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**ABSTRACT**

This monograph describes community rehabilitation services available to persons with traumatic brain injury in Israel. Following a foreword by Leonard Diller which cites the incidence of traumatic brain injury and notes existing intervention models, an introductory chapter by Shlomo Katz and Victor Florian provides a historical survey of the evolution of these community rehabilitation services. Subsequent chapters provide descriptions of the services and programs. "A Rehabilitation Center for Veterans with Severe Brain Injury" (Shlomo Katz) describes the activities and procedures of a center guided by the principles of meaningful activity and autonomy. "An Integrative Rehabilitation Program for Traumatic Brain Injured Persons at the Loewenstein Medical and Rehabilitation Center" (Max Stern) discusses early and later stages of post-injury treatment, diagnostic methods, treatment philosophy, and treatment methods. "The National Institute for Rehabilitation of the Brain Injured" (Dani Hoofien and others) offers case studies to illustrate treatment at a public nonprofit organization administered by Israel's Defence Ministry and the National Insurance Institute. "The Neuropsychological Unit for Treatment and Rehabilitation, Givatayim, Israel" (E. Klag and others) discusses the conceptual framework and theoretical orientation of the unit, its approach to assessment and evaluation, intervention principles, family and social system dynamics, and structural features. "U.S. Commentaries" (Sheldon Berrol and Barry Willer) compares the rehabilitation approach of Israel with that of the United States. References accompany each paper. (JDD)

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An Overview of Programs and Services in Israel

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Monograph #50



Returning the Individual with  
Traumatic Brain Injury to the Community:  
An Overview of Programs and Services in Israel

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## Preface and Acknowledgements



We are pleased to be able to present this timely monograph as the 50th golden entry into the International Exchange of Experts and Information in Rehabilitation (IEEIR) monograph series. It is the outcome of the efforts of several individuals and organizations.

First, we would like to acknowledge the National Institute for Disability and Rehabilitation Research, whose funding has made the International Exchange of Experts and Information possible since 1978. It is their mandate that makes it possible for us to facilitate the exchange of ideas coming from other countries through the publication of a monograph series, as well as a fellowship program.

We would also like to express our appreciation to James F. Garrett, Ph.D. who originally conceived of this project and who has been involved in providing support for it through the World Rehabilitation Fund which was its home for twelve years.

Without the support of Bruce Mallory, Chairman of the Department of Education, as well as that of the Director of the Institute on Disability, Jan Nisbet, the project would not have been able to move to the University of New Hampshire.

We have been extremely fortunate to have had the interest, expertise and perseverance of the two editors: Shlomo Katz and Victor Florian, both of whom have been involved in other International Exchange of Experts and Information in Rehabilitation (IEEIR) activities, as well. The Israeli and American authors of the chapters and the commentaries have been able, through their various contributions, to present to the readers an extraordinary state of the art of community services for persons who have experienced traumatic brain injury in Israel and the U.S.

A very special thanks to Leonard Diller who prepared the foreword and who has been a special friend of the IEEIR since 1978.

Finally, I want to acknowledge our IEEIR UNH graduate assistant, Amy Brnger, who has creatively and persistently participated in preparing this monograph for publication. Kathleen Secret, of the University print shop, has also been very helpful to this undertaking.



We hope you, the readers, will find the efforts of all those mentioned above, in the form of this monograph, valuable to you in accessing useable information, fulfilling the mission of the IEEIR which is to promote the international exchange of ideas primarily for the benefit of the U.S.

*Diane E. Woods*

*Project Director*

**International Exchange of Experts and  
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## Foreword



**T**raumatic Brain Injury (TBI) is a staggering problem in the United States. Over 700,000 cases of TBI occur annually with 100,000 deaths each year and 70,000 to 90,000 people are left with permanent disabilities that would require rehabilitative measures. It is estimated that there is a prevalence of 1,000,000 to 1,800,000 cases in the United States. Traumatic brain injury is an epidemic in the United States resulting in a one-billion-dollar-a-year industry. Since it typically occurs in young people (15-30), those with permanent disabilities may live for many years burdening the individual, the family and societal institutions.

In relation to this growth, there are now more than 700 programs listed in the 1990 directory published by the National Head Injury Foundation. They are listed under a dozen categories, ranging from acute care to employment. Most involved the management of long term problems in the community. All of this growth has taken place during the 1980's. Despite the ferment in the field, there are few places in this country with a decade of experience in working with individuals with TBI.

During the early 1970's there were very few countries engaged in the active rehabilitation of individuals with traumatic brain injury. In part this was because traumatic brain injury was largely a wartime phenomenon until the rise of the high speed motor vehicle and the superhighway. In the United States, medical rehabilitation which grew out of World War II, was concerned with spinal cord injury and amputations, and distanced itself from involvement with disturbances in behavior and cognition associated with brain damage. Medical programs concentrated on motoric dimensions of activities of daily living. Vocational programs concentrated on counseling, work sample approaches, and job placement. The actual care and study of traumatic brain injury did not occupy a high priority. It is only very recently that state departments of health, and social and rehabilitation services have designated TBI as a separate, definable condition, requiring special consideration with regard to manpower and services.

During the 1970's the British played a great role in calling attention to traumatic brain injury with advances in research, while the Israelis advanced our knowledge of clinical management of people with hands on experiences since during

this time period Israelis were involved with continuing battles along their borders. Some were part of little known skirmishes, some were part of major wars (e.g., Yom Kippur War-1973). Their TBI population suffered not only from classical penetrating head injuries due to missiles, but also from head injuries due to driving at high speeds under conditions of poor illumination and moving soldiers and supplies under cover of darkness. Israel is a small country with an army composed of civilians who needed clinical attention. Injured veterans are treated as national heroes demanding a high priority for both services and research. Consequently, a great deal of thought and effort went into their care. A brief history of the evolution of how the Israelis developed their programs is presented by Katz & Florian who were there at the beginning and participated in the process.

Israeli programs take on additional meaning for the United States. One person who played an important role in pointing out that traditional models of rehabilitation were not appropriate was Yehuda Ben-Yishay. An American citizen and ex-soldier in the Israeli army, he was familiar with its health care delivery system and its population. He played a key role in initiating one of the programs described in this monograph. Based in part on these experiences, he set up one of the first programs to treat the combination of cognitive and behavioral deficits in order to facilitate living with the family and return to employment. He worked with individuals with traumatic brain injury who had failed to return to gainful employment following conventional courses of medical and vocational rehabilitation they were delivered in the late 1970's in the New York City area. This program is still ongoing and is recognized at a national level. Readers will be interested in examining the thrust of the original program which is described in chapter four by Hoofien, Becker, & Vakil as it is being delivered, some 15 years later. This model is now recognized and accepted in this country. Calling an individual who has suffered traumatic brain injury a trainee rather than a patient, as a reflection of a philosophy which was community-oriented rather than hospital-oriented, was an indication of the direction of the program. At that time, considerable effort was required to break down traditional patterns of service delivery including team structures and therapeutic techniques, and simply call to attention to the fact that people with traumatic brain injury could not be managed with conventional methods.

The other chapters are of equal interest because the authors have been in close touch with contemporary thinking in the U.S.A. (Shlomo Katz is a Ph.D. from

the University of Wisconsin and Yigal Gross played an important role in program development at the JFK program). Katz describes a novel adaptation of a sheltered workshop to address psychosocial as well as vocational needs for TBI. The description of the organization of the staff and clients in order to provide work which is meaningful and the attempt to foster self-actualization by providing clients roles in administration, decision making and daily operation of the center is a marked departure in dealing with these issues. By providing activities such as the inclusion of attendants in training in order to prevent burnout, one can see an approach to a problem of great importance as we examine healthcare outreach of hospital systems. The chapter by Stern is a good illustration of the evolution of a sophisticated multidisciplinary model under medical leadership to address ongoing long-term needs for outpatients. The day center program was changed to a day clinic to permit participants to shed their dependent status and engage in more productive activities for most of the week. Treatment is viewed as a supplement to the patient's experience of reality and is not a substitute for reality. Traditional therapies are refashioned to accommodate to the evolving needs of a community-based population. Changes in treatment techniques brought about by technology, e.g., the use of computers in cognitive remediation, are also described. Attempts to tackle different problems such as improving abstract thinking are described.

The final chapter by Klag, Gross, Ben Nachum, Moed, & Fishman is cast much more explicitly in a psychotherapy framework. Brain damage results in a fragmentation of the self-concept. Think of it this way. Most people, when asked to identify themselves (Who are you?), choose to identify themselves by their occupation or role. In the case of TBI, the premorbid self-concept cannot be squared with current realities. In response to the question, who are you, the individual with TBI has to integrate a pre and a post trauma experience. Traditionally, cognitive impairments are treated as deficits in isolated skills to be corrected or ameliorated in their own right. Hence the high incidence of denial and the difficulties in making cognitive retraining relevant and generalizable in people with brain damage. The authors propose that cognitive deficits be treated not as phenomena in their own right, but as sources of confusion to a person trying to make sense out of information and maintain a consistent self-concept. This point becomes the central focus of the entire rehabilitation program. The interventions which follow from this premise have traditionally been hard to implement in a practical way. Some of these interventions are spelled out in useful case illustrations. The aim is to help the person achieve coherence of

information and experiences. This goal is congruent with the classical work of Kurt Goldstein as far back as World War I. It is also up to date and fits with present day social psychologists who stress self-efficacy as a primary drive/incentive and learning theorists who have moved away from simple stimulus-response reinforcement theory to notions of intrinsic motivation.

In sum, these papers present not only useful models of how TBI programs designed to be community-based have evolved but the concepts in themselves are timely and stimulating. The recent directory of programs published by the National Head Injury Foundation, which lists hundreds of programs which present alternative patterns of treatment for community reentry, only reinforces the timeliness of this monograph. As we move in the 1990's towards shaping health services and rehabilitation systems which work and, in the absence of replicated bodies of scientific knowledge, it is helpful to learn how others have been dealing with these problems.

by

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# CHAPTER ONE

## Introduction

*Shlomo Katz, Ph.D.; Victor Florian, Ph.D.*



The purpose of this monograph is to describe community rehabilitation services available for persons with traumatic brain injury (TBI) in Israel today. These services evolved from public and professional attempts to find appropriate intervention techniques to help persons with brain injury lead relatively independent lives in the community. This introduction will provide a short historical survey of the evolution of these services in Israel with the following chapters providing a detailed description of these services and programs.

There has been an impressive increase in the number of professionals and programs serving persons with traumatic brain injury during the last two decades in Israel. As in other countries, the development of community programs for persons with traumatic brain injury in Israel was made possible only after TBI was recognized as a specific disability requiring unique intervention techniques developed specifically for this population (McMahon & Fraser, 1988). Prior to the establishment of these programs, the rehabilitation services were generally not equipped to deal with this particular population because of the lack of knowledge and understanding of the cognitive and psychosocial consequences of TBI.

Often persons with traumatic brain injury were treated according to the dominant symptoms which they presented. If the problems were essentially physical, these individuals were treated as if they were physically disabled with little attention given to the associated cognitive impairments. In cases where these persons presented severe behavior problems they were perceived as psychiatric patients. Consequently, persons with TBI were often placed in institutions for people with mental illness.

The perception of traumatic brain injury as a subgroup of other disabilities, as psychiatric illness or physical disability often led to misdiagnosis and placements which did not meet these persons' needs. Persons with TBI who were placed in rehabilitation settings with either a predominantly psychiatric or physical rehabilitation orientation, generally received such treatment as chemotherapy

and physical restoration. In these settings little consideration was given to the rehabilitants' neurological problems. These settings did not provide specific services such as like skills retraining, cognitive rehabilitation, memory training, and behavior management programs for persons who required these specific services due to brain injury. As a result, these persons received little help in their struggle to adjust to life in the community. Consequently, many of them were transferred to psychiatric institutions or nursing homes where they lingered untreated for many years. This often resulted in chronicity. In addition, those persons who did not have severe behavior problems were unable to function in the open job market or often had problems in dealing with family and other social issues because of the lack of appropriate community services.

An additional factor which had an impact on the development of community services for persons with TBI was the relative increase in the survival rate of persons with this disability. Due to advances in medical technology, neurosurgery, and physical treatment, 60% of persons after brain injury now survive, compared with 15% a decade ago. This increase in the numbers of persons who survive with brain injury required that rehabilitation services find solutions for these persons' problems.

One agency that was faced with an ever increasing number of persons with TBI as the Ministry of Defence's Department of Rehabilitation which is responsible for the rehabilitation of veterans. This problem became more pressing after the Six Day War and the war of attrition that followed upon the conclusion of that war. The Ministry of Defence's Department of Rehabilitation found itself with additional numbers of veterans with traumatic brain injury who required extensive rehabilitation services to find their niche in society and employment commensurate with their abilities. Although these veterans' disability pensions were generally sufficient to satisfy their economic needs, many of them were unable to leave their homes or immediate community and, therefore, led restricted lives and were a burden on their families. Many of these veterans had severe behavior problems which increased the level of domestic stress. These veterans with head injuries and brain injury and their families requested with increasing urgency that the Ministry of Defence's Department of Rehabilitation find solutions for their problems. It was clear that hospitalization in psychiatric hospitals and nursing homes were not appropriate responses to these persons' request for help (Gur, 1990). A solution that appeared promising was the setting up of community-based sheltered employment workshops and intense treatment programs specifically designed to meet this population's needs.

In 1972, the Ministry of Defence's rehabilitation department initiated a request to the psychology department of Tel Aviv University for help in setting up a community treatment and research program for persons with brain injury (Gur, 1990). The request was for a service that could help alleviate some of the severe behavior problems manifested by the brain-injured veterans and develop treatment methods appropriate for this population. This service, which was situated at the university, offered cognitive therapy, family counseling and individual and group psychotherapy. These services were provided by a small unit for a limited number of difficult cases. This unit constituted the first community-based program that attempted to combine cognitive therapy with other intervention techniques to alleviate the multifaceted problems that characterize the situation of these persons with severe brain injury and their families.

The unit at Tel Aviv University was research oriented and served persons whose brain injury had resulted in severe cognitive and behavior problems. Therefore, it was not set up to help large numbers of persons with TBI or treat other veterans whose brain injury was accompanied by less severe behavior and cognitive disabilities and whose main problems were unemployment and social isolation. In December of 1972, the Ministry of Defence's Department of Rehabilitation requested help from the rehabilitation psychology program of the Department of Psychology at Bar-Ilan University in setting up a research project to investigate the feasibility of a service for brain injured veterans who were living at home but were unable to return to their former place of employment and had not found alternative employment in the open job market. A rehabilitation center was set up in the Tel Aviv area whose purpose was the provision of sheltered employment and recreational services for this population. Initially, the center was part of a research and demonstration project that evaluated the efficacy of the center both in improving the functioning of these veterans and their families in a number of significant areas of activity and in improving these persons' and families' quality of life. On the basis of the positive results of this research (Katz, Galatzer, & Kravetz, 1978), it was decided to retain the center as a permanent service for this population of veterans.

The 1973 Yom Kippur War significantly increased the need for community programs for veterans with TBI. As a tragic consequence of modern weaponry, a fairly large number of soldiers sustained head injuries and, therefore, required extensive rehabilitation services. Three additional community programs were initiated to serve these veterans. These were (a) a day center at Beit Loewenstein



Medical and Rehabilitation Center (b) The National Institute for Rehabilitation of the Brain Injured, and (c) the Unit for Neuropsychological Treatment and Rehabilitation.

Beit Loewenstein is a major rehabilitation center which is sponsored by the Worker Fund's health insurance program. It provides a wide spectrum of medical, psychological, and social rehabilitation services for a variety of physical disabilities resulting from paraplegia, amputations, cerebrovascular accidents and cervicocranial injuries. After the Yom Kippur War Beit Loewenstein became the main medical center for the hospitalization and rehabilitation of persons with TBI. This was a natural choice because the center had acquired experience in developing specialized treatment programs for persons with TBI especially with regard to the acute stages of the disability (Najenson, Mendelson, Schechter, David, Mintz, & Groswasser, 1974).

This concentration of persons with TBI at the Beit Loewenstein Medical and Rehabilitation Center required the establishment of new programs to meet the needs of these persons. An extensive multidisciplinary program was initiated which with time developed into a center for day care service. In the past, these persons had often been hospitalized for long periods so that they could receive extensive and comprehensive treatment. Since hospitalization usually does not encourage independence, providing this treatment as part of a lengthy hospitalization was often detrimental to these individuals' successful rehabilitation. The day care center for persons with TBI was set up so that these people could continue to receive rehabilitation services while living at home and adjusting to their new realities. These services were aimed at helping persons with TBI and their families cope with the difficulties associated with reintegration into the family and the community. These services also helped to prepare them return to the world of work whenever such an outcome seemed possible. This day center was the prototype of the services that will be described in chapter three.

