HOW TO ...

Test distance vision using a Snellen chart

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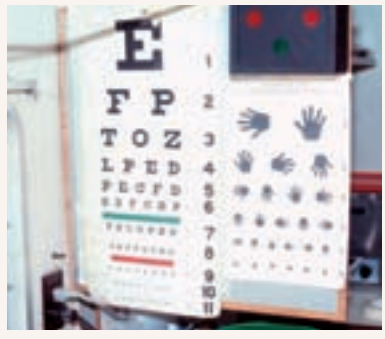
Indications

- To provide a baseline recording of visual acuity (VA)
- To aid examination and diagnosis of eye disease or refractive error
- For medico-legal reasons

Equipment

- Multi-letter Snellen chart
- E or C Snellen chart or a chart with illustrations for patients who cannot read or speak
- Plain occluder (not essential)
- Pinhole occluder
- Torch or flashlight
- Patient's documentation



A multi-letter Snellen chart (left) and a chart with illustrations

Procedure

- Ensure good natural light or illumination on the chart
- Explain the procedure to the patient
- Wash and dry the occluder and pinhole. If no plain occluder is available, ask the patient to wash his/her hands as they will use a hand to cover one eye at a time
- Test each eye separately – the 'bad' eye first
- Position the patient, sitting or standing, at a distance of 6 metres from the chart
- Ask the patient to wear any current distance spectacles, to cover one eye with his/her hand (or with a plain occluder), and to start reading from the top of the chart
- The smallest line he/she can read (the VA) will be expressed as a fraction, e.g. 6/18 or 6/24 (usually written on the chart). The upper number refers to the distance the chart is from the patient (6 metres) and the lower number is the distance in metres at which a person with no impairment should be able to see the chart
- In the patient's documentation, record the VA for each eye, stating whether it is with or without correction (spectacles), for example:
  Right VA = 6/18 with correction **Left VA = 6/24 with correction**
- If the patient cannot read the largest (top) letter at 6 metres, move him/her closer, one metre at a time, until the top letter can be seen – the VA will then be recorded as 5/60 or 4/60, etc.
- If the top letter cannot be read at 1 metre (1/60), hold up your fingers at varying distances of less than 1 metre and check whether the patient can count them. This is recorded as counting fingers (CF). Record as: **VA = CF**
- If the patient cannot count fingers, wave your hand and check if he/she can see this. This is recorded as hand movements (HM). Record as: **VA = HM**
- If the patient cannot see hand movements, shine a flashlight toward his/her eye from four directions of a quadrant. Record this in the documentation, in the relevant quadrant, as perception of light (PL or √), or no perception of light (NPL or X). Record as:

$$\text{Right VA} = \begin{array}{|c|c|}\hline \text{NPL} & \text{NPL} \\ \hline \text{NPL} & \text{NPL} \\ \hline \end{array} \qquad \text{Left VA} = \begin{array}{|c|c|}\hline \text{PL} & \text{NPL} \\ \hline \text{PL} & \text{NPL} \\ \hline \end{array}$$

or

$$\text{Right VA} = \begin{array}{|c|c|}\hline \text{X} & \text{X} \\ \hline \text{X} & \text{X} \\ \hline \end{array} \qquad \text{Left VA} = \begin{array}{|c|c|}\hline \surd & \text{X} \\ \hline \surd & \text{X} \\ \hline \end{array}$$

- If 6/6 (normal vision) is not achieved, test one eye at a time with a pinhole occluder (plus any current spectacles) and repeat the above procedure at 6 metres only. The use of the pinhole enables assessment of central vision
- If the vision improves, it indicates the visual impairment is due to a refractive error, which is correctable with spectacles or a new prescription
- Repeat the whole procedure for the second eye
- Summarise the VA of both eyes in the documentation, for example:
  Right VA = 6/24 with specs, 6/6 with pinhole **Left VA = NPL**

If using the E or C chart:

- Point to each letter on each line and ask the patient to point in the direction toward which the open end of the letter is facing
- Follow the same procedure and recording methods as above.

EXCHANGE

Community perceptions of refractive errors in Pakistan

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Pakistan's national survey of blindness and visual impairment in 2002–2004 reported the prevalence of blindness to be 0.9 per cent. Of this total, 3 per cent can be attributed to uncorrected refractive errors. As Pakistan has a population of 150 million, this is equivalent to just over 40,000 people. Given these figures, there is an urgent need to increase refraction services in a comprehensive manner.

Whereas many studies have been conducted on the scientific and programmatic aspects of refractive error services, there is insufficient data available about the consumer's perspective and possible reasons for the low uptake of services.

We designed a study to investigate communities' perceptions of refractive errors, to assess sociocultural patterns, practices, and attitudes towards the use of spectacles, and to investigate issues related to the affordability and availability of spectacles in rural and urban communities.

Focus group discussions and participatory rapid appraisal techniques were used to collect information from the community. A structured questionnaire was developed and field-tested to ensure validity. A team of two female and three male interviewers carried out the field research and 479 questionnaires were completed. Participants were members of different communities, chosen from 11 clusters representing urban, semi-urban, and rural settings. Each cluster contained from 15–25 participants. We did not encounter any substantial refusals to participate. The quantitative data was cleaned and then analysed using the SPSS statistical package, version 11.

