Visual health screening by schoolteachers in remote communities of Peru: implementation research
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Objective To describe the adaptation and scaling-up of an intervention to improve the visual health of children in the Apurimac region, Peru.

Methods In a pilot screening programme in 2009–2010, 26 schoolteachers were trained to detect and refer visual acuity problems in schoolchildren in one district in Apurimac. To scale-up the intervention, lessons learnt from the pilot were used to design strategies for: (i) strengthening multisector partnerships; (ii) promoting the engagement and participation of teachers and (iii) increasing children’s attendance at referral eye clinics. Implementation began in February 2015 in two out of eight provinces of Apurimac, including hard-to-reach communities. We made an observational study of the processes and outcomes of adapting and scaling-up the intervention. Qualitative and quantitative analyses were made of data collected from March 2015 to January 2016 from programme documents, routine reports and structured evaluation questionnaires completed by teachers.

Findings Partnerships were expanded after sharing the results of the pilot phase. Training was completed by 355 teachers and directors in both provinces, belonging to 315 schools distributed in 24 districts. Teachers’ appraisal of the training achieved high positive scores. Outreach eye clinics and subsidies for glasses were provided for poorer families. Data from six districts showed that attendance at the eye clinic increased from 66% (45/68 children referred) in the pilot phase to 92% (237/259) in the implementation phase.

Conclusion Adaptation to the local context allowed the scaling-up of an intervention to improve visual health in children and enhanced the equity of the programme.

Introduction
Worldwide there are 12 million children with visual impairment due to uncorrected refractive errors that can affect their learning development. Evidence has shown that visual deficits can be identified through visual acuity testing and that affordable treatments to correct vision can improve the quality of life of the population. Some studies suggest that screening children’s vision is beneficial. The inclusion of visual health in a school’s curriculum can contribute to the development of a healthy school environment, promote good vision habits and permit the detection of eye problems, facilitating the integration of boys and girls with visual disability into the classroom.

Apurimac region in the Andes mountains, consists of eight provinces and 79 districts, and has remote villages with hard-to-reach populations living at over 3000 metres in altitude; limited infrastructures and transportation; and poverty affecting a large proportion of the population. Despite these challenges, Apurimac has an educational network that covers the entire region. Access to eye-care services is limited due to a shortage of health professionals, particularly in rural areas.

In 2009–2010, a pilot school visual health programme was carried out in Abancay, the capital city of Apurimac region (situated in a district and province of the same name), by a local eye-care centre with the participation of teachers and local education authorities. The objective was to estimate the proportion of schoolchildren with uncorrected refractive errors and to assess the validity of vision screening performed by trained schoolteachers. The prevalence of uncorrected refractive errors in the pilot sample of 364 children was 6.2% (13 children aged 3–5 years) and 6.9% (11 children aged 6–11 years), consistent with other studies in the region. There was a complete concordance between the visual acuity independently measured by 21 trained teachers and by expert health personnel. The pilot project highlighted a neglected visual health problem, because most of the examined children had never previously received an eye examination. The study also confirmed that trained schoolteachers were a valid resource for the identification of vision deficits in schoolchildren in this context.

Using lessons learnt from feedback from the pilot programme we planned a scaled-up implementation of the screening programme to start in February 2015, with the goal of gradually covering the whole region in the coming years. The aim of this study was to describe the adaptation and scaling-up of the intervention to improve the visual health of children in the Apurimac region of Peru.

Methods

Intervention
The intervention was delivered in three stages: (i) training of teachers in visual acuity measurement and referral; (ii) screening of students by teachers and referral of children with visual deficits to eye-care services; and (iii) examination and treatment of children in an eye-care unit.
Training

Educational authorities at the regional level incorporated the programme in two of the eight provinces of Apurimac region. The training was integrated into the planning meeting that the local educational authorities in each province have with school principals and teachers at the beginning of the school year. The participants in the training were preschool, primary- and secondary-school teachers, and school directors. At least one teacher was trained per school, preferably the school principal.

Optometrists and ophthalmic nurses from the local eye hospital conducted the training with technical support provided by a nongovernmental organization participating in the programme. Teachers learnt how to accurately measure the children's visual acuity at 6 metres in both eyes and to make referrals according to preset criteria. No previous knowledge of visual health was required to participate in the programme.