After the Yom Kippur War, the Rusk Institute at New York University offered assistance to the Ministry of Defence in developing treatment programs for brain injured veterans. This offer was accepted and Professor Yehuda Ben-Yishay of the Rusk Institute came to Israel with a number of his New York staff to help set up community programs for the rehabilitation of veterans with brain injury. The original proposal which was once again initiated and sponsored by the Ministry of Defence's Department of Rehabilitation was to establish two parallel programs, one at the Beit Loewenstein Medical and Rehabilitation Center and the

other a community-based program at Beit Halochem, a recreation and treatment center for disabled veterans near Tel Aviv. However, the proposed program was eventually modified and instead of the parallel programs two independent rehabilitation programs for veterans with brain injury were developed. One was the program at Beit Loewenstein and the second was located at the Beit Halochem recreation and treatment facility.

The program at Beit Halochem was set up in 1975 by part of the staff from the previously described program at Tel Aviv University which had meanwhile ceased functioning. Professor Ben-Yishay spent a year training and supervising the team working on the project which was an intensive community-based program along the lines found today at the Rusk Institute and other centers throughout the world. The Beit Halochem program eventually evolved into the National Institute for Rehabilitation of The Brain Injured which will be described in chapter four.

The National Institute For Rehabilitation of the Brain Injured has recently taken over professional responsibility for another community-based program in Haifa which was set up to serve persons with brain injury who reside in the northern part of the country. This program was initiated in 1981 as a joint venture of the Ministry of Defence's Department of Rehabilitation, the National Insurance Institute and Keren Mifalei Shikum. The latter organization is an affiliate unit of the Ministry of Labor and Social Services and is responsible for setting up and maintaining vocational evaluation centers and sheltered workshops for persons with a variety of physical, emotional, and social disabilities. The initial group of persons with TBI served by this center included both veterans and civilians. The program for these persons was set up as part of the Ministry of Labour and Social Services' evaluation center in the Haifa area. These brain injured persons, in addition to participating in the general work experiences provided by the center, took part in separate treatment programs especially designed to deal with sequelae of the brain injury. This cooperative arrangement was recently terminated and the unit for persons with brain injury has become an independent community service which is managed by the National Institute for Rehabilitation of The Brain Injured and funded by the Ministry of Defence. This service will be described in more detail as part of chapter four.

The last chapter will describe the services provided by the Unit for Neuropsychological Treatment and Rehabilitation. This community project was set up in 1977 to meet the needs of persons with brain injury for whom the

existing services were inappropriate. The founders of this service were originally staff members of the project at Tel Aviv University and Beit Halochem who joined together to set up this program. Psychologists involved in the program at Tel Aviv University were asked to continue seeing their patients on a private basis when the project at the university was terminated. This private treatment program provided the basis for the opening of the unit which also received help from the Ministry of Defence's Department of Rehabilitation. The persons with brain injury initially served by the unit were rehabilitants whose behavioral and communicative dysfunctions rendered them unsuitable for the structured programs then available. On the other hand, patients who were employed, but because of cognitive or emotional deficits, required treatment in order to help them cope and maintain their employment status (Klag & Moed, 1990).

All persons with brain injury in Israel are eligible for services provided by the various rehabilitation agencies. Three principal pieces of legislation form the legal foundation for the provision of rehabilitation services to persons with disabilities: The Compensation and Rehabilitation for Disabled Veterans Act of 1949, The Work Accident Act of 1954, and the General Disability Act of 1974. Whereas the Department of Rehabilitation of the Ministry of Defence is charged with carrying out the mandates of the first act, the rehabilitation branch of the National Insurance Institute is charged with carrying out the latter two acts.

The legal distinction between the status of persons disabled as a consequence of military service and the status of persons disabled in civilian circumstances is ingrained in rehabilitation in Israel. In this way, the nation honors those who paid an extreme price to carry out its missions. The eligibility criteria for services by the department of rehabilitation of the Ministry of Defence are: injury or illness incurred during military service.

Civilians with disabilities are served by a number of agencies. The rehabilitation department of the National Insurance Institute serves persons injured in work accidents, those injured in acts of terrorism, and widows due to spouses' work accidents. These persons are entitled to rehabilitation services to enable them to return to work. In addition to the above mentioned agencies, services are also delivered to the general public by rehabilitation agencies established by special legislative amendments within different government ministries.

The Department of Rehabilitation of the Ministry of Defence is currently serving 1,092 veterans with brain injury of whom 688 are classified as being mildly brain

injured, 225 with moderate brain injury and 179 as having severe brain injury. The National Insurance Institute estimate that out of a total population of approximately 50,000 persons receiving disability pensions, 1,400 (2.8%) are classified as having some form of TBI. These persons were injured either at work, as a result of terrorist activity, or as a result of traffic and other kinds of accidents.

## Summary

The need to help disabled veterans has always been an important motivation for the establishment of rehabilitation services. Both in Europe and U.S.A., the aftermath of the two world wars with the resultant large number of disabled veterans provided the impetus for the initiation and expansion of services for persons with disabilities (Oberman, 1965). Because Israel has had prolonged severe security problems, disabled veterans have a special status in Israeli society. As a result, the ministry responsible for the rehabilitation of this population has often played a pioneering role in the establishment of new innovative services. The rehabilitation services provided for this population are among the best in the country. The Department of Rehabilitation of the Ministry of Defence played a particularly central role in establishing a variety of services for persons with TBI and was responsible for nearly all of the community rehabilitation services available for this population in Israel today. Without any doubt the fairly extensive community services available today for both military and civilian brain injured persons is the result of the initiative and funding of the Ministry of Defence's Department of Rehabilitation under the directorship of Mr. Arye Fink.

This monograph is dedicated to the rehabilitation professionals serving in this department and in the rehabilitation centers described in the following chapters, as well as to the persons with traumatic brain injury and these persons' families who are served by these professionals.

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# CHAPTER TWO

## A Rehabilitation Center for Veterans with Severe Brain Injury

*Shlomo Katz, Ph.D.*



### Introduction

This chapter will describe the activities and procedures of a community rehabilitation center for veterans with severe brain injury. The center is a combined venture of the Ministry of Defence's Department of Rehabilitation which provides the funding and the rehabilitation psychology program of the Department of Psychology at Bar-Ilan University which is responsible for the administration and professional supervision of the center. An advisory committee made up of representatives of the Department of Rehabilitation of the Ministry of Defence and the Department of Psychology at Bar-Ilan University provides administrative and professional guidance with regard to policy decisions.

The main purpose for the establishment of the center in 1973 was to provide these veterans with severe TBI who received maximum financial benefits from the Department of Rehabilitation but whose quality of life remained poor, with a community service that would be capable of satisfying their needs. It was felt that a modified rehabilitation workshop might be an effective means for attaining this goal. Two principles: (a) meaningful activity and (b) autonomy, were the guidelines for the development of the workshop program and for the workshop's ongoing functioning.

The first principle, meaningful activity, relates to the need to provide work and other activities that allow the rehabilitants to make meaningful use of their personal and social resources. Many of these veterans had been employed for years prior to their injury and in some cases had held senior positions in private and governmental organizations. Others had been studying at universities or were planning on undertaking such studies after demobilization. Although these veterans were now functioning at a lower cognitive level as a result of the brain injury, they still appeared to desire work and intellectual activities which would

help maintain their self-esteem and provide a means for self-actualization. Therefore, this workshop and rehabilitation center had to be different from the traditional sheltered workshop which generally serves persons with developmental disabilities or severe physical disabilities who have often never been employed. In addition, some of the veterans who were candidates for the center had been previously referred to existing sheltered workshops which had not been able to satisfy their needs for self-esteem and self-actualization, and subsequently they left these workshops. Therefore, the center had to provide these veterans with work and other activities that would satisfy their unmet needs.

The second principle, autonomy, relates to the programmatic and psychosocial effort invested in encouraging these veterans with brain injury to participate in the administration, decision making, and daily operation of the center. This application of the principle of autonomy was based on the assumption that encouraging the rehabilitants to accept these responsibilities would help in making the activities more meaningful and, thus, would help the rehabilitants regain their dignity and self esteem.

### The Rehabilitants

The center serves veterans with severe TBI who are referred by the rehabilitation department of the Ministry of Defence. Initially, the referrals were people who, prior to their referral, had experienced failure in other sheltered workshop setting and were unemployed, living constricted and non-productive lives. Their low vocational and social status and their low level of life satisfaction were not only a source of distress for the individual, but also gave rise to family conflicts. Another client population from which the center received referrals were veterans with TBI who, because of severe behavior problems, had been institutionalized in psychiatric hospitals for extensive periods of time. Some of these veterans had spent as long as 20 years in these hospitals.

Now, rehabilitants with severe brain damage are referred to the center on discharge from hospital after completion of an extensive medical, psychological, and cognitive treatment process. The community programs that will be described in the following chapters also refer rehabilitants to the center. The latter referrals are clients who were deemed non-teasible for employment in the open job market after completion of the community program and follow-up process.

The rehabilitants differ from each other with regard to the severity of the disability, date of onset, cognitive deficits, emotional problems, personality, age and family status and their expectations from treatment and perceptions of their disabilities. However, they are all severely disabled in some area of functioning and they all share relatively severe social and vocational handicaps. Many of them had been rejected by their families, are divorced or are an extreme burden on their families because of their need for constant supervision and care.

At present, 41 male veterans ranging in age from 21 to 61 attend the center five days a week. All of these veterans had experienced some brain injury and receive disability pensions that are generally sufficient for their own and their families' support. In addition, all their medical needs are provided by the Department of Rehabilitation and they are connected to a medical follow-up program to which they can be referred if necessary. Consequently, the motivation to participate in the activities of the center is probably not financial but for the satisfaction of other needs.

### The Center's Activities

The center was set up with the purpose of providing the veterans with a vocational and social framework that would satisfy their needs and improve their functioning in a number of life areas (Katz, 1984; Katz, Galatzer, & Kravetz, 1978). The assumption was that in an environment requiring autonomous responses, basic human needs most clearly emerge and, therefore, can be optimally satisfied. The center's goal was to create a sheltered environment that is sufficiently challenging to provide opportunities for satisfying a number of the rehabilitants' basic human needs. Maximum freedom of choice is allowed and is hypothetically aimed at providing each rehabilitant with the opportunities and stimulation to take as much responsibility as possible for their own life and actions. The graduated psychosocial and vocational tasks are set up to assist the rehabilitant to achieve a greater understanding and awareness of themselves, their needs and abilities and how these needs can be met. This is a step toward giving them back some self worth and the feeling of accomplishment.

The activities of the center are divided up into a number of activity areas as set out in Figure 1. Each rehabilitant is free to participate in these activities according to their needs and abilities and in coordination with the staff.



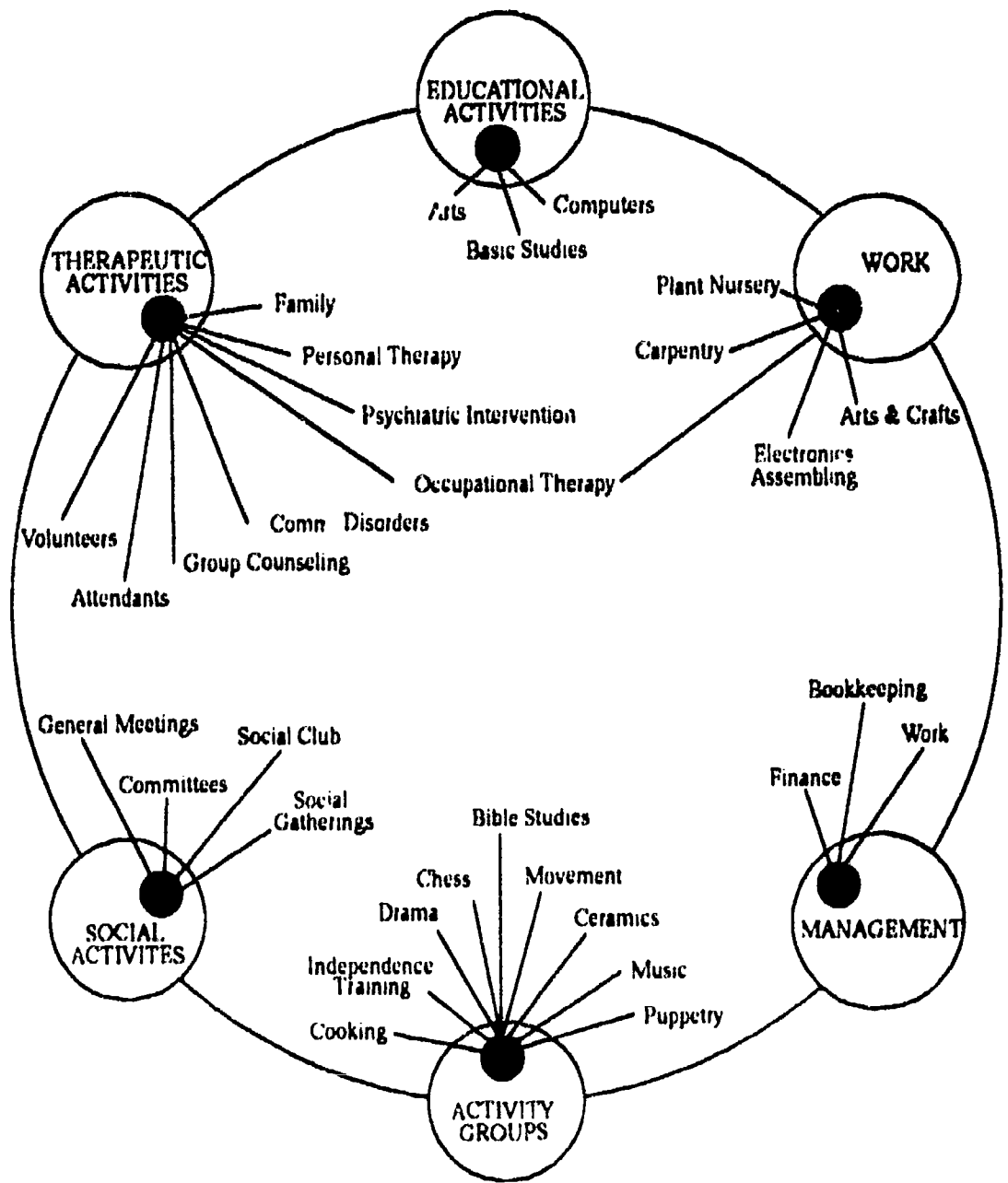


Fig. 1. The Activities of the Rehabilitation Center for Brain Damaged Veterans

## Vocational Activities

From the onset, work was not only perceived as valuable in itself, but also as an educational tool with implications for stages of an individual's accommodation to the center. Work was seen as a method for the resocialization of the individual, and for the teaching of the skills required to benefit from the center. Vocational activity was structured to generate intrinsic motivation, identification with the work tasks and the center, and the willingness to initiate activities and to become involved with different aspects of the center's program. The difficulties created by the severe physical problems of the rehabilitants relevant to the programming of vocational activities were less troublesome than were the difficulties that arouse from cognitive, emotional and motivational problems. Vocational programs were developed that use work to attempt to limit the emotional damage and behavior problems, to improve imagination, and to foster creativity and ambition. Staff sought methods to use work as a treatment mode to improve the quality of life of these rehabilitants and to help them achieve normal patterns of life within the limitations of a severe disability.

"Orderly conduct" is often cited as essential for any educational, social or personal achievement, but when it becomes the major goal of a psychosocial intervention, other more important goals may be endlessly deferred, or totally neglected and a rehabilitation workshop may become a second-rate industrial workshop, with neither the potential for economic gains, nor the potential to enable social and personal growth. As Power and Marinelli (1974) state "because of the need for systematic routine activities, many workshops create an atmosphere of low expectations and as such, the disabled are only contained in their weakness. . . ."

We were aware of the problems faced by other workshops where monotonous work had become the routine. Although productivity was often publicly claimed to be a means of achieving the goals of rehabilitation, it has often come to dominate the workshop's decision making (Wolinsky & Kase, 1973). Therefore methods of organizing the work were sought which would help to overcome these problems. The workshop's vocational activities were organized so that the rehabilitants could let staff know both informally and formally whether they were dissatisfied with any tasks.

### *Work Stations: Group Leaders*

Work stations were set up consisting of three to four rehabilitants. Each work station elected a group leader and was responsible for assembly of a product. Within each group tasks were allocated according to ability. The work leader was responsible for the smooth running of the work station quality control and discipline. At first the functioning of these work stations was dependent on the professional staff, but slowly the individuals in the stations began to function with only minimal guidance from staff. This transition from relative dependence to relative independence was a slow process, but one which had a profound impact on the work stations and on the rehabilitants who were employed by them. This impact manifested itself in a number of areas.

1. The rehabilitants initiated a system of rotation by which they would move from one work station to another as required to facilitate production.
2. The rehabilitants developed an operational interest in improving production by reducing problems, faulty components, inadequate tooling, and incomplete work.
3. The rehabilitants assumed the tasks of supervising, helping, and encouraging those rehabilitants who were poor workers or who required close and constant supervision.
4. The rehabilitants undertook the adequate maintenance of tools and the supply of raw materials required for production and offered advice and consultation to the staff on the kinds of jigs required for the various work stations.
5. The rehabilitants were responsible for quality control and the checking of the finished product before dispatch to the contractors.
6. The rehabilitants became involved with the administrative work associated with putting together the various components, such as monthly accounts, billings, production statistics, stock control, and the banking of payments received for the work.

