UC San Diego

HERBERT WERTHEIM SCHOOL OF PUBLIC HEALTH AND HUMAN LONGEVITY SCIENCE

# Road to health: An investigation of transportation barriers on pediatric primary care in San Diego County

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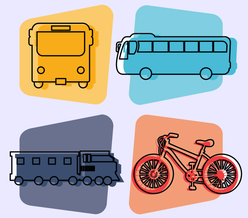


## Background

- In a previous pilot study**, 25% of primary care patients** reported **transportation** as a cause for **missing and rescheduling their appointments** [1]
- Pediatric primary care is critical for **mitigating the effects of congenital diseases** and **preventing the onset of chronic conditions** [2,3]
- Outdated and limited research leaves gaps in understanding how transportation affects patients who are specifically pediatric and living in San Diego County

## Objectives

- To identify the factors that constitute transportation barriers
- To investigate if there is a correlation between transportation variables and attendance to pediatric primary care appointments in San Diego County

## Methods

- A cross-sectional study was conducted by distributing an anonymous Qualtrics survey for 2 weeks between April and May 2025
- Parents participated by responding for their child after being recruited through Facebook, in-person outreach at playgrounds, or mass text messaging
  - **Inclusion eligibility:** had a child ≤15 years old who lived and received primary care in San Diego County (135 received, **n=96**)
  - 1 survey per child
- **Exposure:** transportation barriers (commute time, distance, cost) measured categorically
- **Outcome**: [frequency of] late and missed appointments rated from “never” to “always”
- **Analysis: Logistic regressions** to determine transportation barriers and **chi square tests** to find correlation with attendance status were performed in RStudio. Graphs were created in Excel. Zip code map was created in Google My Maps.

## Results

**Table 1.** Sociodemographics of participants **(n=96)**

| Sociodemographic | n | % |
|---|---|---|
| **Race** | | |
| Asian | 26 | 27% |
| Black or African American | 6 | 6% |
| Hispanic or Latino | 30 | 31% |
| Native Hawaiian or Pacific Islander | 2 | 2% |
| White or Caucasian | 18 | 19% |
| Biracial / Multiracial | 8 | 8% |
| Other / Prefer not to answer | 6 | 6% |
| **Income** | | |
| Less than $30,000 | 9 | 9% |
| $31,000-$60,000 | 21 | 22% |
| $61,000-$100,000 | 15 | 16% |
| $101,000-$150,000 | 16 | 17% |
| $150,000+ | 26 | 27% |
| Prefer not to answer | 9 | 9% |

- **Average income ≈ $101,943**
- **32 zip codes recorded:** highest frequency from **Mira Mesa (15%)** and **Logan Heights (10%)**