Training consisted of one session of 4 hours and included three theory modules on basic eye anatomy and visual function, common vision disorders in children and measuring visual acuity, followed by a practical module. Teachers were given a copy of the didactic materials, which included guidelines for reporting screening results and communicating with parents. The vision screening kit, consisting of visual acuity tests (adapted to reading and pre-reading ages), an eye occluder and measuring tape, were also supplied to each teacher.

Screening and referral

The screening programme covered preschool (age 3–5 years), primary-school (age 6–12 years) and secondary-school (age 13–18 years) children. The programme encouraged teachers to start the vision screenings of the children in their schools shortly after completing the training. In a talk given by a trained teacher before conducting the screening, the parents were informed verbally of the risks and benefits of the screening and asked to give consent for their child’s participation. To ensure confidentiality of the data, teachers informed parents individually in writing about the child’s screening results. Each participant was given a number and only one programme officer was allowed access to the referral information.

The criteria for referral to the local eye-care centre were visual acuity at 6 metres for one or both eyes < 6/9 (20/30) for preschool children and ≤ 6/9 (20/30) for elementary schoolchildren. The observation by the teacher of any eye abnormalities, such as a white cornea, was also a criterion for referral. For preschool children two teachers performed the visual acuity test when possible and repeated it if the results met the criteria for referral. Parents of children identified for referral were informed in writing. Eye examinations of referred children from the same school were programmed together as a group with the corresponding school principal and scheduled according to the school agenda and availability of the local eye hospital, in coordination with the families. Referred children attended eye examinations accompanied by a parent or teacher.

Eye examinations

The local eye-care centre in the city of Abancay offered the eye examination free of charge for referred children and to participant teachers who requested one, and provided the necessary health personnel, clinical equipment and transport to conduct the outreach campaigns. Eye examinations were performed by optometrists or ophthalmic nurses and followed the clinical procedure described in the pilot phase.² In preschool children, hyperopia 3.00 dioptres and astigmatism 1.50 dioptres were considered the reference for minimum optical correction according to American Association of Pediatric Ophthalmology and Strabismus guidelines.³ For children older than 5 years, hyperopia 1.50 dioptres, astigmatism 0.75 dioptres (or lower, if signs and symptoms were present) and myopia 1.00 dioptres (or lower, if it improved visual acuity appreciably) were indicated as minimum values to prescribe optical correction, according to the proposed guidelines.⁴ The final prescription for glasses was determined taking into account the child’s vision reduction, symmetry of refractive error between both eyes and binocular function improvements, according to age. Children presenting with other pathologies were subsequently referred to an ophthalmologist at the local eye hospital or for a full medical examination at the nearest available hospital.

Programme improvements

Before planning the implementation phase, we held a feedback meeting in June 2010 with participants in the pilot programme. This meeting revealed key aspects of the programme that needed to be improved to achieve greater ef-

Table 1. Outcomes, strategies and data sources used to examine implementation of the school visual health programme in Apurimac region, Peru, 2015–2016

<table>
<thead>
<tr>
<th>Outcome</th>
<th>Implementation strategies</th>
<th>Data sources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partnerships</td>
<td>Disseminate pilot study results</td>
<td>Analysis of pilot study results⁵</td>
</tr>
<tr>
<td></td>
<td>Recruit multidisciplinary partners</td>
<td>Memoranda of understanding with partners, programme reports and other institutional agreements</td>
</tr>
<tr>
<td>Teacher engagement</td>
<td>Increase teachers’ access to training programme</td>
<td>Data on number of teachers accessing the course</td>
</tr>
<tr>
<td></td>
<td>Revise training materials and implementation of virtual campus</td>
<td>Data on number of official certificates awarded</td>
</tr>
<tr>
<td></td>
<td>Provide official certification of the training course</td>
<td>Teachers’ scores on evaluation questionnaire completed after training⁶</td>
</tr>
<tr>
<td></td>
<td>Provide visual examination and treatment for teachers</td>
<td>Programme awareness documents and materials</td>
</tr>
<tr>
<td>Referral attendance</td>
<td>Develop health education materials for families</td>
<td>Programme data on subsidies</td>
</tr>
<tr>
<td></td>
<td>Provide logistic and financial support for families</td>
<td>Programme data on number of outreach clinics</td>
</tr>
<tr>
<td></td>
<td>Provide outreach clinics in remote locations</td>
<td>Programme data on referral attendance rate⁷</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Proportion of child population reached by district⁷</td>
</tr>
</tbody>
</table>