At present, this system of work stations continues to function in more or less the same manner as it did initially. The staff encourages personal initiative and group or individual suggestions for change and improvement. Struggles for leadership are tolerated and individual acceptance of responsibility is encouraged, even

when the struggles and individuality created group friction. These struggles often strengthened the group as a whole and, in the long run, the awareness of the responsibility of each individual for his group and the center.

### *Type of Work*

At first the center only assembled electrical components under sub-contract for a number of factories. The work consisted of the assembling of switches, timers and control apparatus which required both manual and tool activities. With time it was found that this type of work was not sufficient to meet the needs of the rehabilitants if we wished to make use of their maximum potential. Furthermore, a number of rehabilitants demanded more complicated and stimulating work. It was decided to look into the possibility of including some kind of manufacturing task. Under the initiative of the occupational therapist a new department was opened. This department produced children's lampshades, mobiles, and various puzzles and games which were sold to stores. The next step was the opening of a carpentry shop where bar stools, artists' easels, small pieces of furniture and other items were produced on a contract basis for a number of permanent customers. In addition any furniture repairs required at the center began to be carried out in the carpentry shop. A new source of work activity was a nursery where shrubs and plants are grown and sold to the public. Silk painting is presently being investigated as a possible source of work for a number of rehabilitants. After discussion with an appropriate staff member, rehabilitants can change the kind of work they perform or they can work part of the day in one area and in another for the rest of the day. Generally new rehabilitants work for trial periods in a number of areas until they find tasks that are satisfying and interesting. In some cases the occupational therapist uses the work station as an individual training program for a new rehabilitant who requires individual attention.

For a number of years, the rehabilitants received payment for their work at the center. These payments were determined by an ad hoc wage committee consisting of three rehabilitants. Membership on this committee was rotated every month. Three criteria: attendance, perseverance and productivity were used to determine each rehabilitant's monthly wage. A more detailed description of this method is presented by Katz, et al., (1978). As the number of rehabilitants increased, this procedure became too unwieldy and the rehabilitants eventually decided to do away with it. Currently, the remuneration received for the work carried out in the center is placed in a common fund which is used to pay for day and overnight trips and social activities and parties at the center.

## Educational, Avocational, and Social Activities

The guidelines for setting up the center were derived from a broad re-conceptualization of the functions and goals of the traditional rehabilitation workshop. Within this re-conceptualization, provision of vocational opportunities is only one of the means used to achieve its overall goal of improving the quality of life of the rehabilitants. Prior to injury, many of the rehabilitants were professionals or university students whose intellectual abilities were generally high. As a result of the brain injury, their intellectual and cognitive abilities are lower, however, many of them still express the need for intellectual and cognitive stimulation, which seems extremely important for their feelings of self-esteem and general life satisfaction. Consequently, in addition to work, educational and other activities were introduced into the center's program to satisfy these needs.

The work day begins at 8:00 a.m. and at 10:30 a.m. there is a coffee break for an hour. The coffee break, in addition to providing an opportunity to have coffee and a light breakfast, is also used to foster interpersonal interactions. Games such as chess, dominoes, and Chinese checkers are available and the rehabilitants are encouraged to take advantage of the games and participate in these activities and other informal social activities. Rehabilitants who are not familiar with games are taught how to and encouraged to play. These activities are a break from work and provide cognitive stimulation and opportunity for the development of socialization skills. These informal activities are especially important for new rehabilitants, since they are an important means of becoming acquainted with the other rehabilitants and, thus, facilitate their integration into the workshop.

In addition to these informal social activities, each rehabilitant is encouraged to participate in a number of more structured learning and activity groups. These activities are presented in Figure 1, and may be carried out in small groups, in pairs, or individually, depending on the type of activity and the individual needs of the particular rehabilitant. A small study group consists of up to four rehabilitants who meet to discuss and study a subject which is of interest to them. Teachers are available who act as guides, fostering interaction, but placing more and more responsibility on the members of the group. In some cases a rehabilitant will work with another rehabilitant on a specific problem. For example, a rehabilitant with a speech problem, in addition to formal speech therapy, will be encouraged to practice with another rehabilitant what he has learned during

therapy. These activity groups foster help-giving and mutual support and a willingness to think about others. Thus, the groups may tend to diminish the self-centeredness that may be sometimes characteristic of persons with brain injury.

Offering a variety of activities increases the probability that each rehabilitant will discover an area of interest that is both commensurate with his abilities and satisfying. In addition, the rehabilitant and the staff sometimes discover strengths of which neither were aware. Thus, a rehabilitant who participates in a painting group with the art therapist might realize that painting is an enjoyable and satisfying activity. The art therapist might discover that the rehabilitant has artistic potential and, therefore, may encourage him to continue painting and even to enroll in a painting course in the community. As a result of such exposure and experience, artistic endeavors have become a significant activity for a number of rehabilitants and have had a profound impact on their self-esteem and behavior. With time, a number of rehabilitants have shown their art work in exhibitions organized for this purpose. The drama and puppetry groups have also performed before invited audiences during various social gatherings organized by the social committee.

In a number of cases, participation in an activity group has resulted in the acquisition of certain vocational skills which allowed the person to then use them in the open job market. Such an outcome occurred in the area of computers. A rehabilitant who had never been involved with computers became interested in them and with time demonstrated an ability to work with them. This rehabilitant subsequently learned a program which is used in auto repair shops. As a result he was placed in a job where he could use these skills. The educational activities, in addition to their enrichment role, are also geared to improving functional day-to-day skills. Thus, arithmetic is taught to help with the family budget or to help one's children with their homework.

This encouragement to express and use residual abilities that satisfy needs is an important facet of the activities of the center. It has been demonstrated that these activity groups can play a significant role in modifying inappropriate behavior and improving the self-image of the rehabilitant. They are also a source of positive feedback from the family and the environment.

### Therapeutic Activities

The center provides a range of therapeutic activities to deal with the problems of the rehabilitants and their families. These include individual counseling,

cognitive therapy, family therapy, marital counseling, psychiatric interventions, speech therapy, and group counseling. A consulting psychiatrist is available once a week to monitor the behavior and the reactions to the medications which have been prescribed for persons with severe behavior problems.

The center has an important role of providing the rehabilitants' families with ongoing support and counseling. Over the years various groups have been organized for the families. Two very central examples of these groups are: groups for parents of unmarried rehabilitants and groups for the wives of the married rehabilitants. In both of these groups problems related to the rehabilitants' functioning and activities in the home are discussed. These groups have an additional function, that of providing the parents and wives with a support group and an opportunity to learn from each other ways of dealing with the mutual problems that arise from having a severely disabled brain-injured person at home. In addition to the group work with families, the social workers at the center maintain ongoing contact with the families to obtain feedback from them and to provide support and counseling when necessary. Part of this ongoing contact with the families includes periodic visits to the rehabilitants' homes and the participation of the families in social events at the center. Even years after the injury, parents and wives often continue to require supportive and counseling services.

A number of severely disabled rehabilitants require the assistance of attendants in the activities of daily living. In some cases these attendants live with the rehabilitant in an independent living arrangement. The staff at the center provide ongoing individual support and supervision for these attendants. Experience has demonstrated that this support and supervision for attendants is extremely important in preventing burnout.

The rehabilitation center sees its role not only as providing a place of work for the rehabilitants, but also as a source of support, guidance, and therapeutic intervention for many aspects of the rehabilitants' lives. Therefore, these supportive and counseling services are an integral part of the services provided by the center.

## *THE CENTER'S ADMINISTRATION*

### *Sharing Management Responsibility*

The philosophy of sharing responsibility with the rehabilitants for the manage-

ment, decision making and smooth running of the center is expressed in various ways. Three rehabilitants are elected by their fellow rehabilitants to serve as a social committee and to act as a liaison between the rehabilitants and the staff. The functions and responsibilities of this committee are:

1. *To ensure the smooth running and responsible management of the work stations.* One member of the committee is responsible for making certain that an adequate supply of raw material is available and that the finished products are sent off on time to the suppliers and that payment for the work is received. This includes taking care of the orders and delivery of goods and products and bills associated with the work. The committee visits factories together with staff to ascertain whether a particular factory can provide appropriate work for the center.
2. *To deal with interpersonal conflicts and disciplinary problems that arise among the rehabilitants.* The committee deals with complaints against a particular person who is not pulling his weight or is causing disruptions and takes disciplinary action against these individuals if the complaints against them are found to be justified. This disciplinary action can take the form of suspending the person from the center for a period of time or the payment of a fine for inappropriate behavior or damage to the center's property. The committee can grant special leave requests for leave of absence or permission to come to work late. The social committee also assigns such tasks to various rehabilitants as the responsibility for the laundry, buying groceries, and washing the cups after the coffee break.
3. *To organize gatherings.* These gatherings include parties for families and friends and trips and outings for the group.
4. *To manage the finances of the group.* One member of the social committee has the right to sign checks and thus takes care of the group's bank account, keeps the books and controls the expenditures of the rehabilitants' activities.

Once a month all the rehabilitants meet to discuss problems either related to the group as a whole or to particular individuals. The social committee raises issues at these meetings for group approval or decision making. During these meetings, the rehabilitants have an opportunity to take responsibility for the workshops by expressing their opinions and voting on issues.

It should be mentioned that this sharing of responsibility was a process which was



developed over a number of years. In order to facilitate this process, the social committee meets with the professional staff periodically to discuss problems and to make suggestions for change.

### Organization of Daily Program

Each rehabilitant has a daily schedule of activities which is displayed on a special bulletin for this purpose. In this way each rehabilitant knows where he should be at any one time during a particular day merely by looking at the bulletin board. However, some rehabilitants have a little wallet in their pocket with their timetable to which they can refer if necessary. If a rehabilitant is unable to read or is disoriented, one of the members of the social committee will remind him of his scheduled activity and send him to the appropriate activity. In this way, the staff can also supervise the daily activities of the rehabilitants. The rehabilitants attend the center five days a week, Sunday to Thursday, from 8:00 a.m. to 2:00 p.m. Transportation is provided to and from the workshop for most rehabilitants. In some cases the families are responsible for arranging the transportation of the family member.

### Professional Staff

At present, the professional staff consists of the director of the center, a half-time rehabilitation psychologist, two work supervisors, three teachers (computers, art, general), a social worker, an occupational therapist, a full-time arts and crafts specialist, a half-time speech therapist, and various specialists who work on an hourly basis and run specific activity groups. In addition to their specific professional roles, each staff member acts as a case manager for a number of rehabilitants. The allocation of rehabilitants to case managers is generally based on the quality of the relationship that naturally develops between staff members and rehabilitants. Staff members are encouraged to form informal relationships with the rehabilitants which then form the basis for further therapeutic work with the rehabilitants. If, for example, one of the work supervisors develops an open and genuine relationship with a rehabilitant, then when necessary he or she may counsel with that rehabilitant under the supervision of the psychologist or workshop director.

### Use of Volunteers

As the main purpose of the center is the improvement of the overall quality of life of the rehabilitants, effort is also directed in providing services for leisure time

activities. Volunteers are often used to initiate and supervise these activities. A number of the rehabilitants, especially those with severe cognitive and behavior problems, have volunteers who spend time with them after work or on weekends in various social and cultural activities. These activities include going to a movie or museum, shopping, and teaching appropriate social skills by modeling or by repeated practice. These volunteers receive supervision from the center's staff.

Volunteers seem to help the rehabilitants use their leisure time more effectively. By spending time with the rehabilitant, volunteers also provide respite care which eases the burden on the rehabilitants' families.

### Data on Persons Served by the Center

Since its inception the center has served another 25 veterans with brain injury in addition to the present 41 rehabilitants. These 25 veterans had spent at least three months at the center and ceased their participation in the center for a number of reasons. Some of them were older veterans who were close to retirement age and felt that they did not need the services of the center any longer. A small number were referred to other sheltered workshops because of their special needs or because they moved to other cities. Veterans who had improved to the extent that they could find employment in the open job market were encouraged to do so and are followed up by the center's staff. Some rehabilitants left the center after a number of years because the staff felt they had improved and attained some type of stability and as a result were able to live independently in the community without being a burden on their families. Certain of these rehabilitants became occasional workers, while others were enrolled in neighborhood community center activities and spent the rest of their time at home. A small number of rehabilitants have taken over the role of housekeeping, while their wives are employed outside of the home.

### Summary

The main goal of the rehabilitation center is to improve the quality of life of these severely disabled veterans and their families. In order to facilitate this, a wide spectrum of work, social, and educational activities are available which stimulate interest and allow for freedom of choice. The activities are aimed at assisting the rehabilitants to achieve a greater understanding and awareness of themselves, their needs and abilities, and how these needs can be met.

The center's philosophy is based on a growth model of motivation (Maslow,

1943) which maintains that the gratification of basic needs stimulates and generates higher order needs and the activities associated with satisfying these new needs. In other works, the center strives to find the parameters and activities that can create a balance between ability and performance assuming that this balance is what leads to satisfaction and subsequent personal growth and self-actualization. The rehabilitants are provided opportunities to discover and express their abilities in a permissive atmosphere. The expression of these abilities provides satisfaction and positive feeling of self-worth and dignity.

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## CHAPTER THREE

### An Integrative Rehabilitation Program for People with Traumatic Brain Injury at the Loewenstein Hospital Day Care Center

*Dr. J. M. Stern*



#### Introduction

The Loewenstein Rehabilitation Center, in Raanana, Israel, provides an all-inclusive rehabilitation program through its various rehabilitation-oriented departments. It caters for about 270 patients suffering from a range of disabilities from limb amputation, diseases of the peripheral nervous system, degenerative diseases of the central nervous system, and hemiplegia resulting from CVA or tumors. There are also departments for prolonged comatose patients and for the rehabilitation of patients with TBI.

The structure of the hospital allows follow-up of the patient from the acute state immediately following injury through to more chronic states. In other words, a continuity of treatment exists from the time the patient is still unconscious to the time he returns to his natural environment and society. Complete hospitalization facilities are available from the initial post-injury stages to ambulatory treatment in later stages when the patient returns to his family.

The notion of centralizing treatment for patients who are brain-injured was conceived after the Yom Kippur War in 1973 when the large number of TBI cases necessitated the creation of one facility that would be equipped to treat all the injury-related pathologies. Thus a high level Ministry of Health decision was given to convert the Loewenstein Hospital into a hospitalization center for TBI patients, staffed by a specially-trained team to meet the treatment requirements of these patients. This was a totally innovative concept in Israel, for until 1973 TBI patients were either hospitalized in various general or psychiatric hospitals, or they were kept at home. There had been no single framework which specialized in treating all the characteristic problems encountered by these patients, and treatment was thus incomplete, unprofessional or sporadic.

Why do we emphasize the necessity of a multidisciplinary team? Brain injury is manifested in four main areas:

- Locomotion
- Communication (all aspects of language disorders)
- Cognition
- Behavior-personality

The fact that damage is manifested on many levels necessitates treatment intervention by therapists representing a spectrum of disciplines who are capable of working as an integrated and complementary team. It is generally recognized that the chances of a good outcome are greatly enhanced when the professionals who treat the patient work in close cooperation with each other.

This was one of the precepts fundamental to the establishment of a centralized rehabilitation unit under one roof. Since its inception, a multidisciplinary team has been established with the objective of coping with all these problems. A great deal of experience in the treatment of TBI patients has been acquired in the interim by the hospital.

A look into the history of rehabilitation reveals that at least in its early stages focus was almost exclusively on the physical aspects of disability. Underlying this approach was the conviction that the rehabilitation process was successfully accomplished when the body's lost functions were restored. We have since learned that the physical components of impairment are accompanied by many other problems that also require attention. The paramedical professions have thus been gaining an increasingly central and prominent place in all stages of rehabilitation, since the disabled person is considered as a whole, as one unified entity composed of many interacting components, none of which can be overlooked in the rehabilitation process.

Many other professions such as psychiatry, clinical psychology, rehabilitation psychology, social work, and speech therapy have been introduced into the rehabilitation process, taking an equal place alongside physiotherapy and nursing that have traditionally been the more recognized modalities for treatment.

## Post-injury Treatment: Early Stages

Clinical experience has taught us that the physical disorders, which receive the most attention, characterize the first stages after injury and therefore necessitate immediate primary intervention. However, with the physical problems there are problems on other levels, as described above, which require no less urgent intervention. It is known that significant improvements in the TBI patient's condition can be attained close to the time of injury, and therefore treatment should be started without delay. The sooner intervention is introduced, the greater the chances of rapid and significant improvements on all levels.