**Figure 1.** Spatial distribution of participants based on zip codes

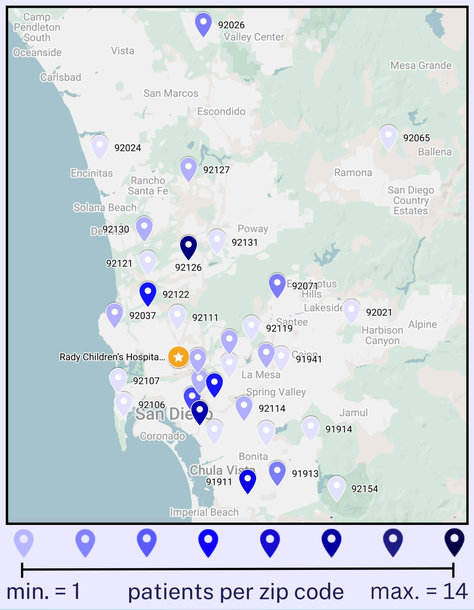


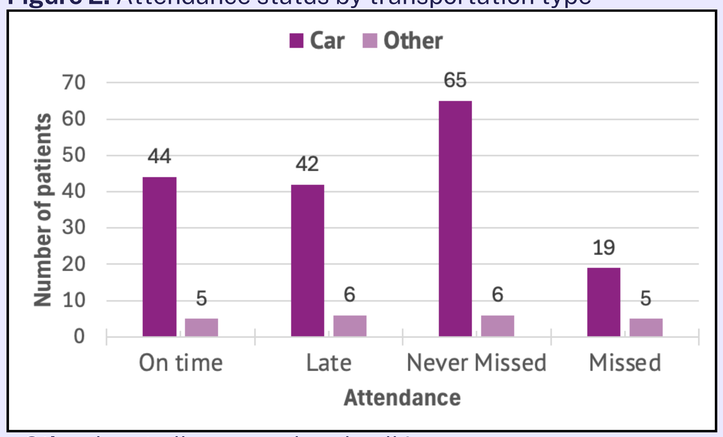

**Table 2.** Attendance status by transportation barrieres (chi-square test)

| Exposure (round trip) | On time vs. late (p-value) | Present vs. missed appointment (p-value) |
|---|---|---|
| Transportation type | **0.0007 ***** | **3.75e$^{-07}$ ***** |
| Commute time | 0.111 | 0.791 |
| Distance | 0.189 | 0.852 |
| Travel cost | 0.257 | 0.777 |
| Income | 0.025 * | 0.415 |
| Zip code | **8.54e$^{-08}$ ***** | 0.445 |

- **Average commute time ≈ 23.3 minutes**
- **Average distance ≈ 9.87 miles**
- **Average travel cost ≈ $8.19**
- **94% (n=90)** reported using a car
- **2-5% (n=2-5)** reported using the bus, trolley, carpool, or walking

*p≤0.05
***p≤0.001

**Figure 2.** Attendance status by transportation type




- **Other:** bus, trolley, carpool, and walking
- **Late/missed group** includes respondents from ‘rarely’ to ‘always’.
- **Total deviates from n=96** due to non-attendance in the past year by some patients and multiple transportation selections

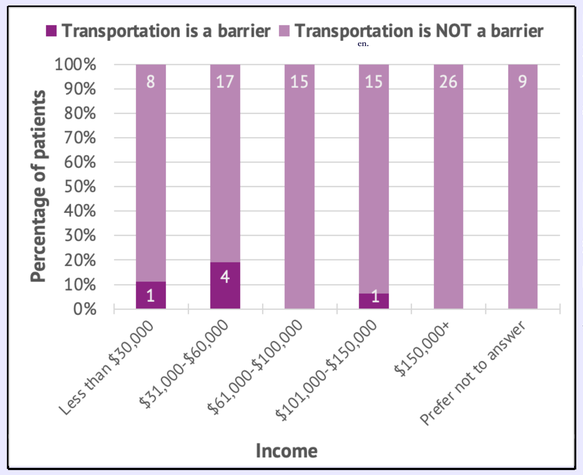



**Figure 3.** Self-reported: transportation as a barrier by income

**Logistic Regression 95% CI: [1.143-5.040]***

*p≤0.05

## Conclusions

- n=6 patients (n=3 **African Americans**, n=3 **Hispanics)** (n=5 out of 6 **low income**) reported **transportation as a barrier.** No other trends (e.g., commute time) were detected amongst these patients (Fig. 3).
- **Commute time, distance, and travel cost were not statistically significant** when comparing exposure levels between individuals who identified **transportation as a barrier** and those who did not (95% CI included 1.00)
  - [Lower] **income was found to be a statistically significant** predictor of transportation being a barrier (Fig. 3)
- A **statistically significant association** with **attendance status** was observed only when considering **transportation type, income, and zip code** as covariates (p≤0.05, Tbl. 2)
- Further research is necessary to examine high-risk groups and identify confounding factors (e.g., work schedule)

## Policy Implications

- Integrate **comprehensive barrier screening** into routine medical visits especially for chronic patients
- **Increase funding for transportation services** for marginalized groups and consider incorporating in medical coverage

## Acknowledgements & References