

Provision of Spectacles Is Associated With Significant Improvement In Children's Self- Reported Visual Function In Mexico

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Refractive Error In Children

- **Refractive error is the most common cause of low vision in children**
- **The proportion of low vision due to refractive error varies from 56% (Chile) to 69% (Australia) to 95% (China) in population studies of school-aged children**



Refractive Error In Children

- A high proportion of refractive error goes uncorrected:
 - 93% in rural China
 - 50% in Florida, Chile
 - 25% even in Australia



Refractive Error In Children

- For this reason, there is growing interest in programs to provide spectacles to children
- However, little specific evidence for benefit of refractive correction in children in terms of visual function



HKI's Refractive Program in Oaxaca

- Oaxaca's 3.4 million inhabitants have little access to vision care
- HKI, with Mexican partner Ver Bien, has screened 400,000 children and provided 40,000 glasses in 4 years



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Materials and Methods

- **Children 6-17 years recruited to the study at time of screening by the HKI-Ver Bien program in June-August 2005**
- **All children underwent initial vision measurement by study personnel, children with VA \leq 6/12 in either eye or complaining of vision problems referred for non-cycloplegic refraction by program optometrist**



Materials and Methods

- All children administered the Refraction Status Vision Profile (RSVP) instrument at baseline and 6 weeks after refraction
- RSVP specifically designed to measure impact of refractive correction on visual function
- RSVP previously validated in Spanish, adapted for use in rural children



Materials and Methods

- **Following data recorded for all children:**
 - Age, gender
 - Spherical equivalent refraction and VA in each eye with and without correction
- **Glasses provided on the spot if more than 0.75 D myopia or 0.5 D of hyperopia or astigmatism**



Results

- **Follow-up available on 88 children to date**
- **Mean age 12 years**
- **55.7% female**
- **Median uncorrected VA 6/18 (range 6/6 to 6/120)**



Results

- **Significant improvement on all sub-scales of RSVP for group as a whole:**
 - Perception ($P = 0.05$)
 - Satisfaction ($P = 0.02$)
 - Function ($P = 0.0001$)
 - Symptoms ($P < 0.0001$)
 - Total Score ($P = 0.0001$)

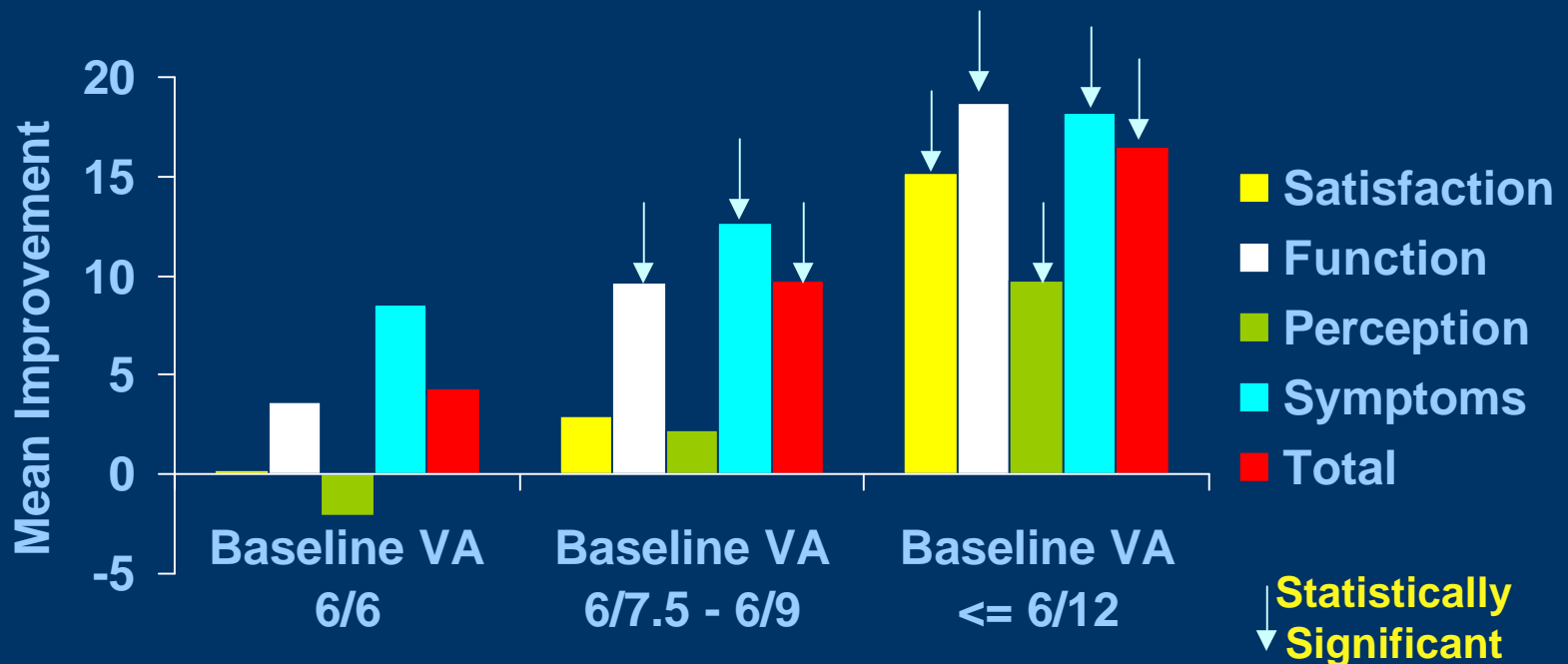


Results

- **Stratifying by baseline vision**
 - No improvement seen for children 6/6 at baseline (n= 22)
 - Modest improvement for children 6/7.5 to 6/9 (n = 34)
 - Significant improvement for those 6/12 and worse (n = 32)



Improvement in Visual Function is Greater for Children with Worse VA at Baseline



Discussion

- **Providing glasses in this setting has a significant impact on self-reported visual function**
- **Present even at modest levels of baseline visual disability**



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Discussion

- **Evidence for a real effect:**
 - Correlation between baseline visual acuity and improved visual function
 - Failure of children 6/6 at baseline to improve
- **Need for careful adherence to protocol in spectacle distribution**



On-going analyses

- **Follow-up information being collected on an additional 90 children**
- **Analyzing association between spherical equivalent and change in visual function**

