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PERCEPTION OF OCCUPATIONAL PERFORMANCE  
BETWEEN CLIENTS AND OCCUPATIONAL THERAPISTS

BY

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A THESIS SUBMITTED TO  
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## STATEMENT OF SOURCES

The idea of the present investigation and planning of the experiments resulted from discussions between the author and supervisors.

All data collections in the present study were completed solely by the author.

The author declares that the work presented in this thesis is, to the best of the authors' knowledge and belief, original, except as acknowledged in the text, and that the material has not been submitted, either in whole or in part, for a degree at this or any other University.

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Karen Pui Yee LIU

February, 1999

## DEDICATION

I dedicate this work to my husband Alex Tsoi who has supported me throughout the entire course of my MPhil study.

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I would like to express my gratitude to a number of people whom I am indebted to. Special thanks to Dr. Chetwyn C.H. Chan, my project supervisor, who has guided me throughout the whole course of my study both in the research and my career, and also for his excellent supervision and training he provided. I wish to extend my gratitude to Professor Christina W.Y. Hui-Chan, my co-supervisor, who gave me scholarly guidance and valuable advice during the entire course of my study. I would like to thank also the members of the Board of Examiners, Professor Helen Madill, Professor Farideh Salili and Dr. Abhik Roy, for their support and useful suggestions. In addition, I wish to extend my special thanks to the staff at the Occupational Therapy Department of Kowloon Hospitals, Pok Oi Hospital, Ruttonjee Hospital, Tung Wah Hospital, Tung Wah Eastern Hospital who participated in the data collection process. Colleagues and classmates whom I met in the university also enlightened my time during my study. Last but not the least, I would like to thank my department manager and colleagues at the Occupational Therapy Department, Queen Mary Hospital, who supported me during my study.

Abstract of thesis entitled 'Perception of Occupational Performance between Clients and Occupational Therapists' submitted by Karen Pui Yee LIU for the degree of Master of Philosophy at the Hong Kong Polytechnic University in (February 1999)

### ABSTRACT

This study examined differences among clients suffered from stroke and their case occupational therapists in their perception of clients' occupational performance. The differences were examined in terms of the clients' considerations of their own illnesses and the different clinical reasoning styles of the therapists. A total of 60 clients and their case occupational therapists were recruited in five rehabilitation hospitals in Hong Kong by convenience sampling. Both groups of subjects were asked to identify clients' problems in occupational performance by following the procedure stipulated in the Canadian Occupational Performance Measure (COPM). All subjects were then interviewed to explore on the mechanisms of their perception process by protocol analysis.

According to content analyses of the protocols, the clients were classified into three different groups with respect to the resources that they considered when identifying their problems. The therapists were also classified into three groups according to their styles of clinical reasoning. Results of the study revealed high percentages of agreement (95%) on the problems identified by clients who formed positive strategies when coping with their illnesses and considered all their resources and the group of therapists who employed a conditional style of reasoning. In such cases, both the clients and therapists demonstrated the consideration of internal (personal) and external (environmental) resources of the clients when problems were

identified. The overall client-therapist agreement indices on the ten most common problems identified were found to be significantly higher for therapists employing the conditional and interactive styles of reasoning than procedural reasoning ( $F(2,51) = 10.46, p = .000$ ).

Findings of this study supported the notion that therapists adopting the conditional style of reasoning shared the most similar perception of clients' problems, which is the pre-requisite of client-centered practice. Therapists should also consider clients' responses to their disability based on which assessment and treatment can be implemented.

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## CHAPTER I

### INTRODUCTION

This chapter begins with a statement of purpose that summarizes the objectives of this research study. It is followed by a section on the background and justification of the study, and finally, an introduction to the content and organization of the dissertation.

#### Statement of Purpose

The study was designed to investigate the possible similarities and differences in the perceptions of clients' problems in occupational performance in self-care, productivity and leisure between clients suffering from stroke and their occupational therapists. The objectives were:

1. to identify problems in occupational performance of the clients;
2. to identify therapists' perceptions of clients' problems in occupational performance in their day to day clinical practice;
3. to explore the mechanism of clients' perceptions when perceiving their own problems in occupational performance;
4. to explore the clinical reasoning that therapists use in relation to their clients' occupational performance issues; and
5. to compare clients' and therapists' perception of problems in occupational performance facing their clients.

#### Background and Justification of the Study

With the change of emphasis in the health care services from extending life to enabling clients to make the most of their lives, the concept of client-centeredness is

emerging (Kielhofner, 1992). The philosophy of occupational therapy in helping clients to live more independent and effective lives is becoming the central concern in the health care systems (Kielhofner, 1992). This concept is also reflected in the mission statement of the Occupational Therapy Coordinating Committee of the Hong Kong Hospital Authority, which says, "All our clients should lead meaningful lives of their choice." This implies a client-centered approach. Therapists need to understand the life situation of individuals to facilitate the establishment of treatment plans and services that will assist the clients in fulfilling their life roles.

By gaining mutual understanding on clients' living contexts and needs, the perceptions of clients' problems in occupational performance by both clients and occupational therapists can be matched. If client and therapist perceive the client's problems similarly, the client is more likely to receive the type of care he or she expects, thus enhancing his or her satisfaction with the care received. For the occupational therapist, a relevant treatment plan that leads to a maximum of independence for the client depends not only on the therapist's professional judgment, but also on accurate perceptions of the client's problems. However, in practice, the occupational therapist may judge the client's problems merely through experience and reasoning. It is uncertain what extent the therapist's professional judgment matches the client's own expectations, leaving the client's satisfaction with the services received in question.

This study was designed to investigate the perception of problems in occupational performance by clients suffering from stroke and their occupational therapists. The client subjects in this study were all recovering from the effects of stroke. The therapist subjects were selected according to their field of practice and

years of experience. It is hoped that this study will enhance occupational therapists understanding of their clients' perceptions, and lead to the reinforcement of practice methods most effective in helping clients lead productive lives. It is also hoped such practice methods will serve as guidelines in occupational therapy clinical reasoning.

### **Organization of the Chapters**

Altogether, there are six chapters in this dissertation. The first one is this introduction chapter. Chapter II is the literature review, giving background on the trend toward client-centered health care service and a discussion of the perceptions of problems by clients suffering from stroke and their occupational therapists. Chapter III gives a detailed description of the method of investigation including the sampling method, instrumentation used, and data collection procedure. Chapters IV and V present and analyze the data gathered in this study. These two chapters describe the characteristics of the clients and the occupational therapists who participated in this study, and the effects these characteristics had on their perceptions of the clients' problems in occupational performance are identified. The different styles of clinical reasoning utilized by the occupational therapists in terms of the therapists' length of clinical experience and, and the different perception mechanisms and the problems identified by the clients were examined.

Chapter VI, the final chapter of this dissertation, suggests implications these findings have for clinical practice based on the evidence gathered on the perceptions of clients' problems by the clients themselves and their occupational therapists. Limitations of this study are also included in this final chapter.

## **Chapter II**

### **LITERATURE REVIEW**

#### **Introduction**

This chapter begins with a description on the changing trend of the health care services from a professional-dominated to a client-centered practice. The history of occupational therapy being a client-centered profession is reviewed below. The importance of the Model of Occupational Performance and the application of the Canadian Occupational Performance Measure to client-centered practice in occupational therapy are discussed. The mechanisms on how occupational therapists perceive clients' problems in occupational performance (used interchangeably here with the term 'problems') and how clients perceive their own problems are analyzed. Lastly, the importance of understanding clients' perception in stroke rehabilitation is discussed.

#### **The Current Trend of Client-Centred Practice in Health Care Service**

The advocacy of equal rights in society in general has substantially strengthened voices promoting equal opportunities for people with long term disabilities and the elderly (Canadian Association of Occupational Therapists CAOT, 1991). It is now more or less accepted that people with disabilities should have an equal chance to fully participate in the society which they live in. As individuals with disabilities gain experience in utilizing health care services, they gradually become more knowledgeable about their health and demand more personalized health care (Duffy & Lemieux, 1995). People with disabilities are increasingly seen, and increasingly are viewing themselves, as health care 'consumers' who should be

respected. This philosophy of putting clients and their families at the center of health care services has largely been adopted both internationally and in Hong Kong. (Duffy & Lemieux, 1995; Hong Kong Hospital Authority, 1997). The stated mission of the Hong Kong Hospital Authority stipulates 'quality patient-centered care through teamwork'. The Authority further advocates the delivery of its service in a client-centered way (Hong Kong Hospital Authority, 1997). As the Hospital Authority is the largest health care provider in Hong Kong, client-centered practice becomes the main stream of health care service delivery.

Under the client-centered practice initiative, hospital care is more warmly rendered, making hospitals more homelike and therefore more accepted by people in the community (Blank, Horowitz, & Matza, 1995). Under the traditional system, clients were regarded as 'patients' (a more medically oriented term) who were categorized and referred to different medical or rehabilitation specialties for investigation and treatment. In the new system, in contrast, health care services are reorganized and geared towards meeting the needs of their clients (a more customer oriented term). Clients are no longer considered as being composed of different parts; instead, they are viewed as whole persons. Besides receiving treatment in designated hospital settings, clients can choose to receive treatment in the local community or at home by visiting clinic or being visited by health care providers. Ironically, these changes can help to reduce costs because traditional health service delivery in hospital settings is expensive and not easily affordable in today's economic environment. But more importantly, this is a shift of service delivery paradigm to a 'consumer' oriented client-centered practice. The importance of the 'customer' is the basis of the present study.

### **Client-Centred Practice in Health Care Service**

According to Law, Baptiste and Mills (1995), the term 'client-centered practice' was firstly found in the work of Carl Rogers which emphasizes:

1. the importance of cultural values of the client;
2. dynamic interaction between the client and health care provider;
3. the need for the client to have an active role in approaching problems and concerns; and
4. the need for openness and honesty within the clinical relationship.

In the clinical settings, client-centered practice model is operationalized to enable clients to select services which they deem relevant to their own problems and to maximize their quality of life after sustaining diseases (Coles, 1995). Different from the traditional health care model, the client-centred model stipulates that health care providers serve as facilitators and educators, helping ensure clients and those around them take effective and appropriate self-management of the disease or condition (Blank, Horowitz, & Matza, 1995; Coles, 1995). Through changing or adapting the environment or health care regimen, health care providers assist clients to actively participate in treatment program which contributes to the life their clients prefer to live (CAOT, 1991). At the same time, clients are expected to take initiative in understanding their own illnesses and making choices among the options for their treatments (Luban-Plozza, 1995). Under this process, health care professionals and clients become more equal in terms of their roles and the power inherent in their roles.

Similar to traditional health care, client-centered services are provided through multidisciplinary professionals (Duffy & Lemieux, 1995). In Hong Kong, a team of multidisciplinary professionals would include medical doctors, nurses, occupational

therapists, psychologists, social workers, dietitians and physiotherapists. Among these, occupational therapy is the focus of this study.

### **Occupational Therapy as a Client-Centred Profession**

Occupational therapy has its goal the promotion of individuals' independence in daily activities so as to enable them an opportunity to meet their own expectations (Christiansen & Baum, 1997). As a clinical intervention, occupational therapy facilitates individuals' occupational performance (major social roles and functions) by building the performance components (abilities and skills) that are fundamental to the performance. The term 'client-centred practice' commonly appeared in overseas occupational therapy literature for about ten to fifteen years whilst it is comparatively new in Hong Kong. The client-centred philosophy began to be advocated locally in 1997. It was first appeared in the mission statement of the Occupational Therapy Coordinating Committee of the Hong Kong Hospital Authority (Chapter I, p. 2). The client-centred philosophy is relatively new in Hong Kong. Occupational therapists practiced locally are in the stage of familiarizing and applying the philosophy in their daily clinical practice.

Since occupational therapist's job is to help clients to resume previous social roles or engage in new social roles and functions, it is important that therapists understand clients' needs and wishes. Furthermore, under the philosophy of client-centered practice, in order to help clients to come closer to their goals, occupational therapists and clients should have the same focus on or perception of their needs and problems so that appropriate treatment can be rendered.



## **Occupational Therapy Practice**

According to the *Occupational Therapy Guidelines for Client-Centered Practice* published by the Canadian Association of Occupational Therapists (CAOT) in 1991, in client-centered practice, the importance of the clients' living environment and cultural values should be considered in the delivery of occupational therapy services. Its treatment program pulls clients' personal experiences with the influence of their social realities. It also encourages clients' active participation during the treatment program. The model guides the client-centered practice of occupational therapy with the beliefs that clients are an essential part of the treatment intervention (CAOT, 1991; Townsend *et al.*, 1990).

### **Model of Occupational Performance**

Several theoretical and practical models have been built to substantiate the client-centered practice. For example, Kielhofner developed the Model of Human Occupation (Kielhofner, 1995), while Townsend *et al.* (1990) constructed the Model of Occupational Performance. The Model of Occupational Performance is widely employed by occupational therapists engaged in physical rehabilitation services in Hong Kong.

