

Occupational Therapy in Leprosy¹

Jal M. Mehta²

A great deal has been written about occupational therapy which is a science in its own right with wide applications. It has been confused with physical therapy, diversional therapy and vocational training. Quite often the work entrusted to a physiotherapist is partly that of an occupational therapist and vice versa. This happens all the more in leprosy because of the paucity of workers and the necessity to get diverse things done by a worker trained in one discipline only.

What is occupational therapy? It must be remembered that it is a rehabilitative procedure and ideally should be guided by a qualified occupational therapist, who, under medical prescription, uses self-help, manual, creative, recreational, social, educational, prevocational and industrial activities to gain from the patient the desired physical function and/or mental response. It aims at achieving improvement in muscle power, joint range, and functional achievement through purposeful movements and activities. If the patient is unable to achieve functional activity the therapist devises techniques to enable the activity to be accomplished.

The therapist thus makes functional assessment and contributes towards the total assessment of the patient. Repeated evaluation of functional capabilities provides an objective measure of improvement or deterioration, often not clearly interpreted from muscle power charts or joint range measurements. It is with this in mind that our unit has developed "Functional Testing for Vocational Training" (to be published in *A TEXT-BOOK OF LEPROSY* by Dr. Dharmendra).

Occupational therapy tends to be concerned with upper limb function. It also has a considerable contribution to make to lower limb function and in leprosy would embrace such specialized methods as protective footwear.

Many of the activities of daily living require a coordinated action of upper limbs, lower limbs and trunk. In leprosy these are not particularly affected and need not be stressed by the therapist except in the rare cases who have developed generalized body contractures and stiffness due to non use arising out of psychologic disorder.

Occupational therapy is not limited to diversional activities though these may be useful in the management of the more severely and chronically disabled. It is now a dynamic process and methodology which draws from many sciences and is concerned with the total approach to the patient. Emphasis should be laid on the functional assessment of the patients' capabilities. Practical functional assessment should precede the planning of the final stages of rehabilitation and resettlement, both in the home and in employment. Deformities in leprosy usually follow a set pattern. I have not reproduced here any special assessment charts which would be useful to the occupational therapist, physiotherapist and reconstructive surgeon alike.

The complete functional assessment of a patient must include psychologic, social, economic, educational, domestic, vocational and physical aspects of his state.

Physical treatment is closely associated with physical and functional assessment and all three form part of the total management of the patient. Within the rehabilitation team, therefore, there must be close collaboration with social workers, occupational psychologists and all other professions supplementary to medicine and involved in the total management of a patient in the community. Some institutions have used the title "Physiotherapy and Reeducation for Resettlement Department" instead of the usual title of "Occupational Therapy." In leprosy this is of significance as the stress should be more heavily placed on sensory loss, while in conventional occupational therapy the stress is placed on regaining motor power.

With the advent of rehabilitation those formidable "old days" are gone (at least in

¹ Received for publication 7 November 1974.

² Jal M. Mehta, M.B.B.S., Head, Department of General, Plastic and Reconstructive Surgery, Dr. Bandorawalla Leprosy Hospital. Address correspondence to: Dr. J. M. Mehta, Hon. President, Poona District Leprosy Committee, 593/2, Rasta Peth, Poona 411 011, India.

some areas of the world) and doctors are learning, somewhat reluctantly, that there is a phase of medicine beyond the so-called curative phase in which efforts are made to reintegrate both curable and incurable patients into society. Occupational therapy is the growing Cinderella of medicine and it is only relatively recently that its valuable applications, along with those of physical medicine, have been made available in a variety of conditions ranging from orthopedic to cardiac, cancer and psychiatric cases, with remarkable results.

Man's adaptability, as contrasted with the animal world of biologic adaptation, has become his supreme instrument of survival. True power consists in the mastery of oneself. The discoveries of technology are being more and more harnessed to rehabilitation; e.g., powered prostheses, electromyography in nervous disorders, computers in evaluating function and monitoring progress, and the use of electronic gadgets to study muscle movements, gait or weight-gearing. But rehabilitation, which is the ultimate goal of occupational therapy, cannot be left to medicine or to technologists: it involves the whole of society. To avoid the trap of narrow specialization, teamwork is essential to achieve maximum beneficial results. Though in occupational therapy we play with hands and feet, the "head" must also come into play and unless the patient is cooperative, well motivated and of good morale, beneficial and lasting results will not be achieved.

