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SUMMARY

Rehabilitation of the blind is an active process whereby the blind person is helped to become an independent and useful member of the community. Rehabilitation thus improves the psychological wellbeing of the blind person as well as making him a happy, contributing member of the society.

INTRODUCTION

Rehabilitation is an essential part of the management of the blind person. The doctors in charge of looking after the wellbeing of the patient, especially the Ophthalmologists, are therefore reminded that the blind person is not a hopeless case. On the contrary, it is the beginning of a totally new life for the blind person, who needs all the help and advice doctors can give. This paper therefore highlights ways in which the blind person can be helped.

DEFINITION AND INCIDENCE

Blindness is a recognised world wide health problem. The prevalence is about 1% in developing countries of Asia and Africa.(1,2). The WHO estimates that no less than 10 million people are totally blind and millions more have loss of sight sufficient to prevent them from living a normal life(1,2); the latter group are referred to as the partially sighted. These numbers are increasing rapidly and the prevalence is thought to be 10–40 times higher in developing countries than in industrialised countries(2).

A functional definition of blindness is "loss of vision sufficient to prevent an individual from being able to carry out everyday activities for which sight is required". Different types of blindness have been defined:-

(i) Economic Blindness — based on the person's capacity to work, i.e. he may not be able to pursue a particular occupation because of poor vision.

(ii) Legal Blindness — the most widely used in the USA for the purpose of determining who is eligible for tax deductions. This states a vision for distance of 6/60 (20/200) or less in the better eye with best correction (i.e. with glasses) or widest diameter of visual field subtending an angle of less than 20°.

(iii) Social Blindness — related to educational requirements or to the capacity of taking care of personal needs or for maintaining social relations.

(iv) Automobile Blindness — when vision is so poor that responsible licensing agencies in that country will not issue a driver's licence (used in Britain and USA).

Complete loss of sight in one eye is not blindness if the vision in the better eye is more than 6/60. In Nigeria, the Nigerian National Advisory Council for the blind (NNACS) in 1962 adopted the definition, "A person is blind if he has less than 1/20th of normal vision, i.e. 3/60 or if he cannot count fingers at a distance of 1 metre or if his visual field is restricted to 10° on each side of fixation.

WHO has identified 6 of the major causes of blindness(1,2), they include cataract, glaucoma, onchocerciasis, trauma, trachoma and vitamin A deficiency worsened by protein calorie malnutrition. Other causes include senile macular degeneration, leprosy, retinal detachment, diabetic retinopathy, hereditary conditions like retinitis pigmentosa, to mention a few. Quite a number of these could be prevented and there is an increasing emphasis on this aspect in Ophthalmology. With intensified efforts on prevention, public awareness, education and genetic counselling, a number of these preventable blindness will be a thing of the past.

PROBLEM OF BLINDNESS

When an individual becomes blind, he faces 2 major problems(3):

(i) He must learn the skills and techniques which will enable him to carry on as a normal, productive citizen in the community.

(ii) He must be aware of and learn to cope with public attitudes and misconceptions about blindness.

The first is far easier to solve than the second. It is now an established fact that with proper training and opportunity, the average blind person can do the average job in the average places of business and do it as well as his sighted neighbours. In other words, the real problem of blindness is not the blindness itself but the lack of understanding which exists(3). In the

words of Helen Keeler, a deaf-blind, "It is not blindness but the attitude of the seeing to the blind that is the hardest burden to bear."

The word "blind" carries with it the erroneous connotations of inferiority and helplessness(4). These in the African setting include:-

(i) The belief that the loss of a valuable aspect of the body is loss of the whole personality.

(ii) Some superstitious people belief, that a disability is a symbol of punishment by the gods, a sign of divine disapproval or punishment for evil.

(iii) Many consider blindness to be infectious and so pregnant women dread coming in contact with the blind in case the baby *in-utero* will contract the disease.

Public attitudes about the blind often become the attitude of the blind. They tend to see themselves as others see them, they accept the public view of their limitations and thus do so much to make those limitations a reality. So, society has a role to play in encouraging the less fortunate ones among us to give them hope. Until we can change our attitude to the blind and realise that blindness can be ABILITY and not disability, hence letting the blind see themselves more as equals of the sighted rather than people whom sympathy and charity are dispensed, then, participating in community life will not be a reality. This is the essence of rehabilitation.

