

**SOCIAL COMPETENCE FOLLOWING TRAUMATIC BRAIN INJURY:  
PROGRAM REVIEW AND GUIDELINES FOR INTERVENTION**

by

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## Abstract

The purpose of this study was twofold, to evaluate a social skills training program and to develop a set of guidelines for social skills intervention for adults with traumatic brain injury (TBI). Issues addressed in this study were: theories and models of learning for persons with TBI; cognitive-communication disorders - characteristics, assessment and treatment procedures; and the impact of cognitive-communication disorders on rehabilitation and community reintegration processes. The study was based on historical data from a 7-week pilot social skills training program conducted with two young adults with TBI, ages 22 and 28. Case studies and program evaluation documentation were examined. Improvements in social competence following TBI are associated with repetitive and consistent instruction, feedback, opportunities for the transfer of learning to functional settings, and adequate personal insight, awareness of deficit, and motivation demonstrated by the client.

Keywords: brain injury, rehabilitation, social communication skills

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## Introduction

This thesis uses key terms such as traumatic brain injury (TBI) and social communication skills. In order to assist the reader, a definition for each will be provided. References to TBI and head injury will indicate injury to the brain as a result of an external event such as a motor vehicle accident, assault or a fall, and will not include impaired brain function as a result of a stroke, aneurysm, tumor or a degenerative neurological condition.

Social communication skills refer to the use of language in a socially appropriate manner. This group of skills includes understanding and using verbal and nonverbal language to interpret and convey messages, using contextual and situational cues, and behaving in a socially accepted manner. The term pragmatics is used in the title of the communication skills program on which this study was based. The term pragmatics will be used synonymously, therefore, with the concept of social communication described throughout this thesis.

Due to the strong connections to financial status and self-esteem, and the links to other aspects of rehabilitation which relate to employability, vocational success has become one of the most important outcome measures in brain injury rehabilitation (Buffington & Malec, 1997). Return to work following traumatic brain injury (TBI) has been studied for the past decade yet few advances have been made to improve the opportunities for employment for individuals with TBI. Brooks, McKinlay, Symington, Beattie and Campsie (1987) were among the first to document poor vocational outcomes following TBI. Unemployment rates of up to 70 or 80% following TBI were collected in a seven-

year longitudinal study. More recent studies have supported these findings and have indicated that in addition to poor outcomes for vocational reintegration, up to 75% of the individuals who do return to work will lose their jobs within the first 90 days (Buffington & Malec, 1997).

Individuals with TBI present a unique challenge to rehabilitation counselors and educators. Long-term needs of this group include medical, psychological, residential, social, as well as vocational services (Goodall, Lawyer, & Wehman, 1994). Outcomes regarding return to work have been difficult to study. This is in part due to variation as a result of age, gender, severity and type of injury, education level, socioeconomic status, personality characteristics and employment history. Time elapsed since the injury also complicates the interpretation of research findings. Barriers to employment are linked to cognitive, physical, and psychosocial changes as a result of injury to the brain.

Physical disabilities, while a significant factor in adaptations for return to work, appear to be only minimally related to employability whereas cognitive and behavioural disturbances and personality factors are significantly related to employability (Kreutzer, Leninger, Sherron, & Groah, 1990).

Ben-Yishay, Silver, Piasetsky and Rattock (1987) noted that individuals tended to demonstrate failure to return to work due to cognitive impairments such as deficits in attention, persistence, memory and executive skills, problems associated with adynamia and/or disinhibition, impaired interpersonal skills, lack of awareness of the implications of the injury, and unrealistic expectations



concerning the types of employment for which they were suited following TBI. Cognitive deficits are also apparent in the failure to transfer compensatory strategies from setting to setting and the failure to implement acquired rehabilitation strategies consistently to improve functional abilities on the job (Ben-Yishay et al., Jacobs, 1997; Wehman, 1991).

Gaining employment may be challenged by the cognitive, physical and behavioural disabilities caused by TBI. It is, however, interpersonal skills deficits and behavioural dysfunction that prevent individuals with TBI from maintaining employment (Jacobs, 1997). Factors such as irregular punctuality, attendance, inability to get along with coworkers, inefficient production, and inability to manage personal life along with work, interfere with job retention. Psychosocial problems following TBI include depression, aggressive behaviour, family dysfunction, impaired self-awareness, and substance abuse. Other characteristics that interfere with return to work are disinhibition, problems with anger management, lack of initiative, anxiety, social isolation, and socially inappropriate behaviour (Ben-Yishay et al., 1987; Buffington & Malec, 1997; Jacobs, 1997; Kreutzer et al., 1990; McMordie, Barker, & Paolo, 1990).

Devany, Kreutzer, Halberstadt, and West (1991) studied the predictive relationship between neuropsychological assessment results and a return to work. Results from their study indicate that quantitative scores are predictive of a return to work after TBI when related to decision-making, problem solving and judgement. The most serious difficulties were noted in the areas of attention and information processing where more than 90% of the subjects performed in the

impaired range (Devany et al.). Additionally low academic scores for reading, spelling and arithmetic were problematic areas for many of the subjects.

However, neuropsychological testing did not provide sufficient explanation for the employment issues that are associated with TBI. Behavioural and psychosocial difficulties such as disinhibition, adynamia, impaired interpersonal skills, limited self-awareness, and unrealistic expectations regarding employment contribute significantly to poor outcomes in vocational reintegration (Ben-Yishay et al., 1987; Devany et al., 1991; Jacobs, 1997).

The cognitive and communication disorders associated with TBI result in problems with social interactions. Social competence is a set of skills which requires the integration of cognition and behaviour in order to act in a manner which is acceptable in society. It is a component of the executive function which encompasses the use of both verbal and nonverbal language and is demonstrated in processes such as self-evaluation and self-regulation behaviours. It is the understanding and implementation of the rules of communication, and the ability to read and interpret social contexts and cues. As previously described, social competence is a significant predictor of rehabilitation outcomes for community reintegration following TBI (Ben-Yishay et al., 1987; Buffington & Malec, 1997; Devany et al., 1991; Jacobs, 1997; Parente & Herrmann, 1996; Ylvisaker & Feeney, 1998).

Given the importance of social communication skills on rehabilitation outcomes it is important to investigate the complex relationships between cognition, communication, environment, and behaviour and to determine the

factors which need to be considered when developing a treatment plan.

Ylvisaker, Urbanczyk, and Feeney (1992) outline some key factors which influence social communication skills. These factors are interrelated and thus, changes to one area result in changes to the rest of the system. Therefore, all aspects of communication must be considered when establishing a social communication skills intervention program for individuals with TBI. The factors described in a social communication skills model (Ylvisaker et al.) are self, social cognition, communication, personal supports and social environment.

Brain injury can distort self-concept through the physical damage to the brain, which interferes with the perception and comprehension of cognitive deficits. Psychological denial of deficits is a common trait among individuals with TBI, which must be differentiated from cognitive unawareness of deficits for treatment purposes. Unawareness can result in anger, frustration and disengagement in the rehabilitation process.

Social perception including reading facial expressions and interpreting complex social situations, and social knowledge, including social routines, social rules and roles and social decision-making are all components of social cognition. These are key target areas for a social communication skills training program.

The goal of social communication skills training programs is improved communication skills, which includes the use and understanding of language and nonlanguage components. The connection between communication and behaviour is recognized in this section, as is the importance of understanding

social context in conversation.

Personal hygiene and grooming are important features of a social communication skills training program. Grooming, clothing and body language project an image which influences the way individuals perceive and respond to each other during interactions. Following TBI individuals may have an altered sense of self and may need assistance in developing a new self-image.

Social interactions are influenced by many factors in the communication setting or environment. The quality and style of communicative interactions are influenced by the roles that significant others play in the communication process. Social communication skills training programs need to address this variable for the successful generalization and transfer of newly acquired social communication skills (Ylvisaker et al., 1992).

This overview of a social communication skills framework is included in this section to illustrate the complexity of human communication. Consideration must be given to all of the concepts and components described above in order to develop a comprehensive program for the assessment and treatment of cognitive-communication disorders following TBI.

The text for this thesis is organized in the following manner. The review of the literature introduces the relationship between cognition and communication, social communication problems which can result from a traumatic brain injury, theoretical models for understanding the impact of a brain injury on cognition, learning, and social communication skills. Challenges and procedures for the assessment and treatment of cognitive-communication disorders are detailed.

The components of the pilot social communication skills project are detailed in the Methods section. Results from the pilot project are described and analysed. The Discussion section presents trends and findings from the review of the pilot social communication skills program. Guidelines for intervention are established and recommendations for future research are summarized. In the final chapter, conclusions from this study are presented.

## Review of the Literature

### Theoretical Models of Cognition

There are three theoretical frameworks with foundations in neuropsychological research that are useful in understanding the characteristics of cognitive-communicative disorders following TBI. They include: Brain-Behaviour relationships - a neuropsychological perspective on cognition and behaviour (Luria, 1973); Information Processing Model - an educational perspective on the process of learning based on an information processing model (Gagne, 1985); and Cognitive and Linguistic Processes: A Clinical Model - a cognitive-communication framework (Halper, Cherney & Miller, 1991).

Neuropsychology is a field of study that attempts to relate what is known about the functioning of the brain to what is understood about human behaviour. Behavioural phenomena associated with neural changes induced by injury, disease or dysfunction of the nervous system have been studied in an attempt to understand the role of the brain in thought and action. Luria's (1973) brain-behaviour relationship theory has contributed greatly to the understanding of the complexity of cognitive function. His research shifted the focus of cognitive research from the localization of specific and independent lobe functions to a focus on the intricate and integrated interrelationships of neural functioning. His research outlined three principal functional units of the brain and suggested that every form of mental activity involved the combined workings of all three units. Each unit had a distinct role to play within a hierarchy of brain function (Luria, 1973; Pollack & Whitlock, 1988).

The first functional unit is located in the brain stem's reticular activating system and its projections to the sub-frontal, prefrontal, and inner aspects of the temporal lobes. This system is responsible for regulating cortical tone and levels of alertness or arousal within the brain. There is a reciprocal relationship between the reticular activating system and the cortex which allows relevant stimuli to become differentiated from irrelevant stimuli. Since the maintenance of the optimal level of cortical tone is essential for the organized course of mental activity, this functional unit is the foundation for new learning, and goal directed behaviour (Luria, 1973; Pollack & Whitlock, 1988).

The second functional unit is located in the posterior region of the brain and includes areas such as the temporal, parietal and occipital lobes. Information from the outside world is received, processed and stored here. The information from the various senses is organized into data that the third functional unit can use to guide behaviour.

The third functional unit is located in the anterior portion of the brain, encompassing the frontal and prefrontal areas. This unit programs and performs executive functions which regulate and verify mental and physical activity. There is a feedback system which loops through all three functional units. Information from the first and second units is organized and evaluated and adjustments are made through ongoing communication among the three units (Pollack & Whitlock, 1988).

Luria's (1973) brain-behaviour relationship theory has been applied to the field of education as a framework to demonstrate the processes of learning and

how these processes may relate to neurological factors. Neuropsychological literature attempts to explain how the brain receives, analyses and stores information and uses this information to plan, program and execute behaviour (Adamovich, Henderson & Auerbach, 1985; Burns, Cook & Ylvisaker, 1988; Gagne, 1985).

An information processing model is comprised of processes such as attention, perception, memory, information processing, and executive function, and considers the influence of both internal and external factors in examining the learning process (Burns et al., Gagne, 1985). These cognitive processes are building blocks for learning. By assessing cognitive functions based on these component processes, one can begin to understand where learning is being challenged. This information can be used to plan intervention strategies.

Attentional abilities are the foundation for new learning. Sohlberg and Mateer (1989) describe five levels of attention focused, sustained, selective, alternating and divided. When there are attention deficits following TBI, the following behaviours might be observed reduced arousal and / or sleepiness, difficulty in focusing attention and filtering out distractions, difficulty concentrating and staying focused on task, difficulty shifting from topic to topic, or task to task, difficulty dividing attention between two or more topics or activities (Burns et al., 1988). New learning requires the ability to focus and sustain attention on task and the ability to selectively attend to the relevant details of the task. Impaired attentional abilities interfere with new learning by altering the perception, processing and retention of information.



Perceptual processes may be affected by cognitive deficits and / or through physical changes as a result of TBI. Perception is influenced by level of alertness and ability to selectively attend to meaningful stimuli. Perceptual problems following TBI can include difficulty in seeing objects as part of the visual field, perceiving the spatial orientation of objects, separating the object of perception from background stimuli, and recognizing objects if too much is presented at once or too rapidly (Burns et al., 1988). Perceptual problems impact negatively on learning when information received is not recognized, or key elements are distorted or omitted by sensory receptors.