There is no room for boredom in occupational therapy. The therapist must be careful not to generate undesired dependence in the patient for this can lead to hostility and resentment. The therapist must quite often explore with the patient any suggestions the latter may have for his improvement, and the therapist must not hinder him. Only when the therapist and patient work together can rehabilitation be practiced more efficiently. The therapist must try and get maximum participation from each patient.

In leprosy there are no problems of spasticity, architectural barriers involving the handicapped, and affections of the trunk necessitating a complicated therapy. However, anesthesia of hands and feet and affections of the eyes cause problems unique to this disease. Motor paralysis can be treated by surgery and physical therapy, but we have no tool for treating sensory loss ex-

cept to rely on the inefficiency of the patient's ability to take care of his hands, feet and eyes.

The role of society. Though the personality of the doctor and other therapists and their handling of the patient can achieve a lot, it can be truthfully stated that the medical profession, aided by all other health professionals, has not been able to attain the desired goal—which is rehabilitation.

Health professionals can restore a patient's capacity to work and to carry out the activities of daily living, but it is up to society as a whole to satisfactorily reintegrate the patient.

Rehabilitation is not a medical but a philosophical and sociologic concept with political overtones. Difficulties are created in reintegrating the disabled into a society devoted to the pursuit of pleasure and materialistic goals.

In leprosy an additional factor of the utmost importance comes into operation: social stigma. It is a matter of grave concern that the social stigma of leprosy is so fearful and interferes with rehabilitation at each and every stage of its progress. Though we have a tendency to slight this phenomenon, we cannot, if we truly ask ourselves, deny that it is a factor of prime importance. Thus the occupational therapist must have the assistance and cooperation of the social worker if results are to be achieved. Public education is of utmost importance and more definite guidelines based on future research regarding infectivity and other factors of the disease must be publicly issued. Changing the attitude of society is a very difficult task but it can be made easier by actual demonstration that leprosy can be controlled and arrested. To help in the rehabilitation process, governments could issue clear instructions based on scientific opinion regarding medical fitness certificates issued to patients and on these depends the acceptability, or otherwise, of the patients into service by the employing agencies. To stress the role that society plays it is necessary to observe how many of the leprosy disabled who secure jobs in open industry due to the efforts of social workers, find themselves out of employment within a few months. Thus, quite often a rehabilitation program looks beautiful on paper, but a follow-up study reveals its failures.

The occupational therapist and social

worker are quite often ignorant of the available facilities as laid down by law or otherwise, and there should be a drive to keep them informed.

There is the need to make the utmost use of any potential available, even in a severely disabled individual. There is likely to be a trend to seek realistic goals, i.e., goals which appear realistic to those concerned with rehabilitation. This may lead to the client being inhibited by insistence of his advisors that his goals are not realistic.

Self-care. In leprosy (more than in most other disabilities), due to sensory loss, the patient must be taught and retaught the care of hands, feet and eyes until it becomes second nature to him. This aspect of self-care is stressed throughout treatment by the physician, physiotherapist, reconstructive surgeon and other members of the team.

The occupational therapist here has a special and definitive role to play as he is the member of the team who is responsible for developing the patient's maximum functional performance and is one of the last to come in contact with the patient before the latter's onward march to rehabilitation.

In our unit we have tried to keep the occupational therapy sections like normal workshops, with stress on self-protection for sensory loss and concentration on training in order to overcome physical handicaps (Figs. 1, 2).

Integration. Occupational treatment is normally given to leprosy cases in institutions designated for leprosy only. It would be much wiser to carry out this treatment for the noninfectious cases in centers meant for orthopedic and other disorders. This would help reduce the stigma and benefit both the leprosy and the nonleprosy groups by offering an opportunity to the occupational thera-



FIG. 1

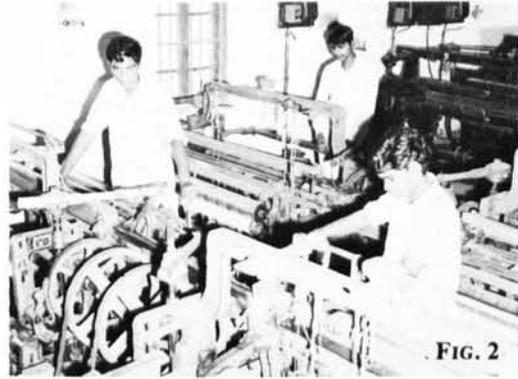


FIG. 2

pist to study the special problems of each group parallel to each other.

Occupational therapy may thus be prescribed in leprosy for one or more of the following purposes.