¹ Structured questionnaire, with answers graded from 0 to 4 (strongly disagree to strongly agree). Teachers’ scores from each section of the questionnaire were aggregated into mean and standard deviation scores.
² Number of children attending eye clinic as a percentage of number of children referred.
³ Number of children screened as a percentage of child population aged 3–17 years, attending school or not, by district (based on census data for Peru).
fectiveness and impact. These were: (i) strengthening partnerships to achieve leadership and financial sustainability; (ii) promoting teachers’ engagement and participation; and (iii) increasing the referral attendance rate to improve the programme’s equity and impact. We therefore designed strategies to address these factors when planning the implementation phase (Table 1).

**Partnerships**

The organizations responsible for carrying out the programme were the local secondary eye hospital Fundación Medico Oftalmológica Sagrado Corazón de Jesús, Peru, and the nonprofit organization Global Health Vision-Entretodos Foundation, Spain, leading the initiative, with the support of the University of Alicante, Spain. The partnership included the regional education directorate of Apurímac, local and international social organizations and educational institutions committed to the prevention of blindness and supporting people with disabilities (Table 2).

To strengthen the partnerships for long-term leadership and financial sustainability, we disseminated the evidence of the pilot results and contacted potential partners. This resulted in agreements with seven new local and international stakeholders as well as collaboration with other facilitators. Their backgrounds, roles and responsibilities are summarized in Table 2.

**Teacher engagement**

Based on the results obtained in the pilot intervention, we introduced several strategies to increase the number of teachers who received training and completed the programme, and to ensure better follow-up of referred children.

First, we adapted and shortened the teacher training session. Training in the pilot study was carried out in two 4-hour sessions on consecutive days. In a sample of 21 feedback questionnaires, teachers were slightly dissatisfied with the duration of the training. Therefore, in the implementation phase we reduced the time for theoretical content by providing additional printed materials and focusing on practice (the visual acuity test, data collection and informing parents) in a single 4-hour session. Second, in partnership with the regional education authorities, official certification for the training course was obtained. Third, the teaching materials were revised with the contributions of visual health and education specialists from the partnership. Fourth, in addition to the paper-based system for training and recording data, an online virtual campus was designed and presented to teachers to facilitate their access to teaching materials, reporting of results and referral and follow-up of children identified with vision problems. Fifth, education resources on school vision health were made available through the virtual campus, including recommendations for integration of visually impaired children into the school (defined by conventional standards).

Finally, with the aim of improving the engagement of teachers, as part of the training session we offered all teachers a full eye examination and provided them with glasses if required.

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### Table 2. Partnerships in the implementation phase of the school visual health programme in Apurímac region, Peru, 2015–2016

<table>
<thead>
<tr>
<th>Partner</th>
<th>Roles and responsibilities</th>
</tr>
</thead>
</table>
| Nonprofit organization leading the programme | – Design and develop the visual health programme and vision screening in the child population  
– Search for funding sources  
– Contribute to the training of teachers and raising social awareness  
– Promote partnerships  
– Provide evidence and models based on good practices towards universal access to eye health |
| Local eye hospital | – Provide comprehensive vision and diagnostic examinations  
– Monitor and validate vision screening carried out by teachers  
– Register patients who receive treatment  
– Refer complex cases to specialized care within health services  
– Provide vision health services to teachers when required |
| Regional education authority | – Certificate the training of teachers by providing curricular accreditation  
– Coordinate and assist teachers in the training  
– Participate in the planning, monitoring and evaluation of the programme  
– Provide institutional and economic support to guarantee access to diagnosis and treatment for children referred after school screening  
– Facilitate infrastructure to the health team during travel  
– Support dissemination of the programme and raising social awareness in the local community |
| Municipal institutions | – Provide institutional and economic support to guarantee access to diagnosis and treatment for children referred after school screening  
– Facilitate infrastructure to the health team during travel  
– Support dissemination of the programme and raising social awareness in the local community |
| Universities and educational institutions | – Provide programme management  
– Provide monitoring and evaluation  
– Generate, transfer and disseminate scientific knowledge  
– Facilitate training and support for health professionals  
– Provide specific training and resources for health and education sector professionals in terms of a school environment where children with disabilities can participate fully  
– Identify children with visual disability who are not attending classes and facilitate their integration into the school |
| International organization supporting the inclusion of people with disabilities | – Partake in the planning, monitoring and evaluation of the programme |
| Other facilitators | – Contribute to expanding the social network to strengthen the programme in different ways:  
– Community organizations: logistic support, transport of supplies and donation management  
– Vision health specialists: support in teacher training, collaboration in design of training materials |

