TRAINING IN THE USE OF LOW VISION DEVICES

AUTHORS

Hasan Minto: Brien Holden Vision Institute, Pakistan

Pirindhavellie Govender: University of KwaZulu Natal (UKZN)

PEER REVIEWER

So Yeon Lee: Nova Southeastern University

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AIMS

This module aims to outline the necessary training for the use of low vision devices via developing a:

- Systematic protocol and structured process
- Knowledge base of the range of common low vision devices

LEARNING OUTCOMES

After completing this module, students should be able to:

- Train patients to use low vision devices
- Enhance the confidence level of a low vision patient in using low vision devices

INTRODUCTION

Training of patients with low vision is essential to ensure that they understand the difference between standard optical devices (like spectacles and contact lenses) and specific low vision devices. Training allows us to educate patients on the advantages and limitations of using low vision devices so that they can maximise the use of the device.

TRAINING PATIENTS WITH LOW VISION DEVICES

The essentials of training patients to use low vision devices include the following:

- Enables the patient to do the task he/she wants to do
- Ensures patients appreciate the advantages of a given device and not focus on its disadvantages
- Is success-oriented to enhance acceptance of the device
- Success is defined in terms of particular objectives
- Written instructions on the use of device(s) are given to patients
- Explanations are given in familiar terminology
- The practitioner educates patients on the myths regarding the use of device(s)
- Tasks of the training session are broken into component parts
- The easiest task is the starting point of the training
- The first few training sessions are conducted under professional supervision and last for a short duration so as not to overwhelm and tire the patient
- The training program is tailored to the patient's needs, i.e. specific tasks that the patient needed to be addressed, e.g. reading the newspaper

The practitioner should:

- Be flexible with regard to the patient's needs and training sessions
- Enable the patient to do the task he/she wants to do
- Not feel discouraged if a patient does not want to use a particular device as they may return later to seek help
- Explain the differences between old and new prescription/aids at the start of the training session
- Explain how the new low vision aid should affect tasks that the patient would like to perform

Preparation for training includes:

- Assemble information about the patient
- Make a tentative outline for training
- Prepare an optimal environment
  - Consideration is given to:
    - Lighting
    - Posture
    - Seating at a table or not
    - Support for the device e.g. reading stand or clipboard
  - Have non-optical aids that may enhance the use of low vision devices, e.g. typoscopes, fibre-tip or 20/20 pen, writing guide, yellow acetate filter paper, etc.
- Gather materials
  - Based on the tasks the patient would like to perform with the device, appropriate materials can be gathered, e.g. if reading is the task, then samples of reading material from magazines, newspapers, books, etc. should be gathered.
  - Specific homework exercises can also be gathered to supplement the training in-office

The initial encounter should determine:

- Objectives for the use of the device and priorities among them
- Current level of performance of tasks
- Present use of low vision devices
- Patients' understanding of vision and its functional implications

- The clinical examination required
- Optimal illumination needed

DEVELOPING A STRUCTURED PROCESS

A structured process should be adhered to so that there is efficient use of visual skills with low vision devices. There may be variations in this process depending on what specific devices are being prescribed as well as problem-specific tasks based on patient's needs.

1. FAMILIARISATION

- This process enables the patient to become familiar with the intention of using the device and understand its shortcomings, e.g. using a telescope may give the patient the resolution they need to read at a particular distance, however, there is an accompanying visual field loss
- Patients should be familiar with the spatial distortions that they may experience using low vision devices. This can be demonstrated by walking toward a patient using a telescope and having them note the distortions that occur.
- Understanding the range of the device is important, e.g. telescope for distance, hand-held magnifier has a particular focal length and therefore can only be used when placed over a small range of distances from the target material
- When using telescopes, familiarisation involves carefully showing the patient which side of the telescope is held closer to the eye (usually the eyepiece is the side with a soft rubber covering), removing the cap/s before viewing through a telescope, holding the telescope as close to the eye as possible, maintaining a steady hand when using the telescope and using support to rest the arm if the hand is not steady
- Holding the telescope is also important. The device is placed in a patient's hand between the thumb and forefinger when they are in a V-like angle. The thumb is rested on the patient's nose to support the device. Usually the right hand holds the device over the right eye and the left hand for the left eye. This is varied if you require the other to be covered when using a monocular telescope. In which case the right hand may hold the device over the left eye while the rest of the right hand is obstructing the view through the right eye (a subtle form of occlusion).