As with every instance of mental or physical disorders, the pathology in the wake of the injury is manifested in all the systems with which the patient comes into contact. All factors involved must undergo reorganization, particularly the patient's family. The pre-trauma homeostasis is disrupted following injury, thus all aspects of the patient's life require reorganization to enhance the prospects of successful rehabilitation.

The family needs to learn how to live with the new situation; how to relate to the patient and how to avoid developing rejecting and/or aggressive feelings towards him, especially when (in the stages when he is still incapable of considering the needs of others) he demands their exclusive attention in fulfilling his own needs. The family usually expresses ambivalence, feeling dutybound to devote themselves to the patient on the one hand, but not being able to surrender their own personal needs on the other hand. This conflict gradually intensifies after the initial period in which family members are prepared to devote themselves unconditionally and tirelessly to improving the patient's condition. Frustration and burnout take over when the initial symbiosis ceases to prevail. All these problems require treatment, which clearly needs to be comprehensive and relevant to all the problem areas expressed in the clinical situation.

In the first stages after injury, psychological and social intervention is needed in order to become acquainted with the patient's problem configuration, and to attempt to find a preliminary solution. In our framework, therefore, there is a division between the psychologist who relates to the intrapsychic aspects of the patient's emotional conflicts, and the social worker who relates to interpersonal relationships and links with the community. The primary processes handled by the professional therapists at this stage are actually the first steps in community rehabilitation, in the sense that attempts are made to return the person with a

disability to his environment in an optimum functioning state. As a means of attaining this objective, ties are formed with a community representative in the person of a rehabilitation worker of one of the major institutions (the National Insurance Institute or the Ministry of Defence) who will assist in the harmonious reintegration of the patient into the community. The reciprocal interaction between the treatment staff in the hospital and the community representative allows the integration of the person with a disability on his own terms, and helps to prevent him from entering a vacuum. However, in the initial stage many of the potential problems have not yet fully crystallized since the patient lives in the sheltered environment of the hospital ward which allows regression and does not present the patient with real life situations. In fact, the patient is not faced with real demands, he is not required to handle them, and he is therefore often completely unaware of his difficulties.

When the patient leaves the ward, he is usually only partially aware of his problems, and therefore often fails to understand the necessity for continuing therapy. After returning into the "real" world, however, he gradually learns to recognize the impairments which prevent him from succeeding at self-imposed tasks within his family and social framework.

## Post-injury Treatment: Later Stages

### *Follow-up Clinic and Day Center*

In order to solve these problems we established an ambulatory framework with the objective of treating the disorders which appear in the later stages after injury.

Patients are referred to the day center after attempting to live outside for varying periods of time. Referral is made either through a rehabilitation worker (from the Ministry of Defence or the National Insurance Institute) who represents the person with TBI in the community, or after having undergone a comprehensive and integrative assessment, in our follow-up clinic.

The rehabilitation worker, assigned to the person from the moment he is recognized as such by the Ministry as having a disability, is very well-acquainted with the patient and his problems. This worker is at the forefront of efforts to assist the patient in coping with the gamut of problems encountered in real life, and when the worker feels that she is unable to be effective she refers the patient to us to begin or continue treatment.

Upon referral the patient undergoes several examinations, including: medical, neurological, psychiatric and neuropsychological examinations. When necessary, auxiliary tests may also be used to assess the problem (blood tests, EEG, CT scan, physiotherapy examinations, sleep laboratory examinations, etc.).

Once again we stress that our approach is comprehensive. We always try to explain the pathological phenomena from every possible pathological point of view. The advantage of our follow-up arrangement is that it enables us to evaluate the patient's general condition, to pinpoint major conflicts and strengths, and to assess the degree of social support that can be expected from the person's milieu. When the evaluation is complete, we decide whether or not to accept the patient into the ambulatory treatment framework at the Loewenstein Center.

In order to be accepted patients must meet the following criteria:

1. The patient must be independent in his daily life.
2. He must be able to look after himself, and be capable of some introspection.
3. He must be able to express himself.
4. He must be motivated to improve.
5. He must have "rehabilitation potential."

Since the investment per patient is very high, we must be able to assess whether indeed the patient has the ability to change and improve.

### *Structure of the Day Center*

The team consists of a psychiatrist who has specialized in the unique pathology of TBI and who is also head of the center, clinical and rehabilitation psychologists, and neuropsychologists. Moreover, since the unit is located in a general rehabilitation hospital, it benefits from additional counseling and medical services needed for the rehabilitation process.

It should be noted here that in the later stages following injury, the principle focus is on the patient's psychological and cognitive problems, and therefore these are the disciplines which are stressed during this stage. *However, we must not be misled into overlooking the fact that brain injury is primarily a medical problem, while the problems we mention are the consequence of organic brain pathology.*



The day center was established in 1975 as a framework where the patient spent eight hours daily attending individual, group, and occupational therapies. Clinical work was divided between psychotherapy and cognitive therapy. It very soon became clear that this environment was inadequate in meeting patients' requirements. The patients tended to view the center as a maintenance shelter, very remote from real problems encountered outside. At that time the model presented by the unit was simply a continuation of the hospitalization ward, with all the shortcomings of this approach. Patients showed little motivation to change, thus making no effort to improve, and therefore remaining in the same regressive state as earlier. On the whole, they expected to continue receiving what they considered was owed to them, without taking any responsibility for their actions or their future. They remained dependent on their therapists and failed to develop independence.

Therefore, the basic concept and structure of the center became converted into a kind of extended day clinic which the patient attends once or twice per week for therapy. For the remainder of the week he is in a suitable work or occupational environment. Here we stress a substantial change in our attitude towards the importance of the rehabilitation process in TBI patients. *Treatment is viewed as only one component that supplements the patient's experience of reality, and is under no circumstances a substitute for it.* Every treatment framework represents a simulated reality in which the patient is accepted unconditionally, where he is understood, and where he is permitted to express himself freely. This reduces the prospects of the patient changing and modifying his behavior. He does not receive meaningful feedback to any behavior distortions so he has no way of knowing to what extent others find his behavior reasonable and acceptable.

### The Treatment Philosophy of the Day Center

When the patient is referred to the unit we face a large range of problems. How can these problems be addressed? As usual in pathological cases, one must first diagnose the clinical syndrome accurately. The diagnosis should relate to both personality and cognitive factors. This point perhaps deserves some elaboration. The implication is that when the patient is examined, one should look not only for damaged functions as expressed, for example, during the neuropsychological assessment, but one should also analyze the remaining strong, healthy abilities. The same holds true for personality evaluation.

## Diagnostic Methods

Before describing our diagnostic methods, it is necessary to raise the fundamental conceptual issue of whether or not it is possible to assess cerebral damage. In other words, is there a direct link between function as expressed in assessment on the one hand, and healthy or damaged cerebral structures on the other? Many tests for diagnosing brain injuries in clinical practice are reported in the literature. Yet from our point of view, the question still arises: do these tests measure what they purport to measure? In our opinion no hasty decisions should be made on the subject. It seems to us that every test measures primarily the quality of thought processes. It is possible to assume cerebral damage on the basis of the quality of various thought processes, and in particular impairment of these processes, only if pathognomonic patterns are found. For this reason, the diagnostic system we have devised is grounded on what the literature describes as the characteristic function of each cerebral lobe separately, and each hemisphere separately. The following functions are tested: perception, praxis, psychomotor reaction time, verbal and visual memory, logical thought processes (transitive, analogic, and inductive-deductive thought processes), categorization, organization of thought processes graded in complexity from simple tasks with few elements to complex tasks with many elements, mathematical problem solving. Most of the tasks are presented verbally and visually.

At the Loewenstein Center, the emphasis when administering the tests is not necessarily on the *quantifiable* final result (output), but rather on the *quality* of the process or the strategies used by the patient to reach a solution. We consider the manner in which the patient works more important than his output, since our treatment program is based on the evaluation results. A qualitative analysis of performance allows us to discern the weak link in the patient's cognitive processes and to thus treat it rationally.

Parallel to the neuropsychological diagnosis, we also administer a diagnostic assessment battery specifically directed towards the behavioral-personality elements typical of TBI patients. This multi-questioned structured interview is geared to examine all behavioral elements in TBI patients, similar to that employed in a psychiatric intake interview. The questionnaire is divided into the following sections: general history including pre-injury psychological pathology, cause of injury, duration of unconsciousness, description of the patient's condition at time of interview, various cognitive processes including the different

kinds of memory, awareness, behavioral characteristics, comparison of family relationships before and after injury, personality traits before and after injury, language disorders, sleep disorders, and a general summary which, on the basis of the personality and behavioral changes described during the examination, attempts to locate the cerebral damage. Each section is detailed and includes many questions aimed at obtaining the maximum precision possible in relation to present disorders.

The advantage of our questionnaire is that it is based on the great wealth of experience accumulated over many years of working with a population of persons with brain injury, and it relates specifically to the clinical symptoms encountered in this type of pathology. In addition, by means of a qualitative description, it is also possible to quantify the severity of the disorders according to the interviewer's impressions. This type of questionnaire also makes it possible to carry out research and to compare patients at a later stage, and to evaluate the severity of damage, an aspect which is insufficiently described in the literature.

### Treatment Methods

Only after reaching a personality and cognitive diagnosis for the patient can a treatment program be developed.

The main thrust of the treatment program centers on the two aspects with the greatest impact on the rehabilitation process: (a) *cognitive impairments* and (b) *behavioral and personality changes*.

### Cognitive Treatment

Our treatment policy is based largely on the important principle of compensation. Rather than attempting to cope directly with the weak or damaged link in the cognitive process, we bypass it by providing a treatment framework which emphasizes the patient's strong points instead. Only in the second stage is the patient required to transfer his accomplishments to his impaired faculty. A typical example, which we have described elsewhere, is of a patient with severe problems in verbal memory and other mental processes associated with language. Treatment was directed at enabling him to use the functions of the right hemisphere (visual tools and components), and later he was required to translate what he had done into the verbal tools at his disposal. We demonstrated that this form of treatment enabled him to enrich his language and hence to increase his capacity to overcome many basic difficulties.

Many assumptions underly the choice of this therapeutic technique. When, during the course of treatment, the patient is presented with a task which he is incapable of handling, he will predictably fail. Consequently he loses confidence in himself and in his abilities. He reacts with responsive depression and his motivation to continue with therapy decreases. On the other hand, when the patient is given tangible evidence that he is capable of succeeding, his self esteem and faith in his own ability are restored, both important factors in increasing his motivation to continue therapy. His increasing strength allows him to better handle failure when it arises, and raises his frustration threshold level.

Our cognitive therapy techniques are based on the findings of the patient's neuropsychological diagnosis. In other words, every treatment is individually tailored and makes use of materials taken from the patient's areas of interest. We try to avoid the use of neutral or standard exercises since the patient loses interest in them. When given these exercises the patient frequently fails to understand the connection between his work in the therapy room and the problems he must face in his own world. We thus attempt to use the material that the patient brings with him from the outside, and to construct the treatment program around it. On the part of the therapist, this approach demands considerable creativity and flexible thinking, and the courage to face totally new situations. For example, the therapist works with a student on his school material, with a lawyer on legal material, with an engineer on engineering material, and so on. Of course, this requirement is potentially stressful for the therapist since she is not always familiar with the material she is required to work with, but the obvious advantage is that there is a connection between therapy and the patient's activities outside the hospital. The fact that therapy material is carefully chosen is important for the patient since it also contributes to his feeling that he is being treated with respect, that what he does is appreciated, and that the treatment is anchored in real life.

In recent years we have introduced an additional therapeutic tool, computer-based cognitive therapy. Yet again, based on our wide experience with patients with TBI, we have learned to recognize many characteristic impairments. This has led to the construction of a treatment system related to the most commonly found problems, with special emphasis on two main areas: (a) the inability to construct hypotheses and (b) rigidity of thinking and impaired shifting ability.

Hypothesis construction, among all the complex and abstract thought processes in daily use, is an integrative thought process which demands the capacity to go

beyond the given information. This is accomplished by determining our goal and the best and most efficient way of attaining it. Therefore, the process used in constructing a logical thought set demands a methodical approach involving the correct analysis of all the component parts of the task, weighing up every single unit of information and their relevance to the goal, comparing them to other simultaneous bits of information, and finally constructing the rules governing their common denominator. This basically complex and integrative thought process mobilizes our total cognitive capacity. Clearly, following cerebral injury in which many cognitive thought components have been damaged, the patient is unable to exercise this process effectively.

In order to cope with these cognitive deficits we thought that it would be worthwhile to focus on this particular and integrative aspect of the patients' disabilities, namely the difficulty they experience when asked to construct hypotheses. For this purpose, several therapeutic approaches were developed over the years, based mainly on paper-and-pen exercises. We felt that it would be more effective to take into account the practical and psychological advantages of a computer environment and we therefore developed some specific software for this purpose. We had to write our own software because: (a) the usual teaching programs on the market are geared for children and (b) the programs geared for TBI patients relate mainly to perceptual problems (visiomotor coordination and reaction time).

We devised a self-contained series of 11 lessons, with about 10 to 12 exercises per lesson, based on hypothesis-forming and -shifting. The training exercises are aimed at gradually and methodically restoring this lost capacity to the patient, starting at relatively simple levels containing a small number of concepts (e.g., color or shape) and graduating to levels in which attention must be paid to more complicated, abstract, and less readily noticeable components.

The advantage of our training exercises is that they can be used regardless of any specific disorder resulting from TBI. They are constructed in such a way that they demand simultaneous action of many thought process operations. The objective is to always relate to what is defined as high cortical functions, rather than to any specific one such as perception, psychomotor reaction time, attention, memory and praxis.

Our method can definitely be adapted to use with all types of brain injuries, since it attempts to activate various lobe-related functions belonging serially and

permanently to both hemispheres. The underlying principle of the exercises is to develop, at different levels of complexity, the integrative thought processes. During training sessions, it is not sufficient that the patient answers correctly (which does not interest us *per se*, but is rather an indicator of his way of thinking), but he is required to explain how he arrived at any particular solution. It is important to bring the patient to the stage where he is capable of formalizing his answers, or in other words, he is forced to conceptualize and verbalize his responses and utilize appropriate goal-oriented concepts.

The advantage of using the computer as a therapeutic tool is that it is appealing, "magical," and powerful. Patients were observed to be alert, curious, interested, and above all, totally cooperative. At the end of training sessions they requested more exercises and were disappointed that we could not oblige.

## Method

The series uses the graphics of the Macintosh computer and presents the exercises in visual form. The patient works independently, accompanied all the way by a therapist. Every exercise aims at activating higher integrative cognitive functions, and in practice, the following functions are used at all times for every exercise:

- identifying visual stimuli,
- collecting all information from the stimuli,
- processing, sorting and categorizing this information on different levels,
- proper analysis of material,
- constructing a hypothesis concerning the rules underlying the organization of the given information,
- continual testing of the hypothesis,
- discarding unsuccessful hypotheses and performing a shift to constructing new ones on the basis of different categorizations,
- determining the relevant rule, and
- activating a new visual stimulus (the next self-contained unit).

For each new exercise different criteria apply, and if in one exercise the concept of color is used, the next one will use form, size, location or number. These are what may be called simple criteria. More complex exercises require the use of different logical rules, and deductive and analytical thinking ability.

A standard step in the procedure is to always ask the patient to explain his choice. It is imperative to know whether or not a correct answer is intuitive (right hemisphere), or whether indeed it utilizes the function of the left hemisphere. Since we actually want to teach the patients to translate their perceptions verbally, we are primarily interested in left hemisphere activity. This procedure enables the therapist to know if the choice is well-defined. (For more information about this technique, please see our article by Evyatar A., Stern, M. J., Schem-Tov, M., & Groswasser, Z. (1988), Hypothesis forming and computerized cognitive therapy in Roger Wood (Ed.), *Cognitive Rehabilitation in Perspective*, Taylor & Francis, Basingstock England, 1988.)

### Psychotherapeutic Treatment

Psychotherapy is based on the same principles governing cognitive therapy outlined above. The purpose of psychotherapy is to enable the patient to gain cognitive and emotional insight into himself. This is by no means a simple matter since it is commonly believed that patients with TBI are cut off from their inner emotions. They rarely describe their emotions spontaneously, and especially avoid exposing their feelings to strangers. It is important to establish a therapeutic alliance and basic trust between the patient and therapist. Since the patient fears appearing to be "insane," he prefers to remain reticent about himself, his feelings and his experiences. One way we found of circumventing this problem was to use, as a therapeutic approach in the unit, materials that express the emotional contents belonging to the primary processes, namely, the material manifested in the patient's dreams. Another means of working totally unjudgmentally with the patient's emotional contents is through art therapy.

It should be noted that using dreams as a therapeutic tool is a fairly original approach, since reports in the literature discount the possibility that people who have experienced brain injury dream, and if they do, the dreams are not remembered. Our experience has shown that when the importance of dreams is stressed during therapeutic sessions, a significant number of dreams are revealed. These dreams increase gradually and noticeably in complexity, expressing emotional contents as experiences.



The use of this material makes it possible to process the significance of the patient's experiences through psychotherapy, and often to his complete surprise, the patient himself learns of the depth of the levels within.