THE BLIND CHILD

A blind child needs understanding parents and only with professional enlightenment can parents provide for his/her needs(6,7). Even the most educated parents are entitled to the intense emotional feeling when they realise their child is blind, acceptance is difficult. In the African society a child is thought to be a divine gift from God and when blind, is thought to be a punishment rather than a blessing. Feeling of grief, resentment, disappointment and unhappiness are common. Some withdraw from or reject their blind child, others are filled with shame and tend to hide them, which is negative for the child. Some say that the problem exists or assume that it will resolve and others feel guilty for their child's handicap and so smother them with affection, overcompensating for the bitter disappointment and hidden anger.

Any of these feelings may retard a child's emotional development. Such a child therefore suffers from a double handicap.

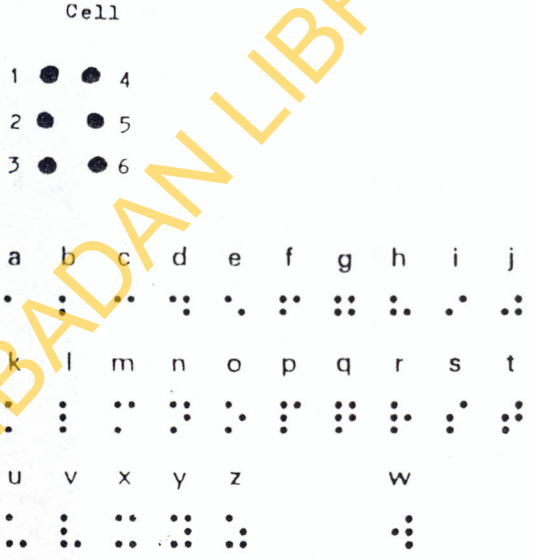
Informed parents should not dramatise the child's limitations nor avoid referring to his handicap, they should learn to talk about it freely and without exaggeration. The attitude of parents eventually communicate themselves to the child. The mother is the most important at this stage. Her attitude and the meaning of the defect itself to the mother are of extreme importance to the mental health of the child as negative attitudes lead to a decrease in the child's self concept.

MEANS OF REHABILITATION

There are many ways to help the blind if the individual is emotionally prepared to be helped, adaptation to the situation and readjustments are the beginnings of rehabilitation. To the blind, the knowledge that rehabilitation is obtainable is vital. The totally blind often have less difficulty in accepting the need for rehabilitation than do the partially blind as the latter group find it more difficult to accept the fact that their visual handicap is irreversible(5,7,8).

Figure 1

Braille alphabet



Rehabilitation is an activity to assist the disabled shift from a position of dependency to independence, inade-quacy to adequacy, psychological wreck to a self confident, happy contributing member of the society(3). The aim of rehabilitation is to acquire skills that will enable the individual integrate into the society, thus making the individual either self employed or employable. He is therefore able to contribute to the economic and social life of the nation, became a tax payer and not a consumer.

Rehabilitation is expected to be a team work. The team should consist of physicians, ophthalmologists, special educators, rehabilitation psychologists, physical and occupational therapists, social workers, braillists, orientation and mobility specialists.

Parents, teachers, family and society all have a role to play. Education however is the key to meaningful and successful rehabilitation and so education for the blind must be priority as it is indeed for the sighted. An educated disabled is certainly better material than his illiterate counterpart. It enables them to minimise

the effect of the disability and develop adequate powers and potentials.

Two basic problems confront the visually handicapped.

(a) Communication
(b) Mobility

DISCUSSION

Everybody knows the value of being able to read and write and this is what the visually handicapped cannot do. Blind children acquire the skill of speech and language just as normal children do, but cannot learn to read and write in this ordinary way. If they hope to depend just on what they can be taught by word of mouth, their educational gap will be so wide as to pose a serious problem to their progress in a very competitive society.

The blind owe their new lease of life in this regard to Lonise Braille(9), who opened the door to knowledge in 1925 to those who cannot see and brought with it inspiration, confidence and hope, where there was despair. It is based on the use of six embossed dots, arranged in 2 columns, left and right, and various arrangements of these dots form 63 characters (Figure 1). They are read by passing the fingers lightly over them, they include punctuation signs as well as mathematical codes and are so designed that they could be used to read music, maps, etc. It is still more superior to any other system for the blind in that it could be written.

Two methods are available for writing Braille:

(a) Handwritten Braille — a hand frame is used with a clamp for holding the paper firmly. A stylus is then used to push the Braille dot. This method is slow and laborious although cheaper and small enough to carry around.