The next component in the process, memory, is complex and multifaceted. There are two main components of memory; working, or short-term memory, and long-term memory. Working memory is responsible for encoding information received from the environment. It serves not only as a temporary store for incoming information, but also is responsible for the retrieval of associated information from the long-term memory. This process allows the combining of material to be learned with the contents of memory established by previous learning. The encoding process which transfers information from the working memory to the long-term memory is semantically organized (Gagne, 1985).

Long-term memory appears to remain relatively intact following TBI. However the ability to access prior knowledge and memories may be disrupted by inefficiencies in the retrieval process. Deficits in memory function following TBI may include difficulty in holding several words, thoughts or intentions

concomitantly, recalling pre-injury acquired information, academic skills or social rules, recalling information or events from earlier in the day or from previous days, registering new information learned, especially under stressful conditions, and, searching memory in an organized way to retrieve stored information (Adamovich et al., 1985; Burns et al., 1988; Gagne, 1985; Sohlberg & Mateer, 1989).

Efficiency and effectiveness of information processing may be reduced or significantly impaired following TBI. Attention and perceptual deficits may reduce the quality and quantity of information available to be processed; memory deficits may impact the rate of information processing and also can affect the association and integration of information. Problems in information processing may include reduced rate of information processing, difficulty processing large chunks of information, difficulty with specific modalities of information processing, such as visual or auditory, difficulty integrating information from more than one source (Gagne, 1985; Pollack & Whitlock, 1988; Sohlberg & Mateer, 1989).

Executive function refers to the processes of problem solving, planning, organization and self-regulation that individuals implement to function in day to day tasks. Setting goals, assessing strengths and weaknesses within the system, planning and directing activity, initiating and inhibiting behaviour, monitoring current activity, and evaluating results are all components of executive function (Halper, Cherney & Miller, 1991). When applied to learning, these processes are the organizational structures that influence how learners process information, attend to, store, encode and retrieve information. Gagne

(1985) referred to executive functions as “control processes” (p.77). These processes determine the learner’s success with the more basic levels of cognition such as attention, perception, memory and information processing, and determine which type of learning is necessary in a particular setting.

Gagne (1985) describes a second control process, “expectancies” (p.78 ). Expectancies represent the specific motivation of learners to reach the goal of learning that has been set for them or that they have set for themselves. What learners intend to accomplish can influence what they attend to, how they encode the learned information, and how they organize their responses. By combining purposeful learning through expectancies with the metacognitive strategies governed by executive function, the process of learning becomes an active and dynamic process.

Difficulties with executive function are related to the frontal lobe injuries frequently observed in TBI, and have significant impact on an individual’s ability to acquire new information. Problems in executive function following TBI may include difficulty in setting goals, perceiving strengths and weaknesses in an objective manner, planning activities, analysing a task into component parts, seeing relationships among things, organizing objects into appropriate groups, or organizing events into appropriate sequences, organizing information into themes or ideas, initiating and/or inhibiting behaviour; and monitoring and evaluating one’s behaviour (Sohlberg, Mateer & Stuss, 1993; Varney & Menefee, 1993).

The components of learning and the processes outlined in this model demonstrate the complexity of cognitive function. Impairment in one component of learning has an impact on the entire system of information processing. All components of learning must be considered when assessing abilities and developing treatment plans for individuals with TBI.

Halper, Cherney and Miller (1991) developed a conceptual framework for the management of cognitive and linguistic problems of adults with TBI. It combines neuropsychological literature and clinical experience and expertise in the area of cognition and language. The premise of the framework is that cognitive processes sensory reception, attention, perception, orientation, organization, reasoning, problem solving/judgement, semantics/pragmatics, and memory, underlie the performance of any task or functional behaviour and must be considered in the selection of evaluation and treatment activities.

Although the general cognitive components are similar to Luria's model and the information processing model, this model includes information which specifically identifies components of communication which are affected following TBI. In particular, the semantics/pragmatics section and the communication and executive systems are relevant to this literature review, as these areas focus on the relationship between the processes of cognition and communication.

Language is a complex process involving the comprehension, integration and expression of an organized set of symbols used for communication. The symbols are auditory for oral communication and are graphic or gestural in visual communication modalities. In this model, language has been divided into five

levels phonology, morphology, syntax, semantics and pragmatics. Semantics and pragmatics are the two levels of language that are primarily affected in the TBI population (Halper et al., 1991).

The first level of language affected is semantics. This term is used to describe the process of attaching meaning to words and sentences. This process requires the ability to integrate the literal meaning of the sentence with the speaker's intended meaning. Semantics is influenced by and influences many of the other processes in the system, including perception and orientation, problem solving and reasoning, memory, and, organization (Halper et al., 1991).

Pragmatics refers to the understanding and use of verbal and nonverbal language in the context of the communication setting. Verbal aspects of communication include the choice of words and grammar, as well as topic selection and maintenance, and referencing skills which combine to express a message. Nonverbal communication includes visual messages such as writing, eye contact, gestures, body language, facial expression, and, vocal expression such as pitch, tone, inflection and volume. Nonverbal communication behaviours can be used in combination with verbal communication or can convey information independent of words. Like semantics, pragmatics is influenced by and/or influences perception, orientation, memory, problem solving and judgement, reasoning, and, organization (Halper et al., 1991).

In conclusion, this model of cognitive-linguistic processes demonstrates that deficits in social communication skills, or pragmatics following TBI are related to, or are a symptom of, underlying cognitive impairments (Halper et al.,

1991; Sohlberg, Perlowitz, Johansen, Schultz, Johnson & Hartry, 1992). Deficits in the processes of sensory reception, attention, perception, orientation, memory, organization, reasoning and problem solving / judgement affect communication and executive function. Assessment and treatment of cognitive-communication disorders following TBI must be comprehensive and sensitive to these variables.

### Cognitive-Communication Disorders

Speech-language pathologists work in collaboration with other rehabilitation professionals such as psychologists and occupational therapists to assess and treat the cognitive and communication disorders which result from TBI. Consequently, the American Speech, Language and Hearing Association (1987) has published a position paper summarizing characteristics associated with cognitive and communicative disorders. This summary is divided into two categories; receptive and expressive language. These categories provide therapists with a framework and a set of descriptors for the assessment of cognitive-communication disorders.

The first area described in the summary is receptive language skills. Cognitive-communication impairments in the category of receptive language are comprehension difficulties with complex and lengthy information and rapidly presented materials, detecting the main idea when listening to or reading information, and understanding abstract language, including indirect or implied meanings.

Expressive language problems can be detected when speech and written work is disorganized and language is imprecise, output is restricted or overly

verbose, and when socially inappropriate language is used. Characteristics such as inefficient verbal learning and reasoning, and the ineffective use of social and contextual cues are other indicators of cognitive-communication impairments (Ylvisaker, 1992).

The combination of cognitive and communication impairments presents a challenge to the clinician attempting to assess and treat the problems. Traditional speech and language assessment protocols are not sensitive to the underlying cognitive impairments which are unique to the TBI population. Unlike patients with aphasia who may “communicate better than they talk”, individuals with head injury appear to “talk better than they communicate” (Milton, Prutting & Binder, 1984). The quantity of verbal output from an individual with TBI may be within a normal range when discourse is analysed. However the quality of the output is distinctively impaired. Imprecise and disorganized language, and the inability to use contextual cues in conversation are some of the features which distinguish the cognitive-communication disorders of TBI from the language disorders associated with aphasia.

The TBI population is a heterogeneous group. Each individual who sustains a TBI has a unique set of abilities and deficits. The type and severity of injury, pre-injury personality and cognitive abilities are all characteristics which impact on function and on the outcome of rehabilitation efforts.

### Assessment Protocols

Cognitive-communication disorders following TBI are difficult to assess. Tests designed specifically to assess the communication disorders following TBI

remain in the developmental stages. Traditional linguistic approaches to assessment of the communication strengths and deficits of individuals with TBI focus only on specific linguistic skills and not on languages' integrative functions or pragmatics skills. Many existing standardized tests administered to individuals with TBI, were developed and normed for an aphasic population and are insensitive to the subtle communication deficits which occur following TBI. Additionally, most aphasia batteries ignore the psychosocial and cognitive aspects of normal communication and therefore do not tend to lead to socially meaningful treatment goals or tasks (Hartley, 1992; Kennedy & Deruyter, 1991). Thus, traditional aphasia batteries administered to adults with TBI can lead to inaccurate and inappropriate diagnoses ( Freund, Hayter, MacDonald, Neary & Wiseman-Hakes, 1992; Groher & Ochipa, 1992; Hartley; Kennedy & Deruyter; Miller et al., 1991).

There is considerable variability in patterns of abilities and deficits which is related to the diverse combinations of diffuse and focal brain damage (Hartley, 1992; Ylvisaker, 1992; Ylvisaker et al., 1992). The type of injury can vary resulting in different types of recovery patterns and symptoms. Stages of recovery, as categorized by the Ranchos Los Amigos Stages of Recovery Scale (Pollack & Whitlock, 1988) require different types and levels of assessment and intervention. Spontaneous neurological recovery can alter an individual's performance from one day to the next (Kennedy & Deruyter, 1991). Since a preponderance of those individuals with TBI suffer frontal lobe damage, the assessment of executive skills, such as formulating goals, planning and initiating



plans to achieve goals, is important to the understanding of their disability (Groher & Ochipa, 1992).

Cognitive-communicative disorders following TBI require the integration of cognitive and communication theories and knowledge to assess residual skills and deficits accurately. Theoretical frameworks such as: Brain-behaviour Relationship theory (Luria, 1973) ; the Information Processing Model (Gagne, 1985); and, the Cognitive and Linguistic Processes Affecting Communication and Executive Functions: A Clinical Framework (Halper et al., 1991) all describe the integrated nature of cognition and communication. Each theory demonstrates that there are cognitive constructs which subserve and coexist with linguistic competencies such as: memory, attention, executive functions, visual-integrative skills, as well as aphasic or dysarthric disturbances (Groher & Ochipa, 1992). Additionally, these theories suggest an interrelationship between the executive and communicative systems. Neither the executive system nor the communicative system is a unitary process; rather, they function in combination with each of the other cognitive and linguistic processes to maximize performance (Halper et al., 1991).

Factors such as socioeconomic status, cultural values and attitudes, social support systems, occupational level and history of alcohol abuse contribute to variability in assessment results. Pre-injury characteristics such as learning disabilities, behavioural problems, and potential negative attitudes towards testing in general must be taken into account by any clinician faced with

the assessment of this population (Freund et al., 1992; Kennedy & Deruyter, 1991).

Traditional methods of assessment of neurogenic speech and language disorders have been implemented. However, a standardized method of evaluation for the cognitive and communication disorders associated with TBI has not been developed. The assessment of language following TBI must then include an examination of the role of underlying cognitive processes, and the impact of cognition on communicative functioning. It is the complex relationship between cognition and language, and the effect of that relationship on social competence that differentiates the communication disorders following TBI from neurogenic disorders such as aphasia caused by strokes.

The value of standardized psychometric assessment of individuals with TBI is significant. Standardized assessment protocols provide the data to discriminate between normal and abnormal communication skills. Results provide the clinical staff with a comprehensive profile of an individual's strengths and weaknesses as they pertain to linguistic knowledge and performance. As with standardized tests in other disciplines, results from formal linguistic evaluations document the level of severity of impairment and provide the clinician with a group of performance scores against which future scores obtained with the same measures can be compared. Results from standardized testing summarize and categorize linguistic strengths and deficits. These patterns of information provide a basis for the development of individualized treatment plans with long- and short-term goals, and contribute to the

determination of a prognosis. An additional benefit of the standardized assessment is the framework it provides for the development of family education and counselling sessions (Groher & Ochipa, 1992; Miller et al., 1991).

A standardized linguistic assessment has four main components: a Case History; an Evaluation of Component Processes; Behavioural Observations; and, Interviews with the client and with the client's family members (Hartley, 1992).

The Case History contains background information about the client. This information must be gathered and reviewed to determine the origins of deficits as well as to determine pre-injury factors which might influence the assessment process. Medical information regarding the injury would include details focusing the nature and severity of damage to the brain, sensory deficits, medications, and ongoing medical problems such as pain, and fatigue which might influence performance. Additionally, information should be collected regarding the age of the individual at the time of the injury and the time elapsed since the injury, as well as the type of services received to date (Freund et al., 1992; Hartley, 1992; Kennedy & Deruyter, 1991; Miller et al., 1991).