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6 Global Health Vision-Fundación Entretodos, Zaragoza, Spain.
7 Fundación Médico Oftalmológico Sagrado Corazón de Jesús, Abancay, Peru.
8 Dirección Regional de Educación de Apurímac, Abancay, Peru.
9 Local authorities and rural health post in both provinces at the district level, Abancay and Chugurambilla, Peru.
10 Universidad de Alicante, Alicante, Spain and Universidad Peruana Los Andes, Huancaíney, Peru.
11 International Centre for Eye Health, London, United Kingdom of Great Britain and Northern Ireland.
12 Fundación ONCE para América Latina, Madrid, Spain.
13 Madre Coraje; Jerez de la Frontera, Spain, Club de Leones Lima “La Recoleta”, Lima, Peru, Escoles Solidaries and eye care specialists, Valencia, Spain, Asociación Mirada a Perú, Lima, Peru.
**Referral attendance**

Several strategies were put in place to improve the relatively low attendance rate at the eye centre observed in the pilot programme (66%; 45 out of 68 children referred), and to improve equity of access to eye-care services, by including rural teachers and communities in the programme. The health team from the local eye-care centre in the pilot were also responsible for the implementation of the scaling-up.

First, we increased awareness about visual health among the local community and families by providing the schools with posters and information leaflets which they distributed before the screening started.

Second, to overcome the barriers discussed in the pilot, we introduced logistic support for families in the rural areas, initially by covering the cost of transport to the eye hospital for referred children. Due to the number of children referred by teachers from remote areas – where travelling to and from eye examinations by public transport cannot be achieved in a single day – we found that organizing an outreach clinic was a more efficient and patient-centred way to offer the examination and treatment. Deployment of a mobile unit from the local eye hospital to remote municipalities was arranged, coordinated through links with municipalities and the national network of rural health posts that supported the implementation of the programme.

Third, financial subsidies for patients who could not afford the cost of glasses, medical treatment or transport to the eye hospital were offered from cooperation funds and crowdfunding through the local eye hospital. The programme established three principles for the correction of refractive errors for the children identified through the screening: (i) no child with vision problems should lack treatment due to financial reasons; (ii) families can contribute fully or partially to the cost of the treatments; and (iii) all service providers involved in the school visual health programme participate on a nonprofit basis.

The cost of quality glasses sourced from local providers, including durable, plastic lenses, cutting, assembling and transport, was estimated at 15 United States dollars (US$) each. Payment options for families were the full cost of the treatment, a partial contribution or no contribution; the payment option for each child was selected by the family during the examination according to self-reported financial status or, in the absence of parents, following teacher recommendations.

**Implementation**

Implementation of the scaled-up intervention, which is still in progress, began in February 2015 in Abancay and Grau, two of eight provinces in Apurímac region. Training sessions were carried out in institutional facilities in the capital cities of these provinces, Abancay and Chuquipambilla respectively, in February and March 2015.

All partners provided the financial, human and logistic resources needed to implement the scaling-up programme. A collective crowdfunding campaign generated funds and optical and ophthalmic equipment were donated to the programme. Local authorities at the district level assisted by accommodating health staff and providing a suitable location for the eye clinic, i.e. a rural health post or a classroom with suitable lighting and a room at least 5 metres long.