Psychotherapy also places special emphasis on the meaning of the mourning process through which the patient must pass; we speak here of a special kind of mourning, since it is mourning for the parts of his own personality that have been lost. In cases of brain injury, the patient faces an extremely difficult task which demands relating to two parts of his ego: (a) the pre-injury ego and (b) the post-injury ego. The gap between these two parts of the ego is one of the most difficult obstacles in the therapeutic process to bridge, since the patient is often unable to surrender the ego that characterized and defined him prior to his injury. The pre-injury ego becomes idealized, as we see in all cases of mourning, and thus prevents the patient from investing in the present for the future. He remains entangled in the web of a largely unrealistic past that saps his psychic energy, preventing progress towards the future. We believe that the reconciliation of these two parts is the major objective of any therapeutic process. One of the initial clinical signs announcing the first stages of insight is the onset of depressive elements in the clinical syndrome, an essential prerequisite for the patient to mobilize his inner strength in order to construct his new identity.

In addition to individual psychotherapy, we also pay special attention to interpersonal relationships following injury, especially to interfamily relationships. Since the injury touches on all aspects of the patient's life, family relations obviously play a major role in the overall rehabilitation process.

The day center thus provides not only individual therapy, but also therapy for the patient's spouse, either separately or together with the patient. These two instances fulfill two totally distinct aims. Spouses enter therapy to focus on their own needs, as a separate entity. It is not unusual to hear spouses report guilt feelings when attending to their own rather than to the patient's needs. Against this background spouses frequently voice their feelings of moral obligation to devote themselves exclusively to the patient's needs, and they feel they should not allow themselves the right to consider their needs.

Therapy is aimed at legitimizing for the spouses their right to devote time and attention to themselves, while at the same time it does not ignore the inherent danger of this stand. In view of changes in the original families, the spouses may decide that they no longer wish to be part of it. They may no longer feel morally



obliged to continue being victims of circumstances, and may wish to exercise their prerogatives in their own lives. This could understandably result in a serious clash of interests between the patient and spouse. It is therefore essential to begin couples therapy while the couple are still within the treatment framework, with the objective of evaluating the feasibility of the couple continuing their partnership. It should be noted that the divorce rate in our population is very low, which is paradoxical in view of the changes that take place in the patient. The answer can probably be found in the new homeostasis that is eventually established successfully by the family, each member finding a place and satisfaction within the family.

The main aim of psychotherapy is to allow the patient to gain a better understanding of the underlying motivating forces of his behavior and to liberate him from his regressive stance so that he is able to relate to the needs of others. We strive to equip him with the tools to have greater control over himself, to acquire skills and mastery over his experiences and environment, and to thereby change his self-image and restore faith in his abilities. In other words, we strive, as in all psychotherapy, to develop alternatives for the patient. Receptivity to choosing wisely and recognizing available options is worked on doggedly.

### Occupational Rehabilitation

In addition to psychotherapy, the center's work also relates to the patient's role in his own social milieu. Intrinsic to this approach is the desire to return the patient to work. The underlying philosophy is to make it possible for the patient to develop the feeling that he can lead a full life through his own efforts rather than through the goodwill of others, that he can support himself and his family according to his ability. A great deal of effort and thought is invested in finding occupational solutions for the patients in the unit. Since this tends to be a young population, many patients have not yet acquired a profession; and in another share of the population the injury has resulted in the patient being unable to return to his former work, and alternative professions or jobs must be found. A number of factors are involved in accomplishing this objective.

Adjacent to the day center is an occupational rehabilitation center which is equipped to perform comprehensive tests of occupational ability. After evaluation, the patient is offered a choice of workshops where he can acquire the special professional skills. He receives a recognized diploma at the end of the course, after passing an examination supervised by the Ministry of Labour. An additional

advantage of this center is that it undertakes the practical application of the newly acquired profession with follow-up of the patient's adaptation to his new job. The role of the center is thus central since it returns the patient of society with tools that allow him to cope realistically.

Another important factor in occupational rehabilitation is the rehabilitation worker, who is in continual contact with the patient and who is fully cognizant of all the available possibilities in the vicinity of the patient's residence. The rehabilitation worker may also assume the responsibility for placing the patient in a job outside the vicinity of the patient's residence, in accordance with instructions from the therapy team.

It is important to note that a correct decision is possible only when there is full cooperation and interaction between factors in the community and the therapy team in the center. This approach enables a general overview of all the components in the pathological picture, and increases real-life alternatives in accordance with the patient's strengths, skills, and options.

Using these principles as a guideline, we have treated a large number of patients over a period of time in our center. We handle simultaneously an average of about 50 patients annually, and have thus treated 500 patients in the past 10 years. About 200 patients pass through our day center annually, making a total of 2000 examined in the past 10 years. In contrast to similar units in other countries, no time limit is placed on the treatment available to each patient. The length of treatment is determined by the patient's clinical condition, rather than by economic or financial criteria. As long as there continue to be signs of progress in the patient's condition treatment is available.

As mentioned above, an important factor in the success of treatment is creating a strong link with the community. The above factors act as the link between the center and the community, and enhance the creation of a treatment program relevant to the demands of the reality in which the patient lives. In our opinion, each treatment program must be anchored in the real life world to which the patient will return, and suited to the options available. All studies, training and skill acquisition must take into account the patient's natural environment. In other words, the treatment cannot exist on an abstract plane, but must be firmly rooted in reality. From this point of view the day center provides a counseling service for all factors in the environment so that the rehabilitation program can be constructed and implemented accordingly. The center is always available for

counseling and preparing guidelines for dealing with practical problems as they arise. We are always prepared to reaccept patients after they have completed treatment, to reevaluate their condition and to consider additional treatment possibilities.

It would seem that it is only with a comprehensive approach of this nature that an appropriate and all-inclusive rehabilitation process relevant to the patient's reality can be effected.

## Conclusion

Described above is the treatment model at the Loewenstein Rehabilitation Hospital, a national treatment center for brain injured patients. The hospital's uniqueness lies in that follow-up is made of patients from the initial acute stage until the later stages after injury. We attempted to describe the nature of the center, the underlying treatment philosophy and the scope of our activities.

The experience of many years has taught us that despite the high cost of this treatment program in terms of personnel, the results indicate that this investment is worthwhile. This assumption is based on the fact that a large number of serious cases have already succeeded in joining their families and returning to work, with a concomitant improvement in their quality of life. It should not be forgotten that until a few years ago the same patients would have been defined as unrehabilitable, and would have been hospitalized in various institutions, including those for chronic psychiatric cases.

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## CHAPTER FOUR

### Rehabilitation Communities of the Brain-Injured Patient — The National Institute for Rehabilitation of the Brain Injured

*D. Hoofien, M. Becker, E. Vakil*



#### Introduction

**T**he National Institute for Rehabilitation of the Brain Injured (Recanti Rehabilitation Center) is a public nonprofit organization administered by the Rehabilitation Division of the Defence Ministry and the National Insurance Institute.

In operation since 1975, the Institute is designed to provide neuropsychological and community rehabilitation services on a national basis, to a varied population of patients with acquired head injuries, aged 15-60.

The Institute operates two branches in the central and northern regions of Israel, providing the following services for 150 patients:

1. Intensive ambulatory rehabilitation programs, using community and social treatment methods for social and vocational rehabilitation.
2. A sheltered rehabilitation program for improving the quality of social and vocational life.
3. Social clubs for improving the quality of social life.
4. Psychotherapeutic and counseling treatment programs for individuals and families.
5. Comprehensive neuropsychological evaluation for the purpose of rehabilitative guidance and differential diagnosis.

In addition to these clinical services the Institute functions in the scientific-academic area, teaching and executing scientific research in the field of memory, evaluation and follow-up.

Following a description of the target population, the nature of acquired brain injury, and the general therapeutic conceptualization of the Institute, we will describe the above services listed above.

Relevant case descriptions will be included in the text to illustrate particular portions of the presentation.

### Target Population, Scientific and Conceptual Background

In industrialized countries at least 200 per 100,000 citizens suffer brain injury each year (Levin, Benton, & Grossman, 1982; Brooks, 1984), the majority of them at relatively early ages. The primary reason for brain injury in these countries is traffic accidents.

Brain injury accounts for about 70% of the fatalities in these accidents, and for a considerable percentage of long term impairment. Other prominent causes are injuries resulting from work accidents (C.C.I.), vascular disease (C.V.A.), central nervous system disease and removal of brain tumors. Since so many patients with brain injury are young, the cost to the individual, family and society of direct medical expenses and ultimately of lost productivity, can mount into the hundreds of thousands if not millions of dollars during an individual's lifespan. Obviously, financial measures do not address the personal tragedy represented by such a life-altering injury. Thus, it is critically important to understand the factors which may contribute to the individual's recovery from injury and reintegration into society.

Damage to the central nervous system following head injuries may result in focal contusions, shearing of fibers, diffuse axonal injury, or some combination thereof (Blumberg, Jones, & North, 1989; Brooks, 1984; Levin, Benton, & Grossman, 1982). Additional injury may be caused by increased intracranial pressure. However, the relationship between the aforementioned neuropathologies and behavior is not simple. Individuals presenting with seemingly similar neuropathology may follow very different courses of recovery and ultimately levels of functioning. Like other bodily injuries, traumatic brain injury is also divided into two stages of developmental duration. In the initial acute stage, the severe immediate consequences of the injury are in evidence (such as extended unconsciousness), some of which pass as a result of medical treatment and spontaneous recovery. During the chronic stage most of the handicaps stabilize, remaining at a fixed level.

## Case 1: The Case of D. S.

D. S. is a pretty, 21 year old woman who had recently completed her army service and had planned to start university studies the following month.

On Sunday, September 9, D. S. was hit by a young drunk driver who was driving at 40 m.p.h. above the speed limit. At arrival to the emergency room she was met in an unconscious state (Glasgow Coma Scale = 4) with no response to verbal, visual, kinesthetic, or tactile stimuli. Further medical examination uncovered the facts that D. S. had suffered a head injury with a RT. epidural hematoma, LT. fronto-parieto-temporal fracture of skull, fracture of RT. Ribs. five and seven and compressed fracture of L. one and two bodies of vertebrae. The family was informed that D. S. was on the "critical list" and that the first week would determine if she would survive her injuries. Her family was instructed to speak with D. despite her lack of response. By the second week, D. moved her fingers in response to squeezing her hand and her eyes responded to light. By the third week she responded to verbal commands. The family was told that D. would live, however, they received no assurances as to the level of functioning that she would regain.

In its chronic state traumatic brain injury expresses itself in many cases by long-lasting impairments and regressions affecting a wide spectrum of innate abilities.

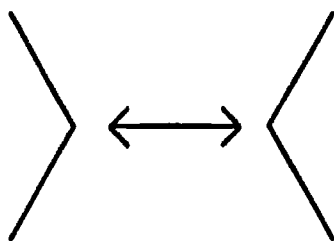
Common disabilities include severe motoric disturbances, various kinds of paralyses, disorders in fine coordination, impairments of attention, concentration, orientation, perception, verbal communication, comprehension and abstraction. In addition, there are behavioral and personality disorders, known in part as the frontal-lobe syndrome, deriving from the brain injury itself as well as from the patient's personal attitude toward his state of disability (Lashman, 1987, pp. 225-230).

These disabilities of patients with chronic brain injury may be divided into two different types: handicaps stemming directly from the brain injury, which we will refer to here as "primary impairments," and, in contrast, impairments which are results of spin-offs of the primary disabilities, which will be referred to here as "secondary impairments" (See Table 1).



**PRIMARY DEFICITS**

**COGNITIVE**  
 Simple / Split Attention  
 Perception  
 Manual Dexterity  
 Memory and Learning  
 Logical Reasoning  
 Problem Solving  
 Categorical Thinking



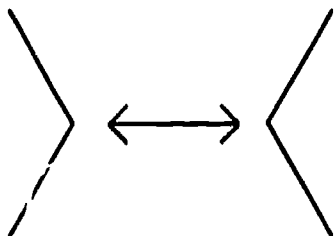
**PERSONALITY / BEHAVIOR ORGANICITY**  
 Frontal Lobe Syndrome  
 Adynamia  
 Behavior Disorders

**ASSOCIATED CHANGES:**  
 Reactive Depression  
 Post Traumatic Stress Disorder  
 Disturbed Self Concept



**SECONDARY DEFICITS**

**VOCATIONAL**  
 Work Habits  
 Attitudes and Values  
 Loss of Motivation



**SOCIAL**  
 Withdrawal, Loneliness  
 Alienation  
 Inter Personal Functioning

Table 1. Distribution of Primary and Secondary Deficits in Adults with Chronic Brain Injury

Primary deficits (Table 1.) may be divided into two main groups:

1. Cognitive impairments, i.e., functions of the cognitive functions directly affected by head injury.
2. Personality and behavioral impairments, i.e.:
  - a. "Organic" changes caused directly by brain dysfunction, i.e., changes in behavior caused by injury to the frontal lobe.
  - b. "Adjunct" or reactive changes, i.e., emotional reactions to the initial trauma and to the on going mental and physical handicap.

There is a mutual interaction between the (primary) cognitive disabilities and the (primary) personality and behavioral impairments. In this conceptualization, cognitive impairments not only affect intellectual performance but also markedly influence the individual's capacity for emotional and behavioral adaptation.

Examples of this interaction may be found in most of the behaviors and reactions of these individuals. Thus, for example, disturbances in the area of split attention, expressed by hypersensitivity to stimuli and lack of capacity for selective attention, often brings about behavioral manifestations of irritability, disquiet or the opposite — a tendency toward seclusion and lack of activity. Another example is concerned with the integrative thought dysfunctions (typical of right hemisphere injury) and ability to build a new self-image after the trauma. Building a new self-image or changing the previous image is necessarily an integrative, abstract course of thought. Thus, the inability to think in an integrative, abstract way harms the process of building a new or "revised" self-image. This is one of the reasons that some individuals with post-traumatic brain injury tend to cling with characteristic rigidity to their pre-trauma image.

#### Case 2: The Case of H. P.

It was already two years since "the accident." H. P., a 43 year old man, married with three children, had suffered a severe head injury with marked impairments in physical and cognitive function. He was told to be patient, that brain recovery is slow. H. P. was encouraged by his steady progress. Thanks to physical therapy and perseverance, he had managed to overcome most of his physical limitations and eventually walked with a slight limp due to the remaining hemiparesis. Less encouraging, however, was his recovery of

cognitive functioning. There was some improvement in his short-term memory and in his visual deficits. However, the remaining cognitive limitations (such as short attention span and the inability to remember certain things, such as names, daily events, and important things to do) left H. P. feeling like a "shadow of what I once was."

The shocking revelation of these remaining deficits occurred upon his return to work eighteen months after the accident. At work, H. felt lost and in a state of utter confusion and left after three days. The last six months H. found himself swinging between states of agitation and depression. His wife and children felt ashamed and angry with H., themselves, and their fate. In a state of desperation, H. and his family arrived at the Institute with hopes to rebuild "what once was."

This interaction between cognitive and behavioral/personality primary impairments explains why these same patients who, after brain injury suffer from only moderate cognitive impairments and from relatively minor personality defects, ultimately fail to be successfully rehabilitated. Each of these causes, when evaluated separately, are perceived as "minor." When in interaction, however, their mutual influence increases, constituting a significant disturbance which is expressed in secondary impairments.

The secondary impairments, which also mutually interact, are divided into two types:

1. *Vocational unsuitability.* This is measured by often repeated failures in employment, sometimes for many years and without any significant change over time. It is characterized by deficient work habits, decline in work values and flatness in vocational interests.
2. *Social incompatibility.* This is expressed by a state of isolation, loneliness, and notable difficulty in intimate and family functioning.

The interaction between vocational unsuitability and social incompatibility is obvious. Repeated failures at work cause a loss of social status, embarrassment and isolation. On the other hand, seclusion, isolation and family difficulties frequently prevent proper adjustment at work.

As noted, the cognitive as well as behavioral/personality disturbances (primary impairments) are mutually and equally influential on the individual's vocational and social functioning. In our view, these interactions are the essential expla-

nation for the eventual overall rehabilitative failure with people for whom no severe disturbances were found in any single area of disability.

Dividing the four foci of disability — cognitive, personality, vocational and social — into primary and secondary is not simply schematic and semantic. It has implications for the method of treatment. Rehabilitative treatment of individuals with post-traumatic brain injury, like any other rehabilitative treatment, can opt for one of two approaches. One way would be to treat secondary impairments, i.e., the actual results of the various dysfunctions (which are also the ultimate rehabilitation goals). Thus, a course of rehabilitation which engages primarily in preparation for work by imparting work habits takes this approach. It creates an improvement in the secondary disability and does not deal with primary causes. This course is analogous to symptomatic medicine.

In contrast, there could also be an approach dealing mainly with the primary reasons for rehabilitative failure which would define improvement in secondary impairments as desired results, but would not deal with them directly.