Detailed social, vocational and educational information, as well as pre-injury communication style is vital to the assessment process. The historical information which is contained in a comprehensive case history provides a basis for comparison between pre- and post-injury abilities, and valuable information for evaluating client priorities following TBI (Kennedy & Deruyter, 1991).

Traditional speech and language assessments evaluate performance on comprehension and expression in four modalities: auditory or listening

comprehension, speaking or verbally expressing thoughts and ideas, reading comprehension, and, written or graphic expression. A standardized communication assessment tool, such as The Western Aphasia Battery (Kertesz, 1982), is designed to provide a comprehensive evaluation of the individual's speech and language abilities. Following test administration the clinician can identify specific areas of communication strength and those communication modalities that are clearly below expected levels. Specific patterns of performance may be developed if a thorough examination is administered. Additionally, standardized measures should delineate the severity of the linguistic disorder through comparisons of test performance against normative data (Groher & Ochipa, 1992). Discourse and pragmatic difficulties, which are common problems following TBI, are often overlooked in the traditional assessment process as they are not measured by standardized tests (Freund et al., 1992).

Recently, two standardized measures, the Brief Test of Head Injury (Helm-Estabrooks & Hertz, 1991) and the Scales of Cognitive Ability for Traumatic Brain Injury (Adamovich & Henderson, 1991) have been developed as measures of cognitive/communication function for individuals with TBI. The Brief Test of Head Injury measures: orientation and attention; following commands; linguistic organization; reading; naming; memory (immediate, long- and short-term); and visual-spatial skills. The Scales of Cognitive Ability for Traumatic Brain Injury is composed of six subtests: orientation; perception and attention; discrimination; organization; recall; and reasoning. Both tests have been

standardized on large groups of individuals with brain injury and those without, and raw scores can be converted to standard scores or percentile rankings to establish an overall severity ranking or severity ranking for each specific subtest (Groher & Ochipa, 1992).

Behavioural observation is another component of the standardized assessment process. Systematic observations provide insight into a client's ability to sustain and shift attention, benefit from feedback, and use situational cues appropriately. Response patterns such as impulsivity, perseveration and response speed, as well as aspects such as frustration tolerance, anxiety concerning performance, compliance with requests and physical and verbal aggression are important as they can indicate the level of recovery as well as readiness for intervention (Groher & Ochipa, 1992; Hartley, 1992; Miller et al., 1991).

Additional information regarding a client's pre-injury abilities, characteristics and interests can be obtained by interviewing the significant individuals in his/her life. The interview process provides a basis for understanding the client's and family's level of awareness and acceptance of the cognitive and communicative deficits, as well as providing a starting point for the process of education and counselling. The information collected during the interviewing process is not standardized data. However, the importance of this information is crucial for test interpretation and treatment recommendations (Hartley, 1992).

Despite the benefits previously discussed, there are limitations to the type and quality of information collected in a traditional standardized linguistic assessment of cognitive-communication disorders. One aspect of limitations is associated with inadequate measures of communicative performance within real-life context. Standardized speech and language assessments focus on specific linguistic skills which are performed in a clinical setting. This clinical information fails to convey the relevance of therapy to everyday life to the client, to the family, to other professionals, or to third-party funders.

Total reliance on standardized measures runs the risk of not describing certain communicative deficits commonly found in individuals with TBI, especially those with impairment in frontal lobe function. Psychosocial and cognitive aspects of communication which are not components of a formal linguistic assessment protocol, are key factors in the development of meaningful treatment goals or tasks.

Standardized tests are not necessarily sensitive to the improvements made in real-life communication as a result of treatment and, therefore, can lead to inaccurate conclusions about the efficacy of treatment. Results can over- or under-estimate cognitive-communication abilities. The standardized linguistic assessment does not adequately evaluate pragmatics skills, and therefore, does not reflect the functional cognitive and linguistic abilities of the individual with TBI (Groher & Ochipa, 1992; Hartley, 1992).

In contrast, a functional communication assessment involves observation and data collection in an individual's familiar environment. The value of a

functional cognitive- communication assessment is the ability to determine the communication behaviours needed within the individual's domestic, social, community, academic and / or vocational environments, and the individual's pre-injury interests and communication style. A functional communication assessment examines an individual's overall communication competency and determines how the client makes use of residual skills and strengths in everyday communication, including the implementation of compensatory strategies.

Hartley (1992) defines functional communication as the communication skills necessary for communicating adequately and appropriately within an individual's own environment, including independent living and consumer activities, interpersonal relationships, academic endeavours, and work-related activities. It includes a complex repertoire of behaviours that requires integration of cognitive, social, behavioural, psychological and linguistic abilities. These communication skills are evaluated through an environmental needs assessment, an evaluation of everyday performance, including assessment of everyday listening and speaking skills. In order to assess the individual's communicative performance, observations of communication are elicited in a variety of natural settings. The emphasis is on assessing functional, integrative behaviours that require the coordination of component cognitive and linguistic systems.

The first component of the functional communication assessment involves the completion of an environmental needs assessment. This is an evaluation of the demands and expectations that are placed on an individual based on

cultural, and social environments. The purpose of this assessment is to survey the client's interests and focus on the specific settings, activities, roles and communication partners that may influence the individual's adjustment. A needs assessment gives the client and family an opportunity to participate in treatment planning by providing the treatment team with critical information regarding personal and cultural values, priorities for rehabilitation and specific long-term educational and/or vocational goals (Hartley, 1992). Information from the needs assessment can be readily translated into treatment goals based on the priorities stated by the client and family. That is, the functional goals of the client become the curriculum for the cognitive rehabilitation program. Motivation and perseverance increase when the activities of rehabilitation are based on personal interests and familiar tasks (Berquist & Jacket, 1993).

Data collection for the assessment of everyday communication can be generated by observation of communication in a variety of natural settings, observation of unstructured conversation in a clinical setting, preferably videotaped for later analysis, simulation or role-playing of real-life events, and through a quantitative assessment of monologic discourse comprehension and production (Hartley, 1992). Since the goal of the assessment is to observe communication function in natural settings, the method of assessment needs to be relevant to the natural environment. Combinations of methods may provide the clinician with a more accurate representation of the individual's actual cognitive and communication performance than is possible on a traditional standardized test.



One of the cognitive-communication abilities to be assessed is auditory or listening comprehension. Listening comprehension can be affected by impairments in one or all of the cognitive processes attention and concentration, perception, memory, speed of information processing, and executive function. The completed environmental needs assessment provides a list of the settings in which the client's listening comprehension should be assessed. Functional listening comprehension skills can be assessed by asking questions regarding the content of a radio or television program or by observing the client's performance in following verbal directions for task completion. Accuracy of performance should reflect the client's ability to listen and process the information presented.

Listening skills that are useful targets for assessing auditory comprehension in functional settings reflect the individual's ability to understand the main idea and the speaker's intent in a conversation. The ability to infer information and draw conclusions from dialogue is a cognitive-communication skill. Higher level cognitive skills are necessary for the interpretation of messages when details are missing or irrelevant details need to be separated from relevant facts. Additional characteristics of listening comprehension include the ability to follow verbal directions, remember the sequence or organization of information and distinguish fact from opinion (Freund et al., 1992; Hartley, 1992; Ylvisaker, Feeney & Urbanczyk, 1993).

The assessment of speaking skills is another important component of a functional communication assessment. Speaking skills are usually divided into

subsets for analysis. These subsets include content, form and use of language. There are a variety of methods of analysis available for the assessment of functional speaking skills. The content and form of a client's speaking skills can be assessed through the transcription and analysis of a speaking sample from conversation or from monologic discourse. Three types of discourse have been studied in the neurogenic population descriptive, narrative and procedural discourse and some norms are available for the TBI population (Ehrlich, 1988; Hartley, 1992; Yorkston & Beukelman, 1980).

Descriptive discourse is normally obtained by having the client describe a picture. This particular language sample is useful for quantifying vocabulary, client's awareness of causal relationships, use of situational clues, interpretation and integration of complex visual information and word retrieval in connected speech (Hartley, 1992; Kennedy & Deruyter, 1991).

Narrative discourse is elicited through the retelling of an experience, and is valuable for obtaining information regarding the client's ability to sequence the events of a story. Other information obtained includes the identification of feelings, knowledge of cause and effect and knowledge of personal relationships (Hartley, 1992).

Finally, procedural discourse involves the client explaining how to complete a particular activity. Procedural discourse requires an organized and concise ability to sequence information. Examples of procedural discourse samples include explanations of how to play a game, how to get to a certain

destination, and how to complete a task such as following a recipe (Hartley, 1992).

The assessment of the use of language, or pragmatics, must be administered over a series of sessions and in a variety of settings in order to collect reliable data of an individual's communicative behaviour. Protocols such as the Pragmatic Protocol (Prutting & Kirchner, 1983), The Communication Performance Scale (Ehrlich & Snipes, 1985), and the Behaviourally Referenced Rating System of Intermediate Social communication skills (Farrell, Rabinowski, Wallander & Curran, 1985) are procedures which facilitate the systematic observation and rating of social communication skills. The benefit of this approach to assessment is that each of the protocols can be implemented in naturalistic settings. Observations of an individual in a variety of settings can be analysed, compared and summarized as a component of a functional communication assessment.

Role playing activities such as going shopping, asking for directions, going to a restaurant and other activities of daily living can provide the clinician with information regarding the individual's pragmatics skills. Other methods for assessing functional communication include interviewing the client's significant others and gathering information about his/her communicative behaviours in a variety of settings and with a variety of communication partners, and eliciting and analysing monologic discourse (Hartley, 1992).

Although a functional cognitive-communication assessment can result in a comprehensive evaluation of abilities, there are limitations to this method which

will be addressed in this section. Limitations of a functional communication assessment are associated with the contrast in procedures for data collection from a standardized linguistic assessment. A functional assessment of cognitive-communication abilities following TBI requires a flexible, creative and adaptable approach. This method is time consuming, as data must be collected from a variety of sources and in a variety of settings. Time requirements and non-standardized procedures involved in a functional communication assessment may be met with resistance by third-party funders.

Subjectivity of data collection methods and analysis limit reliability and validity measures for the functional assessment. The influence of communication partners on functional communication performance is significant for each client. The natural settings for each client are unique to his/her situation, thus a comparison of performance between clients is difficult to achieve.

Interpretation of results will vary based on the therapist's understanding of the relationships between cognition and communication. Additionally, individuals with TBI tend to have difficulty generalizing learning and behaviour from one setting to another. The therapist must observe or collect information from a variety of settings in order to obtain a representative sample of the individual's abilities (Freund et al., 1992; Hartley, 1992; Kennedy & Deruyter, 1991).

### Treatment Procedures

There is little available in the literature regarding specific treatment methods, and procedures for cognitive-communication disorder following TBI. Recent medical advances and the increased rate of survival following TBI, have

expanded the role of rehabilitation to try to meet the needs of this challenging population. Existing programs for neurogenic disorders such as aphasia cannot be directly applied to this population, as the language needs of an individual with aphasia are markedly different from the cognitive-communication needs of an individual with TBI. One factor which contributes to the challenge of providing treatment is that the individual differences within this population are significant. These differences can include the pre-injury personality and learning characteristics, severity, sites, and the types of injury. Other factors to consider include the time between when the injury has occurred and when treatment is initiated, as well as the individual's awareness of the communication deficits and his/her motivation to remediate the problem.

Rate of recovery and level of functioning are key factors which influence the development and implementation a treatment program. Early in the recovery process, efforts are made to restore pre-injury skills and abilities. As individuals move through the recovery process, the residual and lasting impairments of the brain injury become apparent. Goals of intervention shift from the skill based learning to the development of a series of cognitive compensatory strategies. These compensatory strategies can facilitate improved functional outcomes in areas where cognitive function has been permanently altered. Although a landmark cognitive-communication program has not been developed to meet the various needs of this heterogeneous group, there are some principles outlined by Ylvisaker and Szekeres (1986) for the planning and implementation of treatment programs. These principles include:

1. Success, resulting from planned compensation and appropriately adjusted expectations, facilitate progress while building a positive self-concept.
2. The systematic gradation of activities can facilitate recovery.
3. Training that specifically targets habituation and generalization, is necessary for learning.
4. Engaging the client in goal setting, planning and clinical problem solving is essential to enhance motivation and to promote ultimate independence.
5. Integration of treatment among staff and family members facilitates the patient's orientation, learning and generalization of learned skills.
6. Chronological and developmental age must both be considered when designing treatment.
7. Individual and group treatment are necessary to provide specificity of treatment, training in social cognition, and interaction in more complex environments.
8. Pre-traumatic personality, interests, and educational/vocational level must be considered.
9. Patient's understanding of cognitive deficits and the purpose of therapy facilitates motivation and progress.