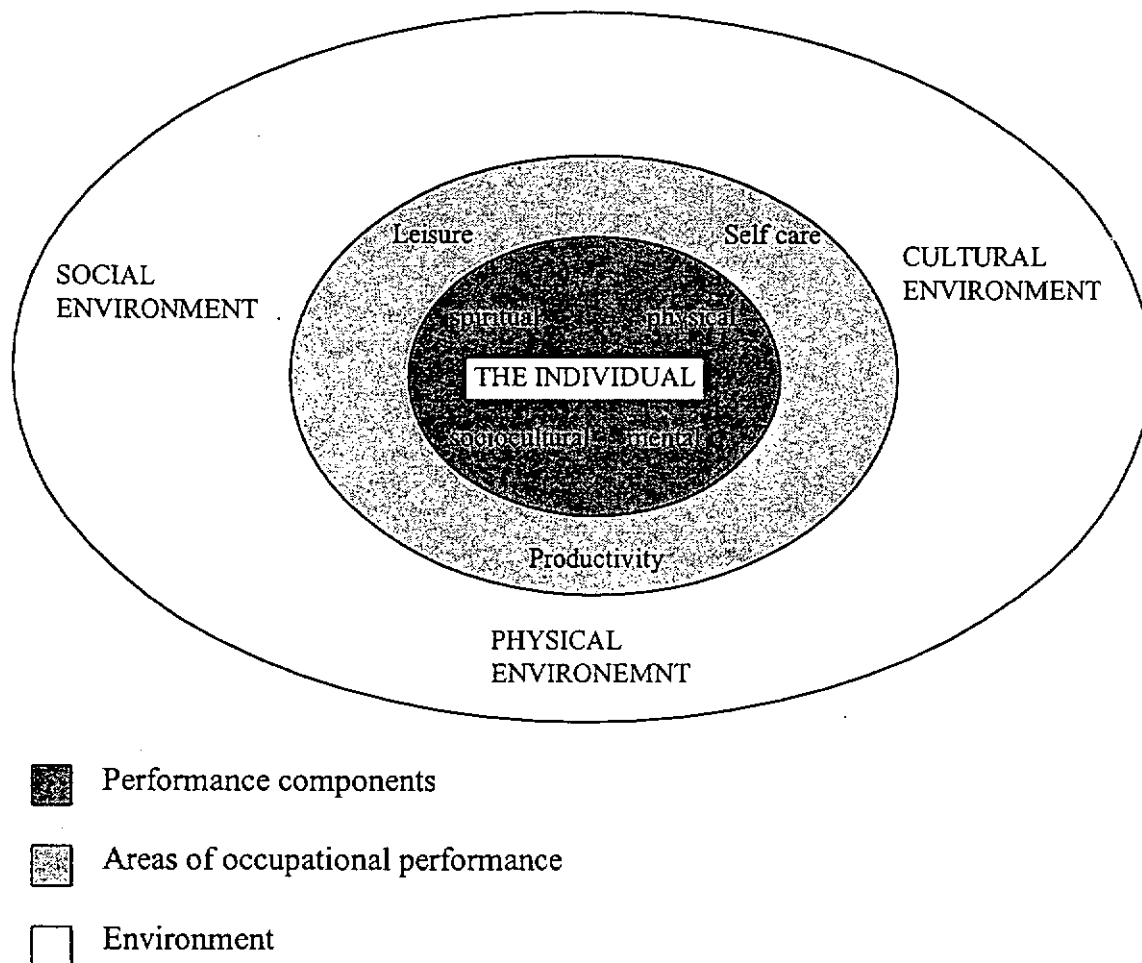
In the Model of Occupational Performance, occupational therapists work under the premise that individuals need to be engaged in occupations or occupational performance in self-care, productivity, and leisure (CAOT, 1991). These occupations are influenced by performance components categorized under mental, physical, socio-cultural and spiritual areas. Clients' engagement in various occupational roles and occupational performance requires the integration of performance components and clients' social, cultural, and physical environment. The model is further revised to

include the influence of institution in the environment (Townsend, 1997). As discussed in previous section, the practice of client-centredness is also affected by the institution the clients and the therapists are in. In Hong Kong, since all the settings providing stroke rehabilitation are under the management of the Hong Kong Hospital Authority, it makes the influence of 'institutional environment' on the practice of client-centredness in different settings negligible.

Every individual has a unique combination of occupational performance that constitutes individual's occupational roles, such as a worker, housewife, or student. A bread winner of a family assumes a worker role; he needs to engage in gainful employment and perform self care activities, such as grooming, dressing, bathing, feeding. Furthermore, he engages in leisure activities with family and friends, such as playing ball games after work and while on holiday. A two-year old child is expected to be assisted in self-care activities by the parents. A retired woman manages her own self care activities, helps in simple household work and goes to the garden for a walk with her friends. Independent performance of occupational roles therefore relies very much on the interaction of the individual's performance components (physical, mental, sociocultural, and spiritual) and the physical, social, and cultural environments the individual inhabits (Pedretti, 1996). Figure 2.1 was extracted from the *Occupational Therapy Guidelines for Client-Centered Practice* (CAOT, 1991, p.17). It illustrates the interaction between the individual, his or her performance and the influence of the environment which characterizes the Model of Occupational Performance.

Figure 2.1

The Model of Occupational Performance showing the interacting elements of the individual



Note. From Canadian Association of Occupational Therapists. (1991). *Occupational therapy guidelines for client-centred practice*. Toronto, ON: CAOT Publications, p. 17. Reproduced with permission of the Minister of Public Works and Government Services Canada, 1998.

The Model of Occupational Performance guides the client-centered practice of occupational therapists in which clients' behaviors are viewed in a holistic way. Occupational therapists are encouraged to apply this model of clinical practice to assessment and treatment of clients.

### Occupational Therapy Assessment

Occupational therapists provide treatment to clients by assessing their functioning and tailor-making a unique program for each individual client. Under the Model of Occupational Performance, assessment of clients takes into account clients' deficits in performance components, and the effects of their deficits to clients' occupational performance under specific conditions. Occupational therapy assessment includes interviews, standardized and non-standardized tests, checklists, observation and self-evaluation (Pedretti, 1996; Turner *et al.*, 1996). The aims of assessment are to understand clients' life roles and environment, observe the actual performance of a necessary task, and test physical abilities or performance components such as strength and range of motion. Take for example a client presenting, say, hemiplegia and perceptual deficit due to stroke. Interaction with the client indicates that he needs to be able to dress himself after discharge because he lives by himself. As a consequence, intervening in the dressing problem becomes one of the goals of occupational therapy after the assessment.

In treating clients with the disability as described in this example, the goal of the occupational therapy is to increase clients' independence in occupational performance (Trombly, 1988). No two persons are identical. Despite individuals with similar impairment, the disabilities and level of handicap are likely to be different (Pedretti, 1996). In other words, even if clients display similar deficits in performance components, their problems in occupational performance and needs in occupational roles may be different because they occupy different physical, social, and cultural environments.

### Occupational Therapy Intervention

Occupational therapy assessment enables clinicians to formulate a list of clients' problems and the goals of the subsequent intervention. Therapists make use of purposeful activities to elicit clients' active participation in the treatment program (Reed & Sanderson, 1980). In the context of the Model of Occupational Performance, besides aiming at promoting clients' independence in occupational performance and enhancing clients' performance components, purposeful activities should be congruent with clients' physical, social, and cultural environments.

Using the client who suffered from stroke and presents with hemiplegia and perceptual deficits as an example. His loss of normal functioning of one side of the body makes him unable to dress himself. An exploration of the client's 'environment' indicates that he wears pull-over shirts most of the time. The treatment priority would therefore be put on dressing pull-over garments relevant to the client's needs.

The choosing of appropriate tests for assessment, the setting of relevant goals and the provision of relevant intervention in occupational therapy are crucial to clients' success in engaging in their life roles. This process of occupational therapy depends very much on clinicians' clinical reasoning that is described in the following section.

### **Clinical Reasoning**

The term 'clinical reasoning' refers to the thinking and decision making processes associated with the clinical practice of health care providers (Higgs & Jones, 1995). Unlike an airline pilot whose job is to follow a set of protocols as closely as possible, that is, to maneuver a plane and fly to a specified destination in an efficient and safe manner, reasoning in the health care service is more than following

protocols or engaging in a process of technical decision making. The whole reasoning process involves the integration of sensitivity, professional knowledge and thinking. More importantly, health care providers must be able to monitor their own thinking process (Higgs & Jones, 1995). This self-monitoring component is an essential part of effective clinical reasoning. However, the style of reasoning and the thinking process may vary among the health care providers even within the same profession. For example, a medically oriented doctor may discharge a client once his or her medical condition is controlled. However, another doctor may also consider whether the client can manage to go back home and take care of himself in daily life activities. Besides the concern of client's medical condition, this doctor may also aim to rehabilitate the client to a level that he can take care of self before discharging him.

#### Clinical Reasoning in Occupational Therapy

Throughout the development of the occupational therapy profession, different theorists or authors use the term 'clinical reasoning' to refer to different subsets of the occupational therapy process (Higgs & Jones, 1995). Hemphill (1982) described clinical reasoning as an evaluative process. Day (1973), Trombly (1988), and Pelland (1987) used the term in reference to treatment planning. Line (1969) described it as clinical thinking, while Rogers and Masagatani (1982), and Hopkins and Smith (1988) considered it to be problem solving. The definitions of clinical reasoning suggested by the above authors seem to regard it as part of the occupational therapy process that uses scientific deduction to match disease conditions to therapeutic interventions. However, with respect to the Model of Occupational Performance, clinical reasoning in occupational therapy should require a thorough understanding of clients' clinical conditions as well as their needs in the environment throughout the occupational

therapy process (Mattingly & Fleming, 1994). In this study, clinical reasoning is therefore defined as the way of justifying what actions occupational therapists take with their clients throughout the occupational therapy process using their professional knowledge (Mattingly & Fleming, 1994). According to Mattingly and Fleming (1994), clinical reasoning involves several forms of thinking and different ways of perceiving clients' problems and needs. Recognizing the uniqueness of every individual, besides following set service protocol which provides standard of practice to clients, therapists should also analyze clients' problems based on their clinical reasoning. In order to provide quality care, service delivery by therapists should exceed the accepted standard of practice as set out in the service protocols. This is true even if different clients sustain a similar illness. For example, a manual worker's concern when suffering from stroke might be to regain body strength and physical endurance. In contrast, a computer company manager having the same illness might be more concerned with regaining fine finger dexterity and cognitive endurance. In other words, clinical reasoning in occupational therapy is directed to clients' motives, values and beliefs (Mattingly, 1991b). Different therapists may perceive problems of clients differently, and the style of clinical reasoning has a major influence on their perceptions. When entering into a therapeutic relationship, both the perceptions of the problems by the client and the therapist are important to the success of the relationship and thus the client's success in returning to his or her chosen life roles.

#### Clinical Reasoning in Occupational Therapy Assessment

In assessing clients' conditions, occupational therapists conduct a variety of tests to identify a list of dysfunction. The therapists may start with functional assessments such as self care evaluation, work assessment or assessment of the pursuit

of leisure activities and by observing clients' performance to find possible deficits that limit independent functioning. Those possibilities are then tested directly by administering the selected tests (Trombly, 1988). This list of dysfunction that results from these tests may include such things as the client's inability to walk, the use of only one arm for eating, and the inability to express himself. According to the Model of Occupational Performance, the list of dysfunction refers to the client's problems in occupational performance and performance components. It is the client's internal resources, that is, his or her assets and limitations due to the disabilities. Internal resources also include personality (Schlosser, 1996; Zeidner & Endler, 1996). Internal resources reflect the client's severity of disabilities.

The client's external resources refer to the availability of support and demand in the client's environment, including the client's financial situation and the amount of time he or she can afford in being dependent on others do perform various daily tasks. According to the Model of Occupational Performance, external resources form the essential part of clients' physical, social, and cultural environments. Occupational therapists gather information on clients' external resources by interviewing and interacting with clients and their families. Therapists may perform on-site assessment of clients' physical environments such as the home or other places the client would frequently be. Therefore, in exploring clients' external resources, both assessment and ongoing dialogue with clients and/or family members or interviews are used by therapists (Lewinter & Mikkelsen, 1995). Obtaining accurate information on individual clients' premorbid lifestyle and expectations for future functioning are also important in guiding treatment planning (Proctor & Kaplan, 1995).



Hence, careful evaluation, both in the form of assessment and interviews, must be performed in order to understand clients' internal and external resources and the implications these resources have for the individuals' future lives. It assists in designing treatment program relevant to individual client.

Because of the focus on clients' needs in their life contexts, occupational therapists are required to make decisions in situations of uncertainty (Higgs & Jones, 1995). In the above example of two men, one a manual laborer and one a computer company manager, both having suffered from stroke, their needs in motor skill and strength in occupational performance are different. Therapists are required to make decisions on the problems identified based on their life roles and needs. Hence, theoretical knowledge alone is insufficient to provide the basis for effective clinical reasoning; practical and intuitive knowledge which is the tacit knowledge founded in therapists' clinical experience is therefore essential (Mattingly, 1991a). As discussed earlier, occupational therapists exercise their power of thought in perceiving clients' problems. According to the clinical reasoning study conducted by Mattingly and Fleming (1994), three major types of clinical reasoning methods employed by occupational therapists are suggested and adopted in this study. They explain how therapists function with different clinical reasoning styles when perceiving clients' functional problems differently. They are procedural reasoning (Type P), interactive reasoning (Type I), and conditional reasoning (Type C) (Fleming, 1989; Mattingly & Fleming, 1994).