Out of the total sample interviewed, 41 per cent were female and 59 per cent were male. The age breakdown of the participants was as follows: 1–15 years, 41 per cent; 16–30 years, 27 per cent; 31–40 years, 18 per cent; and 41 and above, 14 per cent. Many of the respondents (44 per cent) were married, 32 per cent attended school, and all ethnic groups were represented.

Many people did not understand what refractive error services were offered and did not consider themselves as having refractive errors. Affordability was the major reason given by people for not purchasing the spectacles they had been prescribed.

Cosmetic factors were important for all

communities surveyed. The main reason for discontinuation of spectacle wear in women was given as community pressure and cosmetic factors. The stigma attached to spectacle use was apparent in women, who were keen to know about the other options available, such as contact lenses and refractive surgery. These women reported that they often had to face social pressure, not only in terms of appearance, but also because of the perception that their children may inherit their visual impairment.

In rural areas, 69 per cent of people thought that using spectacles would cause their vision to deteriorate; they therefore tried to avoid it. However, the perception of most of the respondents was positive with regards to the use of spectacles by children. Respondents said that it helped children to continue their education and improved their quality of life. However, they also felt that spectacle wear hindered children's participation in sport and other extracurricular activities.

The majority of respondents countrywide reported accessing refractive error services in the private, rather than public, sector. They said this was because, in the private sector, they could access both refraction and spectacle dispensing services at the same location. They were also not satisfied with the attitudes of service providers in the public sector.

The average amount paid for spectacles in poorer communities ranged from US $1.5 to US $4. In most instances, refraction was included in the price. The average amount spent by middle-class families on spectacles ranged from US $6 to US $10. Throughout Pakistan, a range of affordable spectacle frames were available; however, there was a clear lack of high-quality, modern spectacle frames in the smaller towns.

In summary, this study suggests that there are currently a number of barriers to the effective correction of refractive errors:

- lack of awareness and recognition of refractive error as a correctable cause of visual impairment, compounded by the non-availability of affordable services
- cultural factors which lead to discontinuation of the use of spectacles, especially in women
- lack of awareness among providers that good quality, attractive, and comfortable spectacles are essential to ensure continued use of spectacles.

When designing refractive error programmes, consumers' perspectives are often ignored. However, we feel strongly that community studies should form part of the planning process.

References

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Experiences with optical centres in West Africa

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While working for Sightsavers International in 2003, I took over the management of an optical centre in Hohoe, Ghana (established in 1999), with the view to making it sustainable by improving profitability.

The basic changes we made were to run the centre more like a business.

However, after two years, the model proved to be unsustainable because of cost issues (the expense of running outreach trips, too many staff members), as well as a lack of community ownership, staff commitment, and patronage in the local area.

The lessons learnt in Ghana were subsequently applied to the setting up of optical centres within existing Sightsavers International-sponsored eye care facilities in hospitals in Cameroon, Nigeria, Mali, and Guinea. These lessons were also put in practice when reorganising two existing facilities in Sierra Leone.

In order to avoid the problems we experienced in Ghana, such as lack of patronage in the local area, we undertook an assessment of the potential centres. We considered several factors beforehand: available space at the clinics, local private and public optical suppliers, local population numbers, the proximity of the optical centre to the main population centres, patronage at the current clinic, existing facilities available at the clinic, available staff or training institutions, hospital administration and local government commitment, the influence of other stakeholders, current memoranda of understanding, and so on.

After this assessment, we compiled orders for equipment and materials. The stock for the centres included fashionable frames, lenses (single vision and bifocal), readers, cases, cords, and low vision supplies (providing low vision services forms part of the centres' remit).

Staffing was a delicate issue, as optical centres often do not fit into existing government salary and employment structures. This is an area that requires extensive advocacy by NGOs and private providers to improve the acceptance of optical providers within the public system. Optical and low vision service provision is further complicated by the lack of training facilities available.

Our experiences in Ghana suggested that we needed a strong outline of procedures in the optical centres. This led to the development of an extensive handbook that is used in day-to-day operations.

The handbook outlined the records to be kept, operational guidelines, storeroom procedures, outreach guidelines, staff job descriptions, administrative requirements, and a monitoring checklist.

A generic version of this document was developed as the basis for organising the new optical centres. However, it was heavily adapted to suit local circumstances; the organisational structure, in particular, was adapted to fit within existing eye clinic and hospital procedures.

Another lesson we learnt was to treat our patients as customers: we are aiming for profit and independence, and frames are as much about style as they are about function. Frame styles and lens types should be considered with the local population in mind.

The centres have only been operating since the beginning of 2007, and reports are now coming in. The biggest issues are with record keeping (store room procedures, recording payments, taking patient details) and improving the refraction and dispensing skills of staff. The focus now is also on generating awareness of refractive errors within the local communities.

In my opinion, the long-term success of the centres is dependent on the close monitoring of their operations, particularly proper stock keeping, financial accountability, and quality of service. This can indeed be accomplished if we train staff and set up appropriate systems.

Exchange continues over page ➤

Participants in a staff training workshop. GUINEA

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