One of the greatest challenges in establishing rehabilitation goals with individuals with TBI is the influence of awareness. Impaired self-awareness is a common and expected problem following TBI, due to the challenges of altered cognitive abilities. For some individuals, reduced self-awareness is linked to the early stages of recovery. These individuals are able to use residual skills and abilities to compensate for cognitive deficits once they have had the opportunity to experience familiar activities and to realize the difficulties the brain injury has caused. However, there are some individuals for whom this awareness deficit is the significant residual deficit of their brain injury. The vocational and social outcomes for these individuals is usually poor, as they are unmotivated to compensate for deficits which they do not perceive. The individuals in this group

tend to shift the blame for problems they experience onto others. In most cases, they fail to comprehend their role in the problem.

Crosson et al., (1989) developed a model for understanding awareness deficits following TBI, and described the impact of these deficits on the rehabilitation process. The model identifies three levels of awareness and demonstrates the relationship between these levels of awareness and the types of compensation which would be appropriate in the treatment process. The first level, intellectual awareness, describes the individual's ability to recognize and discuss on a basic level a particular function that may be impaired. Understanding the impact of this impaired function on daily functioning is a skill that requires more complex intellectual awareness. Compensation for intellectual awareness deficits may start by providing the individual with brain injury information and education.

The second level of awareness, emergent awareness, describes an individual's ability to recognize a problem when it is actually occurring. Although an individual may have the intellectual awareness to be able to describe a deficit area, he/she may require training to recognize the context in which to use compensatory strategies. The ability to compensate for the deficit relies on the individual's ability to recognize a problem and to apply strategies at the appropriate time. Compensation for emergent awareness deficits may focus on assisting the individual to use internal and external cues to recognize problems as they are occurring.

The third and most complex level of awareness, anticipatory awareness, describes the ability to anticipate a problem occurring as a result of a deficit. Compensation at this level focuses on assisting the individual to plan ahead to avoid potential problems linked to functional difficulties.

It is incumbent upon the therapist to develop a positive working relationship with TBI clients to ensure that the rehabilitation program targets meaningful goals. A clear understanding of the role of self-awareness in the rehabilitation process is a necessary skill for clinical staff to possess. Research suggests that individuals with TBI who are involved and supported in developing treatment goals are more likely to be motivated to achieve designated goals, and to maintain gains following the completion of the rehabilitation program (Barco et al., 1991; Berquist & Jacket, 1993; Crosson et al., 1989).

Due to the association of poor rehabilitation outcomes, reduced self-awareness, and inappropriate social skills, the development of cognitive-communication treatment programs and more specifically social communication skills training programs has been studied. These programs have been established using a variety of theoretical approaches. Programs can have a foundation in one area or can contain components of a combination of these approaches. Behavioural (Ylvisaker et al., 1992), metacognitive and social cognition (Ylvisaker et al., 1992) and process-specific (Sohlberg & Mateer, 1989) approaches form the basis for this area of clinical and theoretical knowledge and practice.



The first approach to be described is a behavioural approach to teaching social communication skills. The goal of a behaviourally based social communication skills training program is the acquisition of a specific repertoire of positive behaviours (Ylvisaker et al., 1992). This approach has its foundation in behavioural psychology; antecedents and reinforcements are manipulated to train desired responses. Treatment is typically implemented in the early stages of recovery and/or for individuals with significant behavioural problems. In the initial stages of recovery a behavioural approach in the form of environmental controls may be recommended to reduce the likelihood of a behaviour becoming a habitual response. As the individual recovers, reinforcement is used to shape positive or desirable behaviours (Ylvisaker & Feeney, 1994).

A behavioural approach to social communication skills training allows an individual with significant impairments in social communication skills to participate in interactions with others in training specific responses. This training is likely to take place in a variety of naturalistic settings as individuals with TBI have difficulty transferring skills from one setting to another. Generalization of newly acquired skills is a key component to the success of a behaviourally based social communication skills program.

Ylvisaker et al., (1992) have outlined behavioural procedures used in teaching social communication skills following TBI. Their procedure includes two stages of learning; one for the acquisition of skills and the second for the stabilization/ generalization of skills. In the acquisition stage teaching methods such as modelling, prompted imitation, shaping cuing and fading are

implemented. Reinforcement of target behaviours is a key component of this approach. Role-play and scripting activities provide the practice required to acquire appropriate social communication skills.

A second approach to teaching social communication skills is a metacognitive, social cognition approach. This approach requires individuals to possess insight into cognitive and pragmatics deficits. Due to demands on higher-level cognitive abilities, this approach appears to be most effective in the later stages of recovery from TBI. Individuals are taught to become more aware of the social environment around them and to make decisions based on their knowledge of social routines. The significant difference between the behavioural approach and the metacognitive approach is that the behavioural approach is externally driven and reinforced, while the goal of the metacognitive approach is to teach self-monitoring and self-regulating strategies.

Ylvisaker et al., (1992) state that a metacognitive-social cognition approach to treatment must include consideration regarding the individual's perception and interpretation of social situations, interpretation of the behaviours of others, understanding of social routines, rules and roles, goals, ability to be divergent with responses and to consider the impact of proposed actions, and, ability to self-direct, self-monitor, self-evaluate, and self-correct.

Ylvisaker et al., (1992) developed a hierarchical list of procedures for teaching social communication skills using a metacognitive and social cognition framework. Initial training emphasizes procedural learning of social knowledge base skills such as roles, rules and routines for interactions. This information is

taught through direct instruction, interviews with others, and video analysis. Procedures for developing awareness of social situations and others' intent include guided analysis of videotaped interactions and role-playing with guided discussion. Metacognitive questioning is a component of social cognition which facilitates the development of problem solving skills. Questions are formulated to assist individuals in considering alternative plans for a course of action. Questions for the who, what, where, when, why and how provide individuals the opportunity to consider the context of a situation and the impact of their decisions on themselves and others. Self monitoring skills are taught by reviewing an individual's course of action for a particular event and discussing possible alternatives.

Other procedures implemented in a metacognitive and social cognition approach include outloud thinking and self-directing, verbal or visual rehearsal, self-monitoring, self-evaluating, and self-rewarding. Role-playing, scripting, peer teaching, and video feedback assist with the acquisition of social cognitive skills. Generalization of metacognitive and social cognitive skills is facilitated by in vivo coaching in socially relevant settings for the individual (Ylvisaker et al., 1992).

Sohlberg and Mateer (1989) described an approach to cognitive rehabilitation which emphasizes the importance of repetition both for the remediation of cognitive abilities as well as for the systematic training of compensatory strategies. Theoretically the process-specific approach suggests that the remediation of cognitive impairments can be facilitated by the repetitive stimulation of discrete components of a particular cognitive process such as

attention, memory and aspects of information processing and executive function.

Since deficits in pragmatics in individuals with TBI are most often a symptom of underlying cognitive impairments, this approach would focus on building skills and strategies through repetition and practice in the specific cognitive areas affected by the trauma. Sohlberg et al., (1992) have outlined three basic principles of the process-specific approach to the cognitive rehabilitation of social communication skills. These include the need for theoretical models to describe cognitive process areas, the importance of collecting data and analysing performance to guide therapy decisions, and an emphasis on actively facilitating generalization of improved cognitive abilities to functional areas.

The information in this review of the literature has described the cognitive-communication disorders which are characteristic of the problems associated with TBI. Considerations for the assessment and treatment of cognitive-communication disorders have been outlined and limitations of existing processes have been described. The relationship between impaired social communication skills and rehabilitation outcomes has been documented, and a social communication skills program Improving Pragmatics Skills in Persons with Head Injury has been described. Results, case studies, and an analysis of a pilot social communication skills program based these materials will be discussed in the later portions of this thesis.

## Method

### Participants

Participants in this study included two adults with TBI recruited from a community-based rehabilitation program in southwestern Ontario. The project was presented to individuals who had participated in a social communication skills training program in 1997 at the rehabilitation centre, with permission of the Program Director. Participants were contacted by telephone and home visits were scheduled to explain the purpose and procedures for the research. Participation in this study was based on the review of the historical data from clinical records. Participation was voluntary; written consent was obtained. Participants were able to withdraw from the study at any time.

Although there were five participants in the social communication pilot project, only two will be described in this study. One participant was excluded from the sample because the nature of her brain injury was related to a significant childhood illness. Developmental factors as well as the type of brain injury interfered with the interpretation of her results. The two other participants had moved and forwarding addresses were not available. Although they could not be included in this study it is important to consider their influence in the dynamics of the group interactions during the social communication skills group. Brief case studies of the two participants will be presented.

Participant #1 (P1) is a 28 year old male, who sustained a closed head injury as a result of a motor vehicle accident (MVA) six years prior to the social communication skills program. He received one-to-one cognitive rehabilitation in

his home and community environments for five of the six years. Educational background includes a Bachelor of Arts degree obtained prior to his MVA. Pre-injury interests were focused on sports; he was employed at the time of the injury. Injuries sustained in the accident included a severe brain injury, right sided temporal bone fracture, right mandibular fracture, a profound sensorineural hearing loss in his right ear, right facial nerve paralysis, left sided weakness resulting in balance, fine motor and coordination impairments.

Neuropsychological results indicate reduced intellectual function (low average IQ scores), language skills, memory and right-hand motor function, concrete thinking skills and poor organizational skills in an unstructured setting. Insight into cognitive deficits is variable and limited to concrete examples of problem areas. Fatigue and reduced stamina were noted; P1 demonstrates impulsive behaviour for task completion.

During a rehabilitation work placement, feedback from the employer indicated that P1 was pleasant and punctual; he needed constant supervision and direction to complete required tasks until a routine had been established. P1 was living in his own apartment at the time of the social communication skills program with supports from his family and his rehabilitation therapist. He drove his own vehicle to the centre for the group sessions. A pragmatics skills profile indicated communication strengths in the areas of intelligibility, word and grammar choices, and the use of appropriate turn taking, eye contact, and body language. P1 demonstrated difficulty organizing his message, providing the listener with adequate background information and requesting clarification if a

message was not understood. Mild flaccid dysarthria was noted when he was noticeably fatigued, and his affect was somewhat flat.

Participant #2 (P2) is a 22 year old female, who sustained a closed head injury as a result of an MVA four years prior to the social communication skills program. She had been receiving one-to-one cognitive rehabilitation in her home, academic and community environments since the time of her discharge from hospital three months after her accident. P2 was a high school student and had a part-time job at the time of her injury. Educational background included a high school diploma which was completed following her injury. She completed one year of college at a reduced course load; academic supports were provided through college special needs services and her cognitive rehabilitation program. Injuries sustained in the accident included a severe brain injury, right parietotemporal depressed skull fracture, left acute subdural haematoma, right orbital roof fracture, balance and coordination problems.

Neuropsychological findings indicate reduced nonverbal intellectual functioning (average range IQ scores) involving mildly to moderately impaired visual-perceptual (including facial recognition) and visual-construction skills, impaired executive functioning including problem solving, cognitive flexibility, planning, foresight and organizational skills, impaired motor skills. Behavioural and psychosocial findings include impulsivity, disinhibition, poor social judgement, limited motivation, and poor insight into cognitive difficulties. Significant fatigue and stamina were noted.

During a rehabilitation work placement, feedback from the employer noted

that P2 demonstrated inappropriate social communication skills such as swearing, talking excessively and inappropriately in the work setting; she required constant supervision and direction and did not use feedback to modify her behaviour. P2 was living in her own apartment with support from her family at the time of the social communication skills group. She used public transit to attend the sessions.

A pragmatics profile revealed communication strengths in the areas of vocabulary and language skills; word choice was intentionally informal and immature in nature. Swearing, inappropriate topic selection for context was noted. P2 had difficulty recognizing and interpreting the nonverbal language of others. She demonstrated a verbose conversational style and her discourse was tangential. She was observed interrupting others frequently, and had difficulty with active listening skills.

#### Data Collection and Analysis

Two case studies were presented, components of the program Improving Pragmatics Skills in Persons with Head Injury will be examined, and the impact of the Communication Skills group on each participant will be analysed. Data will be collected through the examination of program methods and materials, clinical assessment, observation, and evaluation forms, videotapes, participant workbooks and feedback forms, session evaluation forms, and curriculum post-tests and questionnaires from the pilot program.

This study will examine the findings from the pilot project and use them to consider the following research questions.



1. How did two individuals with TBI respond to participation in a communication skills group which included video instruction, and feedback?
2. How did two individuals with TBI use feedback from video instruction?
3. Did two individuals with TBI provide evidence of learning each of the five communication topics outlined in the program description; initiating conversation, topic management, turn taking, verbal organization and active listening?