#### Procedural Reasoning

Procedural reasoning is used when therapists associate disease and disabilities with the particular procedures and treatment activities that are used to maximize

clients' functioning. For example, training will be given to clients for improving reaching upward and grasping with upper limbs and methods to compensate for one-sided neglect in order to enable them to put on upper limb garments. Therapists put emphasis on improving clients' functional capacities to an optimal level appropriate to their body dysfunction. Procedural reasoning to solve clients' problems and identify underlying causes is built on the hypothetical-deductive reasoning model that originated in medicine (Higgs & Jones, 1995). Elstein, Shulman, and Sprafka (1978) suggest a four-phase strategy in operating this model (Table 2.1).

Therefore, in procedural reasoning, occupational therapists define clients' problems based strictly on the cues gathered from the results of the assessments and select treatment to remediate clients' limitations. This is similar to the typical medical problems solving sequence (Mattingly & Fleming, 1994). The problems identified for clients would be directed to clients' disabilities. Other factors such as clients' motivation and preference to treatment, and the availability of support at home and in community are rarely taken into account.

Table 2.1

Four-phase Strategy Used in Procedural Reasoning

Phase	Process	Example
1 Cue acquisition	Therapists gather cues about clients.	Client's illness, age and gender, and problems in performance components
2 Hypothesis generation	Cues are formed into potential patterns, and hypothesis are generated on the occupational performance problems that clients would encounter.	Client's inability to take care of self and go to work.
3 Cue interpretation	Therapists repeatedly check on the analysis of the cues and the potential usefulness of the cues.	After repeated analysis of the cues, a client who suffered from stroke may not be possible to resume the job of a policeman.
4 Hypothesis evaluation	Hypotheses are reviewed and clients' occupational performance problems are selected and confirmed as the basis of planning for treatment.	Taking care of self such as putting on a coat, taking a bath, would be the occupational performance problems selected for the client.

### Interactive Reasoning

Interactive reasoning is used when therapists intend to understand and interact with clients as persons, instead of merely focusing on the disabilities. Interactive reasoning assumes that interaction with clients enhances better understanding of the individuals within the environments and cultures in which they function. This will enable clients to share the experience on their disabilities and their subjective feelings on the treatment that they receive with the therapists. This type of information and perception enables the therapists to tailor-make treatments which address the clients' specific needs and preferences. In other words, clients and therapists undergo a collaborative relationship with the clients actively participating in the treatment process. For example, a therapist identifies a client as, say, having difficulty in buttoning and using chopsticks due to the client's poor finger dexterity and strength. By communicating with the client, the therapist understands the client's preference for wearing pullovers instead of shirts with buttons, and he places a lot of value in using chopsticks and eating in a socially acceptable manner. In this scenario, the therapist would put a high priority in training in the use of chopsticks instead of buttoning. The therapist would further reconfirm the relevance of setting chopsticks training with the client. In return, the client would actively participate in the chopsticks training because it is perceived as relevant and meaningful.

The adoption of interactive reasoning by therapists is seen to be associated with professional competence (Mattingly & Fleming, 1994). Here, professional competence refers to an effective application of the therapist's knowledge in practice. With the effective application of knowledge in practice, therapists should be able to interact with clients and understand their experiences effectively. Since the adoption

of interactive reasoning is associated with professional competence, junior therapists in their first few years of practice may not be comfortable in employing this clinical reasoning style (Mattingly & Fleming, 1994). Instead, they might prefer to use procedural reasoning. Therefore, besides being able to relate possible treatments to clients' limitations, occupational therapists using interactive reasoning would be able to read clients effectively by assessing their 'cues', convey 'possible hypotheses' to clients, and interpret clients' responses to the possible hypotheses before confirming the interpretations.

### Conditional Reasoning

Conditional reasoning requires therapists' "ability to understand and see" clients as they see themselves, and the "ability and energy to project a picture for a person's future" (Mattingly & Fleming, 1994, p.197). Conditional reasoning is a process in which therapists attempt to understand clients as whole persons, and the impact of the disability in the context of their life world. Instead of just putting emphasis on observable problems and preferences of the clients, therapists using this reasoning style attempt to visualize clients' function and dysfunction in a broader social and temporal contexts. Referring to the Model of Occupational Performance, therapists using conditional reasoning would look at their clients' own problems in their environment and create future images on how the clients would live with the possible residual problems in their own environment. Again, this is very much dependent on the attitude and professional competence of individual therapists. There are three characteristics when adopting the conditional reasoning:

1. the therapist considers the whole circumscribing condition of the client, including the individual, the illness, the meanings the illness has for the individual and his or her family, and the social and physical contexts of the client.
2. the therapist needs to anticipate in what way the conditions of the client can evolve in the course of the rehabilitation process. That is, the therapist should project images of how the client will progress, what residual disabilities the clients is likely to have and the effects of the residual disabilities on the client's future life.
3. the client needs to participate, not only in the therapeutic activities, but also in constructing the images of his or her future conditions. For example, would a 58 year-old client want to resume in a worker role or would he or she choose to retire? This affects the therapist's treatment planning with the client. Therefore, the success or failure of reaching a point in life that approximates the future image of clients is conditional upon the client's participation.

In a study conducted by Mattingly and Fleming (1994), occupational therapists with more than two year's experience found conditional reasoning congruent with their practice. Using the example quoted above, in using conditional reasoning, besides implementing the chopsticks training for the client, the therapist might gather feedback from the client that indicates he sees himself as the breadwinner of the family and desperately wants to be engaged in gainful employment after discharge from the program. Further discussion with the client reveals that his previous job as an electrician demanded good dexterity and strength in both hands. In view of his progress and the present functioning, resuming the job as an electrician would seem to be unrealistically difficult, so client and therapist collaboratively agree on exploring

other options. The client therefore might consider changing to a job inspecting electrical appliances, for instance. With this target in mind, the therapist would plan treatment directed at helping the client go back to work in a revised job role, helping the client construct a new life in the wake of his disabilities.

Occupational therapists using conditional reasoning consider clients' limitations, communicate with clients to understand their needs in their unique environment, and incorporate clients' expectations to form future conditions for the clients' lives. In other words, therapists employing conditional reasoning integrate both procedural and interactive reasoning and further extend concerns into clients' future images. This is also described in the Model of Occupational Performance. Again quoting the above example, the therapist considers the client's internal resources (consideration of limitation in procedural reasoning) and discusses with the client (in interactive reasoning) his preferences. It reveals the need of the client to take public transportation to work place. Treatment to include taking transportation or changing work location is considered. With the client's participation in creating this image of his future life (in conditional reasoning), client and therapist are working together to construct client's chosen future life.

Current researches on clinical reasoning are based on the results of the extensive work done by Mattingly and Fleming. For example, Alnervik and Sviden (1996) conducted a study of the clinical reasoning patterns used by occupational therapists in describing the treatment provided, concluding the need for therapists to understand the meaning of disability from clients' point of view. Another study to investigate the elements that influenced occupational therapists clinical reasoning showed that clients' needs, therapists' internal belief about clients, and the lack of

complete theoretical knowledge in occupational therapy created uncertainty in therapists in making clinical decisions (Higgs & Jones, 1995). The results of these studies further substantiate the need of therapists to understand the meaning of disability and the clients' needs from clients' point of view. This understanding influences the way therapists perceive clients' problems. The results of the studies also support on the importance of the therapists' professional experience therapists in understanding clients' individual problems.

In the present study, the way occupational therapists' perceive clients' problems reflects the type of clinical reasoning methods they use.

### **Clients' Perception of Problems in Occupational Performance**

Occupational therapy clinical reasoning strives to develop a picture of disorder as perceived by clients (Gillette & Mattingly, 1987). Therefore, the understanding of clients' choices for their future lives and perceptions of own problems is important and respected in client-centered practice (Gerteis, 1994; Law, Baptiste, & Mills, 1995). In order to facilitate the client-centered model, clients are involved in the evaluation of their own problems when given the relevant information on the disease progression and the recovery process (Gerteis, 1994; Law, Baptiste, & Mills, 1995). This evaluation process helps clients in self-reflection and gives insights into their own problems. Clients' perception of their own problems is also essential in and contributing to the clinical reasoning process occurred in therapists, particularly in the interactive and the conditional reasoning.

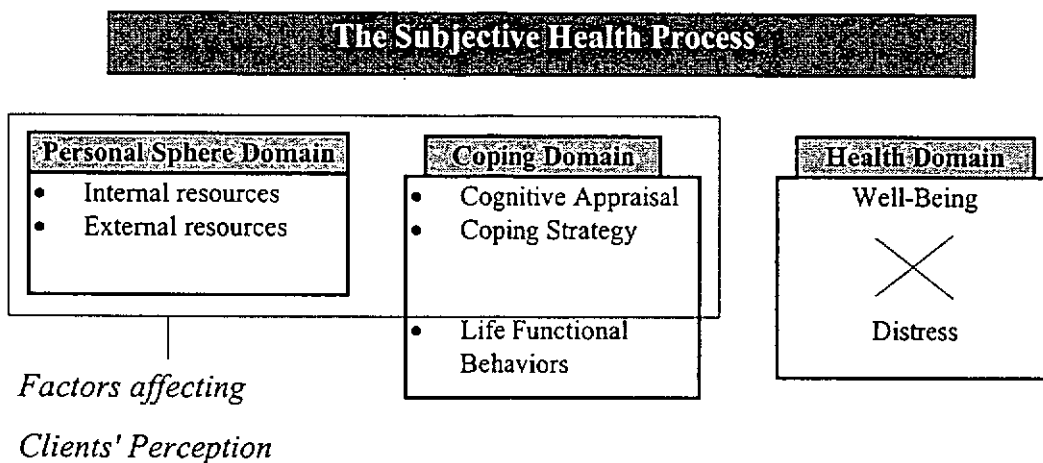
But in what mechanisms do the clients perceive their own problems? The subjective health process model (Schlosser, 1996) (Figure 2.2) provides a theoretical



framework to discern the characteristics and processes associated with the perception of problems by clients.

Figure 2.2

Clients' Perception Process



Note. Adopted from Schlosser, B. (1996). New perspectives on outcome assessment: the philosophy and application of the subjective health process model. *Psychotherapy*, 33(2), 284-304, p. 288. This figure is copyright© Clarity Health Assessment System, Inc. All rights reserved. Reprinted with permission of Clarity Health Assessment Systems, Inc., Norwalk, CT, USA.

The subjective health process model stipulates that people exist in an environment in which unexpected things happen and coping is required to adapt to the exigencies of life (Figure 2.2). This model comprises three domains: 1) the personal sphere that consists of individuals' internal and external resources, 2) coping, and 3) the health of the individuals. This model is originated from the field of health psychology which represents the self-perception of health status. Health functioning can either be in a state of well-being or distress, which is further broken down into six

dimensions: physical, emotional, mental, social, life satisfaction, and life direction. The model explains the phenomenon in a left-to-right fashion across the diagram. In the present study, this model is adopted to help understand how the clients perceive their own problems. The 'personal sphere' and the 'coping' domains of the model are found particularly useful in describing perception process of clients' own problems.

The personal sphere domain consists of individuals' internal (person) and external (environmental) resources as explained in the previous section. Internal resources include the individuals' assets and limitations of the function and dysfunction, the severity of the disabilities on individuals' lives, and the individuals' personality. Personal skills are regarded as one type of internal resources which are influenced by learning opportunities and abilities of the individuals. Information resources are the knowledge individuals possess or have received. Information resources and personal skills represent individuals' resources in their internal world, such as cognition or body functioning. The client's illness and disabilities affect the life events that he or she experiences. Life events are described in terms of onset, duration, frequency, phase, and amplitude of the events. It is found that life events are unique to the individuals' life circumstances or life roles. The individual's personality shapes the experience that the client has of the surrounding world which he or she prepares to encounter, adapt, and function within in their fulfilling life roles. For example, an individual who is obedient (personality style) is punctual (her action in fulfilling her roles) as she learns that this is her responsibility (experience gained from the surrounding). Individuals' personality style is moderated by their emotion and direction such as interests and goals. External resources of individuals refers to social, and material resources arising from their physical, social and cultural

environment. Social resources refer to the support provided by people around the individuals such as their families, friends and society at-large. 'Things' are material resources which are individuals' possessions such as money and other assets of this type.

Like running a computer, data are entered into the individual for processing. When facing a stressing event, the event itself, the personality and the resources and skills of individuals act as 'data'. Imputing all relevant 'data' is essential in the subsequent steps. These data are input into the coping domain or 'the computer' for processing. Cognitive appraisals are the 'processes' by which the 'data' are analyzed. Coping is the 'output' which, in other words, is formed when individuals face or encounter a stressful situation such as illness or suffering from disabilities (Lazarus & Folkman, 1984).

The 'coping' domain represents the process of cognitive appraisal and subsequent coping. Cognitive appraisal is the evaluation of stressful events experienced with reference to the individual's internal and external resources (Lazarus, 1991; Frijida, 1988; Schlosser, 1996; Weiner, 1985). After such an evaluation, individuals each form different perceptions of their own events. Coping is the subsequent adjustment strategies to the perceived problems associated with the events (Lazarus & Folkman, 1984).

When facing a stressful situation, individuals will undertake a primary appraisal to assess the significance and requirements of the situation. This enables the evaluation to focus on whether the situation will be aversive to the individuals. The appraisal process involves the psychological structure or personality, the characteristics of the event, and anticipated impact of the event to individuals' lives

influenced by sociocultural factors and individuals' life roles (Lazarus & Folkman, 1984; Lazarus, 1991).