(b) Machine produced Braille — this has 6 keys, one for each dot in the Braille cell. Types available include Stanisby B.M. (Britain), Lavendar and Perkins (USA), PAP Marburg B.M. (West Germany).

A recent innovation is the electronic IBM Braille typewriter with keyboard similar to that of the ordinary typewriter.

Duplicating machines (Thermoform duplicator) and printing press are also available. These are used in the production of books, examination papers, maps and diagrams (Geography and Biology).

Braille by automation — with the computer age, programme for automatically translating print into Braille have been developed and provide Braille feedback from standard tele-typewritten keyboard.

In these ways, the blind have access to all human knowledge through reading and writing.

Other resource materials available in communication and learning include:

- Conventional typewriters with large type print which are used by the partially sighted.
- Dictaphone — like cassette recorder but has more gadgets that enable the user to control the speed. It has earphones and typewriter attached.
- Cassette recorder — useful for teaching and learning situations especially in higher institutions. Used to record lectures, speeches, discussions.
- Optical aids used to increase the size of the image without using large print materials. Used mainly by the partially sighted. These include:
  - Stand or mounted magnifier
  - Hand held magnifier
  - Telescope (Galilean)
  - Projection magnifier
  - Closed circuit TV — consists of a small TV camera and an inexpensive TV monitor
  - Spectacle magnifier.
- Talking books — provides a simple tape player or a special record player which operate on very slow speeds. A large variety of books have been read and recorded into cassettes and phonograph records. These are mailed out at no postal charges. Journals and magazines like Newsweek are also read on these to enable the blind keep abreast of major developments in the world.
- Radio programmes, e.g. Washington ear, which devotes a few hours each day on a single radio station and reads the entire text of the daily newspapers.
- Audiocalculator — reads whatever is pressed out for the blind to hear and so he easily recognises when he makes a mistake in calculation.
- Braille watches and clocks — these are read by touch. Some talking clocks are also available which says the time once a button on it is pressed.
- Optacon — this is a reading machine which, when activated transforms letters into tactile symbols on the fingertips.
- Telephone with large numbers
- For the blind medical student or doctor, there are sphygnomanometer dials in Braille and stop-watches in Braille.
- Numerous domestic appliances are also available for the blind.

MOBILITY

In a narrow sense, as applied to the blind, it is the technique of moving freely, safely and gracefully in both familiar and unfamiliar environments, i.e. be an independent traveller(10). It is an important skill to learn and a tool for their rehabilitation. A blind person has to depend on his senses to maintain contact with the environment, the 2 most important ones are auditory and tactile. The blind person is full of fear of the unknown, fear of bumping into objects or falling down. Without mobility, he is affected adversely, psychologically, economically, as well as socially and so mobility helps him to gain some freedom.

The two most important mobility aids are
Long cane,
Guide dogs.

The long cane skill is easy to learn to use. The aim is to develop a tactile sense when using the cane to detect objects and obstacles(1). The cane should be one piece or collapsible, some are telescopic. The cane is individually prescribed by the mobility specialist as its length is determined by the user's height, his stride and comfort.

With a great deal of practice, they learn that the top of the cane sets up auditory vibrations from which they can judge distance and even shapes, location and quality of objects near them (like bats).

The disadvantage here is that objects shoulder or head high without ground support will not be detected by the cane.

Electronic devices could be built into canes or worn by the blind, e.g. Laser canes, Step-down detectors, Object detectors, Russel path sounders which are worn around the neck and emit sounds deflected by objects 6 feet or less away.

Guide dogs provide protection, speed and companionship for the blind. The dog is trained for 8 months before being allocated to any blind person. It is not trained to think and so cannot help his master function better in a strange world. It only obeys commands and its usefulness is therefore directly related to the competence of its master. The cane may be said to have the same set backs but it does not have to be fed, housed or taken to the veterinarian. Older people also have trouble with the dogs as one needs a lot of strength to hold them in check(13). They are most useful for students and professionals in good health who lead fairly organised lives. About 2% of blind people in USA use guide dogs. The blind must know by necessity where he is going and use the dog as a mobility aid to get there.

CONCLUSION

In conclusion, rehabilitation to the blind is an active process, starting with the sighted understanding the problems of the blind, and establishing means of helping the blind become an independent member of the society as much as possible.

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