**Outcomes and data sources**

We considered three outcomes of the implementation process, corresponding to the three areas targeted for scaling-up the programme: (i) partnerships; (ii) teacher engagement; and (iii) referral attendance. Table 1 shows the sources and types of data collected under each outcome; these included regular field visits, routine programme records, programme documents and reports, and structured evaluation questionnaires completed by teachers. Qualitative and quantitative analyses were made of data collected for the period of implementation from March 2015 to January 2016. We also present data on the causes of decreased visual acuity collected from records of a sample of 63 children attending the local eye-care centre.

**Results**

The collaboration with the regional education directorate of Apurímac resulted in the intervention being included in the official school agenda in Apurímac.

**Teacher engagement**

The number of teachers and directors completing training were 355 in both provinces, belonging to 315 schools distributed in 24 districts, compared with 21 teachers from one district in the pilot intervention. Overall the teachers agreed or strongly agreed that the training session was useful, gave them the skills needed for screening and was well delivered.

Due to the adaptations needed to include a one-hour practice and the delivery of visual health materials for schools during training sessions, teacher participants were distributed into groups. The same process was followed for all groups, except that questionnaires were collected from only one in four groups due to the limited time available. The mean scores of the teachers’ assessment of the training (from 0 to 4) for each item in a sample of 84 questionnaires collected were as follows: “The training contents are useful for my performance as a teacher” 3.7 (standard deviation, SD: 0.5); “I understand the material taught in the training session and I feel capable of performing vision screening test” 3.7 (SD: 0.6); “The structure of the sessions has been adequate” 3.5 (SD: 0.7). The single 4-hour session applied in the implementation was better received by teachers and they showed good confidence in the acquired knowledge during training.

The estimated cost of training and equipping one teacher to perform the vision screening, calculated considering the resources procured from local providers, was US$ 5.

**Referral attendance**

The data on screening outcomes and coverage, disaggregated by district, obtained in the implementation phase compared with the pilot phase are shown in Table 3. Between March 2015 and January 2016, 74 teachers from 6 districts screened a total of 1522 children and 259 (17%) met the criteria for referral. The proportion of the total child population aged 3–17 years who were screened ranged from 4% (625/17 862) in Abancay district to 24% (364/1 516) in Gamarra district. From the referred children, 237 (92%) received a comprehensive eye examination. Except in Abancay, the majority of children came from remote rural areas (Table 3).

Over three quarters of the children examined (147; 62%) required treatment for refractive errors, giving a prevalence of uncorrected refractive error in this sample of children screened of 10%. Regarding financial contributions towards the cost of treatments, 53
(36%) of the 147 families were able to pay fully for glasses, 30 (20%) were able to pay partially and 64 (44%) required full subsidy.

**Vision problems detected**

The main cause of decreased visual acuity in the 63 children examined at the local eye hospital was refractive error (60 children; 95%) (Table 4) and the most prevalent refractive error was astigmatism (47 children; 75%) with a mean value of 2.25 dioptres (SD: 1.77). Amblyopia, defined as decreased vision in one or both eyes even after best optical correction, was found in 12 children (19%). Conjunctivitis was the cause of poor vision in 9 (14%) children. Other eye diseases identified were corneal trauma and retinal disorder in 3 children (5%).

**Discussion**

This paper presents the implementation strategy and processes of a school visual health programme with the participation of trained teachers and the involvement of a multisector partnership. Our results show improvements in the scope and effectiveness of the intervention compared with the pilot programme. The attendance rate at referral visits increased by 39% (from 66% to 92%) in the scaled-up intervention. This was achieved by offering support to poor communities from remote areas to ensure the delivery of a more equitable programme.

The main cause of decreased visual acuity in the children examined was refractive error (95%). The prevalence of uncorrected refractive errors in this sample (10%) was higher than in the pilot programme (6.6%) and higher than presented in another study in the same area (4.6%).