Primary appraisal usually follows by a secondary appraisal in which individuals evaluate whether actions are required in response to the perceived problems of the event. The secondary appraisal process requires individuals to perceive the feasibility of various types of actions in order to cope satisfactorily with the event.

For example, a person who has suffered a stroke faces the stressful situation of losing the ability take care of himself. With the consideration of his lack of social support (external resources) and his determination to go back to his home (internal resources), he decides to look into the problems (forming positive strategies towards coping with the illness after primary appraisal) of his body functions due to stroke (internal resources) and finds ways (secondary appraisal) to achieve his goals. This example of appraisal involves a substantial cognitive processes and rational decision making (Lazarus & Folkman, 1984; Lazarus, 1991). The primary and secondary appraisals often go into a cyclic process until a final decision is made on what actions to take in coping with the perceived problems. Coping strategies towards coping with the evolution of the problem resulting from the appraisal process can roughly being either positive or negative (Lazarus & Folkman, 1984). People with positive coping strategies would face the problems encounter positively as illustrated by the above example. They would try to analyze their situation in order to solve the problem. In contrast, people who form negative coping strategies would try to avoid facing the problem. They would not go through the process of analyzing their situation and they would be passive in dealing with the problems.

Positive and negative strategies are believed to be related to the types and amount of resources that individuals recognize and consider. Negative strategies of the clients are those leading to anxiety and anger. Their emotional upheaval prevents them from recognizing the resources that they have, which may lead to non-productive actions (Lazarus & Folkman, 1984). Individuals of this group who will not consider their resources are regarded as 'type 1' in this study. Positive strategies originate from the clients' active participation in finding ways to solve the problems. They evaluate the illness as genuine and something that needs to be tackled (Lazarus & Folkman, 1984). They may consider both internal and external resources or they may consider only one of these types of resources. They are the 'type 2' clients in this study if they consider either the internal or the external resources. If individuals consider both the internal and the external resources, they are the 'type 3' clients.

In summary, there are three categories of resources that clients consider when they perceive a stressful event such as the experience of disability after suffering a stroke. Type 1 clients form negative strategies towards coping with the illness, and they do not consider any of the internal or external resources they have. For clients who form positive strategies towards coping with their illnesses and consider either their internal or external resources are the type 2 clients. Those clients who form positive strategies and consider both their internal and external resources are the type 3 clients in this study.

Take for example how a person who has suffered a stroke evaluates whether the existing situation after is relevant for his well-being. Let's assume he forms a positive strategy which is not overwhelmed by the emotional upheaval, and he perceives that his loss in function due to the illness is significant to him and creates

stress in his life. Suffering an illness or accident which results in disabilities and sudden change in life roles is referred to as the eventful experience. Due to his eventful experience he fears of becoming jobless which would affect his living standard. From what he knows about the consequence of being jobless and after considering his previous life style and all his existing internal and external resources, which include his present disabilities (internal resources), the understanding of the long recovery process (internal resources), his lack of social support (external resources), and financial difficulty (external resources) as a result of being jobless, he finds that he will not only become jobless but also need others to look after him. This leads to him taking productive actions. Finally, he determines to accept the reality and works towards his goals of being able to take care of his personal care in the first place and then consider going back to work. This illustrates the perception process of a type 3 client. The image of 'intuitive scientist' is used to characterize the perception process of this type of client in which a thorough audit of all relevant viewpoints is made; demands of environment, existing resources are considered; biased are removed or minimized; and oversights and errors are prevented (Fiske & Taylor, 1991).

Based on current research findings, Fiske and Taylor (1991) give an account of how people regulate their cognitive inference and decision processes which formulates their perception of problems. They explain that in order to maximize the accuracy of the clients' perception process, the objectivity of the process (which includes information gathering and cognitive appraisal) rather than watching for the outcome (which is the problem identified and the final health status) should be monitored (Fiske & Taylor, 1991). This is also demonstrated by studies on cognitive appraisal. For example, Folkman and her colleagues conducted a study to examine

the relation between appraisal, coping, and health status of a sample of 150 community-residing adults (Folkman *et al.*, 1986). Results showed that subjects' reported process of appraisal on five stressful situations varied tremendously. The ultimate reported health status of the subjects had a low correlation with their appraisal process ( $r$  ranged from  $-0.26$  to  $-0.14$ ,  $p < .05$ ). This study showed that in order to understand individuals' appraisal processes, the evidence of what types of resources they considered instead of their reported health outcomes should be captured.

In the present study, in order to understand the process of clients' perceptions of their problems after suffering strokes, evidence of clients' coping strategies towards the illness and their considerations of their resources are gathered.

### **Comparison of Clients' and Therapists' Perceptions**

Since occupational therapists have different considerations when employing different clinical reasoning styles, and the resources clients consider vary if they form different coping strategies towards the event, the perception on the problems identified may differ in different types of therapists and clients (Figure 2.3).

As mentioned previously, type P occupational therapists, who use procedural reasoning, would focus on clients' internal resources when identifying their problems. When compared with the problems identified by clients, it is expected that those identified by type P therapists would yield a low matching with those identified by the clients except the clients who form positive strategies towards coping the illness and consider only the internal resources (type 2-internal) (Figure 2.3).

Occupational therapists utilizing interactive reasoning (type I) would yield a relatively higher match than the type P counterpart between the problems that they

identified in their clients and those identified by the clients themselves. This type of therapist usually adopts an open attitude and eclectic approach. That is, they are willing to be exposed to more perspectives on the clients. These therapists would like to create choice for clients, individualizing treatment, structuring success, exchanging personal stories and joint problem solving with their clients (Mattingly & Fleming, 1994). Therefore, the matching of their perceptions with those of their clients would be good (Figure 2.3).

Therapists who adopt conditional reasoning (type C) would have the highest match between the problems that they identified on their clients and those identified by the clients themselves, as compared to their type P and I counterparts. Besides focusing on clients' internal resources, they also consider the clients' external resources. They interact and collaborate with clients to build the future image of their clients' lives. The match of their perception of the problems identified would be the best with clients who form positive strategies, consider both their internal and external resources, and share the same images concerning their future lives (type 3 clients) (Figure 2.3). However, in the case of type C therapists, the match would be lower with clients who bear negative strategies and hence do not consider their resources (type 1 clients), and those who form positive strategies but only consider either internal or external resources (type 2 clients).



Figure 2.3

Different Types of Occupational Therapists and Clients and Predicted Matching of Problems Identified by the Two Groups

<u>Occupational therapists</u>		Predicted degree of matching of problems identified by clients and therapists	<u>Clients</u>	
Clinical reasoning styles	Factors considered by therapists		Resources considered by clients	Types of strategies
Procedural	Clients' internal resources	← · · · · · →	None	Negative
Interactive	Open attitude to clients' problems	← · · · · · →	Internal or external	Positive
Conditional	Both clients' internal and external resources Clients' images of future lives	← · · · · · →	Both internal and external	Positive

- Note.    ←————→ Represents predicted excellent match on problems identified by clients and therapists who consider both clients' internal and external resources
- ← · · · · · → Represents predicted good match on problems identified by therapists using interactive reasoning with their clients
- ← · · · · · → Represents predicted relatively poor match on problems identified by clients and therapists

## **Clients' Perception and Occupational Therapy Assessment**

In the occupational therapy assessment, information on clients' problems is usually obtained through formal evaluation and interview, and clients' goals and priorities are obtained through informal means. Processes with which clients perceive their goals and priorities are rarely explored. In a recent survey conducted by Neistadt (1995), among 142 centers specializing in neurological diagnosis, occupational therapists in 97% of the centers reported their concerns on clients' perception of functional problems. However, only 58% of the centers used informal procedures to solicit clients' goals and priorities on admission, while only 39% used formal assessment to document the process and their findings.

Formal assessments used to solicit clients' goals and priorities include the Occupational Performance History Interview (Kielhofner, Henry, & Whalens, 1989), Goal Attainment Scaling (Ottenbacher & Cusick, 1990) and the Canadian Occupational Performance Measure (Law *et al.*, 1994). The Occupational Performance History Interview (Kielhofner, Henry, & Whalens, 1989) is a semi-structured interview to help determine clients' goals for treatment. It includes specific questions about clients' past and present organization of daily living routines, life roles, interests, values and goals, perception of ability and assumption of responsibility and human and non-human environment. Goal attainment scaling (Ottenbacher & Cusick, 1990) is a systemic method of determining and recording clients' problems and goals that includes the scoring of goal outcomes. Occupational therapists collaborate with clients to identify four to six occupational performance deficits and develop general goals for each area. Therapists and clients then develop three to five levels of performance as an evaluation for each goal.

### Canadian Occupational Performance Measure

With the conceptual framework of the Model of Occupational Performance, the philosophy of client-centeredness is reflected in the development of the Canadian Occupational Performance Measure (COPM) (Law *et al.*, 1994). The COPM was developed by the Department of National Health and Welfare and the Canadian Association of Occupational Therapists Task Force. It is a client-centered self-report assessment tool designed for measuring changes in functional performance of clients receiving occupational therapy services (Chan, 1995; Chan & Lee, 1997; Chan & Lee, in press). It is designed for use by occupational therapists with clients with a variety of disabilities and across all developmental stages (Law *et al.*, 1994). A validity study of the COPM shows evidence that clients' responses to problems identification on the COPM reflect their existing life roles and role expectations (Chan, 1995; Chan & Lee, 1997). Due to these reasons, the COPM was used in this study as a tool from which clients' problems were identified, both from clients' and therapists' perspectives. Details on the COPM including its reliability and validity are discussed in Chapter III.

In administering the COPM to clients, therapists are expected to act as facilitators in helping clients to identify their own problems in occupational performance (Law *et al.*, 1991). In performing the task, clients are required to be competent in decision making and problem solving, and have good knowledge about their own role functions and expectations, and be insightful.

Competent cognitive function of clients is required to enhance the validity of their responses in the present study.

Therefore, the COPM was used in this study for identifying clients' problems.

### **Clients' Perception and Stroke Rehabilitation**

Stroke is defined by the World Health Organization as an acute neurologic dysfunction of vascular origin (World Health Organization, 1980). It presents signs and symptoms corresponding to the involvement of focal areas of the brain (U.S. Department of Health and Human Services, 1995). Stroke accounts for about 20% of beds occupied on general medical wards in the United Kingdom (Gibbon & Little, 1995). It is the third leading cause of death in Hong Kong and the United States (Chae *et al.*, 1995; Hong Kong Hospital Authority, 1997). Stroke can occur at any age, but the incidence is higher with increasing age; about 80% of people with stroke are aged over 65 years (Gibbon & Little, 1995).

Stroke is a major cause of long-term disability (Lewinter & Mikkelsen, 1995; U.S. Department of Health and Human Services, 1995). Clients who suffer from stroke often have long term disabilities in occupational performance, including self-care, productivity and leisure, due to a combination of physical and mental impairments (Chae *et al.*, 1995; Reed & Sanderson, 1980). A high number of people surviving a first stroke usually regain only partial independence in their activities of daily living (Gibbon & Little, 1995). The residual long term disability may lead to role changes or role losses which handicap the person.

Rehabilitation for people who have suffered stroke is therefore essential. It is "a restorative and learning process which seeks to hasten and maximize recovery from stroke by treating the resultant impairment, disabilities, and handicaps" (U.S. Department of Health and Human Services, 1995, p. 1). Its purpose is to help clients to reduce the level of disability and to regain independence in daily activities so that

they can reintegrate as fully as possible into community life (U.S. Department of Health and Human Services, 1995).

As mentioned previously, this issue of discrepancy in perception of problems between occupational therapists and clients is especially important when functional limitations are long-term symptoms with which the clients must struggle (Berkanovic *et al.*, 1995), as in the case of stroke. The clients' long term disabilities and changes in occupational roles resulting from stroke, the importance of understanding the life-world of these clients when giving occupational therapy to them, the possible differences in therapists' perception of clients' occupational performance due to the use of different clinical reasoning methods, and the impact of the handicap of people with stroke to society, all contribute to stroke patients being the target group of subjects in this study.

#### **Protocol Analysis - Understand the Process of Perception**

The process of perception of both occupational therapists and clients is the thinking and decision making process of their perception. It tells their attitudes towards the event and the factors that they consider when they perceive with particular problems. To understand the process of perception of therapists and clients, protocol analysis was adopted in this study.

Based on the theoretical framework of human information-processing theory, comes protocol analysis (Ericsson & Simon, 1980). The theory postulates a transformation process through which a sequence of internal states or thinking processes of an individual are transformed successively. Each of these successive states can be described in terms of a small number of information structures. These information structures are available in the short term memory of an individual and can

be retrieved through verbalizations. Hence, the verbal protocols of individuals can reflect the ongoing cognitive processes when they are working on different tasks.

Since the respondents' internal state is available in their short term memory, it may not be accessed directly if there is time lag. There is a possibility of respondents reconstructing their thoughts. Therefore, the ideal method of gathering reliable information on respondents' information process is to ask them to 'think aloud', that is, to verbalize information at the time the respondents are attending to it; this is called 'concurrent verbalization'. The advantage of this method is that reliable data on clients' information process can be immediately gathered after the response. However, in order to gather reliable data, the respondents should be willing to verbalize their thoughts. Moreover, the retrospective strategy, which means respondents are asked about the cognitive processes that occurred at an earlier point of time, is thus less desirable (Ericsson & Simon, 1980).

