, 69(1), e29329.

Zeng, X. L., Hereghian, M. B., & Bastawy, S. M. (2023). Adherence to oral chemotherapy in acute lymphoblastic leukemia during maintenance therapy in children, adolescents, and young adults: a systematic review. *Current Oncology*, 30(1), 720-748.

## INTEGRATION OF FINDINGS