The pilot study was carried out mostly in an urban population, in contrast with the implementation that also covered hard-to-reach areas. By targeting hard-to-reach populations this programme specifically included children who were more likely to be deprived of eye-care services and therefore more likely to have an uncorrected refractive error. Similar findings about a higher rate of uncorrected refractive errors in rural populations was reported by a school screening programme in India. 10

We also confirmed that astigmatism was the most common refractive error in the Andean region of Peru. 11 Our findings show that 19% of children with uncorrected refractive errors presented with amblyopia. In a study from Chile, 6.5% of 1285 schoolchildren with decreased visual acuity had amblyopia. 13 Although the prevalence of refractive errors reflected the entire sample, data on causes for decreased visual acuity were limited to the children attending the local eye-care centre (Table 4). There are now arrangements in place to ensure that disaggregated data collection for outcomes are recorded and completed by age and area (rural or urban) for all children examined, with the ap-

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### Table 3. Screening data and outcomes from the pilot and implementation phases of the school visual health programme by district of Apurimac region, Peru, 2015–2016

<table>
<thead>
<tr>
<th>Phase and district</th>
<th>Children’s characteristics</th>
<th>Screening outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Population aged 3–17 years*</td>
<td>Living in rural areas, no. (%)</td>
</tr>
<tr>
<td>Pilot phase</td>
<td>17,862</td>
<td>1,964 (11)</td>
</tr>
<tr>
<td>Abancay</td>
<td>25,081</td>
<td>17,005 (68)</td>
</tr>
<tr>
<td>Implementation phase</td>
<td>17,862</td>
<td>1,964 (11)</td>
</tr>
<tr>
<td>Circa</td>
<td>824</td>
<td>709 (86)</td>
</tr>
<tr>
<td>Huanipaca</td>
<td>1,720</td>
<td>1,341 (78)</td>
</tr>
<tr>
<td>Lambarma</td>
<td>1,677</td>
<td>1,191 (71)</td>
</tr>
<tr>
<td>Pichirhua</td>
<td>1,482</td>
<td>1,550 (87)</td>
</tr>
<tr>
<td>Gamarra</td>
<td>1,516</td>
<td>1,359 (90)</td>
</tr>
</tbody>
</table>

* Total census population aged 3–17 years; attending school or not, by district. Data sourced from Instituto Nacional de Estadística e Informática, 2010.

### Table 4. Causes of decreased visual acuity in schoolchildren referred by teachers in the implementation phase of the school visual health programme in Apurimac region, Peru, 2015–2016

<table>
<thead>
<tr>
<th>Cause</th>
<th>Children diagnosed, no. (%) (n = 63)</th>
<th>Mean (SD) refractive error, dioptres</th>
</tr>
</thead>
<tbody>
<tr>
<td>Refractive error</td>
<td>60 (95)</td>
<td>-2.25 (1.77)</td>
</tr>
<tr>
<td>Astigmatism</td>
<td>47 (75)</td>
<td>-1.50 (1.11)</td>
</tr>
<tr>
<td>Myopia</td>
<td>16 (27)</td>
<td>1.00 (0.73)</td>
</tr>
<tr>
<td>Hyperopia</td>
<td>13 (21)</td>
<td>N/A</td>
</tr>
<tr>
<td>Amblyopia</td>
<td>12 (19)</td>
<td>N/A</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>9 (14)</td>
<td>N/A</td>
</tr>
<tr>
<td>Other causes</td>
<td>3 (5)</td>
<td>N/A</td>
</tr>
</tbody>
</table>

N/A: not applicable; SD: standard deviation.

* Number of children attending the local eye hospital, (numbers do not total 63 as children could have more than one diagnosis).
东亚所作的多样化工作。这一支持允许进一步的分析，以评估干预的效果，这将有助于改进教育的成果。数据收集将评价干预的整体效果，包括长期方案的实施。向前，参与方应关注方案的议事日程，以评估有效性的视觉健康干预在不同背景下的影响。}
Dépistage des troubles visuels par des enseignants dans des communautés isolées du Pérou: recherche sur la mise en œuvre

Objectif Décrire l’adaptation et l’extension d’une campagne visant à améliorer la santé visuelle des enfants dans la région d’Apurímac, au Pérou.