### Procedure

This was a descriptive study which examined the process of a communication skills program and the impact of the program on the communication skills of two participants with TBI. Historical data in the form of rehabilitation files, clinical information, videotapes, program materials, and participant work books were reviewed by this author.

The model of instruction and communication topics for the pilot social communication skills training program were based on the program developed by Sohlberg et al., (1992) Improving Pragmatics Skills in Persons with Head Injury was selected for use in this pilot project due to its foundation in neuropsychological theory. It identifies and addresses the characteristics of communicative and cognitive disorders common to TBI which are described previously in the literature review section. This program incorporates all three of the approaches to intervention described in the literature review. Sohlberg et al., (1992) describe a process-specific approach to intervention, which attempts to target impaired cognitive processes underlying communication problems. Components of a behavioural approach to treatment are evident in the

systematic feedback, shaping and reinforcement of appropriate communication behaviours throughout the program. Additionally, features of a metacognitive and social cognition approach are implicit in the program through the use of the video analysis and self-rating exercises in the practice and generalization phases of each topic.

Instructions in the Manual recommend an eight week program per topic, taking into account the awareness, practice and generalization phases. However, this pilot project briefly overviewed only the awareness and practice phases of each topic over the course of the seven week program. The rationale for this brief introduction was to assess the usefulness of the awareness and practice materials for each of the topics, and to group together two participants with varying deficits in social competence.

The social communication skills group was co-facilitated by a speech-language pathologist and a rehabilitation therapist who specialize in brain injury rehabilitation. The staff are members of a brain injury rehabilitation program which provides a full range of services from an inpatient acute rehabilitation program to the community-based rehabilitation services. The community-based component of the rehabilitation continuum of services is supervised by the Program Director, clinical psychologist. Participants in the program were not registered patients of the rehabilitation facility, but rather were clients of this community-based program.

The program requires clients to actively participate in the planning and evaluation of their individualized rehabilitation program. Most of the intervention

occurs in the individual's home, school, community or place of work, and is provided on a one-to-one basis with a rehabilitation therapist who is trained and supervised by a regulated health professional. Consequently, clients do not tend to participate in group treatment sessions. The social communication skills pilot program provided the participants with an opportunity to interact with others who were involved in cognitive rehabilitation following TBI.

The schedules and activities for the pilot project are summarized in Appendix B.

## Results

### Setting

The social communication skills program was held in a self-contained outpatient area of the rehabilitation centre. Participants were familiar with the clinical setting from their involvement in previous rehabilitation programs in this centre. P1 and P2 had met previously at a family education series held in the same location. Neither P1 nor P2 was enthusiastic about returning to a clinical setting for a rehabilitation program as both preferred their individual home and community rehabilitation settings. However session evaluation forms filled out by the participants indicated that the refreshment break and informal social times were the best parts of the program.

The location contained the necessary equipment to run the program. There was a video camera, television, VCR, audio cassette recorder, telephone, overhead projector and screen available. Rehabilitation staff had access to a photocopier for preparing session materials. The setting had several group meeting rooms, a kitchen and washroom facilities available.

### Model of Instruction

The awareness phase of each of the topics was an information session. Group facilitators presented information as directed in the manual. Participants responded with appropriate facts and details in the questionnaires designed to assess knowledge base. Responses written by P1 and P2 were in single word and point form formats. P2 used phrase and sentence length responses inconsistently from week to week. Responses were relevant to the topic

presented indicating comprehension of the information presented. P1 was quiet during the awareness phase segments of the sessions. He answered direct questions but did not volunteer information. His responses were on topic at a basic concrete conceptual level. P2 contributed appropriate and complex information to the discussion; tangential comments and egocentric speech interfered with her contributions. She was reminded on several occasions during awareness phase discussions that she should allow others to contribute to the conversation.

The group leaders introduced the awareness activities for each topic. The program Manual provided clear and concise suggestions and useful handouts. Due to the relatively high level language skills of the participants, some of the work sheets were modified to reflect their abilities.

Components of the practice phase of the program were implemented in the pilot program. Activities were limited to one to two trials per communication topic due to the time allotted in the pilot project. P1 and P2 followed instructions to complete tasks such as giving and receiving directions through audio cassette recordings and telephone conversations and role plays. Comments on participant feedback forms indicated that they would like to complete some of the tasks "for real".

Practice tasks outlined in the manual provided the group leaders with organized materials to present to the group. Documentation forms provided for the activities were useful for data collection. Opportunities to practice skills were

limited due to scheduling constraints in the pilot project; thus, data to suggest skill acquisition was limited.

### Video Analysis

The participants were involved in two aspects of video analysis in this pilot program. There were prepared videos used for the awareness phase of the program and video segments of P1 and P2 working on practice phase activities which were used as a basis for self-evaluation and discussion. The prepared videos were produced by the group leaders to provide emotionally neutral scenarios which depicted the characteristics featured in each of the five program topics. The tapes were effective presentations of the topics, and provided the group with models of communication behaviour for observation and group discussions.

P1 appeared to observe the salient features of the weekly tapes. His comments were appropriate to the topic of discussion. P2, who has residual visual-perceptual problems did not appear to recognize the nonverbal language communicated by the actors. She commented "I didn't see that" when a particular behaviour was identified by others.

The use of video recordings for self-evaluation and feedback discussions was a component of the practice phase of the social communication skills program. P1 did not verbalize concerns about the use of the video camera to record interactions during practice activities. He did write "I wouldn't evaluate myself" when asked what if anything he would change about the session.

P2 was distracted by the presence of the camera. She focused her attention on her appearance and had difficulty completing the practice task. She commented that "seeing myself on tv" was the best part of one session. During another session the feedback segment was emotional for P2. She perceived the comments of others as "mean". She commented that she felt "attacked" by the group. Clinical records revealed that she had received feedback in the same structured objective manner as her peers had received. The communication breakdown was related to her feelings of frustration that no one else in the group shared her views about the conversation topic during the discussion.

Time for clinical observation was limited during the video and observation component of the program. It was a small component of the pilot program due to the reduced practice time allowed in the session schedules. Videos were a useful presentation format for the group as the tapes could be viewed as many times as necessary to demonstrate an important message. The implementation of a standard observation format appeared to assist the participants in observing relevant details on the tape as well as providing them with the structure for providing objective feedback. The awareness videos were a neutral introduction to the feedback process as the actors were unfamiliar to P1 and P2. Practice with observation of others facilitated the development of objective feedback routines for the analysis of personal communication behaviours. It was observed by rehabilitation staff that P1 appeared to recognize his communication behaviours and benefit from the opportunity for feedback. P2, who had difficulty reading the nonverbal cues of others, did not appear to derive benefit from the

observation or self-analysis opportunities available during the practice phase of the pilot program.

### Group Discussions

The effect of peer interaction versus participant-staff interactions was examined. Due to the familiarity of staff and participants and the small number in the group, there were not distinguishable features which characterized the interactions between participants differently from the interactions between participants and staff in the videotaped portions of the data.

The group discussion format appeared to be an effective way to facilitate interactions among participants. The materials provided in the program Manual were useful resources for planning the sessions. The lists of topics were used in this group to provide the participants with ideas for initiating conversations, practising turn taking, topic maintenance, and active listening skills. The language and cognitive abilities in this group were relatively high, so the lists of abstract and emotionally charged topics included in the program Manual appeared to heighten interest in the discussions. The concrete list of topics in the Manual was used in the first session. It provided clear and defined parameters for discussion which were beneficial in developing cohesion in a group of participants who were previously involved in individual one-to-one rehabilitation sessions.

The communication topics presented in Improving Pragmatics Skills in Persons with Head Injury had varying relevance to this group. All topics were introduced in the pilot project as a means to assess program materials and



participant responses to the information and activities outlined.

Initiating conversation was the first topic. Responses by P1 and P2 to the initiation questionnaire were relevant to the discussion and reflected the information presented in the chapter. Participants personalized their responses to the question, "What might others think when a person does not initiate conversation?". Their responses included, "That there is a problem"(P1), and "They might think you're snobby, or stuck up, or rude, or totally not friendly" (P2).

Clinical observations indicated that P1 used his topic cards like a script. He initiated a conversation in the structured practice session; informal observations of initiation behaviours were not noted in clinical documentation. P2 was verbose. She demonstrated the ability to initiate conversation in structured and unstructured parts of the session; her ability to use contextual cues for selecting appropriate topics for conversation was observed to be limited in unstructured tasks throughout the session.

Topic management was the second topic introduced to the group. P1 and P2 provided relevant responses to the "Topic Management Awareness Questionnaire" following the information session and group discussion.

Examples of written responses are recorded below.

1. Why is it important to stay on topic?

- (P1) "to hold a person in a conversation ... so someone knows you're listening"
- (P2) "cuz if you keep changing the topic the other person will get confused and will think you are strange"

2. What are some ways you can help yourself stay on topic?

- (P1) "think about what you're going to say before you speak ... pay attention...self-control"
- (P2) "talk about only what the other person is talking about"

3. How do people let other people know when they want to change the topic?

- (P1) "speak up louder ... ask to change the subject ...eye contact ... mention something new"
- (P2) "they use a segue like 'on the other hand', or 'let's change the subject', or 'let's talk about ...'".

4. What are some reasons people get off topic in a conversation?

- (P1) "let their minds wander"
- (P2) "They don't know how to communicate very well, they might have a brain injury or some other problems, they aren't paying attention"

5. Do conversations usually only have one topic?

- (P1) "no"
- (P2) "No, during a conversation you may or may not talk about many different things depending on who you're talking to."

The significance of these results is the clear indication of the participants' abilities to master the concepts outlined in the awareness phase of the program as demonstrated through the appropriate responses recorded above.

In the chapter about turn taking in conversation, each of the participants provided examples of situations they had encountered in which someone had dominated a conversation. They described it as "not being able to get a word in" and reported feeling frustrated and somewhat angry when it occurred. P2 reported that she had been told by others that she talked too much. P2 commented that she thought this was a result of limited self-control. During the video analysis of the role play the participants identified similar trends in the

actors' turn taking behaviours. When observing the tapes for Subjectivity of ratings between "needs to work on this a lot" versus "needs a bit more practice" and "did pretty well" versus "did really well" there were discrepancies between P1 and P2's responses.

The session evaluation forms provided some useful feedback regarding the participants feelings about the session. Their responses consistently demonstrate the acquisition of the basic concepts of the communication topics presented in the program. A summary of the evaluation comments included the following:

1. What did you learn about yourself with regard to turn-taking in conversation?  
(P1) "Learn to take your turn"  
(P2) "I talk too much".
2. List one or two strategies you can use to monitor turn-taking in conversation  
(P1) "Ask a question about the topic"  
(P2) "Ask the other person to talk more; try to talk less"

The next topic in the program, Verbal Organization, was identified as a problem area for both P1 and P2 on the pragmatics summaries. P1 made assumptions regarding the listener's knowledge; his messages did "not include enough details" to convey accurate information. P2's pattern of discourse included tangential and disinhibited speech. Her messages were confusing due to errors in providing "too much information". The main idea in her message was lost in the irrelevant details provided. In the awareness phase of this chapter, participants were provided with a framework for identifying verbal organization errors including "too much information", "not enough information" and "message out of order". Participant responses were accurate in the identification of reasons

why the messages presented by the group leader were confusing.

A strategy discussed for organizing information was presented for the practice phase of the session. The use of a stop light image to cue oneself to “stop, think and then talk” was introduced. Participants implemented this strategy with success in a structured practice task requiring them to organize a set of directions for each other. The practice exercise “Route/Search Directions” from the program Manual was adapted to incorporate the stop light strategy.

Participant summaries from the session indicate that the content of the verbal organization chapter was relevant and understandable. When asked to comment on personal challenges with verbal organization, P1 noted “sequence ... talk in order”, while P2 wrote “staying on the same topic ... giving too much information”. When asked to list strategies they could use to improve verbal organization, P1 wrote “Organize your thoughts ... give enough details” and P2 commented “Look at the picture of the stoplight ... get feedback from others”.

The final communication topic, Active Listening, was a relevant topic to P1 and P2. Pragmatics assessment summaries indicated that P1 demonstrated passive listening skills and rarely requested clarification from the speaker. P2 was described as verbose and egocentric on the pragmatics assessment and did not demonstrate interest in what others had to say. Emotionally charged topics from Appendix A in the Manual were selected by the participants for discussion. P1 was not present during this session. P2 was required to paraphrase the comments of one of the group leaders during the practice phase. Clinical records indicated that P2 had a great deal of difficulty with this task. In addition,

attempting to paraphrase the group leader's comments, she added evaluative comments and rolled her eyes when redirected to task. Documentation indicated that she was observed to interrupt the group leader to add personal comments. Despite acknowledging her interest in participating in the discussion, P2 appeared resistant to focusing on the goal of the assignment which was to actively listen and demonstrate active listening by paraphrasing her partner's comments.