- 1) As specific treatment for restoration of physical function, to increase joint motion, muscle strength and coordination. This work must be as realistic as possible and related to the patient's work and/or hobbies.
- 2) To teach self-help activities concerned with daily living, such as eating, dressing, writing, and the use of simple adaptive equipment.
- 3) To teach homemaking with the use of simple adaptive equipment where necessary and give advice on work simplification.
- 4) To develop work tolerance and maintenance of special skills or learning new skills, as required for the patient's vocational training.
- 5) To bring about work adjustment with little loss in production.
- 6) To wean certain leprosy disabled persons from antisocial activities into which they may have drifted.
- 7) As prevocational exploration to determine the patient's physical and mental capabilities, social adjustment, interests, work habits, skills, and potential employability.
- 8) As specific treatment for a psychologically disturbed patient to structure opportunities for more satisfying relationships and to aid as a diagnostic tool.
- 9) As a supportive measure in helping the patient to accept and utilize constructively a prolonged period of hospitalization. This may be called diversional

therapy.

- 10) As a measure for an accurate assessment of the patient's ability for work.
- 11) Above all, to teach the patient to understand and learn how to protect anesthetic areas and at the same time make good functional use of limbs and eyes.

The patients that go to occupational therapy are, therefore, not only those having physical deformities. As the disease is quite often progressive, patients who have no motor or sensory loss would also benefit by attending the occupational therapy department, thus becoming well armed to meet the destructive effects of the disease, especially of sensory loss.

The occupational therapist must at least once a day make the patient do simple exercises of the hands, feet and facial muscles. He must himself examine and make the patient inspect the hands, feet and eyes before starting the daily occupational therapy session. At the end of the session it would be advantageous to provide the patient with water soaks and oil massage. Though, this is the work of the physiotherapist, it can also be done advantageously by the occupational therapist in order to impress upon the patient its supreme importance. The occupational therapist must also insist and see that the patient is never without the proper footwear.

Occupational therapy, vocational training and rehabilitation. Strictly speaking, occupational therapy need not concern itself with the other two moieties, but it is most essential to have a continuous link if our aim is to make the disabled patient once again a respected and useful member of the community.

It would thus be reasonable to devise occupational therapy by making use, preferably, of the vocations already known and practiced by the patient so that he can safely re-enter the respective professions. The occupational therapist with the vocational counsellor can decide in what areas the patient may be given training with a view to help him in rehabilitation. At times, in order to strengthen him economically, training may be provided in some craft in addition to his previous profession. It is gratifying to see how a leprosy patient who is multitrained and starts earning well, soon loses the stigma and becomes integrated into the commu-

nity. Economics is thus one of the main tools one can use to fight the leprosy stigma. Once a good earning capacity is restored, the patient gains back his self-confidence. Because of the social opprobrium it is quite often advisable to use occupational therapy to provide training which will allow the patient to settle into self-employment.

In our present world of economic self-interest and competitive struggle and wherein the aspect of "work ethic" prevails, an occupation leading to economic gain is still the basis of occupational therapy.

The type of work that can be offered depends largely on the local situation. If the institution is situated near a large industrial town it is usually possible to get profitable work in the form of contracts from local industry. If the unit is in the country some form of craft work may be necessary due to lack of industrial potential.

The activities involved in work for outside industry are well suited for quick restoration of hand function, but there are limitations when dealing with illiterate patients coming from a purely rural setting.

Occupational therapy must therefore deal with agricultural occupations for many patients (a large bulk come from villages) who during the therapy are gainfully occupied in farming by the traditional methods for which a suitable ploy of land is allotted. Here, the most important function of the occupational therapist would be to see that the patient does his work without damaging the hands, feet and eyes and that he uses micro-cellular rubber-covered implements when necessary. Change in his working habits brought about by continuous and diligent demonstration by the therapist may be very important in preventing tissue damage. It is often recommended that some rural crafts e.g., poultry raising, sheep rearing, keeping a piggery, etc., be taught side by side with these efforts. However, this can often be a waste of time as at times it is not possible for the patient to implement these crafts on returning to his village.

In our hospital we have found that tailoring and powerloom weaving (Figs. 1, 2), apart from farming, are useful methods for the conduct of occupational therapy.

The amotivational syndrome. Just as there is sensory loss in the limbs, some patients find that after being infected with leprosy their whole being becomes desensitized.

This causes them to lose all interest in life and though they require psychotherapy, many of them begin responding to a sympathetic occupational therapist. Here the therapist has to be slow, tender and understanding, and begins by allowing the patient to merely observe the others and gradually weaning him away from this frightful syndrome by recreational, diversional and other aspects of therapy.