A further implication is that rehabilitation treatment must relate to interactions between areas of disability and not just to the specific impairments as separate entities.

The array of rehabilitation treatment services provided at the Institute is intended to meet the varied needs of patients in each of the four areas of disability noted above. Those individuals with simultaneous dysfunctions in all areas are treated in a more comprehensive, interactive type of treatment. Those suffering from dysfunction in only one of the four areas may suffice with a more narrowly focused treatment. Thus, there is a range of treatment services, from an intensive treatment program designed to respond to impairments on all rehabilitation fronts, to individual treatment programs intended to deal with single areas of disability.

### Intensive Treatment Program — Therapeutic Community

The treatment program in the therapeutic community setting is designed to help in the rehabilitation of people with disabilities who, though suffering from dysfunction in all four areas of disability, have been defined as having a favorable prognosis for successful vocational placement.

This treatment program is grounded on three basic assumptions:

1. Rehabilitation should be regarded as a social process, i.e., a process of change within a given social context by means of social modeling and renewed social learning in a therapeutic community.

Successful personal and vocational rehabilitation would be the result of an acquisition of new coping modes and social behaviors. Thus, our treatment emphasizes to a great extent the community-social-group model within which the patients must learn and emulate and subsequently apply corrected social skills in society at large. In this frame of reference, the patient's family is conceived of as a social structure within which the patient must be rehabilitated. Quite often the whole family must first undergo the same process (further details of the basic principles are presented in Ben-Yishay, et al., 1978:1-9).

2. One of the more efficient means of treating the adult with brain injury is via an intensive treatment program. The intensive nature of the program is designed to overcome marked difficulties in generalizing between situations and across periods of time. Repetition and variation of learning situations, either cognitive or social, enables assimilation of new mental and behavioral schemata.
3. The last assumption emphasizes the importance of treating the constellation of cognitive impairments through cognitive-neuropsychological remediation.

The treatment plan, based on the above assumptions, may be divided into two main stages. The first stage, involving intensive treatment, lasts for about a year and is carried out as day treatment, three to five days per week, five to seven hours daily in the framework of a day center. The second stage, which constitutes the continuation of the former, is a follow-up stage in which rehabilitants enter the vocational world according to their individual ability, while therapeutic follow-up is maintained. Duration of the follow-up stage is unlimited.

### Intensive Year of Treatment

Rehabilitants are accepted in groups to this one year stage. The group, serving as a therapeutic community, undergoes all treatment stages together as a social-communal microcosm.

The treatment program during this stage is divided into four developmental periods of time:

1. The first period is devoted to consolidating the group socially and communally, and lasts a month.
2. The second period, lasting for one-and-a-half months, serves to clarify problems through developing the rehabilitants' awareness of their condition. Rehabilitants test themselves in different domains -- cognitive, behavioral, emotional and social -- establishing treatment goals according to their self-examination.
3. The third and longest period (six to seven months) is devoted to individual and group treatment of the problems previously defined.
4. The final period (two to three months) is dedicated to conclusion of treatment, constructing external rehabilitation programs for each rehabilitant and initiating them.

In terms of content, this period of intensive treatment focuses on three basic areas: the personal-social, cognitive and vocational.

### *Personal and Social Treatment*

On the personal level, the therapeutic approach is essentially eclectic. During the entire period of treatment, each patient receives intensive psychotherapy at least one hour per week. Therapeutic approaches range from a psychodynamic insight-oriented theory to behavior modification.

In addition to therapeutic support, individual psychotherapy is, as a rule, directed at improving the patient's awareness and acceptance of his state and toward decision-making related to accurate reality testing.

Family therapy is utilized with most patients. Concomitant with the treatment of current family problems, family therapy is aimed at reinforcing the family's involvement in the rehabilitation process and at stressing the threefold responsibility for its results: that of the patient, his family and the Institute.

On the social level, the group orientation is emphasized throughout the course of treatment. Treatment is designed so that the group of patients, together with the professional staff, become a microsocial model, within which social skills are taught and learned. The group provides a medium in which, both in practice and in the therapeutic atmosphere, the individual patient's attitude toward his peers and vice versa are strongly considered. The group (patients and staff), as a

"society," establishes its own "institutions," such as committees, allocation of duties, parties, excursions; and establishes social activity and norms.

Regarding social interactions, the main emphasis is placed on group therapy and community meetings. The group therapy, moderated by two members of the staff, varies in content between interpersonal dynamics and the acquisition of proper social behavior by role-playing and psychodrama (Guggenheim & Lesser, 1990). The weekly "community meeting" is more open in character and is like a social event, the responsibility for which patients and staff take turns. In addition to the weekly community meeting, there are also excursions, parties and lecture meetings at least once a month. The importance of the participation of patients' relatives and staff is underscored.

### *Cognitive Treatment*

The aim of cognitive treatment is to bring the patient to maximum utilization of his cognitive potential, i.e., to reinforce his normal capabilities and, within limits, to evolve a gradual remediation of impairments caused by injury.

In light of clinical experience and accumulated research, a number of treatment techniques (modules) have been developed for the purpose of cognitive treatment. In accordance with assessment results and individual goals for rehabilitation, a treatment "menu" is composed for each patient. This tailored program includes cognitive modules which are applied either consecutively or concurrently (Hoofien & Ben-Yishay, 1982).

The main cognitive modules are:

- Individual treatment of concentration, simple attention and split attention (Hoofien, 1987; Ben-Yishay, et al., 1978).
- Individual treatment for manual dexterity and eye-hand coordination (Ben-Yishay, et al., 1978).
- Individual treatment for figural analysis and synthesis (Ben-Yishay, et al., 1978).

These individual cognitive treatments are given throughout the entire year between two to four hours weekly:

- Group treatment for memory functioning (Vakil & Shelef, 1990).

(...)

- Group treatment for verbal communication.
- Group treatment for solving complex logic problems (Gross, Ben-Nahum, & Munk, 1982).
- Group treatment for mathematical ability, up to eighth grade level.

### *The Vocational Sphere*

During the course of the intensive treatment year, three aspects of vocational rehabilitation are dealt with: work habits, vocational choice and improvement of vocational skills. In addition to personal, social and cognitive aspects, the weekly treatment framework also emphasizes appropriate work habits. The conduct required from participants mirrors that of a real work place. They must arrive punctually, sign time cards, report and conform to accepted work norms. Concomitantly, group vocational counseling is conducted during the year to assist choosing a vocation, becoming acquainted with various places of work and volunteering in different jobs for a period of time.

During the latter third of the treatment year, a vocational rehabilitation program is planned together with the rehabilitant on the basis of vocational assessment and consultation. Upon the program's conclusion it is carried out by the placement worker and the rehabilitant.

### *The Vocational Experience and Follow-up Stage*

This is the final and perhaps most important stage of treatment. Its aim is to apply in the vocational as well as social and family environments, the changes and improvements achieved in the intensive stage and to reinforce the trends of progress. After a short term of vocational education the rehabilitant begins actual employment at appropriate jobs. During this stage the psychotherapy and family therapy are maintained. Termination of this stage (and, in fact, that of the whole course of treatment), which may well be prolonged, takes place after a final vocational decision has been made, and stability at work and in the social, emotional and family spheres has been achieved.

An important advantage of this procedure for vocational placement lies in the fact that the same unit that dealt with rehabilitation also assesses the results in the field and their application. The continuity of treatment and placement enables the patient, as well as his/her therapists, to consider thoroughly and to gradually construct the process of advancement.



### Case 3: The Case of P. T.

P. T. finished the intensive treatment program with a new understanding of how her cognitive limitations dramatically affected her overall functioning. She understood that she would never achieve the professional status to which she once aspired. She also became aware of how she presented herself: confused and disoriented.

The next stage of therapy (post intensive treatment program) was individual psychotherapy. In this stage, P. T. struggled to assimilate her new self-image with the original self. Accepting her cognitive limitations and disorientation as a part of herself was, for P., equivalent to destroying the dreams and hopes of the original self. Suicidal ideation and depression were interpreted as a need to save the original self. P. began to understand how she forbade herself enjoyment since it would symbolize an acceptance of her new self. Only after several years of psychotherapy was P. able to begin dating men whose company she enjoyed in the "here and now" and not rather than according to old measures of approval. Soon thereafter she married. She ended therapy by saying, "I'm not what I once was but I'm not ashamed of what I am now."

### Therapeutic Community in a Sheltered Setting

This special community treatment framework is suited to those rehabilitants who, due to the severity of their impairments, have no reasonable chance of being integrated into the competitive working world. Hence, the sheltered community framework is designed to help improve the quality of the social and occupational lives of its rehabilitants, enabling them to live in a productive social atmosphere while providing the occupational and social interventions and intellectual stimulation necessary to prevent regression.

The treatment program in the sheltered framework includes four occupational workshops and a wide variety of ameliorative treatments. The occupational workshops are:

- Carpentry workshop — engages in individual production, primarily in hand crafts of carpentry products for personal use (i.e., toys, decorations, games).
- Production workshop — engages in assembly and packaging (production line) of different products and instruments supplied by outside manufacturers.

- Creative workshop — engages in creation of decoration and hobby products for personal use.
- Photography workshop — engages in photography (black and white) on an amateur level.

The accompanying array of treatments while participating in the workshops includes psychotherapy, family counseling, cognitive treatments, speech therapy and occupational therapy.

A personal treatment program is adapted for each rehabilitant. Two-thirds of the time is spent in the different workshops (adjusted to each individual) and one-third of the time is set aside for various individual treatments. The content of a treatment program varies according to the individual's progress and the need for varying his/her stay within the framework. The rules and expectations of the work program are determined and made known from the outset. The rehabilitant must try to contend with them to the best of his ability. Nevertheless, since it is essentially a sheltered setting, a liberal policy of discipline is adopted and adjusted to the individual.

Since most of the rehabilitants in this framework remain there for long periods of their lives, special emphasis is put on group consolidation and creating a productive, mature and social atmosphere. The group of rehabilitants is given administrative responsibility over community activities which take place regularly (i.e., excursions, parties, meetings with guests). Internal social issues and similar matters are brought up for discussion in community meetings once a week where community decisions are made by sampling or democratic majority.

The sheltered community framework interacts with the community at large in several circles. Within the family circle, family members share inner community life both on special occasions and through personal on-going counseling. Thus, the therapeutic community also constitutes an emotional and supportive "home" for family members. On their part, family members contribute through their presence and involvement in community life to the community's atmosphere of productivity and health. On the vocational level, the therapeutic community is connected both with outside factories and with employers who accept graduates who show ability appropriate for external placement.

#### Case 4: The Case of A. F.

A. F., a 30 year old single male, was the only survivor in a head-on collision in which three passengers and the driver were killed.

A. F. was in a coma for three months and was given little hope of recovering any basic function. In what the family considers a miracle and to the surprise of the physicians, A. gradually regained consciousness, began to verbalize sounds and to feed himself. A. was able to walk with a cane, make himself understood, and master most of the basic daily living skills (hygiene, dressing, eating).

After one year of hospitalization, A. was finally discharged. Although, before the injury A. had lived on his own, he was forced to move in with his elderly parents. Despite his significant advancement, he remained severely impaired. In particular, A. lacked social inhibition and frequently violated social norms. His behavior was childish, intrusive, and inappropriately sexual and aggressive. The quality of A.'s thinking was rigid, constricted and concrete. His world was centered around his needs and others were designed to satisfy them. A. became increasingly agitated, claiming he was bored. It then became clear that A. needed a daily routine. The sheltered workshop was accepted by his parents with a sense of deep humiliation, while A. was relieved. A. quickly found that a daily routine of physical work, carpentry and occupational therapy contained much of his anxiety. However, his behavior was far from acceptable and the staff created a behavioral program in which his behavior was reinforced with self-chosen rewards. Six weeks into the program A. was involved in a physical fight with another patient. The patients made it very clear that A.'s violent behavior was not acceptable; they distanced themselves, and for the first time since the accident A. expressed a desire for friendship.

A. has been at the sheltered workshop for seven years. He considers the workshop both his home and work place. And, he has learned to conform to the norms of and feels he is a valued member of the work shop community.

#### Social Clubs

As an expression of the Institute's emphasis on the rehabilitant's social-community quality of life, the Institute maintains social clubs for its own rehabilitants and others in the community. The clubs are operated once or twice a week during the late afternoon and evening hours. The purpose of the social clubs is to give the

interested rehabilitant an opportunity for positive social activity, without any professional interference, with emphasis on free will and independent decisions.

The clubs are not designed to meet all the rehabilitants' social needs or to substitute for other settings, but rather to supplement them. Many persons with brain injury, among the Institute's clientele and others, do in fact integrate into regular social frameworks, and are content with this.

Nevertheless, there are some rehabilitants who feel more comfortable, more open and more able to enjoy themselves among other "fellow rehabilitants" and this is the rationale for supporting the clubs.

The scope of activity in the clubs is determined to a great extent by their members. The Institute, as a maintenance body, supplies the logistical and budgetary framework and minimal professional support. Members decide from time to time on activities for the coming months. The content is characteristic of hobby and leisure activities, such as exercise classes, a cooking class, photography, painting, ceramics, social-political discussions, group outings to movies, and other social, recreational or cultural activities.

As noted, the club is regarded as purely for social enjoyment, without any therapeutic or rehabilitative purposes. The "contractual" basis is the member's desire to spend time with his peers and fellow rehabilitants. Though there is an underlying assumption that the social encouragement gained by a club participant will also facilitate his integration into other social frameworks, this assumption has no operative expression and is given no relative preference over the social experience per se.

### Individual Treatment

Above and beyond the three community group frameworks enumerated so far, the Institute also supplies individual treatment.

Individual intervention, which usually takes place between one to four hours weekly, is intended primarily for two groups of rehabilitants. At one end of the spectrum it is designed to answer the needs of rehabilitants already partially integrated within external vocational training and social frameworks but who suffer from personal, emotional or other specific distress. The primary foci of treatment in such cases are individual psychotherapy, rehabilitation counseling, family and couple therapy, and specific cognitive treatment.

Beyond providing a response to the client's personal and family distress, this service is intended to aid complete integration into the community. It is, naturally, sought more for rehabilitants who suffer difficulty in one specific area of rehabilitation which can be dealt with by treatment in this limited setting.

However, it is this type of service which is actually generally needed. On the other end of the spectrum, this service is appropriate for rehabilitants who, because of various social/behavioral and cognitive impairments, are still incapable of fitting into rehabilitation or training frameworks, either at the Institute or elsewhere. Unlike the previous group, what characterizes these rehabilitants is in fact multiple impairments in different areas, low self-awareness and deficient motivation for rehabilitation.

The purpose of treatment in this case would be to help the rehabilitant improve awareness of limitations, in order to enable the rehabilitant to integrate successfully into more intensive rehabilitation settings.

Individual treatment of this type would usually be graduated quantitatively — starting with a small amount and increasing gradually the number of treatments over time and the variety of their content. Thus, in the course of time the rehabilitant would also be integrated into therapy groups and therapeutic-community activity, still as an "external" participant, until he is ripe for more intensive treatment.

### Neuropsychological Assessment

The main goal of assessment is to arrive at a differential diagnosis and an up-to-date evaluation of the patient's mental, cognitive and social condition. According to this evaluation the patient's needs and suitability for treatment are determined, and a provisional therapeutic approach for the initial stage of treatment is constructed. The assessment battery is divided into two parts: (a) a cognitive diagnostic battery and (b) a behavioral-social-personality diagnostic battery.

#### Case 5: The Case of D. Y.

D. Y., a married, 38 year old father of three, was head injured in a car accident with a loss of consciousness for two hours. He was discharged from the hospital the same day with no clinical signs. D. reported back to the emergency room complaining of headache and dizziness — only to be told he was experiencing high anxiety. On the third visit to the emergency room, a hematoma was

discovered and operated on. D. never recovered from the sense that others suspected him of "playing sick." When he failed to succeed at work he became clinically depressed. Although D. suffered from attention and memory problems he did not dare attempt to attribute them to the accident for fear of being accused of hypochondriasis. After two years of classical psychotherapy for his depression, D. was referred for a thorough neuropsychological assessment. The therapist's referral question was whether D.'s head injury had caused cognitive deficits which were preventing him from returning to his normal social and occupational level of function. The results confirmed that D. suffered from an overall decline in intellectual functioning with impairments in his processing of information, short-term memory and the ability to convert relevant information into an efficient plan of action.

These cognitive limitations were seen by the evaluator as the primary reason for occupational failure and subsequent depression. The assessment served to help D. and his family reinterpret D.'s depression as a reaction to D.'s decline in function. The next step was a much longer process of accepting emotionally D.'s cognitive limitations.