2. FOCUSSING

The process of focussing training enables the patient to get a feel for the range of focus of the device and the process to actually the focus the device to see at a particular distance. It starts by the patient locating a target at distance with the naked eye.

When focussing, the telescope is placed in front of the eye and the focussing ring is turned out as far as possible whilst looking at an object at distance. The ring is then rotated in the opposite direction to bring the object into focus. This is repeated to ensure that the best focussed image is achieved.

If the patient is using a binocular telescope, then focussing is done one eye at a time with the patient closing the eye not being used. The practitioner can sometimes assist the patient with focussing of the device initially, however, the process should be repeated several times until the patient is comfortable and confident with the difference between a blurred image and a focussed one.

During the focussing training, the patient can also be made aware of the visual field changes that will be experienced with the low vision device before the eye.

3. LOCALISATION

Training localisation strengthens the patient's ability to spot specific objects at a distance. It starts with the patient locating an object without a telescope and then locating it through the telescope. The task is increased in difficulty by having the patient spot larger objects first and then smaller ones. The patient must be made aware that they should not be walking while trying to spot objects.

The training can start in office and then should move outdoors to spotting objects on streets, shopping malls, etc. Once stationary objects are localised easily, the patient can then move onto localising dynamic objects. It is also important for the patient to ensure that their back is to the sun so that it does not result in glare which is amplified through the telescope.

Nystagmus and scotomas can result in difficulties with localisation.

4. TRACKING

The process of tracking can be preceded by having the patient trace a stationary line. This allows the patient to learn how to make head movements (scanning) to follow something. Once this is achieved, the patient can move on to tracking which is the process of following a moving object. This can begin with the patient simply following the examiner around the consulting room and then following moving objects outdoors.

The patient is encouraged to use head movements and not eye movements. During this process the practitioner must make the patient aware that the magnifying device also magnifies movement and therefore the patient may complain of things moving too fast.

TRAINING PROGRAM SUCCESS

The success of the training program is measured by the ability to complete specific tasks. Initially this happens with the practitioner being present and thereafter the patient is asked to practice without any instruction or guidance.

FOLLOW-UP

The patient should be followed up to determine if there are any difficulties experienced in their “real life” environment. Follow up can be via telephone or the patient can be visited at home. If a problem is experienced the patient may need to return for additional training sessions in-office.

TRAINING FOR SPECIFIC DEVICES

The advice and training given to the patient is based on the specific device chosen as the most appropriate for the individual case.

The following are common examples:

MONOCULAR TELESCOPE:

- When sitting, rest both elbows on a table or desk
- When standing, hold the device with one hand and use the other hand to grasp the bent elbow
- When focusing, hold the device with both hands, and bring the arms close to the body

TO FIND A DISTANT OBJECT:

- Use unaided vision to search the general location of the object
- Keeping eye and head still, raise the telescope and look through it to locate the object
- Focus the telescope to obtain a clear and sharp image

SYSTEMATIC SEARCH:

- Horizontal pattern for vertical objects (pole)
- Vertical pattern for horizontal objects (blackboard)
- Practice first without spectacles
- Field of view is smaller when using a telescope with spectacles

HIGH PLUS POWER READING GLASSES:

- Patient in a comfortable, upright position
- Reading material placed on a flat, inclined surface
- Reading stand used to hold printed material
- Additional lighting as needed
- Double vision: occlude eye not being used
- Bring the reading material closer until it touches the nose
- “Push” it away slowly until the words are clearest
- Explain the need for a close reading distance
- Recommend to move the reading material left to right in front of the eye while holding the head and eyes still.

HAND MAGNIFIER:

- Keep the magnifier parallel to the reading material and view through the center of the lens.
- Difficulty in locating the next line
- Use a line marker
- Place a finger at the beginning of the next line
- Note the first letter or word of the line that follows
- Additional lighting. If light is built into the device, demonstrate how to replace the batteries if required

STAND MAGNIFIER:

- Lens position at the focal distance from the printed material.
- Base kept in contact with reading material while moving the magnifier across the page
- Look through the centre of the lens
- Eyes close to the magnifier
- Wear prescribed/recommended refractive correction. If wearing bifocals, look through the bifocal near addition when using the stand magnifier.
- Use additional lighting. If light is built into the device, demonstrate how to replace the batteries.
- Use with adjustable reading stand if required

CARE OF DEVICES:

- Take care not to scratch the lenses/glasses
- Clean lenses with a clean, lint-free cloth
- Store device in the carrying case, if available, to prevent scratching the lenses. For telescopes, a neck cord helps to keep the telescope safe and accessible

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