#### Social Communication Group Feedback

Feedback regarding the social communication skills group was examined by reviewing the session evaluation forms completed by the participants at the end of each session. Session evaluation forms provided the participants an opportunity to comment about the activities of each meeting. The comments provided by P1 and P2 were brief and superficial. They wrote comments like "nothing" and "sandwiches instead of sweets" when asked what if anything they would change about the session. When asked what they liked best about the session, responses included "the videotaping was cool", "group discussion", "we got out early", "break", "activity#2" (video observation and analysis), "evaluation and feedback", "talking on the telephone", "getting out to socialize", and "being on the videos".

## Discussion

The present study was conducted to evaluate a social communication skills training program and to develop a set of guidelines for social communication skills intervention for adults with TBI. Findings, themes and implications from a pilot social communication skills program will be identified. Limitations of the present study, and suggestions for future clinical practice and research will be discussed.

### Model of Instruction

The difficulty of individuals with TBI to transfer skills from one activity or setting to another has been well documented (Ben-Yishay et al., 1987; Jacobs, 1997; Wehman, 1991). The model of Instruction in the program Improving Pragmatics Skills in Persons with Head Injury had three phases of learning; an awareness phase, practice phase and generalization phase. Theoretically this model should provide the appropriate steps for the acquisition of skills for persons with head injury, as one phase reinforces the next and repetition and practice are key elements within the program. However, it is difficult to assess the model of instruction based on the findings from the social communication skills pilot project because the group was an overview of the awareness and practice phases and did not include the generalization phase of instruction.

Since outcomes in rehabilitation are often assessed by measures such as return to work (Buffington & Malec, 1997), one measure of the success of this pragmatics skills program would be the transfer of improved social communication skills to home, community and work settings (Sohlberg et al.,

1992). Outcome measurement is implied in the materials for the generalization phase of the program. It will be necessary to assess the usefulness of this program in producing successful outcomes through the transfer of newly acquired skills to community settings in the generalization phase. Consideration will need to be made in understanding how this component could be scheduled and supervised in the naturalistic settings for future communication skills groups.

### Communication Topics

Communication behaviours such as problems with verbal organization, including tangential discourse, word finding difficulties, socially inappropriate language and behaviour, and difficulty understanding abstract language highlight the unique cognitive and communication disorders associated with TBI (Freund et al., 1992; Hartley, 1992; Kennedy & Deruyter, 1991; Sohlberg et al., 1992; Ylvisaker, 1992).

As described in the review of the literature, Improving Pragmatics Skills in Persons with Head Injury addresses five communication behaviours, Initiating Conversation, Topic Management, Turn-Taking In Conversation, Verbal Organization, and Active Listening. All five of the topics were introduced within the pilot social communication skills group. When reviewing the pragmatics assessment results for the participants, it appears that most of the deficits in cognitive-communication demonstrated by P1 and P2 were addressed by the topics in the Improving Pragmatics Skills in Persons with Head Injury program.

When working through the information and activities in the chapter, Initiating Conversation, one of the participants had questions regarding how to

end a conversation. Flexibility and adaptability are important strengths for group leaders to possess. The value of the program is only as good as its ability to meet the needs of the participants. As outlined by the authors of Improving Pragmatics Skills for Persons with Head Injury, the materials presented in the program are meant to be adapted to meet the needs of the individuals in the treatment program.

#### Guidelines for Intervention

The first goal of this study was to review the findings from the social communication skills pilot project based on the materials presented in the Improving Pragmatics Skills in Head Injury program. The second goal of this study was to provide clinicians interested in facilitating a social communication skills program with information and recommendations for running a group based on the findings from the pilot project. The following section will address the issue of Guidelines for Intervention. This information will be organized according to the research questions proposed at the beginning of the study.

#### Participants

As described in the methods and results sections, the participants in this study were high-functioning adults with TBI who were working on independent living skills, academic, vocational or avocational goals and were able to converse verbally in a functional manner. Each of the clients selected reported in the intake interview that communication problems were presenting a barrier to achieving rehabilitation goals.



From the small sample in this study it is apparent that individuals such as P1 with some insight into cognitive and communication deficits following TBI were more likely to benefit from participation in the communication skills group. He contributed relevant information during discussions, and applied the strategies discussed in the awareness phases into the practice phases with minimal to moderate instruction. P1 was an active participant in the observation and feedback exercises of the program and appeared to benefit from the comments and suggestions of the staff and the peer group. P2 who demonstrated poor insight into cognitive-communication deficits required a greater amount of support, and an increased number of practice trials per topic. She demonstrated a defensive demeanour during feedback sessions and appeared to be unable to use the feedback to modify behaviour. Her difficulty in recognizing and interpreting the nonverbal cues of others limited her ability to benefit from the observation and feedback procedures in the awareness phase of the program.

There was a discrepancy noted in her ability to perceive the communication deficits in others during the video observation and her ability to objectively analyse her own performance. Given her relatively intact intellectual abilities and her poor awareness of deficit, an intensive one-to-one training program based on the awareness phase of each of the communication behaviours may have prepared her for the practice and generalization phases of the program.

It is noteworthy that the authors of Improving Pragmatics with Persons with Head Injury developed the program specifically for individual and small group sessions. The Pilot project sample was kept small for several reasons; to assess the recommendations of the authors for a small group, to keep the ratio of staff to participants at approximately 1:2, and, to group clients with similar cognitive-communication disorders.

While the size of the sample will influence the dynamics of group, and the ability to generalize findings, the types of cognitive-communication deficits and ages of the clients may have a greater influence on the communication outcomes of the group. The discussions and practice activities require the participants to work together and to provide feedback to each other. Grouping individuals with similar cognitive-communication problems together, while preferable, may be difficult for clinicians who have a limited population of individuals from which to select. Perhaps this would be a situation where individual sessions would be necessary. In such a situation, the provision of objective feedback and peer review might have to occur in carefully orchestrated situations in the community.

From information reviewed in the literature, and data collected in this study, some trends and several questions arise related to the selection of participants which should be considered for future projects of this sort.

What are the individual's goals for participating in the group? Participants with similar communication goals should be grouped together. Common goals and/or common deficit areas help to focus the content of the group. As indicated

in the manual, each chapter or topic is the focus for a series of sessions from the awareness phase through to the generalization phase. Common goals also help to maintain the motivation of the group to work together.

Were participants referred by clinical staff or were they self-referred?

Motivation to participate may be a factor depending on each individual's source of referral to the group. Self-referred individuals may seek intervention because they have insight and awareness of cognitive and communicative deficits and understand the implications of these deficits on rehabilitation outcomes. Thus, they may be more motivated to achieve communication goals than are the individuals who lack insight into problem areas and who may be referred to the group by clinical staff and / or family members.

Does the participant have the cognitive abilities to attend to the details of the program and to comprehend the materials? Although this program can be modified to meet a variety of client needs, it is important to have a common level of cognitive abilities within the group. Group members provide discussion and feedback opportunities for each other. Participants with common goals and communication deficits would benefit from working together.

Sohlberg et al., (1992) have provided resources for a variety of levels of function, from nursing homes and inpatient rehabilitation centres to community-based programs. The pilot project was offered in the community-based rehabilitation program. From the limited data set in this study, it is difficult to predict the procedures and outcomes that would be expected from a hospital, nursing home or other residential setting. Similarly, it is unclear whether or not

these materials would be adaptable and suitable for use with a group of nonverbal individuals with TBI.

Do the participants have support in the community? The generalization phase of the program is the most important component for successful communication outcomes. There was not time to implement the generalization phase of the program within the time allotted for this pilot project. Generalization requires a great deal of support within the individual's home and community environments. A family education and support program would be a useful component to explore in order to promote the generalization of acquired social communication skills. Teaching family members and other significant support persons how to provide feedback which is consistent with the messages presented during the social communication skills group has the potential to improve the generalization of newly acquired communication skills to home and community settings.

#### Communication with Participants

The community-based brain injury rehabilitation program which served as the basis for the social communication skills group fosters an empowerment model of rehabilitation which encourages client participation in the goal setting and program evaluation processes. Each participant was contacted by the rehabilitation professional involved in his/her program and informed about the development of the social communication skills group. Discussion regarding the benefits of such a group occurred and the individuals were provided with a list and explanation of the topics to be covered within the seven-week program.

Each potential participant met with the speech-language pathologist and rehabilitation therapist coordinating the program so that any questions or concerns he/she had could be addressed.

The rationale for participating in the social communication skills group should be presented in the context of the individual's community-based rehabilitation goals. Impaired self-awareness skills which are a significant factor in poor social communication skills following TBI need to be considered, and a rationale for treatment developed which is compatible with level of awareness of deficit (Barco et al., 1991). Difficulties the individual is experiencing in functional settings such as at home, in the community or in a volunteer or work placement related to cognitive-communication impairments might serve as examples of potential goals areas within the social communication skills group. For example, if an individual is having problems getting along with others in a work setting because he/she frequently interrupts others or dominates the conversation, information and strategies from the chapter on "Turn-Taking in Conversation" could be introduced to illustrate potential strategies and methods for intervention. Simple yet concise information regarding the content of the program is a helpful resource for potential participants.

Individuals who are involved in setting goals are more likely to acknowledge the need for participating in rehabilitation, be motivated to achieve goals, and are more likely to maintain gains once treatment has been completed (Berquist & Jacket, 1993). This approach was adopted by the staff coordinating the social communication skills pilot program.

Participants were questioned regarding their interest in the social communication skills program. They were asked to discuss their preferred mode for receiving feedback regarding their performance. For example, they were asked to describe a situation which stood out as a successful learning opportunity for them. Auditory, visual, immediate and/or delayed feedback was discussed at a level which was appropriate for the individual's abilities. It also provided necessary information to the group leaders in terms of the planning of appropriate strategies and activities.

When the use of videotapes for self-evaluation was introduced, P1 and P2 expressed some anxiety related to the idea of being videotaped. They expressed concern about not liking what they would see, being embarrassed by their image on screen, or concern about sharing the experience in a group setting. It seemed helpful to discuss with the participants the value of self-evaluation for improving social communication skills. It was also helpful to remind them that each person in the group would be videotaped and therefore would be a shared experience. Additionally, "ground rules" were established at the beginning of the group to promote a supportive environment for learning in which respect for each individual would be fostered. Consent forms for the use of videotaping were provided. Participants were reassured to know that the consent forms could be completed to limit the use of the videotapes for educational purposes within the group.

In addition to involving participants in the goal setting process, P1 and P2 were provided with a rationale for each of the activities they were asked to

complete. It was a challenge to motivate both participants for each of the practice phase activities. Relevancy of the topics of communication to the cognitive-communication disorders of each participant influenced his/her interest and enthusiasm for participation. The activities suggested in the manual were helpful starting points for planning the practice sessions. Activities such as, "Pass the Object" and "Route/Search Directions" were implemented directly from the manual. Other activities required adaptations to make them relevant and appropriate to the needs of these participants.

The generalization phase of the program was not implemented in this study, thus there are no details to report. However, based on what is known about outcomes for brain injury rehabilitation, the generalization phase is the most important component of a social communication skills program. The transfer of communication skills to community-based settings should be the ultimate goal of such a program. This phase of intervention is the most complex and time intensive, as it requires coordination and supervision of services in the community. Repeated trials in a variety of settings will more than likely be necessary based on the information reviewed regarding the learning needs of individuals with TBI (Ben-Yishay et al., 1987).

### Feedback

Discussions and activities throughout the program were monitored by staff for effectiveness and interest on the part of the participants. The information or awareness component was the most didactic. The participants appeared to understand the information presented which was demonstrated in their written

work. Their contributions to the discussion and their written summaries on the questionnaires were on topic and contained some of the key points presented.

The participants' feedback regarding practice activities was more difficult to assess. There was very little in the clinical documentation, videotapes, or participant work books which commented on the effectiveness of the practice activities to teach communication skills. Specific methods of data collection should be considered for each aspect of the program. Participant feedback is a valuable component in the evaluation of a social communication skills program.

#### Awareness of Deficit

The ability to address awareness deficits appropriately in brain injury rehabilitation depends on the clinicians knowledge of types of awareness deficits following TBI and their relationship with other neurological problems. Developing a treatment program based on the awareness literature and corresponding theoretical compensation literature is a challenge (Barco et al., 1991; Berquist & Jacket, 1993; Crosson et al., 1989; Malia, 1997). The key to success appears to be the ongoing assessment and monitoring of an individual's awareness of deficit.