### *Cognitive Battery*

In the cognitive battery the patient's abilities and impairments are examined by nine categories: attention and concentration, dexterity and coordination, visual perception, memory, learning, planning and anticipation, acquired abilities, comprehension and judgement, abstraction and concept-formation. The examinations are conducted by means of familiar neuropsychological diagnostic batteries, intelligence batteries, memory tests, ability tests, neurological examinations and others. The inferred evaluation of the cognitive results describes simultaneously the level of performance (normatively) as well as the quality of performance with respect to cognitive processes typical for each diagnostic category. In conclusion, a "cognitive map" is obtained, presenting the characteristic cognitive function in each category separately and as a whole. At a later stage the points of weakness and strength serve in defining treatment plan priorities.

### *Personality Battery*

The personality diagnostic battery includes several personality tests such as the Rorschach test (Rorschach, 1951), the Bender test (Bender, 1938), "Draw-A-

Person" (Machover, 1949), the Thematic Apperception Test (Murray, 1943), vocational interest tests, clinical interviews (including a psychiatric examination) of the patient and his relatives and behavioral observations. As a result of these, a personality assessment is obtained, as well as a personal and familial anamnesis, which is of cardinal importance in understanding post-traumatic personality reactions.

Assessment may be provided both as a separate service for the client's purposes (legal actions, vocational guidance) and for the sake of determining the type, content and intensity of recommended treatment. In the more intensive services (treatment communities) assessment is a condition for acceptance.

### Case 6: The Case of T. N.

T. N., a 25 year old good looking man injured at the age of 17, presented himself in a stiff and stern manner. He was highly critical of others and described his social experience as one of withdrawal, alienation and rejection. After a series of unsatisfying traditional individual psychotherapies, it was decided that T. was in need of an intensive treatment program which could focus on T.'s social functioning within the program. T.'s initial experience of the intensive treatment program paralleled his general experience of life. He felt different from the rest of the group, and expressed desire to leave therapy. The individual therapy within the program was designed to contain T.'s anxieties and encourage T. to enter the group. During the tenth session of the group therapy T. dramatically described his fears and difficulties in communicating with the group members. The process was arduous, with several mini-crises in which T. felt a need to withdraw and criticize. However, the group members in the program served as a great source of encouragement. T. saw how others struggle with issues of self-esteem in their relationships toward each other, their families and their community. One month before the termination of the program T. reflected upon his achievements. He had stopped criticizing others, he had made significant overtures of friendship, initiated outings outside of the Institute's programs, and taken stock of some, not all, of his cognitive limitations and how they influenced his social functioning.

T. made a final step forward; he began to talk about dating women and the compromises he would need to accept in choice of occupation.

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# CHAPTER FIVE

## The Neuropsychological Unit for Treatment and Rehabilitation Givatayim, Israel

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### Introduction

In this chapter, we wish to describe the way neuropsychological intervention is applied in our Unit. We will begin with a brief review of the development of the Unit. Following this, the Givatayim Unit's approach will be presented in some detail: this section will include a discussion of the conceptual framework and theoretical orientation of the Unit, our approach to assessment and evaluation, principles of therapeutic intervention, and an examination of family and social system dynamics. The last section of the chapter will outline structural features of the Unit and some of the programs offered.

### The Development of the Unit

The Neuropsychological Unit for Treatment and Rehabilitation was established in 1977 with the partial support of the Israeli Ministry of Defence. Since then the unit has functioned both professionally and administratively as an autonomous body. At first, clients referred to the unit were brain-injured individuals who needed post-acute treatment but were unable to benefit from existing intensive and structured rehabilitation facilities. These included two major groups of clients: (a) those whose severity of impairment precluded their participation in these facilities, and (b) those whose moderate impairment enabled them to retain their jobs and position in life so that intensive treatment was not indicated. It soon became clear that the orientation and therapeutic principles guiding interventions and strategies, were eminently appropriate for an extremely broad spectrum of head-injured clients, suffering from and exhibiting varied diverse conditions resulting from their injuries.

The Unit was established in 1977 with a staff of three part-time psychologists and a senior supervisor. By the end of the first year the Unit's case-load numbered ten clients. Both staff and clients have increased in number considerably over the

years. At present the Unit's staff consists of five senior staff members and four interns, all trained as psychologists and psychotherapists, and including a psychiatrist and a job-placement counselor. The Unit's psychiatrist, who has specialized in the treatment of head-injured clients, is responsible for psychiatric and pharmacological interventions. He helps coordinate treatment in other medical institutions and participates in evaluation and treatment planning. The Unit also serves as a training center for University students.

Today, the Unit treats over 180 brain-injured clients and their families. Client-referral sources include: the Rehabilitation Department of the Ministry of Defence, the Rehabilitation Department of the Institute for National Insurance, and self-referral. The Unit is situated in Givatayim, which is a suburb of Tel Aviv; a second clinic was opened in Jerusalem in 1985.

### THE GIVATAYIM UNIT'S APPROACH

#### Conceptual Framework and Theoretical Orientation

The Givatayim Neuropsychological Unit's orientation and treatment model regards all aspects of treatment within the broad context of psychotherapy and the psychotherapeutic relationship. The model, which will be presented in some detail, has evolved over the years in response to several underlying and crucial perceptions. These relate to our perception of the head-injured client, and the treatment processes. This perception will be illustrated using brief examples drawn from the therapy room.

The following illustration taken from Mr. L.'s therapy highlights issues that will be discussed further on.

#### The Case of Mr. L.

L., a 35 year old veteran, lost an eye and sustained frontal injuries several months ago when a rock was thrown at him during his army reserve service. Recently, he allowed his wife to convince him to join her at a party. Assuming his pre-morbid social role, he poured the drinks, but he missed most of the glasses and ruined the tablecloth. He then proceeded to miss the glasses when adding the ice cubes. His good natured friends and his wife responded by pointing out humorously that he was drunk before even drinking. L. laughed along with them, not feeling any embarrassment. L. brought this incident to the therapy session as an example of his problems with depth perception.

This incident reflects how the reality of the brain injury does not become part of the person's awareness. Avoiding the awareness of the brain injury is the result of an interaction between a deficient cognitive system and defensive dynamic processes. In this case L. perceived the event in a concrete way, isolated from any generalized, abstract and personal significance. At the same time, dynamic denial and isolation defence mechanisms were utilized to the same end. These processes found external reinforcement in the denial and protective response of L.'s wife and friends. The role of the physical, overt disability (i.e., the lost eye) is magnified and is perceived as the sole reason for all that is wrong. The above incident becomes one of many fragmented experiences that are not integrated with each other or with L.'s perception of himself. There is also a marked dissonance between the various levels of L.'s responses to his condition: L.'s initial refusal to attend the party indicates some emotional awareness of his changed social identity. On another level his prompt taking charge of the drinks points to the persistence of a pre-morbid self image. On yet another level, the incident was important enough for L. to bring it to the therapy session albeit for the less relevant reasons. These and other levels exist concurrently but in a disjointed manner.

In this and other cases, we choose to focus our attention on the way that the integrative aspects of the client's personality are affected by the direct and indirect sequelae of the injury. These would include the following:

1. The mutual augmentation of the dynamic defense processes and the cognitive deficits (L. could not correctly evaluate the relative significance of his lost eye in his visual motor coordination, and whatever he could comprehend he couldn't "afford" to know).
2. The fragmentation of the self concept brought about by irreconcilable experiences (L.'s persistent effort to maintain his pre-morbid social role and his obvious inadequacy).
3. Lack of congruity between the client's various levels of perceptions (L.'s lack of awareness of his social difficulties and his unexplained unwillingness to go out).
4. The difficulties experienced by L.'s wife who is confronting her own personal loss (her husband is physically present yet in many ways absent as the person she knew).

5. The ways in which a supportive family and social network reinforce the "false self" (The excuse given by L.'s wife and friends for his spilling the wine).

Before we discuss the principles of therapeutic intervention, it is appropriate to review how these principles guide the evaluation process.

### Assessment and Evaluation

A detailed presentation of our approach to assessment is beyond the scope of this chapter. However, we would like to point to some areas in which our conceptual framework has a specific influence on the evaluation process. This is reflected in the qualitative analysis of test data rather than in the specific choice of tests used. Furthermore, observing and understanding the way the client engages in many aspects of his assessment is of great value. We may briefly review the following:

1. On the most basic level, the assessment process attempts to identify areas of deficits and pathology, particularly those that may be indicative of neuropsychological syndromes. In this, the evaluative tests and procedures are quite similar to those practiced in most neuropsychological clinics.
2. Our assessment process is heavily biased towards identifying the client's cognitive style. This style is seen as the result of an interaction among the client's pre-morbid cognitive style, his current deficits, cognitive compensatory strategies and dynamic coping mechanisms. Understanding the nature of this interaction is an essential goal of the assessment process. One of the ways in which such understanding may be enhanced is to look for the simultaneous impact of dynamic and cognitive factors in both cognitive and projective test material.
3. Special attention is given to integrative and meta-cognitive functions. In this context, the client's ability to actively and efficiently seek information pertinent to the task at hand is evaluated. Similarly, the client's continuous awareness of his goals while engaged in a task is also evaluated.
4. Testing-of-limits is often incorporated into the neuropsychological evaluation process. In our clinic, we find particular interest in extending the testing-of-limits to the interaction between the testee and the therapist-examiner. In most cases, new clients are evaluated by the therapist over an extended period of time. In this way, the therapist may observe how the therapeutic relationship affects the client's performance. Information obtained is of prognostic value,

provides guidelines for future therapeutic involvement and is indicative of the client's ability to establish and benefit from interpersonal relationships. This aspect of testing-of-limits is less relevant in medical-legal assessments than in the evaluation of clients who begin the therapeutic process.

5. Since ecological validity is our main concern in assessment, we often seek clients' permission to include significant family members in an intake session and to visit the client in his home environment. This is of particular significance since so many of our clients are stimulus-bound and behave differently in different environments. Establishing a direct link between family members and the therapist and home visits are important sources of additional perspective since many of our clients may be inefficient agents of information.
6. The continuous process in which the therapist-examiner and the client engage in deriving pertinent information from test data is in itself a test situation. Issues examined at various points throughout this process typically include: the client's way of coping with his new reality, particularly when it is presented to him unambiguously; his ability to assume an active role in generating, together with the therapist, an integrated understanding of this reality; his ability and willingness to assume responsibility in sharing new information and insight with significant others.

In view of the above, the evaluation is seen as a multi-purpose process. To begin with, the therapist is provided with many levels of information: symptoms and syndromes, cognitive and personality style, interaction between clinical and neuropsychological dimensions, and social and interpersonal resources. In addition, the evaluation process serves to introduce a framework for future interventions. For example, the developing interaction between the client and the therapist-examiner establishes a concrete basis for future discussion of difficulty and disability within context of acceptance and coping.

### Principles of Therapeutic Intervention

Our intervention model implements the following:

1. All interventions are conducted within the broad context of the therapeutic relationship between client and therapist. This context is based on acceptance and positive regard for the person as he is today. He is experienced by the therapist as a whole person in a way with which he can identify. Within this context, the need for dynamic defenses is reduced, and thus the dynamic

defenses and cognitive deficits are somewhat untangled. Furthermore, within the dynamics of the therapeutic relationship, integration is multi-dimensional. The therapeutic process involves the identification of specific deficits and areas of impaired functioning, and this is accompanied by interrelating these to one another and providing an ego-involved frame of reference. For example, impulsivity, short memory span and inadequate communication are identified and interrelated to each other in terms of the client's inability to remember intentions or achieve a meaningful goal, and this is related to his brain injury. Cognitive deficits are thus presented to the client as sources of confusion and hindrance to integration. Development of cognitive skills and more adaptive coping mechanisms can be perceived as an integrative way of dealing with conflicting information about world and self and regaining mastery.

An important aspect of the therapist's role is to enrich and rehabilitate the client's emotional repertoire in intensity and variety. A detailed presentation of neuropsychologically-based interventions is beyond the scope of the present paper and is available elsewhere (Goldstein & Ruthven, 1983; Gross & Shutz, 1986). The transference relationship enables the client to gradually regain coherence of his fragmentary self experiences. For example, the client who can identify with his therapist's emotional response to his loss, may begin to mourn and integrate his mourning with his other present experiences and memories of the past.

2. By necessity, the language of therapy with the head-injured client has unique qualities (Gross, Klag, & Munk, 1986). For example, the client's concrete attitude and perseverance, while obviously a hindrance to adjustment, may paradoxically enable the therapist to suggest slogans that the client can use to organize and develop his behaviour. A violence-prone client learned to use the slogan "strong men don't hit people." He subsequently internalized the value of restraint. Another client suffering from a severe "frontal syndrome" learned to ask himself "What do I have here?" whenever he came into a new situation. Repetitious experiences with this question taught him to habitually scan his environment. Along with other developments more directly related to impulse control, this client found — to his surprise — that he became more attentive to his girl friend's moods.

It should be noted that a cognitive intervention which is conducted within the framework of a therapeutic relationship often has significant impact on interpersonal and emotional behavior.



3. While the psychotherapeutic relationship serves as context for all interventions, the specific needs of the client with brain injury require interventions to be firmly and explicitly anchored in the client's actual reality. This anchor is of paramount importance because of two interrelated issues. First, as many of us know, the client may not interrelate experiences to another (Mayer, Keating, & Rapp, 1986). He may be stimulus-bound and concrete, and unable to connect — without external guidance — issues dealt with in the clinic with events that take place elsewhere. For example, a client may entirely neglect to bring into therapy the fact that he has a girlfriend. In a similar manner, a client may fail to see the relevance of his emotional reaction to the test performance and his refusal to meet people. Secondly, the client may not on his own relate and apply abstract knowledge, emotions and concrete events to one another. Thus a therapist may feel that the client talks about anxiety related to the possibility that his wife might leave him, while in actuality he is relating separately to either his difficulty in taking care of himself without help, in being alone, or else to being deserted. Indeed, the client's feelings of loneliness, fear of abandonment and anxiety, unless tied together by the therapist to the concrete family crisis, will remain separate and isolated and even lack actual experiential meaning.

In view of the above, cognitive functions are regarded not as isolated phenomena, but within the broader context of the individual's need to achieve coherence of information and experiences. Hence, a discussion of cognitive deficits can provide a framework for relating to a client's emotional world. Similarly, the client's emotional responses may serve as a framework for discussing the way in which he deals with information.

4. It is of utmost importance that while in therapy, the client is fully involved in his "real" life, outside the therapy room. The client is consistently discouraged from seeing himself as a "patient" whose existence in the clinic is separate and distinct from his everyday life. This requires both minimizing actual treatment hours and creating specific therapeutic strategies. The clients in our unit get usually one or two hours of direct treatment hours per week (in no case more than four and this would include family and group therapy where appropriate) and will use the rest of their time fulfilling other roles such as family member, employee and friend. We deliberately refrain from offering para-medical



services (such as physical, speech, and occupational therapy) as part of our services and let the client get such services elsewhere. Thus, in a concrete way, the client is discouraged from seeing himself as the passive recipient of treatment at the Unit. On the contrary, he is encouraged to see himself as an active agent in his rehabilitation process and to assume responsibility as best he can.

When a need to coordinate treatments emerges, the client will be part of the coordination process. He may be given the opportunity to identify the need for coordination, bring together the different parties and propose a policy as the case may be. Whenever possible the client will be the one who explains his situation to others, utilizing concrete examples taken from interactions with his various therapists and to convey "abstract" explanations about deficits and dysfunction. When a multi-disciplinary team is working with the client, the client himself becomes a significant member of that team.

5. The cognitive difficulties of the client usually require therapeutic strategies and techniques designed to facilitate the impact of the therapy and its gains on daily life. Sometimes, deliberate steps are taken to provide the client with a concrete representation of his therapist while he is writing a daily log. When the client is writing the log he is having a covert dialogue with his therapist and can bring together his perception and feelings with those of the therapist. Caution should be taken that the context within which this dialogue is developed is the therapeutic relationship. In this way, three dynamic dimensions have simultaneous presence and can be integrated into one coherent system: 1) the actual and concrete life events of the client, 2) the therapeutic goals, and 3) the internalized therapist. Another means of facilitating integration between the clinic and ongoing life events is by reducing symbolic boundaries between "The Clinic" and "The World." Our Unit is currently located in a residential apartment building and, from the outside, is indistinguishable from surrounding flats. Neighborly relationships are established between staff and clients and the next door grocer. Clients are encouraged to relate to the Unit in an informal manner, to make coffee for themselves in the kitchen, to interact socially with the secretary, other staff members and other clients.

To sum up this section, the following steps are taken to increase generalization and internalization of therapeutic gains and reduce the limits created by the client's tendency to be stimulus-bound, concrete, and defensive:

1. minimizing treatment hours;
2. clearly defining and limiting the role of the therapist in the client's life;
3. encouraging the client to assume an active role in coordinating his relationships with other agencies and life systems;
4. maximizing the representation of life events in the therapy session and of the therapist in life outside the room.

These steps help in making life an integral part of the client's therapy, and therapy an integral part of his life.

### Dynamics of Family and Social Systems

A major challenge for the clinician is to find ways of augmenting interspersed direct client contact by maximally utilizing his various life systems as rehabilitating agents. This should be done with full client participation and without turning members of the client's milieu into therapists.

