Infrastructure Program Impact Evaluation

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School Area Road Safety Assessment and Improvement (SARSAI)

The Program

• Highest-risk schools in highest risk cities in highest risk countries in the world

• Implemented at schools where injury rates among student population are over 1% per year

• Infrastructure improvements to slow traffic and separate pedestrians from traffic:
  • Speed bumps
  • Bollards
  • Sidewalks
  • Signage
  • New school gates, etc.
School Area Road Safety Assessment and Improvement (SARSAI)

Impact Evaluation

- Population based door-to-door surveys at catchment areas around 18 primary schools in Dar es Salaam, Tanzania
- Secondary data unreliable
- Sample size calculated for 33% reduction
- Baseline and follow-up data collected from 2 populations:
  - Intervention
  - Community Control
- Study designed by Amend and CDC
School Area Road Safety Assessment and Improvement (SARSAI)

Results: Anatomic Distribution

Injury occurrence percentages

<table>
<thead>
<tr>
<th>Body Part</th>
<th>Pre-intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Head</td>
<td>10.6%</td>
<td>18.2%</td>
</tr>
<tr>
<td>Arms</td>
<td>15.2%</td>
<td>48.5%</td>
</tr>
<tr>
<td>Chest</td>
<td>3.0%</td>
<td>5.6%</td>
</tr>
<tr>
<td>Face</td>
<td>15.7%</td>
<td>0%</td>
</tr>
<tr>
<td>General Body Pain</td>
<td>2.2%</td>
<td>1.5%</td>
</tr>
<tr>
<td>Back</td>
<td>1.1%</td>
<td>2.2%</td>
</tr>
<tr>
<td>Legs</td>
<td>1.1%</td>
<td>0%</td>
</tr>
<tr>
<td>Death</td>
<td>4.5%</td>
<td>0%</td>
</tr>
<tr>
<td>Psychological Trauma</td>
<td>0%</td>
<td>5.6%</td>
</tr>
</tbody>
</table>

Psychological Trauma: 0%
School Area Road Safety Assessment and Improvement (SARSAI)

Sunrise/Morning

Night

Day

Evening

44→22

2→1

8→7

34→36
Results: Percentage of Associated Vehicles

<table>
<thead>
<tr>
<th></th>
<th>Pre-Intervention</th>
<th>Post-Intervention</th>
</tr>
</thead>
<tbody>
<tr>
<td>Motorbike</td>
<td>58.4%</td>
<td>59.1%</td>
</tr>
<tr>
<td>Car</td>
<td>21.3%</td>
<td>6.1%</td>
</tr>
</tbody>
</table>
School Area Road Safety Assessment and Improvement (SARSAI)

Baseline

Control

92 injuries
1.48/100 person-years

Intervention

89 injuries
1.32/100 person-years

Follow up

125 injuries
1.87/100 person-years

66 injuries ($P<0.001$)
0.96/100 person-years