The social communication skills program could be adapted for an individual with limited awareness of deficit by increasing the repetition and practice of program activities to accommodate the learning needs of the participant. The materials provided in Improving Pragmatics Skills in Persons with Head Injury are presented hierarchically. Goal attainment for each level could be monitored to ensure the participant was developing the necessary



foundation for each skill before progressing to the next goal or activity.

The use of videotapes for improving social communication skills has been well established (Sohlberg et al., 1992; Ylvisaker et al., 1992). The value of video feedback is the ability to play and replay the tape as frequently as necessary to promote improved observation skills. An individual with limited self-awareness may benefit from consistent observation, analysis and feedback using videotapes.

### Clinical Considerations

An important first step of the program is to carefully assess the communication skills of the potential participants. This should include information regarding cognitive status as well as the assessment of functional communication. The clinician should have a clear understanding of the environment in which the individual will most likely communicate. For example, is the person staying at home, going to school, participating in a volunteer or work placement? What are the issues motivating the individual to want to join a communication skills group? It would be important, with the participant's permission, to speak with family members, teachers, employers or friends to gather more information regarding their perspective of the participant's communication strengths and weaknesses. The information collected will serve as the foundation for goal selection with the participant.

A social communication skills training group is an effective way to provide treatment for individuals with TBI. The group setting provides a natural social venue in which participants can gain information about appropriate

communication behaviours and can benefit from the feedback from peers. Social isolation is a phenomenon associated with TBI (Beukelman & Yorkston, 1991; Kennedy & Deruyter, 1991). The value of a social communication skills program, in addition to providing opportunities to acquire new skills, may be a source of socialization for individuals with TBI.

The model of instruction presented in Improving Pragmatics Skills in Persons with Head Injury is based on clinical research (Sohlberg & Mateer, 1989; Ylvisaker et al., 1992). The progression from the awareness phase to the practice and generalization phases appears to facilitate new learning for individuals with TBI. This approach provides opportunities for repetition, practice and feedback for the acquisition of new skills.

The generalization phase was not implemented in the pilot program. It is considered to be the most important phase of the program related to successful outcomes. The transfer the skills practised in the clinical setting requires an organized and consistent plan for intervention. Goals should be established with each participant regarding the anticipated outcome for participation. Development of community resources would be an important consideration when allocating time and resources to the development of a social communication skills program. The benefit of a social communication skills program which does not address the generalization phase is limited for improving outcomes for individuals with TBI. It is recommended that program leaders focus on developing generalization phase activities which are meaningful to the participants.

The pilot social communication skills program was designed to provide an overview of each topic during the seven-week period. Minimal long-term benefits were or should be expected for the participants based on the brief exposure to program materials. It is recommended that program leaders assess potential participants and develop groups based on common social communication skills deficits. A selected topic should be taught from the awareness to practice to generalization phases with the appropriate repetition necessary for the acquisition and transfer of a new skill to a variety of settings.

The program materials offer a variety of forms for documentation. The data collected from this pilot project was not thorough. The group leaders did not complete evaluation forms for each chapter, which meant that details which might have provided more information for the analysis of the program were missing. It is recommended that a careful plan with specific goals for each participant and for each session be recorded so that the clinical staff collecting the data are able to focus attention on the relevant details. It is recommended that clinical staff work to establish a goal attainment scale for the participants so that accountability can be monitored and evaluated.

Group leaders should be knowledgeable about the cognitive-communication disorders associated with TBI. At least one of the leaders should be a speech-language pathologist who has experience in the area of TBI and is able to administer the "Pragmatics Protocol" and "Communication Performance Scale" as recommended in the Improving Pragmatics Skills for Persons with Head Injury program. It would be helpful if the other staff were rehabilitation

professionals who were familiar with the participants so that the subtle communication deficits present could be identified and addressed throughout the program. Another benefit of having staff who are familiar with the participants is the potential for consistent program guidelines to be followed in the community phase of the program. Staff need to be able to dedicate time to the planning, preparation and implementation of this project.

Considerations for the location of the group should include availability of public transportation to the site, comfort measures such as a quiet place for a client who may need to take a break, and a comfortable meeting place that is conducive to discussion. The pilot project group had kitchen and washroom facilities available which was convenient for the breaks. It was helpful to have a second meeting place within the space so that the participants could separate for small group discussions. Certainly the setting can affect the tone and mood of the group, and should be a consideration when organizing a meeting place for such a group.

Another aspect of the group which needs to be considered is the availability and use of multimedia equipment. The following pieces of equipment were used in this project: an overhead projector and screen, a television and a VCR which was compatible with the 8 mm. video cassettes, a video camera and tripod, white boards and an easel with paper and markers, a photocopier to reproduce materials, hand held tape recorders and cassettes, and a telephone. Certainly there may be ways to minimize some of the equipment requirements, but the use of the video camera, and the television and VCR were essential for

the observation and feedback components of the program.

One of the greatest challenges in working on social communication skills with individuals with TBI is the difficulty in measuring outcomes. While Improving Pragmatics Skill in Persons with Head Injury provides a series of rating and score sheets for the program activities, the discussion of overall outcome is not addressed. Since functional measures of improved outcome can be documented in home, work and academic settings by observing functional communication, a system to document change which indicates goal attainment would be useful. Clinicians planning to implement a social communication skills program should establish a system of evaluation and outcome measurement with each participant. Data collected over time and across participants may assist clinicians in refining goal setting and goal attainment measurements.

Improving Pragmatics Skills in Persons with Head Injury is a comprehensive program which contains a systematic approach to cognitive-communication disorders following TBI. As indicated in the program Manual, the activities and agendas must be adapted to meet the needs of the individuals participating in the program. These activities were not developed merely to be photocopied and implemented; program development requires the skilled planning and preparation of a speech-language pathologist or other experienced rehabilitation professional to focus the content and procedures of the program on the needs of the participants.

### Limitations of the Study

There are a number of limitations of the present study which need to be addressed. The first issue to be addressed is the sample size and selection of research participants. The recruitment of the participants for this study was limited by the availability of records to locate the original social communication skills group participants.

Second, this study was based on historical data from a social communication skills pilot group which was not specifically designed for research purposes. Further it was indicated in several areas of investigation that inadequate documentation had been recorded to formulate reliable results.

Third, this study included the awareness and practice phases of the program materials. Information regarding the generalization phase of the program was not implemented in the pilot social communication skills program.

Finally, this study was based on historical data from a social communication skills pilot project. Follow up data was not collected after the project ended. Outcome measurement for the participants and the program cannot be established reliably with this limited data.

### Suggestions for Future Research

In addition to the suggestions that were presented throughout the discussion, there are some general suggestions for future research in the area of social competence following TBI. First, the effects of social communication skills intervention on individuals with TBI needs further investigation. An empirical study investigating the effect of specific components of social communication

skills intervention following TBI might produce reliability and validity measures which would have an impact on assessment and treatment procedures in this area.

Second, the relationship between awareness of deficit and social communication skills impairments has been documented in the literature (Crosson et al., 1989; Devany et al., 1991; Hartley, 1992; Ylvisaker et al., 1992). Research which continues to document the methods of providing treatment for awareness disorders following brain injury would be worthy of investigation.

Third, a study investigating rehabilitation professionals' knowledge of cognitive-communication disorders, and awareness deficits following TBI would reveal information gaps which could be addressed through continuing education programs.

Fourth, research into the implementation of a family education component to the social communication skills training program would provide data on the importance of family in the generalization phase of social communication skills training. The development and assessment of a family or support person training program could be implemented to facilitate smooth transitions and consistent feedback from the clinical setting to the community or generalization phase of the program.

Finally, the importance of outcome measurement in rehabilitation is increasingly apparent in the development of program evaluations and in light of productivity measures required in clinical settings. The development of an outcome measurement system for documenting progress in the areas of

cognitive-communication disorders, awareness of deficit, and social communication skills following TBI would lend credibility to rehabilitation treatment programs, which would in turn have the potential to improve the quality of services available to individuals with TBI.

### Conclusion

In summary, the key concepts investigated in this study were cognitive-communication disorders, awareness of deficit disorders and social communication skills impairments following TBI. The impact of impaired cognitive and communicative abilities was demonstrated to be significant factor in return to work research. Limited assessment and treatment procedures, and outcome measurements for cognitive and communication disorders following TBI have produced gaps in service delivery for these individuals. If individuals with TBI are to return to productive lifestyles following rehabilitation, efforts must be focused on improving the understanding of cognitive-communication disorders, and the development of valid and reliable assessment, treatment and outcome measurement procedures.



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## Appendix A

### Program Description: Improving Pragmatics Skills for Persons with Head Injury

Improving Pragmatics Skills in Persons with Head Injury (Sohlberg et al., 1992) is one example of a social communication skills training program. It includes a manual and workbook of exercises designed to target pragmatic impairments in adults challenged by brain injury. The overall goal of the program is to improve communication skills in a naturalistic setting (Sohlberg et al., 1992). There are five topics addressed in the program including: Initiation, Topic Management, Turn Taking, Active Listening, and Verbal Organization. The model of instruction is divided into three distinct phases: an awareness phase, practice phase and generalization phase. The model of instruction was developed to provide the appropriate repetition and feedback necessary for teaching individuals with cognitive-communication impairments.

Sohlberg et al. (1992) subscribe to a process-specific model of brain injury rehabilitation. This model fosters a systematic approach to social communication skills training which focuses on the rehabilitation of underlying cognitive deficits. Each of the three instructional phases of this pragmatics program is designed to heighten the individual's awareness of his/her communication behaviours thus attempting to facilitate the conscious control of previously automatic cognitive and communication processes (Sohlberg et al.).

Improving Pragmatics Skills in Persons with Head Injury was developed to be used for individual treatment sessions. Modifications are possible to adapt the program for small group therapy sessions. Sohlberg et al. (1992) recommend four specific procedures to follow when implementing each phase of this program. The first recommendation reminds clinicians to provide the necessary repetition of exercises during each phase of the program. The second procedural recommendation relates to the organization of lesson plans for the program and individual sessions. Clinicians must be prepared to modify plans within a session when it is apparent that clients need more time or a different type of instruction to meet treatment goals.

The third and fourth procedures outlined for the implementation of the pragmatics program concern the process of data collection. It is advisable to use the data collection sheets provided in the Manual to ensure accountability for measuring progress and outcomes. Finally, it is important to take frequent probes to assess maintenance and generalization gains. Ideally, some of the data collection should be obtained during naturally occurring situations when the client is not aware of the evaluation (Sohlberg et al., 1992).

In the following section, the awareness, practice and generalization phases of the program are described. A rationale for each phase is presented, and an example of a task or activity is provided for each phase.

The first phase of instruction in Improving Pragmatics Skills in Persons with Head Injury is the awareness phase. This phase is implemented to address the often marked discrepancy between the individuals' knowledge of appropriate

communication behaviour and the implementation of acceptable behaviour following TBI . The awareness phase of the program is an important first stage in the rehabilitation process, as individuals with TBI may need to relearn general rules for communication. They may require assistance to become aware of their own communication strengths and weaknesses. The speech-language pathologist must use this phase to assess each individual's level of awareness, plan and implement treatment.

One of the tasks suggested for this phase of treatment is the use of videotaped scenarios for observation and discussion. Discussions progress from "the least personal stimuli (observing others) to most personal situations (observing self)" (Sohlberg et al., 1992, p. 6).

The second instructional phase of this pragmatics program is the practice phase. The goal of the practice phase is to provide opportunity for repetition of targeted behaviour. Cognitive processes for communication which were automatic prior to TBI may need relearning following TBI. Structured practice sessions targeting a specific communicative behaviour provide an essential component for new learning. Acquiring automaticity for communication skills will require time, effort and direct behaviour modification for success. Additionally, clear instructions, opportunities for repetition, and provision of consistent feedback are key features of the practice phase of the program. Careful documentation of qualitative and quantitative performance is necessary in order to plan and implement treatment at levels appropriate to each participant.



Each chapter of this program contains a series of practice activities which can be implemented in the clinical setting. Documentation of performance for target behaviours is recommended and observation and score sheets for each practice activity are provided.

The third phase of instruction in this program is the generalization phase. The goal of this third phase of treatment is to facilitate the transfer of skills to everyday situations and settings. Success in therapy is determined by improvements in living, vocational and community settings (Sohlberg et al., 1992). Generalization can be observed in target behaviours transferring from one session to the next; from treatment tasks to unpractised tasks; and from treatment tasks to the individual's natural environment.

The generalization phase of this program facilitates opportunities for communicative interactions in naturalistic settings. Participants are required to use practised skills in relevant community settings. Natural feedback and "teachable" moments are reinforced by trained support persons (rehabilitation staff, friends or family members) in the individual's environment.