The client's significant life systems — family, social networks, occupational milieu — provide a primary source of meaningful information and experiences. These systems themselves are inevitably traumatized. Often, the patterns of readjustment become, in one way or another pathological, even when the family was pre-morbidly fully functional. The consequent interactional patterns with the client provide him with contradictory and confusing (or negative) information and experiences.

L.'s case as presented above, illustrates a typical interaction between the individual with brain injury and members of his family which hinders the person's rehabilitation. There are many and complex reasons why a non-injured family member, like L.'s wife, reinforces those perceptions, feelings and behaviors of the client which are inadequate. Mrs. L. felt that she could not hurt her husband's feelings by confronting him with his feelings. She also shielded herself from the full realization of the changes in her husband. In this way, a myth of continuity is preserved. Overt expression of frustrations and anxieties are

suppressed. However, covert emotional responses continue. The family, including the identified patient, becomes locked into a maladaptive system.

The eventual aim of therapy and rehabilitation is the reintegration of the client in social, familial and occupational systems. The process of reintegration of the person with brain injury into his family and social systems places an extremely heavy burden on that system (Brooks, 1984). It calls for a flexible redefinition of roles and interactions, i.e., a redefinition of the family's self-concept. For most families, this process requires external and professional help. This help needs to be introduced as soon as possible so that continuity of the client's involvement and identity as part of his social systems is preserved, yet modified to accommodate new realities.

Therapeutic intervention with the family is important for the client's progress, while at the same time it addresses the family's pain.

An important area of challenges and difficulties for the family therapist is in the seemingly conflicting interests and perceptions of the client, his family and the therapist. These differences may be illustrated in the case of Mrs. S.:

#### The Case of Mrs. S.

S., a 40 year old highly educated mother of two sons, sustained several brain-stem hemorrhages and demonstrated emotional flatness, lack of initiative, extremely brief memory span (she could not remember parts of conversation within ten minutes), in addition to other severe cognitive deficits and difficulties in vision and balance. S.'s husband complained that S. spent most of her time in bed refusing to join the family in the living room. She would also refuse to go outtings with the family, suggesting that she'd rather stay home. She disregarded her lack of safety and need for close supervision. S.'s family were extremely worried by what they considered to be indications of regression. Much family interaction evolved around these issues: S.'s husband consistently prodded her and argued with her about her "lack of cooperation and motivation." In the couple's therapy, whenever these issues would come up, S. would retreat and doze off. In one of the sessions, S. explicitly stated that she wanted to die. Her husband, who is a kind, supportive and warm person, tried to convince her that she had greatly improved and should be grateful for that — as he was.

S.'s behavior was reinterpreted for both her husband and S. herself as genuine expressions of positive therapeutic progress. S. and her family were able to see that underlying her refusal to leave her bed was the expected agony entailed in the situation of being with the family and yet separate. S. was unable, on her own, to formulate to herself or to communicate to others the pain aroused by having lost her function and role in the family. The therapist identified these painful issues for S. and her husband, and could view S.'s staying in bed as a willed decision to avoid confrontation with her reality. Since lack of initiative was one of S.'s problems, reinterpreting her passivity as an act of will allowed the therapist to regard her behavior in a positive way. Also, this provided S. with an admittedly small but growing sense of control. This whole process demonstrated to S. and the family a basic dignity and value which cannot be denied. In a similar vein, her voicing of suicidal wishes could be viewed as positive — albeit painful progress from her emotional flatness.

This example illustrates how in therapy with a brain-injured person, developing neuropsychological processes within the emotional context of psychotherapy must touch upon and often arouse complex, seemingly contradictory, and painful issues for the client and family. The client may be getting better, but this entails feeling much worse. As she becomes less defensive, she can become more aware that she can more fully comprehend and express her predicament. The mourning and depression seen in clients at this stage require therapeutic skill with both client and family, at times psychiatric intervention, and above all, the support of the therapeutic alliance. However, the stage of mourning is an essential part of the client's reintegration of her self concept.

### Structural Features and Programs

We have presented some of the underlying principles that guide the Civatayim Unit's evaluation programs and therapeutic interventions. It should be pointed out that the application of these principles is always adapted to the unique needs of each client and her family. The individual program is flexible, continually reassessed and constantly adapted to the chapter described the various and constantly changing roles assumed by both the therapist and the client at different levels of the treatment the way it is conducted in our unit. The major purpose of this chapter was to describe how we view the complexity of the brain-injured client and her needs, and the neuropsychological intervention processes that we developed to address these needs.

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## CHAPTER SIX

### U.S. Commentaries

*Sheldon Berrol, M.D.*



The concept of community rehabilitation services for survivors of traumatic brain injury (TBI) has engendered widespread international attention. The State of Israel has been a pioneer in recognizing the potential benefit of a community oriented rehabilitation approach. This undoubtedly has been the result of its organized acute rehabilitation effort for traumatic brain injury, and the highly trained staff of rehabilitation clinicians and researchers who recognized that discharge from hospital after traumatic brain injury does not conclude the rehabilitation process, but often signals the need for intense intervention in new directions. The broad multidisciplinary base of professional involvement was an essential component that had been missing in the European arena.

Persons with TBI were recognized as having a unique grouping of impairments that required specialized forms of intervention and that new services needed to be created if these individuals were to be integrated into the community. These clinicians appreciated early on that traditional rehabilitation settings or psychiatric settings were unable to substantially modify long-term outcomes, since they frequently failed to identify or address the higher order cognitive, and subtle (and sometimes not so subtle) behavioral deficits.

The papers in this monograph describe a variety of community based programs that attempt to normalize the TBI survivors' process of re-adaptation by utilizing the community as a therapeutic environment. They recognize the need for individualized vocational rehabilitation, including sheltered employment that is distinct from the traditional sheltered workshop settings, programs that conceptualize the problems and potentials in a new perspective. The potential for behavioral change, new learning and cognitive compensation of TBI patients mandates a change from the traditional workshop model designed for emotionally and developmentally disabled individuals. It became apparent that there was a substantial subgroup of chronic TBI patients who could enter the job market at some level if basic vocational and social skills were enhanced, and intrinsic abilities were facilitated.

The need to develop avocational pursuits both from the perspective of leisure time management, ego development and the process of social reintegration became a paramount effort. Most importantly, the Israeli investigators recognize the need to incorporate the family unit, not only in the therapeutic milieu but in the development of recreational and avocational skills. A revolutionary community-based recreation and treatment center, Beit Halochem, facilitates family participation through its broad scope of sports and recreational opportunities. This level of planned involvement, should be explored and emulated in other more affluent countries.

The programs described are based upon several universal concepts that form the basis for any successful community-oriented program. The goal of attempting to establish a "quality of life" hinges upon an individual's ability to assume some level of control in one's life. Thus we see repeated in several of the programs described, a graduated schema for the sharing of control within each of the programs based upon the patients' ability. This "control sharing" is accomplished within a group or social context. The development of an autonomous role and the acceptance of the responsibilities that accompanies autonomy, serves to reestablish ego strength and the concept of adulthood.

Also stressed within the programs is the concept of providing activities that relate to the individual's life at home, the community and at work. Engagement in activities that are meaningful to the individual is a major factor in overcoming problems of initiation and establishing motivation. The ability to use over learned premorbid skills oft times accelerates the rehabilitation process, and the acquisition of new skills and behaviors.

Several of the programs utilize a sheltered workshop approach and have been able to transition clients into mainstream work activities, although frequently at a different level than the patient functioned at premorbidly. Supported employment is not mentioned as such in any of the programs, but some of the elements appear to be present. The concept of placing the patient in the work environment and then training for the skills overcomes the difficulty in generalization of skills that clients with head injury frequently have. Mention is made of work site assistance for those who do return to a competitive environment, but there appears to be no formalized system of job coaching. The models presented appear to recognize that the potential for change is greater when meaningful ego satisfying activities are provided as part of the therapeutic milieu. Meaningfulness of the intervention appears to be a hallmark criteria, as well it should.

Dr. Katz presents a concept that requires further thought and exploration when he discusses their method of reimbursement for workshop activities. It is worth pondering that the rehabilitants elected to establish a common fund for monies received rather than to direct these monies to the individual who performed the work activity. It may well be that this would occur only when an adequate entitlement is provided. However, the end result is that a decision was made that societal or group needs had greater significance than individual needs. An interesting example of higher order thought processing.

Most of the programs discussed have a strong foundation in the psychotherapeutic process. This may limit the involvement of those at the severely brain damaged side of the spectrum. Experience and the literature suggests that insight therapy may be of limited success in the case of severe frontal lobe pathology. While a multidimensional approach is utilized by all the programs, the limited number of disciplines involved in some programs, and the patient's need to independently seek out care for motoric, orthopedic and neurologic problems would seem to be a disadvantage to staging goals and interventions based upon the patient's needs, rather than discipline needs.

Essential to the development of a broad-based community rehabilitation approach to the needs of TBI individuals has been the centralized planning that developed under government auspices that resulted in a systematic approach to care. As yet, such a systematic approach has not been replicated elsewhere. Certainly the size of the State of Israel has been a positive factor in the ability to develop a system of care, particularly at a community-based level. However, most larger nations could easily develop regionalized systems.

In general, the programs represent day treatment centers where rehabilitants are referred upon discharge from hospital, from chronic care facilities or after having lived in the community for some time. None of the programs represent the "transitional living model" that has been popular in the United States. There is, however, a heavy emphasis described in each of the programs on incorporating the family and social milieu of the individual into the therapeutic process. The advantages of incorporating the family, facilitating their understanding of the pathology and the resultant sequelae, and in expanding their own coping mechanisms is quite obvious. In the United States we have lost this potential since few programs are "community based," but every attempt is made to have wide geographic distribution. Patients must travel long distances to participate, and relatively few members of the family, and certainly none of the extended



family have access to this intensity of counseling or information. Thus it may well be that the need for "transitional" programs which require the patient to live in the facility, remote from the patient's community, all be it "homey," may not be necessary in the continuum of care if the therapeutic community is one with which the patient is most familiar . . . and if family and friends are maximally equipped to deal with the behaviors of the patient.



*Barry Willer, Ph.D.*

Director, Research and Training Center  
on Community Integration of Persons with TBI



The Research and Training Center on Community Integration of Individuals with Traumatic Brain Injury (TBI) has been in operation for slightly more than two years. During that time we have learned a great deal about the frustrations of these individuals and their families, with the services offered in most North American communities, or more importantly, with the services not provided. It would be ideal if the system . . . services offered in another country could be documented and eventually lead to a transfer of innovative aspects to the United States. This monograph describes various components of service for individuals with TBI in a country with a vastly different social system and one forced to cope with a larger than normal number of war veterans with TBI.

The programs we have observed in North America are best summarized by a report of the Ontario Head Injury Association in Canada (1989). Following five days of public hearings in three different cities, the report concluded that the vast majority of individuals with TBI do not receive the care and/or services that would facilitate community reentry. The typical outcome is return to the family, who must cope with the myriad of physical, cognitive and behavioral sequelae with little or no professional assistance. The report calls this *post coma abandonment*.

Various reports in the U.S. have been prepared by committees examining the status of individuals with TBI in their state. In New York, the system of community services was described as fragmented or nonexistent. In Missouri, many individuals end up in psychiatric hospitals receiving inappropriate services. There are similar reports on the status of needs of individuals with TBI in Alaska, Colorado, Connecticut, Illinois, Maine, Missouri, Rhode Island, Virginia, Washington, Virginia, etc. While these reports do not use the term *post coma abandonment*, they describe the elements that characterize this outcome. Services that facilitate community re-entry are scarce.

This monograph describes the development of a system of rehabilitation services in Israel that does appear to address the problems of *post coma abandonment*. It is interesting how these rehabilitation programs have been established in different organizational environments, including an inpatient rehabilitation setting, a stand-alone day hospital, a sheltered workshop program, and a community-based recreation and treatment center for veterans. Unfortunately, the authors do not provide a comparison of organizational compatibility between these types of settings but it raises the possibility for a comparison of the influence of different organizational environments, treatment ideologies and approaches to service intervention.

The impetus to develop or expand services in Israel is described as in direct response to the large influx of war veterans with TBI. It appears that, compared with the general population, veterans are perceived as more deserving of rehabilitation services, for a longer period of time, and with greater participation in the management of programs. It is interesting that there is no mention of the pre-injury characteristics of individuals with TBI as risk-takers or coming from disturbed families; a common theme in North American rehabilitation programs despite relatively little research support (Mack & Horn, 1989).

It is also interesting that the first programs in Israel were developed for those with severe behavior problems and others who are hard to serve (e.g., those placed in psychiatric programs). The next programs established were community-based and serve many who live at home. In North America, rehabilitation programs are more typically inpatient because, as Mullins (1989) points out, this is what the third party payers are willing to fund. Mullins also points out that rehabilitation in the United States is an industry and, as such, is driven by the profit motive. The industry is not likely to support programs that are difficult to fund or serve a

population that is expensive to treat. Individuals with severe behavior problems are the most difficult to treat and such programs are the most expensive to run. In North America, programs of this nature are rare. Community-based programs are also rare because it is difficult to find financial support for them. These programs are only now beginning to develop, but do not have the luxury of support apparent in Israel.

There are a number of innovative aspects of the programs described in this monograph. There is a clear emphasis on vocational adjustment, apparently not just to increase the earning power of the individual and reduce the financial burden to the state, but to increase the self-esteem of the individual and to reduce the stress on the family. The rehabilitation center described in chapter two presents a combination of vocational, educational and social activities for clients who may never return to gainful employment, but can nonetheless have meaningful daytime activity and relative autonomy. Chapter five describes a comprehensive community-based program for higher functioning clients, and the program is terminated only after the individual with TBI has been successfully placed in a vocational setting and has achieved stability.

Return to gainful employment for individuals with TBI is especially problematic. The problems of vocational adjustment are well documented in a recent edited book by Wehman and Kreutzer (1990). This book also highlights some of the innovative approaches now being utilized in the United States. These approaches, particularly supported employment, suggest that job re-entry is more likely when programs provide support to the individual on the job. Transitional and sheltered employment approaches may be too protective and may not allow sufficient generalization of skill learning, to be effective at encouraging competitive job placement. The programs in Israel adopt an attractive ideology but could also benefit from consideration of these innovative approaches.

The Israeli programs share a psychodynamic approach to treatment that is rare in North America. The community-based program described in chapter four outlines the assumptions that underlie this approach. The individual with TBI is assumed to have deficiencies in cognition, but also has defense mechanisms that interfere with successful adjustment. Individual psychotherapy, family therapy and group therapy are all provided. The acute care program described in chapter three provides an additional assumption that inappropriate defense mechanisms and family dysfunction can occur in the acute care and inpatient

rehabilitation setting and that early intervention is required to avoid problems. "Treatment is viewed as only one component that supplements the patient's experience of reality, and is under no circumstances a substitute for it."

It is generally accepted that a common characteristic of TBI is lack of insight (Wood, 1987). Hence, insight-oriented treatment approaches in North America are presumed counterproductive. Most programs emphasize physical and cognitive recovery with relatively little attention paid to personal or family adjustment. Conversely, programs in Israel emphasize psychotherapy and deliberately separate it from the medical and physical interventions.

Each of the programs described in the monograph offers direct and indirect support for families. Since these programs are long-term and community-based, their interactions with families are probably more normalized than is typical for inpatient settings. The program described in chapter two provides support groups for parents and a separate group for wives. These support groups continue several years after the injury. They also provide a support group for personal aides. In North America, support groups are offered in most communities by head injury associations with loose ties to professionals and treatment programs. Unfortunately, the monograph does not tell us whether associations of families and individuals with TBI exist independent of the rehabilitation programs.

Probably the most unique aspect of the system of services described for Israel is the commitment to provide rehabilitation services to all persons with TBI. Chapter one describes the legislation in Israel that dates back to 1974 (The General Disability Act) that reportedly makes this commitment official. Data from the Missouri Registry on individuals with TBI indicate that less than 50 percent of those with severe or moderate disabilities ever receive inpatient services, let alone outpatient, day hospital, or vocational services (Willer, Abosh, and Dahmer, 1990). Does every one in Israel with severe or moderate disability receive rehabilitation services.

Israel's commitment to providing rehabilitation services has stemmed from its respect for those who have disabilities resulting from representing their country in war. Although I have not read the General Disability Act, it is encouraging to see that it is intended to extend this commitment to everyone with disabilities. It is also encouraging that each of the programs described in the monograph is a long-term comprehensive service, some lasting years past the time of injury. However, long-term care reduces the total number of individuals who can be

served in any given year. The programs described in the monograph serve an estimated 300 to 400 individuals in total. According to the authors, there are about 2500 individuals in Israel disabled by TBI receiving disability pension. This suggests that a large number of individuals potentially have not, or are not receiving services. Either that, or the articles in the monograph represents only a small component of the rehabilitation system. Thus, while those who are served by these programs appear to be benefiting from exemplary services, there is a strong possibility that *post coma abandonment* exists for some individuals with TBI, even in Israel.

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