Protocol analysis can be applied to performance assessments such as assessing degree of satisfaction and task performance of clients (Chan, 1995). In Chan's COPM validation study (1995), protocol analysis was used to gather data on the mental processes of clients' response during the COPM assessment. In another study done by Meyers and collaborators (1990), protocol analysis is used to investigate the reading comprehension strategies in the fourth- and fifth-grade students. According to Ericsson and Simon (1980), and as illustrated by the studies of Chan (1995) and Meyers and collaborators (1990), by using the directed and undirected probing relevant to the context of the tasks, the interviewer is able to obtain information from clients. During the process, clients are asked to verbalize their thoughts without trying to explain, analyze, or interpret them. The verbal reports can be recorded by

writing verbatim or through audio recording. After systemic coding of the verbal reports, the data can be analyzed by qualitative content analysis, and in Chan's study, it was used as evidence related to the substantive validity of the COPM.

In this study, protocol analysis was used to elicit the mechanisms or the mental processes clients and occupational therapists used in perceiving clients' problems in occupational performance during the assessment by the COPM.

### **Rationale of the Study**

Clients are postulated to employ different strategies (positive or negative) to cope with stressful situation like suffering from stroke. Different individuals would consider their resources to a different extent when analyzing their own problems in occupational performance. Occupational therapists also analyze clients' problems in occupational performance with different considerations. Some consider only clients' deficits whilst the other consider also the influence exerted of clients' physical and human environment. In the present study, the different mechanisms of clients' perception of problems in occupational performance and the different clinical reasoning styles employed by occupational therapists when they perceive their clients' problems in occupational performance were investigated. Their perceptions of problems in occupational performance were compared.

Followings are the phenomena hypothesized in this study:

1. Clients would form positive or negative strategies in coping with their problems arising from stroke. Clients with negative coping strategies would neglect their resources when analyzing their problems whilst clients with positive coping strategies would consider both or either on of the internal and external resources when analyzing their problems.

2. Occupational therapists would employ different clinical reasoning styles when analyzing clients' problems in occupational performance. Junior therapists would prefer using procedural reasoning whilst senior therapists would prefer conditional reasoning.
3. The closer the factors based on which clients and therapists are considered in perceiving problems in occupational performance, the more similar the problems would be revealed by both parties.

### **Conclusion**

Different clients perceive their own problems differently. Every one has his or her unique way based on the different feeling of problems, the environment he or she is living in, the life roles he or she needs to play or is expected to play. Therapists' way of perceiving clients' problems in occupational performance may be affected by their clinical reasoning styles. Therefore, it is predicted that discrepancies exist between clients' and therapists' perceptions in clients' problems if therapists utilize procedural reasoning or clients do not consider their resources. The condition is even more serious in countries where client-centered practice is not advocated or has only recently been advocated. Therefore, client-therapist discrepancies may be larger in Hong Kong when compared with the situation in North America, where client-centered practice has a longer history. In the medical field, studies done overseas report that discrepancies between clients' and health care providers' perceptions on client's problems exist (Atwood *et al.*, 1994; Edwards, 1990; Kivinen *et al.*, 1998). However, no study has been reported both locally and abroad on the comparison of the perception of problems between clients and occupational therapists.



With the result of the present study, it is hoped that occupational therapists can advocate the use of the clinical reasoning method(s) that produces the least discrepancies with their clients' perceptions. By understanding clients' mechanisms of facing their illness, therapists can also assist them in getting through the disease process and help them to participate in the health care service more actively, which are tenets client-centered health care service.

## **CHAPTER III**

### **METHOD OF INVESTIGATION**

#### **Introduction**

This chapter describes the strategies for collecting the data on the perception of clients' occupational performance dysfunction of the clients themselves and of their therapists. It starts with a description of the sample and the sampling method. It is then followed by sections on instrumentation, data collection procedures, and data analysis.

#### **Objectives of the Study**

The study intended to investigate the clients' perception of their own problems in occupational performance and occupational therapists' perception of their clients' problems and to see how closely their perceptions matched.

#### **Research Design**

According to Portney and Watkins (1993), this study adopted a cross-sectional non-experimental design comparing clients' perception of their own problems in occupational performance and those perceived by their therapists. This study combined the qualitative and quantitative methods in its design, data collection and data analysis, and hence their interpretation. The use of a combination of qualitative and quantitative methods compliments with one another to address the problems under investigation. Qualitative method using protocol analysis is useful in exploring the mechanisms of how clients and therapists perceived clients' occupational performance. To confirm the consistencies between clients and therapists' perception of problems in occupational performance, quantitative methods were employed using

standardized assessment procedures and scoring of the Canadian Occupational Performance Measure (COPM). Quantitative data analyzed with statistical methods can draw conclusions on observations with a certain degree of inferential power and make generalization of the results possible.

### **Sample and Sampling Method**

Convenience sampling was used to recruit two groups of subjects to participate in the study (Portney & Watkins, 1993). With this method, subjects with specific characteristics were selected on the basis of availability. One group was composed of occupational therapists who were working in the field of neurology or stroke rehabilitation. The other group comprised clients who had had strokes and were receiving therapy from the occupational therapists recruited for the study.

Occupational therapists working in hospitals and providing in-patient stroke rehabilitation services were contacted. These therapists were invited by mail to participate in the study, followed by personal contacts in order to obtain their formal consent to participate in the study. Approval was sought from their respective department heads and hospitals. A total of 12 occupational therapists were targeted to be recruited. Among them, six were categorized into a 'senior' group while the other six were in a 'junior' group. The reason for creating a comparison group with occupational therapists was to explore the relationship between the use of different clinical reasoning methods and clinical experience. It is hypothesized that occupational therapists with different years of experience in the field may have different level of knowledge or skills in understanding clients' problems and thus adopt different clinical reasoning tactics.

Selection criteria set for 'senior' therapists were:

1. 7-10 years of experience practicing as occupational therapists;
2. working in hospital and providing in-patient stroke rehabilitation services; and
3. consented to participate in the study.

Selection criteria set for 'junior' therapists were:

1. 0-3 years of experience practicing as occupational therapists;
2. working in hospital and providing in-patient stroke rehabilitation services; and
3. consented to participate in the study.

Convenience sampling was again used to recruit clients to participate in this study. A total of 60 clients were targeted to be recruited. In order to allow the match between the problems identified by the therapists and the clients, clients who received the services provided by occupational therapists recruiting in the 'therapists' group were approached. The selection criteria were set as:

1. clients whose case occupational therapists were recruited as subjects in the occupational therapists group;
2. diagnosed as have had a stroke for the first incidence as confirmed by medical record or computerized tomography scan or magnetic resonance imaging;
3. aged 60 or over;
4. independent in daily activities prior to the stroke as reported by clients themselves;
5. referred for occupational therapy in rehabilitation hospitals in 6-10 working days after admission;

6. having no cognitive or communication disorders that affected their judgment and problem solving abilities (as screened by the Neurobehavioral Cognitive Status Examination, NCSE);
7. having no depressive features that affected their problem solving abilities (as screened by the Geriatric Depression Scale, GDS);
8. having no other active medical problems such as myocardial infarction, diabetes mellitus; and
9. consented to participation in the study.

Clients of the participating therapists were screened and selected by the researcher according to the above set criteria. Occupational therapists were requested to approach and invite their clients suffering from stroke to participate in the study. The Client Information Sheet (Appendix I) and the Client Consent Form (Appendix II) were presented and explained to each client. Those clients who agreed to participate were asked to sign the consent form. The Client Data Base Sheet was then completed (Appendix III). The originals of the Client Data Base Sheet and the Client Consent Form were collected by the researcher when she visited the hospital for data collection.

Clients in the same diagnostic group, like stroke for instance, manifest similar physical disabilities (World Health Organization, 1980) and thus are expected to have similar physical capabilities, length of hospital stay, treatment rationales and occupational therapy programs (Trombly, 1988). Stroke occurs mostly in old age (Gibbon & Little, 1995). Healthy people aged 60 or above usually are retired. They may have similar life styles living in Hong Kong. There are a number of parameters possessed under the eventful experience as described in the Subjective Health Process

Model (Schlosser, 1996), a model employed to describe clients' perception of problems after suffering a stroke. When referring to the event of suffering from stroke, these parameters include the onset, duration, frequency and phase of the stroke. Selection of clients by controlling these variables, that is, based on the same diagnostic group, age range and onset, duration, phase of stroke, enhances homogeneity of the group of subjects.

The major drawback of this non-probability convenience sampling method is that generalization of results is limited only to those who share similar characteristics with the sample of this study (Portney & Watkins, 1993).

### **The Data Collection Procedure**

The data collection process was divided into three parts. The first part was designed to prepare selected occupational therapists for participating in the study. The second and the third parts were the testing protocol of the clients and the therapists respectively.

#### **Part I: Preparing Occupational Therapists for Participation**

Suitable therapists who agreed to participate in the study were invited to attend a half-hour session conducted by the researcher. The purpose of the session was to ensure all participating therapists understood the study. Prior to the session, therapists were requested to fill out a questionnaire collecting information on their age, sex, years and details of experience, and details on the services provided. These included the type of employing institution, and average length of stay of the rehabilitation hospital settings for stroke rehabilitation, time of referral to occupational therapy, and time of completing the initial assessment and the types of assessment tools used in their respective standard assessment protocols (Appendix IV). The purpose of asking

the therapists to fill out the questionnaire was to make sure that participating therapists were not using the COPM in their assessment protocol. During the session, details of the study were explained including its purposes, period of study, selection of clients, roles of participating therapists, and data collection 'procedures and testing schedule. An information sheet (Appendix V) and documentation about the study (Client Information Sheet, Client Consent Form, Client Data Base Record Sheet) were distributed to them. Participating therapists were also asked to sign the consent form for their participation (Appendix VI).

The pre-study information session was deemed important in that it minimized disruption to the clinical procedures when the testing protocols of this study were merged into therapists' daily routine in their own settings. Standardization of the study protocols enabled better control of the confounding variables that were likely to compete with the validity of the results obtained from this study such as differences in time of initial assessment and the resultant different levels of understanding of clients' problems and expectation by the therapists. The information sheet on the session given for participating therapists appears in Appendix VII.

### Part II : Testing Protocol for Clients

From the information gathered in Part I, it was found that the length of stay in the rehabilitation hospitals for stroke rehabilitation varied from 4 to 8 weeks, depending on the severity and the progress of clients. Most of the hospitals referred clients to occupational therapy within the third day after their admission. The occupational therapists normally conducted initial assessment within 72 hours of receipt of referral. Based on the information, the testing schedule of clients for the study was set as below (Figure 3.1):

- A. Conducting the initial occupational therapy assessment of the clients - case occupational therapists completed the initial assessment of their clients according to standard protocols within 72 hours after receiving the referral.
- B. Obtaining consent of the clients - for clients who consented to participate in the study, the case therapists notified the researcher within five days of receiving the referral. The Client Data Base Sheet (Appendix III) included age, sex, date of onset and diagnosis, occupation, and family support, and the Client Consent Form (Appendix II) were completed.
- C. Selecting clients as subjects - based on the submitted Client Data Base Sheet (Appendix III) and consent forms (Appendix II), the researcher selected those who fulfilled the selection criteria of recruitment as described in the previous section.
- D. Explaining testing protocol to the clients - the researcher visited selected clients in the rehabilitation hospitals and collected data from 6 to 10 days after referral for occupational therapy. The testing protocols (E, F and G) were explained to the clients.
- E. Administering screening tests - screening tests were completed by the researcher during the visit to the hospitals. If the NCSE and the GDS were found to be part of the therapists' standard assessment protocols, their results were extracted and substituted for the screening tests of the study. If this was the case, therapists were required to give a copy of the assessment results to the researcher for recording purposes.
- F. Administering COPM to the clients - for clients who passed the NCSE and the GDS screening tests, the Problem Definition portion of the COPM with Chinese translation of the administration procedures (Appendices VIII, IX) was administered



by the researcher. The clients were asked to think of the activities they were required to perform on a typical day. They were then asked to identify those activities that they had problems with after their strokes. The researcher then wrote down the identified problems onto the COPM test form.

G. Conducting protocol analysis of the clients - immediately after administering the COPM, the clients were interviewed by the researcher with a set of prompting questions. These questions were designed to facilitate the clients in describing retrospectively the mental processes that they engaged in when they made responses on the COPM. The prompting questions were:

How did you come up with the problems?

When you said problems were important or unimportant, what was on your mind?

When you came up with these problems, what are you thinking of?

Let's recall what you have on the list. Can you think of what was on your mind?

These prompting questions were aimed at helping the clients recall the facts and processes with which they came up with the list of problems in occupational performance, for example, to see whether they relied more on their internal and/or external resources. Clients' responses were recorded on audio tape for analysis.

### Part III : Testing Protocol for the Occupational Therapists

Before the testing protocol, the dates of initial assessments carried out by therapists to clients were recorded.

H. Administering COPM to the therapists - the Problem Definition portion of the COPM (Appendices VIII, X) was re-administered separately to the therapists whose

clients were assessed as described in F of Part II by the researcher. This part was completed immediately after clients were interviewed by the researcher (F and G). This was to minimize the communication between clients and therapists on the content of the interview. Therapists were asked to identify the problems of the clients according to the COPM assessment protocol.