Résultats Après la communication des résultats de la phase pilote, les partenariats se sont diversifiés. Une formation a été suivie par 355 enseignants et directeurs, dans les deux provinces; ce qui représente 315 écoles, réparties dans 24 districts. L’évaluation par les enseignants de la formation dispensée a été très positive. Un centre ophthalmologique de proximité ainsi que des aides financières pour l’achat de lunettes ont été mis en place pour les familles les plus pauvres. Les données obtenues dans six districts montrent que la prise en charge par un centre ophthalmologique est passée de 66% pendant la phase pilote (45 enfants sur les 68 orientés vers un centre de soins) à 92% pendant la phase de mise en œuvre (237 sur 259).

Conclusion L’adaptation au contexte local a permis d’étendre la campagne visant à améliorer la santé visuelle chez l’enfant et de renforcer la dimension d’équité du programme.

Abstract

Visual health screening by teachers in Peru: research on implementation

Objective To describe the adaptation and extension of a campagne aiming to improve children’s visual health in the Apurímac region, Peru.

Methods In the context of a pilot screening programme implemented in a district of the Apurímac region in 2009–2010, 26 teachers were trained to carry out visual acuity assessment among schoolchildren and refer children with visual problems to an eye-care centre. The lessons learned from this pilot were used to design the following strategies: (i) enhancing multi-sectoral partnerships; (ii) increasing involvement and participation of the teachers; and (iii) increasing the number of teachers handling cases in an eye-care centre. The implementation was launched in February 2015, in two of the eight provinces of the Apurímac region, particularly in remote communities. We evaluated the adaptation and scale-up process and results using qualitative and quantitative analyses of data collected from March 2015 to January 2016 in the programme documentation, routine reports and feedback questionnaires filled in by the teachers.

Results After communicating the results of the pilot phase, partnerships diversified. A training was provided to 355 teachers and directors, in the two provinces; this represented 315 schools, distributed in 24 districts. Teacher evaluation of the training was very positive. A local ophthalmologic centre was set up for the families in need. Data from six districts showed that the proportion of cases handled by an eye-care centre rose from 66% (45 cases out of 68 referred to a centre) to 92% (237 cases out of 259 referred).

Conclusion The adaptation to the local context enabled extending the programme targeting children’s visual health, and reinforcing its equity dimension.
Resumen

Exámenes de la salud visual realizados por profesores de escuela en comunidades remotas de Perú: investigación sobre la ejecución

Objetivo
Describir la adaptación y la ampliación de una intervención para mejorar la salud visual de niños de la región Apurímac, Perú.

Métodos
En un programa piloto de examen realizado en 2009 y 2010, 26 profesores de escuela recibieron formación para detectar y tratar problemas de agudeza visual de los alumnos de un distrito de Apurímac. A fin de ampliar la intervención, las lecciones aprendidas en el piloto se utilizaron para diseñar estrategias para: (i) fortalecer las colaboraciones entre sectores; (ii) fomentar el compromiso y la participación de los profesores; y (iii) aumentar la asistencia de los niños a clínicas oftalmológicas de referencia. La implementación comenzó en febrero de 2015 en dos de ocho provincias de Apurímac. Las comunidades de difícil acceso. Se utilizó un estudio de observación de los procesos y resultados de la adaptación y ampliación de la intervención. Se realizaron análisis cuantitativos y cualitativos de datos recopilados desde marzo de 2015 hasta enero de 2016 a partir de documentos del programa.

Resultados
Las colaboraciones aumentaron tras la publicación de los resultados de la fase piloto. Los que recibieron formación fueron 355 profesores y directores de ambas provincias, los cuales pertenecían a 315 escuelas distribuidas en 24 distritos. La evaluación de la formación por parte de los profesores obtuvo puntuaciones muy positivas. Las familias más pobres obtuvieron acceso a clínicas oftalmológicas a domicilio y ayuda para gafas. Los datos recopilados en seis distritos mostraron que la asistencia a clínicas oftalmológicas aumentó de un 66% (45/68 niños atendidos) durante la fase piloto a un 92% (237/259) durante la fase de implementación.

Conclusión
La adaptación al contexto local permitió la ampliación de una intervención para mejorar la salud visual de los niños y aumentó la equidad del programa.

Referencias