Protective devices and special apparatus. Such devices are many and their main purpose is to protect anesthetic hands and feet. Many gadgets and light splints are devised to help the paralyzed hand. The pathologic changes in leprosy are such that once a certain and prolonged stage of nerve involvement is reached there is no recovery and any motor restoration is achieved by tendon transfer. The once established sensory involvement is such that there is very rarely any scope for surgical restoration.

Some special apparatuses developed by the surgical team at the Dr. Bandorawalla Leprosy Hospital, Kondhawa, Taluka Haveli, District Poona, Maharashtra, India are described below and shown in the accompanying photographs. Mr. W. H. Jennings, our physiotherapist, was mainly responsible for this work.

The Kondhawa cloth cutter (Fig. 3). A large pair of cloth cutting scissors is mounted on a wooden table. One blade of the scissors is fixed to the table and the other blade is mobile and is operated by a foot pedal and spring. Pressing the pedal with the foot brings the cutting edge of the mobile blade to meet the cutting edge of the fixed blade. This enables cloth to be cut. Releasing pressure on the pedal allows a spring to lift the mobile blade upwards by movement at its axis separating the cutting edges of the blades.

This device is of use to patients who cannot operate large tailoring scissors due to deformity of the hands. (For use of large scissors one must have normal digits for a good grip and wide range of movements.)

Knife and block combination for tailoring (Figs. 4, 5). A discarded surgical blade is attached to a smooth wooden handle to afford safety and convenience in slitting seams. A wooden block, rounded well on its upper side, is attached to one side (usually the left) of the sewing machine board by hinges from which it hangs loosely while not in use.

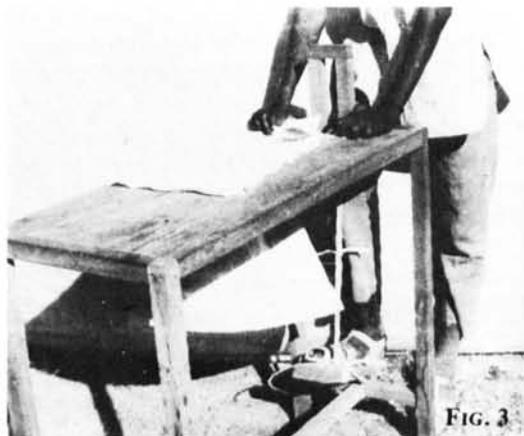


FIG. 3



FIG. 4



FIG. 5

When it is required for use it can be stabilized by a wooden peg, the rounded surface facing upward. This combination allows anesthetic and deformed hands to slit seams safely. The cloth is spread over the block of wood and the seam slit with the wood-handled knife. (Tailors normally slit seams by

spreading the cloth firmly over the index finger of one hand and holding a bare razor blade in the other. This is very dangerous for anesthetic hands.)

The Kondhawa cane holder (Figs. 6, 7). The holder is made of two blocks of wood, the moulded surface of one block fitting into the grooved surface of the other block, and both blocks are hinged at one end from which an arm protrudes from each block. The grooved and moulded surfaces afford a good, safe grip of cane during work. Cane work has sharp trauma potential and has always been considered unsafe for anesthetic hands. The cane holder affords safety while anesthetic hands are engaged in cane work. It can also conveniently be used by claw hands that cannot grip cane easily and also need protection.

The Kondhawa bullock cart plough (Figs. 8, 9). A wooden plough is mounted on a bullock cart in such a way that its blade can be lowered or raised by leverage. A sliding seat for the driver provides for distribution of weight. While driving to the fields the plough is raised and the driver, who also does the ploughing, sits in his seat which is slid well forward over the axis of the wheels. This avoids the strain of excessive back-load on the animals. Before ploughing his field the man first lowers the plough blade till it bites the earth and he fixes the plough beam rigidly with a bolt. Then he shifts his seat behind the axis of the wheels, the distance depending on the amount of back weight required to produce the necessary depth of furrows in the soil.

This cart has been devised for all those who have no other livelihood than agriculture but are unfit to engage in manual ploughing in which the farmer presses down the plough with his hands and feet, simultaneously driving the bullocks forward. Now there are plans to make this cart adaptable so that it can also be used for raking fields and sowing, and serve as a family transport vehicle when not required for agricultural use. The experiments are being conducted using the usual carts and ploughs available in the market.