I. Conducting protocol analysis of the occupational therapists - a semi-structured interview method with the case therapists was used to explore the mechanisms with which they identified clients' problems in occupational performance using the COPM. As was the case for the clients, a set of prompting questions was used to guide the process. This was aimed at revealing the therapists' different ways of perceiving clients' problems to identify which of the types of clinical reasoning as described by Mattingly and Fleming (1994) were used.

The prompting questions to the occupational therapists during protocol analysis were:

How did you come up with this client's functional problems?

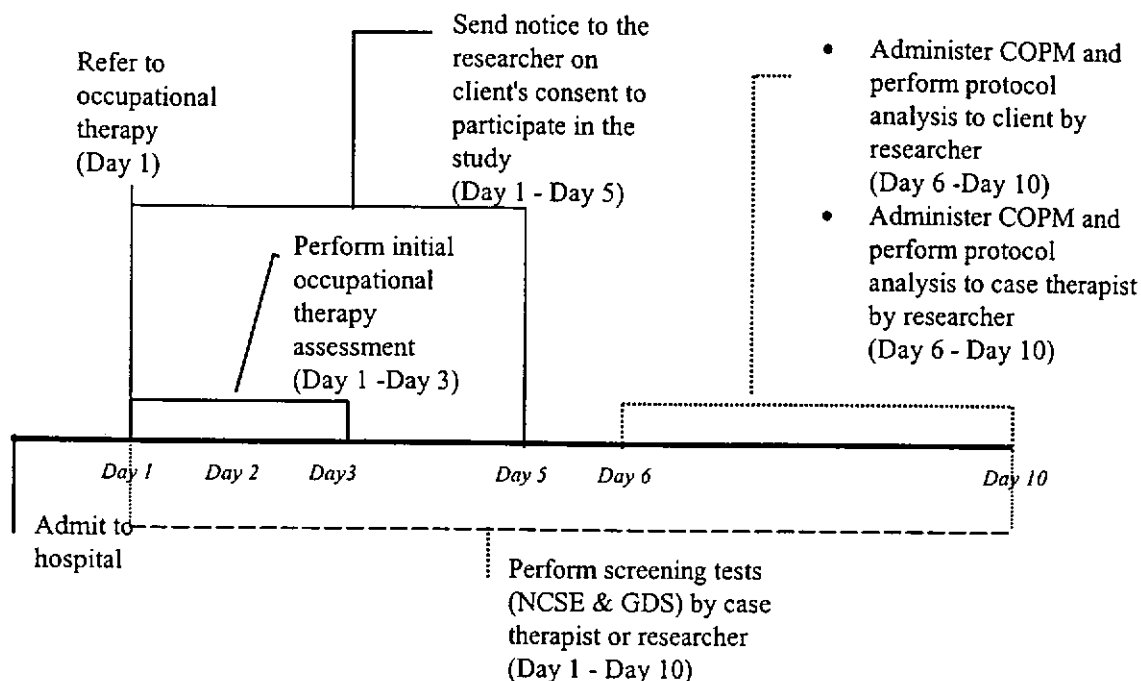
When you said problems were important or unimportant for the client, what was on your mind?

When you came up with these problems for the client, what were you thinking of?

Let's recall what you have on the list. Can you think of what was on your mind?

The whole process was also recorded audiotape by the researcher for analysis.

Figure 3.1

Diagrammatic Representation of the Data Collection Process

The data collected from the testing protocols assisted therapists in treatment planning. The data from clients was disclosed to therapists upon request after the process of data collection was completed.

### **Instrumentation**

#### Canadian Occupational Performance Measure

The Canadian Occupational Performance Measure (COPM) is "designed for use by occupational therapists to detect change in a clients' self-perception of occupational performance over time" (Law *et al.*, 1994, p. 1). The COPM is administered in a five-step process which includes problem definition, problem weighting, scoring, re-assessment and follow-up. In the first two steps, problem identification and problem weighting, the COPM "identifies problem areas in occupational performance" of the client (Law *et al.*, 1994, p. 1). In the third step,

which is scoring, the client "evaluates performance and satisfaction relative to those problems areas" (Law *et al.*, 1994, p. 1). The last two steps "measure changes in a client's perception of his/her occupational performance over the course of occupational therapy" (Law *et al.*, 1994, p. 1).

To investigate the perception of problems in occupational performance of both clients and therapists in this study, the first step, problem definition, was adopted. Since it was not a study to compare performance of problems over time, scoring, re-assessment and follow-up were not necessary .

#### Reliability of COPM

A test-retest reliability study performed in a group of 27 senior clients with a variety of impairment including stroke, Parkinson's disease, hip fracture and arthritis receiving rehabilitation service indicates that the instrument has good reliability for performance (intra-class correlation coefficients ICC = 0.63) while for satisfaction, it shows excellent test-retest reliability (ICC = 0.84) (Law *et al.*, 1994).

#### Validity of COPM

A validation study on clients of two diagnostic groups, orthopedic and stroke, (Chan, 1995) shows:

1. evidence of content-related validity of the COPM in encompassing all three areas of occupational performance when clients are identifying their problems in occupational performance; and
2. evidence that clients' response to problems identification on the COPM reflect their existing life roles and role expectations.

### Use in this Study

The COPM is built on the client-centered and occupational performance models. It uses a semi-structured, individualized approach to help in identifying the perceived problems area in occupational performance of clients by both clients and their occupational therapists (Law *et al.*, 1994). The guiding questions were translated into Chinese (Appendix IX) since most of the elderly clients suffering from stroke in Hong Kong would only understand Chinese instead of the original English version. The guiding questions for therapists were also modified so that it assessed the perception of therapists on their clients' problems (Appendix X).

### Neurobehavioral Cognitive Status Examination

The Neurobehavioral Cognitive Status Examination (NCSE), developed by the Northern California Neurobehavioral Group, is a screening examination that assesses cognition in a brief but quantitative manner (Kiernan *et al.*, 1987). It is designed to assess the cognitive functioning in five major ability areas which include language, construction, memory, calculations, and reasoning (Northern California Neurobehavioral Group, 1988). It also assesses attention, level of consciousness, and orientation of clients. The Chinese validated version of the NCSE was used in this study (Chan *et al.*, in press).

The first part of the NCSE requires the administrator to assess clients' level of consciousness. If clients are alert, the following parts of the test can be continued. The second part assesses clients' orientation to person, location and time. Attention can be assessed by two subsections which are digit repetition and four-word memory tasks.

In the language section, there are four subsections which are spontaneous speech, comprehension, repetition, and naming. In constructional ability, clients' concentration, and visual memory are also involved. In construction, clients are required to draw the figures presented. For assessing memory, clients are asked to recall the four words given previously. In calculation, clients will be needed to perform arithmetic computation mentally after oral presentation. There are two subsections in the reasoning part; they are similarities and judgment.

The test items adopt the screen and metric approach. Except for memory, if clients pass in the screening tests, their abilities in those areas are considered normal. If they fail in the screening, they will be given the metric test which is a series of items of increasing difficulty which can determine clients' degree of impairment in the specific area.

Norms for each subtests of the Chinese validated version are obtained from a group of normal elderly subjects whose average age is 76.2 ( $SD = 6.79$ ) recruited in day activities centers (Chan *et al.*, in press). These form the criterion cut-off scores for each of the subtests. Clients are considered as cognitively impaired if they score below these cut-off scores in any of the subtests (Cammerneyer & Evans, 1988). The test takes about 10 to 20 minutes to administer.

#### Reliability of the NCSE

In reviewing the literature, there is not much information concerning the reliability of the test. According to the Test Manual, the authors suggest that the usual reliability criteria does not apply to the test because the healthy clients should perform the test perfectly, and the ceiling effect makes the test and retest method of reliability study on this test not meaningful (Northern California Neurobehavioral Group, 1988).

The authors also comment that the NCSE has too few items and therefore split half reliability study is not appropriate. However, because of the high sensitivity in detecting clients with cognitive impairment, this test is used as a screening assessment to exclude those cognitively impaired clients from the study (Chan, 1995).

#### Validity of the NCSE

The use of independent tests to assess skills in five major areas of cognitive functioning and the use of a graded series of test items makes the NSCE a comprehensive and sensitive instrument for screening clients with even mild cognition deficits (Schwamm *et al.*, 1987). When compared with the Mini-mental State Examination and the Cognitive Status Examination which provide aggregate scores and thus can only give a global test of cognition, the NCSE is a more superior screening tool in detecting clients with cognitive dysfunction in terms of its sensitivity (Schwamm *et al.*, 1987).

#### Use in this Study

The Chinese validated version of the NCSE was used as a screening assessment to identify those clients who have cognitive deficits. Clients were excluded from the study if they scored below the cut-off scores of the Chinese validated version. The assessment was conducted by either the researcher or case therapists.

#### Geriatric Depression Scale

Depression was measured using the Chinese validated short form of the Geriatric Depression Scale (GDS) (Lee *et al.*, 1993). The original English version was developed by Sheikh and Yasavage in 1986. A number of studies reported on the

utility of the scale as a screening tool for elderly people with depression (Coleman *et al.*, 1995; Haller *et al.*, 1996; Montorio & Izal, 1996; Mui, 1996).

The GDS is a 15 item yes-no response questionnaire which takes less than 5 minutes to complete. The content of the questions is concerned with whether individuals are satisfied with their lives or whether they feel unhappy or helpless.

#### Reliability of the GDS

A study done by Lee *et al.* in 1993 revealed satisfactory reliability on a group of 193 elderly people aged from 60 to 87.

#### Validity of the GDS

In the same study by Lee and the collaborators (1993), the GDS was shown to be able to discriminate between depressed and non-depressed elderly people. Using a cut-off score of 8 to identify presence of major depression, the test demonstrated a sensitivity of 96.3% and a specificity of 87.5%.

#### Use in this study

The GDS was used as a screening assessment to identify those clients who had depressive features which affected their process of perception. Clients were excluded from the study if they scored above the cut-off score of 8 as defined by the test. The assessment was conducted by either the researcher or case therapists.

### **Data Analysis**

#### Demographic Data of Clients and Occupational Therapists

Descriptive statistics (mean with standard deviation or percentage) was used to show the characteristics of both clients and therapists. The clients' characteristics included age, sex, date of onset and diagnosis, family support and living arrangement. Therapists' information included age, sex, years of clinical experience, and types of



institution they were working in. Any difference in clients' and therapists' characteristics of the 'senior' and the 'junior' therapists groups were also reported.

The numbers of clients being assessed by the researcher and therapists on their cognitive function by the NCSE and the GDS and the mean and standard deviation of the GDS score were reported.

#### Mechanisms on Clients' and Occupational Therapists' Perceptions

Immediately after responding to the COPM, clients and therapists were asked to recall exactly on what their thoughts were when making their responses. These protocols were recorded on audiotape. They formed the data on the mental processes of clients' and therapists' responses during the COPM assessment. Protocol analysis was used to investigate the mechanisms with which problems in occupational performance were perceived by the clients and the occupational therapists.

Several steps were included in the data analysis of the qualitative data obtained by protocol analysis of both clients and therapists.

#### Step I- Transcription and translation of Data

The qualitative data on protocol analysis of both clients and therapists were transcribed word-for-word by the researcher from the audiotapes. In order to ensure the accuracy of the transcription, a second reviewer was recruited to cross check the transcripts by replaying the audiotapes. The transcript was then translated into English by the researcher and a Canadian Chinese who held a Bachelor's of Arts degree and worked as part-time Chinese-English translator.

#### Step II- Content analysis of the Data

Thematic content analysis was employed (Leininger, 1985). A theme refers to a unit of analysis which embodies ideas or making an assertion about the concept.

The theme for the content analysis of the data was developed from the three types of clients' perception based on the subjective health process model and the cognitive appraisal theory and the three types of clinical reasoning methods employed by the occupational therapists.

The three types of clients' perception were:

1. those by clients who possessed negative strategies and so ignored their resources (Type 1);
2. those by clients who possessed positive strategies but considered either the internal or the external resources (Type 2); and
3. those by clients who possessed positive strategies and considered all the internal and external resources (Type 3).

Internal resources refer to the resources in the client's internal or personal world. Examples are memories, emotions, cognition, body functioning. External resources are those in the client's external world or environment such as family support and financial status.

The occupational therapists' perceptions of their clients' problems in occupational performance were classified into three types according to the clinical reasoning methods employed:

1. those by therapists who employed procedural reasoning (Type P):
  - \* they think at the disease or disabilities level, focusing on problems of physical body;
  - \* they decide on particular procedures or treatment activities to maximize clients' functioning;
  - \* they concentrate on dealing with clients' performance problems.

2. those by therapists who employed interactive reasoning (Type I):
  - \* they intend to understand and interact with clients and see them as people and did not view them at the disability level;
  - \* they interact with their clients to understand their needs;
  - \* they are interested in knowing how their clients feel about the treatment at the moment.
  
3. those by therapists who employed conditional reasoning (Type C):
  - \* they attempt to understand the whole person in the context of the life world, given the influence the disability may have on the clients' future
  - \* they attempt to integrate the two procedural and interactive reasoning and place concerns in a broader social and temporal contexts;
  - \* they imagine how the condition of clients can change and become a revised condition;
  - \* they consider clients' participation.

