Exploration of Prevention and Treatment Model for Visual Impairment Children

Hongsheng Bi
Instructive Group of Shandong Blindness Prevention Prevention and Treatment Center for Children Visual Impairment of Shandong Province
Affiliated Eye Hospital of Shandong University of TCM
“Vision 2020” and 2014-2019 Global Plan

- Chinese government concluded the “VISION 2020” in 1999: The Right to Sight
- “As a global target, the reduction in prevalence of avoidable visual impairment by 25% by 2019 from the baseline of 2010 has been selected for this action plan.”
Plan for Blindness Prevention of China


• Bringing eye care into the overall development of medical service system.

• Improving ophthalmic service ability in grass-roots, especially in county level. Starting national survey of ophthalmic resources and epidemiological study of eye diseases.

• Focusing on preventing and treating blinding eye diseases: cataract, trachoma, refractive errors, childhood blindness, glaucoma and diabetic retinopathy.
Causes of global visual impairment in 2010

In 2010, 285 million people suffered from visual impairment all over the world, 80% of which were avoidable.

Two main causes of visual impairment: Uncorrected refractive errors (42%) and cataract (33%)
Prevalence of Visual Impairment in Chinese Students

- Primary school: 19.83% in 2005, 40.89% in 2010
- Junior high school: 50.72% in 2010, 67.33% in 2010
- Senior high school: 72.35% in 2010, 79.20% in 2010

Totally 13 million students in Shandong
The Main Problem Mankind Facing
Exam-oriented education system could be altered in near future

The college entrance examination is still a fair talents selection system in China

The system can not be substituted.

Results:
- Heavy study burden
- No enough outdoor activities
- Extracurricular lessons
- Rarely care about the visual health of school children
Shandong Model: Bring Children Eye Care into Blindness Prevention

- Fellowship: government, various circles of society, NGO and ophthalmologists
- Plan for blindness prevention in Shandong 2011-2015
- 7 bureaus made an alliance to print and distribute “Prevention and Treatment Scheme of Children Visual Impairment of Shandong Province”
  - Establishing standard flow and model of screen, early warning, training, rehabilitation, treatment and evaluation
  - Supervision group consisted of several competent departments is responsible for inspecting quality of optometry products in Shandong
  - Translating optometry into medical activity of treating refractive eye diseases
Shandong Model: Constructing Prevention and Treatment System of Children Visual Impairment

- Establishment of Prevention and Treatment Center for Children Visual Impairment of Shandong Province
- Constructing branches in all 17 cities, 137 counties/districts
Shandong Model: Establishment of Expert Committee

Consists of:

- Education official
- Expert of
  - Ophthalmology
  - Optometry
  - Epidemiology
  - Statistics
  - Children development
  - Psychology
  - Nutriology

Work together to conduct scientific research
Shandong Model: Ophthalmology and Optometry Education

- Establish Ophthalmology and Optometry Medical School of Shandong University of TCM to train professionals
- Education of undergraduate optometry course: 4 years program
- 450 graduates
Shandong Model: Training of Various Pattern

• Vocational school for training staff without normal education.

• Verification of professional qualification

• Training 2000 man times of ophthalmologists, optometrist & opticians, rural doctors and school medical officers each year
• Grasp the prevalence of refractive errors and other eye diseases of children
• By 3 years follow-up, incidence and occurrence regularity should be more learned.
• 18000 students’ examination has been done.
• Research findings would be valuable for government decision-making.

Shandong Model: Normative screen, file and early warning

- Normative screen of visual impairment
- More than 6 million students have received free optometric and ophthalmological examination and been filed.
- Technical guideline of 3-level monitor of children vision
Shandong Model: Popularizing the normalized technique

- Establish normative institution of technique
  - Screen and early warning
  - Prevention plan
  - Standardizing ophthalmic and optometric examination

- Formulate technical standard, construct public platform
Shandong Model: Popularization of eye-care knowledge

- Devote to popularizing the knowledge of Eye-care
  - Compile popular science books to make students, teachers and parents learn about common sense of protecting eyes.
  - Distributing more than 10000 posters
  - Deliver 200 lectures in schools and communities for students, parents and teachers each year
Strategic Change for Coping with Myopia

• The upper grade doctors focus on prevention of disease
  – Prevention
  – Control
  – Preventing complications

• Principle of prevention and control
  – Rely mainly on prevention
  – Integrating prevention and control
Measures adopted by western medicine
- **Atropine**: Effective in controlling the increase of myopia
- **Orthokeratology**: several clinical trials confirmed the effect on myopia
- **Other**: spectacle for Decreasing Peripheral Defocus, multifocal contact lens

TCM makes significant progress in treating myopia and amblyopia
- **Myopia**: increasing visual acuity and alleviating visual fatigue and Improving the accommodation and vergence of eyes, which has underlying power in controlling the progression of myopia
- **Amblyopia**: improving visual acuity and effective rate and cure rate, contributing to the recovery of binocular vision and contributing to vision development and improve neurovision
Shandong Model of Prevention and Treatment of Visual Impairment for Children

• Obtaining policy support and institutional guarantee
  - The reduction of prevalence of visual impairment in school children has been included in the assessment of the performance of local government in Shandong Province

• Implementation of working policy
After 5 years of struggle, we have made an great progress in preventing and treating children visual impairment.

- 13,000,000 school children
- According to the survey completed by Shandong Education Department in 2014, the prevalence of visual impairment of Shandong school children was on a declining curve comparing with that of 2010.

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China Dream:
Every child has a pair of bright eyes
Thank you!