Training and retraining to do a job in such a way as to cause no damage to anesthetic hands seems more important than the mere use of adapted tools. The hands must be carefully used and adapted to the work and the tools, rather than adapt tools to the

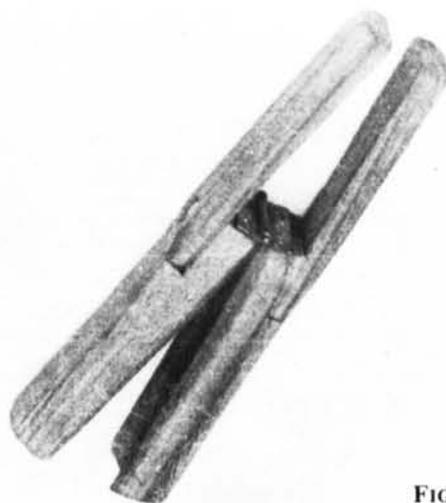


FIG. 6



FIG. 7



FIG. 8



FIG. 9

hands. This can come with meticulous training and by changing bad work habits.

The case for the feet is quite different and no suitable footwear which our farmers can and will use has yet been devised.

The patient who has a plantar ulcer strains to the utmost the ingenuity of the entire medical and rehabilitation team, and the occupational therapist will therefore have to pay special attention to such cases.

Occupational therapy can be used for indoor and outdoor patients. It may have to be modified somewhat when treating the two polar types of leprosy. Homemaking, especially cooking and handling of hot objects, must be taught to women patients so that they are able to do it without injuring their hands. The occupational therapist must see that patients attend the department properly groomed and those having facial deformity make it least obvious by simple concealment measures.

Recreational activities must not be forgotten especially for leprosy-affected children under treatment. The golden mean between work and play is recreation.

As it is difficult to get qualified occupational therapists, it is necessary for the established institutions to train persons in occupational therapy as related to leprosy so that they can go elsewhere and be useful in this area of need. Even the qualified therapist has very little experience in leprosy work and as such would need a course of orientation. Quite often the jobs of physiotherapist, occupational therapist and vocational counselor can be combined into one person.

Some new approaches. To overcome sensory loss, experiments are underway to prepare a hand glove from a thin comfortable durable material having the color of the wearer's skin which will afford protection to anesthetic hands during work without being clumsy and without hampering their already reduced functional capacity. Sensors are being implanted under the skin to act as warning systems in case of excessive external pressure. Various materials are used in the production of footwear for insensitive feet. Direct stimulation of muscles by implanted electrodes in nerve paralysis is being tried out.

All these technics can be assessed in the occupational therapy department and the occupational therapist can thus become a very important member of a highly techno-

logic research team.

It may be of interest to try direct suggestion under hypnosis to fortify the will of the patients to cooperate. This technic may turn out to be of great value in teaching and making patients rigidly observe the care of anesthetic hands, feet and eyes. After becoming anesthetic in some areas of the body many patients almost disown their limbs, treating them as inanimate objects. This could be cured through hypnosis.

It would be fruitless at the present stage for developing nations to follow too closely in the footsteps of the more advanced countries. However, as described in the dissertation above, occupational therapy can utilize simple technics in the amelioration of those suffering from leprosy, and thus it forms a major therapeutic measure even in developing nations.

In keeping with the primarily pragmatic purpose of this article, no bibliography has been given.

SUMMARY

This paper presents a broad discursive assessment of the philosophy and practices of occupational therapy as related to leprosy. It stresses the role of society, self-care by the patient, integration, vocational training, rehabilitation and the amotivational syndrome, and presents some illustrative original innovations. In conclusion some new approaches are suggested.

RESUMEN

En este trabajo se presenta una amplia evaluación discursiva de la filosofía y prácticas de la terapéutica ocupacional relativa a la lepra. Se da énfasis al rol de la sociedad, al cuidado por sí mismo de los pacientes, integración, entrenamiento vocacional, rehabilitación, y al síndrome amotivacional, y se presentan algunas innovaciones originales e ilustrativas. En conclusión, se sugieren algunos métodos nuevos.

RÉSUMÉ

On a procédé à un large tour d'horizon concernant la philosophie et les pratiques courantes de l'ergothérapie en ce qui concerne la lèpre. On a souligné l'importance respective des rôles joués par la communauté, par les soins que le malade s'administre lui-même, l'intégration, la formation professionnelle, la réhabilitation, et le syndrome amotivationnel. On a présenté certaines innovations originales à titre d'illustrations. En conclusion, un certain nombre d'approches nouvelles sont suggérées.