Starting from an inductive approach, the researcher read through the translated data several times and identified the themes that seemed to be related to the process of perception of problems in occupational performance. Afterwards, the researcher followed a deductive approach by grouping the identified themes into categories of clients and therapists with reference to the types of clients' and therapists' perceptions. The breakdowns of the types of clients and types of clinical reasoning for the 'senior' and 'junior' therapists were reported.

Chi-square testing with the significance level set at  $p \leq 0.05$  was used to test for independence of the clinical reasoning methods used by therapists in the 'senior' and 'junior' groups (Portney & Watkins, 1993).

### Step III- Inter-rater reliability on the content analysis

The content analysis was based on guidelines which came up from the subjective health process model (Schlosser, 1996) and the theory on cognitive appraisal (Lazarus & Folkman, 1984; Lazarus, 1991). Clients were classified into Types 1, 2 and 3 according to their strategies towards coping their illness and the resources they considered during the perception process. To estimate the extent of rater's effect or bias in the classification and to test the clarity of the classification based on the criteria set out in the previous sections, inter-rater reliability on the content analysis was conducted. Two occupational therapists who worked in the field of physical rehabilitation with more than two years of experience were recruited for the inter-rater reliability. They were requested to perform the content analyses on the protocols of all 12 therapists and 60 clients. A briefing session was conducted by the researcher prior to their content analysis. The briefing session included introducing the theories on therapists' clinical reasoning, clients' perceptions and the guidelines on therapists' and clients' classification with examples for illustration. Details on the content analyses were described in the briefing session. It included the technique in coding, browsing, checking, sorting and collating the themes identified in the protocols based on the theories on clients' perception. After the briefing session, they were requested to analyze the data of protocol analysis of all participating clients and therapists.

Percent agreement was used to compare the coding of the two raters and the researcher. It was computed by dividing the number of agreements with the total possible number of agreements (Portney & Watkins, 1993). Percent agreement can give results to even a small number of observations, as in this study. However, there

is a limitation of using percent agreement. According to Portney and Watkins (1993), the percent agreement often overestimates the true reliability or matching of the two scores because it may include some portion of the results that occurred by chance.

#### Problems in Occupational Performance Identified by the Clients and Therapists

The total number of problems in occupational performance identified by different clients and therapists with their means and standard deviation were reported. The frequencies and the natures of the problems identified by the different types of clients and therapists were reported. The natures of the problems are based on the items in the COPM Test Form which are listed below:

- |      |              |    |                      |
|------|--------------|----|----------------------|
| I.   | Self-care    | a/ | Personal care        |
|      |              | b/ | Functional Mobility  |
|      |              | c/ | Community Management |
| II.  | Productivity | a/ | Paid/Unpaid work     |
|      |              | b/ | Household Management |
|      |              | c/ | Play/School          |
| III. | Leisure      | a/ | Quiet recreation     |
|      |              | b/ | Active recreation    |
|      |              | c/ | Socialization        |

Ten most commonly identified problems in occupational performance by both clients and therapists were reported.

#### Comparison of Problems in Occupational Performance Identified

##### by the Clients and Therapists

Percent agreement was used to compare the consistency of the individual 10 most common problems in occupational performance identified by the different types

of clients and therapists. Percent agreement is a measure of how often the test scores by two raters agree; it can be used as a reliability test (Portney & Watkins, 1993). The test scores in this study were the numbers and the nature of the problems identified. The two raters referred to clients and therapists in this study. The advantage and disadvantage of using percent agreement is discussed in the previous section.

Overall mean percent agreement on the matching of the 10 most common problems in occupational performance identified by every pair of clients and therapists was computed. For example, if both the client and the therapist identified 5 problems out of the list of 10 activities, the overall percent agreement of this pair is 0.5.

Analysis of variance was used to investigate the effects of the types of clients and therapists on the overall mean percent agreements which formed the interval data. Analysis of variance is a statistical procedure for comparing the difference in the means of the overall mean percent agreements on the problems in occupational performance of the three groups of clients and the three groups of therapists (Portney & Watkins, 1993).

## CHAPTER IV

### RESULTS

#### Introduction

This chapter describes the results of the data collection in this study. It starts with the review on the characteristics of the clients and occupational therapists participating in the field test. The problems in occupational performance identified by the clients and occupational therapists from the COPM will be collated. The results of protocol and content analysis based on which different perceptions of clients and therapists will then be presented. Finally, the extent to which problems in occupational performance revealed by the two groups match with each other will be analyzed.

#### Subject Characteristics

There were two groups of occupational therapists with six in each group recruited for the study. One group was composed of experienced occupational therapists with more than 7 years of experience (the 'senior' therapist group) while the other group with therapists of less than 3 years of experience (the 'junior' therapist group). For each of the occupational therapists, five of their clients who had suffering a stroke and were under the supervision of the therapists were selected to participate as their counterpart. Hence, a total of 60 clients were recruited. The entire data collection process took about 10 months to complete.

#### The Sample - Occupational Therapists

Among the total sample of 12 occupational therapists, three were male and nine were female. The proportions of male and female occupational therapists were

different in the senior and junior groups. Three out of six therapists in the senior group were female, whereas all six therapists in the junior group were female. The mean age of the therapists was 27.3 years ( $SD = 3.6$ ) (Table 4.1). All the occupational therapists were working in stroke rehabilitation programs in various rehabilitation hospitals in Hong Kong including Kowloon Hospital, Pok Oi Hospital, Ruttonjee Hospital, Tung Wah Hospital, and Tung Wah Eastern Hospital. The mean years of experience of the therapists was 4.8 years ( $SD = 3.4$ ) (Table 4.1).

Table 4.1

Characteristics of Occupational Therapists in the Senior and Junior Groups

Groups	<i>n</i>	Age (in years)		Experience (in years)	
		M	SD	M	SD
Senior Therapists	6	30.7	1.0	8.1	1.2
Junior Therapists	6	24.0	0.9	1.7	0.8
All	12	27.3	3.6	4.8	3.4

Note. Experience here refers to the number of years working in occupational therapy.

The Sample - Clients

Among the total sample of 60 clients, 30 (50%) were male and 30 (50%) were female. The proportions of male and female clients in the senior and junior therapist groups were similar. Sixteen (53.3%) out of 30 clients associated with the senior therapists group were male, whereas 14 (46.7%) of the junior therapists groups were



male. The mean age of the clients was 71.6 years ( $SD = 7.4$ ), and the breakdowns associated with the senior and junior therapist groups are presented in Table 4.2.

All clients had suffering a stroke for the first incidence, with 30 (50%) out of 60 clients with right hemiplegia while the other 30 (50%) with left hemiplegia. The proportions of right and left hemiplegia of clients associated with the senior and junior therapists groups were the same. The average duration since the onset of stroke was 16.8 days ( $SD = 7.6$ ) prior to the day of data collection. Slight differences were found in the duration since the onset of stroke between the clients in the senior and junior therapist groups. For those associated with the senior therapist group, the average duration was 17.7 days ( $SD = 9.9$ ), compared with 15.9 days ( $SD = 3.9$ ) for the junior group. The average number of days between the date of admission to the rehabilitation hospitals and the date of referral to occupational therapy was 3.2 days ( $SD = 7.5$ ). Forty-five clients (75%) were referred to occupational therapy within two days of admission to the hospitals. The clients in these hospital settings went through the acute phase of medical attention and received rehabilitation services such as occupational therapy and physiotherapy.

Table 4.2

Mean Age of Clients associated with the Senior and Junior Therapists Groups

Groups	<i>n</i>	Age (in years)	
		M	SD
Senior Therapists	30	73.9	7.2
Junior Therapists	30	69.2	6.9
All	60	71.6	7.4

Concerning the clients' social background, 35 clients (58.3%) were married and 23 (38.3%) were widowed. The remaining two clients (3.3%) were single. Eighty percent of the clients lived with their families. Details of clients' living arrangement are shown in Table 4.3.

Table 4.3

Living Arrangement of the Clients

Groups	<i>n</i>	Frequency			
		With family	With others	Alone	In old age home
Senior therapists	30	23 (76.7)	0 (0)	4 (13.3)	3 (10.0)
Junior therapists	30	25 (83.3)	1 (3.3)	4 (13.3)	0 (0)
All	60	48 (80.0)	1 (1.7)	8 (13.3)	3 (5.0)

Note. Percentage in parenthesis.

### Cognitive Status of Clients

Cognitive dysfunction of all clients was screened by the Neurobehavioral Cognitive Status Examination (NCSE). All of the 60 clients scored within the normal zone in all the subscales which indicated normal cognitive function. There were only four clients who scored below the normal zone and therefore were excluded from the study. Since the occupational therapists who participated in the study were asked to screen out those clients who had obvious or confirmed cognitive deficits, the number of clients excluded by the screening test appeared to be small.

Clients with depressive mood were screened with the Geriatric Depression Scale (GDS) using the cut-off score of 8 (the higher the score, the more depressive the mood). The mean score of the 60 clients on the GDS was 4.3 ( $SD = 2.3$ ) which indicated that the majority of the clients did not possess depressive features. There were two clients who scored above the cut-off score 8 and were excluded from the study. As was the case with cognitive dysfunction, the occupational therapists recruited for the study assisted in screening out those clients with obvious or confirmed depressive mood and therefore the exclusion rate was comparatively low.

### **Data Collection Process**

The COPM and face-to-face interviews were carried out with all of the 60 clients and their occupational therapists on the same day. The average number of days between the date of the clients' referral to occupational therapy and the date of the data collection was 8.0 days ( $SD = 1.4$ ). Results of the problems in occupational performance identified by all clients and therapists using the COPM are firstly presented. Results on the content analyses of the protocol that classify the clients and therapists into different types are then described. Finally, results of the problems in

occupational performance identified by different types of clients and therapists using the COPM are presented.

### **Identification of Problems in Occupational Performance**

Step 1 - problem identification of the COPM was administered to all of the 60 clients and their occupational therapists. Both the clients and the therapists were asked to identify separately clients' problems in occupational performance at the time of data collection. Clients' responses on the COPM are the direct reflection of their own problems and needs in their daily life habits (Chan, 1995; Chan & Lee, 1997; Chan & Lee, in press). Therapists' responses on the COPM indicated their perceptions of clients' problems and needs in daily lives.

#### Results of Problems in Occupational Performance Identified by Clients

The number of problems in occupational performance identified by each of the 60 clients varied from 0 to 15, with an average of 7.7 ( $SD = 3.2$ ). The details of the problems identified are shown in Tables 4.4 - 4.6. According to the COPM manual (Law *et al.*, 1994), problems in occupational performance are classified into three main categories that include self-care, productivity and leisure. There are three sub-categories under self-care; they are personal care, mobility and community management. The three sub-categories under productivity are paid or unpaid work, household management and school or play. Since the clients in this study were over 60 years of age, they were no longer involved regularly in 'school or play' in their daily lives and this sub-category was omitted. Quiet recreation, active recreation and socialization are the three sub-categories under leisure.

For all the 60 clients, the total number of problems in occupational performance identified was 485. The majority of the problems identified by the 60

clients were self-care activities (N = 334, 68.9%) such as bathing, toilet use, and transfer. For productivity and leisure, the total numbers of problems identified were 95 (19.6%) and 56 (11.5%) respectively. The ten most frequently identified problems in all categories were dressing, toilet use, bathing, ambulation, transfer, shopping, transportation, cooking, laundry and outing.

Table 4.4

Frequencies of Problems in Occupational Performance (Self-care) as Identified by the Clients ( $n = 60$ )

Categories of Problems	Sub-categories of Problems	Problems Identified	Frequency	Percentage
Self-care	Personal care	Grooming	21	35.0
	Personal care	Feeding	21	35.0
	Personal care	Dressing	37	61.7*
	Personal care	Toilet use	44	73.3*
	Personal care	Bathing	57	95.0*
	Mobility	Ambulation	52	86.7*
	Mobility	Transfer	35	58.3*
	Community management	Going to bank	7	11.7
	Community management	Shopping	27	45.0*
	Community management	Transportation	33	55.0*
Total			334	

Note. (\*) denotes the 10 most frequently identified problems among self-care, productivity and leisure.

Table 4.5

Frequencies of Problems in Occupational Performance (Productivity) as Identified by the Clients ( $n = 60$ )

Categories of Problems	Sub-categories of Problems	Problems Identified	Frequency	Percentage
Productivity	Paid/unpaid work	Paid work	13	23.3
	Household management	Cooking	28	46.7*
	Household management	Cleansing	25	41.7
	Household management	Laundry	29	48.3*
Total			95	

Note. (\*) denotes the 10 most frequently identified problems among self care, productivity and leisure.

Table 4.6

Frequencies of Problems in Occupational Performance (Leisure) as Identified by the Clients ( $n = 60$ )

Categories of Problems	Sub-categories of Problems	Problems Identified	Frequency	Percentage
Leisure	Quiet recreation	Singing	2	3.3
	Quiet recreation	Writing	2	3.3
		Gardening	2	3.3
	Active recreation	Outings	34	56.7*
	Socialization		16	26.7
Total			56	

Note. (\*) denotes the 10 most frequently identified problems among self-care, productivity and leisure.



The Clients' Problems in Occupational Performance Identified  
by Occupational Therapists

The total number of problems in occupational performance identified by the 12 occupational therapists varied from 2 to 14 with an average of 7.5 ( $SD = 2.8$ ) for each of their clients. The details of the problems identified are shown in Tables 4.7 - 4.9.

