BACKGROUND

- Adherence in pediatric solid organ transplant (SOT) patients is critical for long-term health and graft outcomes (Foster & Pai, 2014).
- Research has linked lower family socioeconomic status to increased non-adherence (Killian et al., 2018).
- Few studies have examined how adherence may be influenced by the intersection of systemic health disparities (e.g., housing, health, economic).
- The present study examines relations between a multidimensional measure of deprivation and an objective measure of adherence in a pediatric SOT population.

PARTICIPANTS

- Participants (N=55, Median age=15.3, 67% female, 93% white, 27% Hispanic) were pediatric SOT patients

METHODS

- Utilized the Census Bureau multidimensional deprivation index (MDI), which provides an overall county-level MDI score based on the following dimensions (Glassman, 2019):
  - Standard of living
  - Education
  - Health
  - Economic security
  - Housing quality
  - Neighborhood quality
- Measured objective adherence using the coefficient of variation (CV) in immunosuppressant levels of both Tacrolimus (N=38) and Rapamycin (N=21; Killian et al., 2018) using five laboratory measurements per patient
- Using stepwise selection, two multivariable linear regression models were fit with CV of each immunosuppressant medication as the dependent variable and MDI and demographic factors as independent variables.

RESULTS (continued)

- MDI rates were calculated by averaging scores across the six dimensions listed above
  - Median = 0.09
  - Quartile 1 = 0.08
  - Quartile 3 = 0.1

RESULTS

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  - Median = 0.09
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- Table 1: After adjusting for age, ethnicity, and insurance type (public vs. private), higher MDI rates were associated with higher variability in Tacrolimus (p<.01). Private insurance also emerged as a significant predictor of CV of Tacrolimus (p<.05).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Estimate (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDI rate</td>
<td>1.786 (0.662, 2.911)</td>
<td>0.0028</td>
</tr>
<tr>
<td>Age at transplant</td>
<td>0.011 (0, 0.021)</td>
<td>0.0533</td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>-0.104 (-0.256, 0.047)</td>
<td>0.1709</td>
</tr>
<tr>
<td>Private insurance</td>
<td>0.207 (0.05, 0.363)</td>
<td>0.0113</td>
</tr>
</tbody>
</table>

- Table 2: After adjusting for age at transplant, median household income, and insurance type, higher MDI rates were related to higher variability of Rapamycin levels (p<.05).

<table>
<thead>
<tr>
<th>Predictor</th>
<th>Estimate (95% CI)</th>
<th>P-Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>MDI rate</td>
<td>2.231 (0.523, 3.938)</td>
<td>0.0137</td>
</tr>
<tr>
<td>Age at transplant</td>
<td>-0.032 (-0.051, -0.012)</td>
<td>0.003</td>
</tr>
<tr>
<td>Median Income</td>
<td>0.105 (0.049, 0.161)</td>
<td>0.0011</td>
</tr>
<tr>
<td>Private insurance</td>
<td>0.149 (-0.063, 0.361)</td>
<td>0.1563</td>
</tr>
</tbody>
</table>

REFERENCES


CONCLUSIONS

- Higher rates of multidimensional deprivation were associated with higher non-adherence as measured by variation in immunosuppressant labs across transplant types and across immunosuppressant medication.
- These relations were maintained even when controlling for insurance type, age at transplant, median income, and ethnicity.
- The MDI captures aspects of systemic health barriers above and beyond commonly used demographic factors. The MDI can inform pediatric psychologists’ biopsychosocial formulation and enable them to proactively advocate for patient and family needs.

FUTURE DIRECTIONS

- Partnerships between psychology and social work are vital in order to assess and address families’ experiences of systemic health barriers.
- Recommend use of information from the MDI to explore family protective factors and models of resilience in the face of experiences of deprivation.