The content targeted in this social communication skills program is focused on five specific communication areas: initiation, topic management, turn taking, verbal organization and active listening. The first chapter of the program focuses on the skills required to begin and sustain a conversation. Individuals with initiation problems may appear disinterested in a conversation or may seem to have difficulty understanding the content of the interaction. The goal of the awareness phase of this section is to increase the awareness and importance of

the initiation process and to facilitate recognition of personal strengths and problem areas. Educational materials explaining the role of the frontal lobe and executive skills in initiation are provided, as are worksheets, scoresheets and feedback forms to reinforce this information in the practice and generalization phases.

The second chapter introduces the concept of topic management. There are four key components to topic management addressed in this chapter. They include the generation of ideas for conversation, skills related to topic initiation, topic maintenance skills, and the ability to end a topic or conversation appropriately. Impairments in topic maintenance include problems with: cohesion, or the ability to link ideas together; ambiguity with parts of speech such as pronouns; and tangential speech. Topic management activities are targeted in the practice and generalization phases.

The third communication process targeted in the program is turn taking in conversation. Turn taking is defined as the balance between listening and speaking. This regulation of discourse can be facilitated through the use of nonverbal cues such as eye contact and body language. Listening without interrupting, staying on topic and asking questions are strategies recommended for improving turn taking. Finally, the ability to initiate conversation, ask relevant questions and inhibit the urge to talk only about oneself are skills which promote appropriate turn taking in conversation. Activities in this chapter include observation of prepared videotapes and information regarding turn taking behaviours, self-rating worksheets, and practice and generalization activities

including telephone conversations and community outings.

Verbal organization is the fourth communication process contained in Improving Pragmatics Skills in Persons with Head Injury. Verbal organization refers to the speaker's ability to sequence ideas within a message which are relevant and concise for the listener. The message should contain adequate information to convey a thought without bombarding the listener with unnecessary details. Communication breakdowns following TBI related to verbal organization include, making assumptions about the listener's prior knowledge of a topic, providing the listener with too much information and often information which is considered to be overly personal for the context, and selecting inappropriate language such as vague or ambiguous words.

Activities provided for this chapter include educational materials regarding verbal organization problems and the identification of these problems in conversation. Communication assignments include giving verbal instructions and receiving feedback from peers regarding the accuracy of the information provided, and self-rating score sheets for the generalization phase of the program.

The fifth, and final component of the pragmatics program is referred to as active listening. Active listening is described as an active intellectual process requiring the listener to use his/her intellect, ears, eyes and memory. This process influences the nature of the conversation by providing the speaker with information about comprehension and interest in the discussion. The four active listening strategies taught in this chapter are paraphrasing, summarizing, verbal

prompting, and clarification.

The awareness phase for active listening focuses on the definitions of the four strategies and the observation of the strategies through the use of videotapes. Practice activities require the participants to implement strategies to clarify messages which have been specifically designed to omit relevant details. The generalization phase of this chapter contains a questionnaire for a family member, significant other or friend to complete. The questionnaire is designed to elicit feedback regarding the participant's performance in the implementation of the active listening strategies in a natural environment. The participant is required to complete a self-rating form which can be compared and discussed in relation to the feedback provided on the active listening questionnaire.

Additional resources are included in the program manual and include information to clarify communication assignments and to provide topics for assignments, suggestions for topics for the generalization phase within nursing home, hospital, and community-based programs, and finally a pragmatics protocol for the initial assessment of participants entering the program.

## Appendix B

### Social Communication Skills Pilot Program Schedules and Session Descriptions

The information in this appendix is organized according to the weekly schedules from the social communication skills pilot program.

#### Week 1: Initiating Conversation

During the first session participants were introduced and ground rules for the group were established. Participants were asked to respect each other within the group and to be respectful of the information shared within the group setting. Issues of confidentiality were discussed. A summary of the session schedule and activities is described in this section.

##### Initiating Conversation

a) Introductions

b) Awareness Phase: What does "Frontal lobe" have to do with conversation?

c) Guided Discussion

d) Video Observation

e) Practice Phase: Conversation openers; discussion

f) Closing: post-test; session evaluation forms; homework assignment

**Awareness Phase:** Participants were provided with information about frontal lobe function, the connection between frontal lobe function and brain injury, and the relationship between frontal lobe function and initiation skills. An initiation questionnaire was adapted from the Manual and participants were asked to fill in their responses directly following the educational presentation and discussion. Participants filled in an observation rating form while observing a video portraying appropriate and inappropriate initiation skills. At the end of the session participants were asked to complete a Post-test, "Frontal Lobe Functioning and Initiation", which was copied directly from the Manual.

**Practice Phase:** The activity "Conversation Openers" was implemented as described in the Manual. The participants were asked to brainstorm as a group and make a list of possible lines to initiate conversation. Once a list had been generated participants were asked to write on a cue card one line which they would be most comfortable using. On a second cue card they were each asked to select a topic from a list of topics provided in Appendix A of the Manual. In the small group participants were asked to initiate a conversation with their peers using the selected topic and opening line cards. Each topic was discussed briefly.

## **Week 2: Initiating Conversation**

The second session of the pilot project was a review of the Initiating Conversation materials from the first sessions and then the group moved quickly into the materials for the second topic, Topic Management. A

description of the session follows.

#### Initiating Conversation

- a) Review initiation homework sheets
- b) Discussion regarding benefits of initiation of conversation

#### Topic Management

- c) Awareness Phase: What does "topic management" mean?
- d) Video Observation
- e) Practice Phase: "Pass the Object"
- f) Closing: summary; session evaluation forms; homework assignment

Awareness Phase: Participants were engaged in a discussion regarding the meaning of topic management, the importance of topic management, strategies to keep on topic and strategies for changing the topic. Following the discussion participants were asked to complete a "Topic Management Awareness Questionnaire". To provide participants with a model for topic management, a video of a role play involving topic management skills was observed. "Topic Management Observation Rating" forms were copied directly from the manual for this exercise.

Practice Phase: The activity selected for this session was "Pass the Object", as outlined in the Manual. Participants were asked to select a conversation topic from the list of "concrete topics" in Appendix A of the Manual. Each was required to write down one topic for discussion on a file card. Instructions were given to the group according to the model provided in the

Manual. In a one-to-one session with a clinician, each participant was engaged in a conversation about the topic he/she had selected. The clinician passed the participant an object following an interaction and the participant was directed to respond to the clinician by speaking only about the selected topic. The clinician passed an object to the participant to signal their turn in the conversation. An observation score sheet was completed by the clinician according to the following criteria, number of turns taken by the participant, number of comments not related to subject and other general comments and observations. Each of the participants was videotaped during this activity so that the group could observe the interactions and practice observation, rating, and feedback skills.

### Week 3: Topic Management

This session was designed to provide the participants with the opportunity to view previously recorded videotape segments and learn how to analyse the tapes. Carefully structured feedback procedures were prepared for this session.

#### Topic Management

- a) Review introductory topic management materials
- b) Practice Phase: "Pass the Object"; Feedback of performance from videotape"; Stick to the Topic"; discussion
- c) Closing: session evaluation forms

Practice Phase: After a brief review of the awareness information regarding Topic Management, the group moved quickly into the video analysis



and feedback from the "Pass the Object" activity the previous week. As with the role play videos, the participants were given specific instructions for the type of feedback that would be appropriate for this peer review. They were instructed to find three positive things that others had done to maintain the selected topic in the interactions. They were asked to suggest one or two things that the participant might try in improving upon a skill that appeared to need some work.

#### Week 4: Topic Management and Turn-Taking in Conversation

A transition was made from the Topic Management materials to the Turn-Taking chapter in this session.

##### Topic Management

a) Review topic management materials

##### Turn-Taking in Conversation

b) Awareness Phase: questionnaire; discussion; videotape review and observation forms

c) Practice Phase: "Take a Turn"; video observation forms and discussion

d) Closing: session evaluation forms; schedule individual appointments with clinical staff

Awareness Phase: The materials for Topic Management were reviewed with all three participants. Due to time constraints the group moved forward to the next topic, Turn-Taking in Conversation.

Participants were involved in a discussion regarding the importance of turn-taking in conversation. The points discussed included how to assess someone's interest in a conversation, clues to watch for when it is time to take a turn or to listen so that others may have a turn, and the impact of conversing with someone who does not allow you to join into the conversation. Strategies for monitoring personal turn-taking were also discussed.

Following the discussion of turn-taking and the completion of the "Turn-Taking Questionnaire", the participants observed a role play video. They were asked to rate the actors on the following communication behaviours; initiation, listening, interrupting, egocentric speech and responding, as outlined on the form, "Turn-Taking Observational Rating - Form #1".

Practice Phase: The participants were videotaped during group discussions following the "Conversation Activity" in the manual. The recorded segment of the previous session had not been analysed due to scheduling conflicts with the previous session. The previously recorded conversations were analysed using "Turn-Taking Observational Rating - Form#2". This form required participants to rate the quality of the conversation based on turn-taking skills such as, "Are both people interested in the conversation?", "Is one person talking more than the other?", "Are they talking about the same thing?".

#### Week 5: Turn-Taking in Conversation

The focus of this session was practice activities for the Turn-Taking in conversation topic. The use of videotape analysis provided the basis for

discussion and individual feedback regarding performance on selected activities.

#### Turn-Taking in Conversation

a) Review Turn-Taking materials

b) Practice Phase: Conversation pairs (videotaped); observation form completed

with video review; "Telephone"; conversation and feedback

c) Closing: session evaluation forms

Practice Phase: This session started with a brief review of the turn-taking strategies discussed in the previous session. The first practice activity for this session involved more conversations, which were videotaped for analysis and feedback by the group. The topics selected by participants included the weather, airconditioning and cigarette smoking. The videotapes were observed by the group and each participant was asked to rate the interactions using the "Turn-Taking Observational Rating -Form #2".

The second practice activity for this session was a telephone conversation based on the "Giving and Receiving Information on the Telephone" activity in the manual.

#### Week 6: Verbal Organization

This session covered the materials for the awareness and practice components of the Verbal Organization chapter.

## Verbal Organization

- a) Awareness Phase: Verbal Organization – what does it mean?;  
video observation and discussion identifying confusing messages
- b) Practice Phase: “Giving Directions”; discussion and feedback
- c) Closing: session evaluation forms

Awareness Phase: The group was introduced to the concept of “verbal organization”. Three categories of problems with verbal organization were identified. These included:

1. Speaker does not provide enough information; assumes the listener knows more than he/she does;
2. Speaker gives listener too much information some of which may not be relevant to the conversation;
3. Speaker presents a disorganized message and may never actually provide the main point.

In order to provide examples for the group, one of the leaders presented two confusing messages and participants were asked to identify the problem based on the three categories discussed.

Practice Phase: There were two practice activities implemented during this session. The first was a barrier task in which the participants were asked to follow verbal / auditory directions with a pen and paper. The purpose of the exercise was to demonstrate the importance of a well-organized, concise message. Each participant was asked to draw a diagram based on the

instructions given. Participants compared their drawings to each others' and then to the drawing of the group leader who had given the instructions.

The second activity required the participants to organize and deliver a set of instructions to a peer. Each participant recorded a set of instructions for a peer which would lead them to a certain area within the work space. The instructions were recorded on an audiotape. The goal of the exercise was to be able to deliver a clear concise message that would lead the participant to the correct location.

#### Week 7: Active Listening

The final session covered the materials for the awareness and practice phases of the Active Listening chapter. Time was allotted for final evaluation of the program and informal social interactions.

##### Active Listening

- a) Awareness Phase: Hearing versus Listening; active listening questionnaire and discussion; video observation
- b) Practice Phase: "What's my view?"
- c) Closing: session evaluation forms; homework assignments to be completed with rehabilitation staff; good-byes/social time

Awareness Phase: The concepts of hearing and listening were presented. Participants discussed the similarities and differences between the two concepts. Two of the three participants were present at this session. They agreed that hearing was a passive event that involved only ears, while listening was an

active process which involved “ears, eyes, memory, thinking skills, and body”. The group was introduced to four strategies for active listening. They include: paraphrasing, summarizing, verbal prompting, and, clarification. Explanations and examples of each were provided. The participants used these strategies as a framework for viewing a role play video regarding active listening. They completed the “Active Listening Observational Rating - Form #1”.

Practice Phase: The participants had the opportunity to practice active listening skills during this section of the session. A list of emotionally charged topics were provided in Appendix A of the Manual. Participants were required to paraphrase the comments of their peers or a group leader in the discussion. Group leaders rated their performance using the “What’s My View? Score Sheet”.