For all the 60 clients, the total number of problems in occupational performance identified by their therapists was 473. The majority of the problems identified by all the therapists for their clients were the self-care activities ( $N = 324$ , 68.5%) such as bathing, toilet use, and transfer. For productivity and leisure, the total numbers of problems identified were 91 (19.2%) and 58 (12.3%) respectively. The ten most frequently identified problems by the therapists in all categories were dressing, toilet use, bathing, ambulation, transfer, shopping, transportation, cooking, laundry and outing. This list of the ten most frequently identified problems in occupational performance was the same as those identified by the clients.

Table 4.7

Frequencies of Problems in Occupational Performance (Self-care) as Identified by Therapists

Categories of Problems	Sub-categories of Problems	Problems Identified	Frequency	Percentage
Self-care	Personal care	Grooming	20	33.3
	Personal care	Feeding	17	28.3
	Personal care	Dressing	38	63.3*
	Personal care	Toilet use	42	70.0*
	Personal care	Bathing	57	95.0*
	Mobility	Ambulation	53	88.3*
	Mobility	Transfer	34	56.7*
	Community management	Going to bank	4	6.7
	Community management	Shopping	27	45.0*
	Community management	Transportation	32	53.3*
Total			324	

Note. (\*) denotes the 10 most frequently identified problems among self-care, productivity and leisure.

Table 4.8

Frequencies of Problems in Occupational Performance (Productivity) as Identified by Therapists

Categories of Problems	Sub-categories of Problems	Problems Identified	Frequency	Percentage
Productivity	Paid/unpaid work	Paid work	12	20.0
	Household management	Cooking	28	46.7*
		Cleansing	25	41.7
		Laundry	26	43.3*
Total			91	

Note. (\*) denotes the 10 most frequently identified problems among self-care, productivity and leisure.

Table 4.9

Frequencies of Problems in Occupational Performance (Leisure) as Identified by Therapists

Categories of Problems	Sub-categories of Problems	Problems Identified	Frequency	Percentage
Leisure	Quiet recreation	Singing		
		Writing	2	3.3
		Reading	1	1.7
	Active recreation	Gardening	3	5.0
		Outings	34	56.7*
	Socialization	18	30.0	
Total			58	

Note. (\*) denotes the 10 most frequently identified problems among self-care, productivity and leisure.

### The Clients' Perception

The 60 clients were classified into three main groups by analyzing the protocol obtained in the interview. The criteria used to classify clients were set based on the subjective health process model (Schlosser, 1996) and the theory on cognitive appraisal (Lazarus & Folkman, 1984; Lazarus, 1991) and were described in Chapter III (p. 57).

### Three Types of Clients' Perception

Protocols were obtained from each of the clients. There were a total of 60 protocols from the clients. The time for the protocols from the clients ranged from three minutes to 22 minutes with a mean of 16.35 minutes ( $SD = 5.07$  minutes). All the protocols were audiotaped and transcribed. The average time taken for the transcription of the clients' protocols was around 45 minutes. After the transcription, translation was done before the content analysis of the protocols. The average time for translating the protocols from the clients was around 10 minutes.

Content analyses of the protocols obtained from all the clients after their completion of COPM indicated that 18 clients (30.0%) were classified as Type 1 - negative coping strategies and failed to analyze the situation. The clients did not appear to reveal the resources that they had when they were asked to recall what was on their mind when they were identifying their problems in occupational performance.

Eleven (18.3%) clients formed positive coping strategies towards the event but considered only part of the resources that they had, either internal or external resources (Type 2).

Thirty one (51.7%) clients formed positive strategies on the situation and considered both the internal and the external resources when analyzing the situation (Type 3).

### Reliability of Content Analysis

After the content analysis, all the 60 clients were classified into Type one, two and three according to their perception processes. The matching of the classification of Types 1, 2 and 3 clients by the researcher and the two raters is illustrated in Table 4.10, 4.11 and 4.12.

Table 4.10

The 3 x 3 Grid of the Classification of Types 1, 2 and 3 Clients by the Researcher and Rater 1

Classification of clients by the rater 1

		Type 1	Type 2	Type 3	
Classification of clients by the researcher	Type 1	15	3	0	18
	Type 2	1	6	4	11
	Type 3	5	3	23	31
		21	12	27	60

N = 60 clients

Note. Type 1: Clients possessing negative strategies towards the illness and neglecting all resources

Type 2: Clients possessing positive strategies towards the illness and considering only internal or external resources

Type 3: Clients possessing positive strategies towards the illness and considering both internal and external resources.

Table 4.11

The 3 x 3 Grid of the Classification of Types 1, 2 and 3 Clients by the Researcher and Rater 2

Classification of clients by the rater 2

		Type 1	Type 2	Type 3	
Classification of clients by the reseacher	Type 1	17	0	1	18
	Type 2	1	8	2	11
	Type 3	1	0	30	31
			19	8	33

N = 60 clients

- Note. Type 1: Clients possessing negative strategies towards the illness and neglecting all resources
- Type 2: Clients possessing positive strategies towards the illness and considering only internal or external resources
- Type 3: Clients possessing positive strategies towards the illness and considering both internal and external resources.

Table 4.12

The 3 x 3 Grid of the Classification of Types 1, 2 and 3 Clients by Rater 1 and Rater 2

## Classification of clients by the rater 2

		Type 1	Type 2	Type 3	
Classification of clients by rater 1	Type 1	15	1	5	21
	Type 2	3	5	4	12
	Type 3	1	2	24	27
		19	8	33	60

N = 60 clients

Note. Type 1: Clients possessing negative strategies towards the illness and neglecting all resources

Type 2: Clients possessing positive strategies towards the illness and considering only internal or external resources

Type 3: Clients possessing positive strategies towards the illness and considering both internal and external resources.



Percentage of agreement was used in estimating the consistency of classification of clients between the two raters and the researcher (Portney & Watkins, 1993). It was computed by comparing the two raters' with the researcher's classifications on the clients' perception.

$$\begin{aligned} &\text{Percent agreement between raters and researcher} \\ = &\frac{\text{Number of agreed classifications}}{\text{Total number of clients in the classification}} \end{aligned}$$

For example, the number of agreed classifications among all 60 clients between the researcher and rater 1 was 44, therefore, the percent agreement was 44/60 which is .73. The percentages of agreement of the researcher and the other two raters are illustrated in Table 4.13.

Table 4.13

Interrater Reliability on Classifying Clients' Perception

Raters	Percentage of Agreement
Researcher and Rater 1	.73
Researcher and Rater 2	.92
Rater 1 and Rater 2	.73

It revealed that the inter-rater reliability was moderate to good (.73 to .92). The inter-rater reliability between rater 1 and rater 2, and rater 1 and the researcher was moderate. The results showed very high agreement between the researcher and rater 2 and moderate agreement between rater 1 and the researcher, and between rater 1 and rater 2.

### **Clinical Reasoning Of Occupational Therapists**

The different types of clinical reasoning strategies possibly employed by the 12 occupational therapists recruited in the study were presented in previous chapter. They are procedural reasoning (Type P), interactive reasoning (Type I), and conditional reasoning (Type C) (Fleming, 1989; Mattingly & Fleming, 1994). Details of the criteria on therapists' classification are illustrated in Chapter III (p. 57-58).

#### Three Types of Clinical Reasoning

Protocols were obtained from the therapists for each of their clients. There were a total of 60 protocols from the therapists. The time for the protocols from the therapists ranged from 5 minutes to 16 minutes with a mean of 9.02 minutes (SD = 1.94 minutes). The average time of the protocols from the clients was longer than that from the therapists. All the protocols were taped and transcribed. The average time taken for the transcription of the therapists' protocols was around 20 minutes. After the transcription, translation was done before the content analysis of the protocols. The average time for translating the protocols from the therapists was around 10 minutes.

According to the protocols obtained from the 12 occupational therapists on the assessment of 60 clients, procedural reasoning was found to be used by the therapists in analyzing the problems of 18 clients (30.0%); interactive reasoning was used for 17 clients (28.3%); and conditional reasoning used for 25 clients (41.7%).

Significant differences were found in the number of therapists using different clinical reasoning strategies between the senior and junior groups ( $\chi^2 = 32.50$ ,  $df = 2$ ,  $p < .001$ ). About 74% of the senior therapist group employed conditional reasoning as compared to only 10% in the junior group (Table 4.14). Sixty percent of the

therapists in the junior group used procedural reasoning when compared with nil in the senior group (Table 4.14).

Table 4.14

Clinical Reasoning Strategies used by Therapists between Senior and Junior Groups

Clinical Strategies	Senior Therapists ( $n = 30$ )		Junior Therapists ( $n = 30$ )	
	Freq.	%	Freq.	%
Procedural Reasoning	0	0	18	60.0
Interactive Reasoning	8	26.7	9	30.0
Conditional Reasoning	22	73.3	3	10.0
Total	30	100.0	30	100.0

Reliability of Content Analysis

As in the clients' protocol, inter-rater reliability was estimated on the classification of occupational therapists' protocols into procedural (Type P), interactive (Type I), and conditional (Type C) reasoning. High inter-rater reliability estimate means that rater's bias in the content analysis was low and the clarity of classification based on the criteria suggested by Mattingly and Fleming (1994) was high.

After the content analysis, all the therapists were classified into Types P, I and C according to their clinical reasoning styles. The matching of the classification of Types P, I and C therapists by the researcher and the two raters is illustrated in Tables 4.15, 4.16 and 4.17.

Table 4.15

The 3 x 3 Grid of the Classification of Types P, I and C Therapists by the Researcher and Rater 1

Classification of therapists by the Rater 1

	Type P	Type I	Type C		
Classification of therapists by the reseacher	Type P	16	2	0	18
	Type I	2	14	1	17
	Type C	1	3	21	25
	19	19	22	60	

N = 60 clients assessed by 12 therapists

Note. Type P: Therapists utilizing procedural reasoning

Type I: Therapists utilizing interactive reasoning

Type C: Therapists utilizing conditional reasoning

Table 4.16

The 3 x 3 Grid of the Classification of Types P, I and C Therapists by the Researcher and Rater 2

Classification of therapists by the Rater 2

	Type P	Type I	Type C		
Classification of therapists by the reseacher	Type P	15	3	0	18
	Type I	1	15	1	17
	Type C	0	3	22	25
		16	21	23	60

N = 60 clients assessed by 12 therapists

Note. Type P: Therapists utilizing procedural reasoning

Type I: Therapists utilizing interactive reasoning

Type C: Therapists utilizing conditional reasoning

Table 4.17

The 3 x 3 Grid of the Classification of Types P, I and C Therapists by Rater 1 and Rater 2

Classification of clients by the rater 2

	Type P	Type I	Type C		
Classification of clients by the rater 1	Type P	13	5	1	19
	Type I	3	15	1	19
	Type C	0	1	21	22
		16	21	23	60

N = 60 clients assessed by 12 therapists

Note. Type P: Therapists utilizing procedural reasoning

Type I: Therapists utilizing interactive reasoning

Type C: Therapists utilizing conditional reasoning

Percentage of agreement was also used to quantify the inter-rater reliability; the computation was the same as that for the clients' perceptions. For example, the number of agreed classifications among all 60 protocols of 12 therapists between the researcher and rater 1 were 51, which means that the percent agreement was 51/60 or .85. The percent agreements of the researcher and the other two raters are illustrated in Table 4.18.

Table 4.18

Interrater Reliability on Classifying Therapists' Perception

Raters	Percentage of Agreement
Researcher and Rater 1	.85
Researcher and Rater 2	.87
Rater 1 and Rater 2	.82

Percentage of agreement among the three raters (the researcher and two raters) ranged from .82 to .87 indicating an overall good inter-rater reliability. The raters mentioned that it was easier and required less time for them to classify therapists' protocols into the different types of clinical reasoning strategies than it was to classify the clients' perceptions because the raters were more familiar with the concepts associated with the former than the latter. Therefore, the percent agreement on the classification of therapists' use of clinical reasoning strategies ranging from .82 to .87 indicated good inter-rater reliability.

#### **Identification of Problems in Occupational Performance - the Client Groups**

Based on their perception processes, three groups of clients were classified – 'possessing negative strategies' or type 1, 'possessing positive strategies and considering part of their resources' or type 2, and 'possessing positive strategies and considering all the resources' or type 3. The average numbers of problems in occupational performance identified by the clients was similar among the three groups (Table 4.19). In general, type 1 clients identified higher numbers of problems (mean = 8.1, SD = 3.5) than the other two groups. The patterns or distributions of the

problems in occupational performance identified were similar among the three groups. The proportions of problems identified in the area of self-care were the largest (64.9% - 75.9%) in all groups, followed by productivity (13.3% - 23.5%) and least in leisure (11% - 12.5%). Detailed frequency distributions of the problems in occupational performance identified by the clients in the three groups are illustrated in Table 4.20.

Table 4.19

Problems in Occupational Performance Identified by Clients

	Type 1		Type 2		Type 3		All Clients	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Number of Problems Identified	8.11	3.53	7.18	3.79	7.71	2.81	7.73	3.18

Note. Type 1: Clients possessing negative strategies towards the illness and neglecting all resources

Type 2: Clients possessing positive strategies towards the illness and considering only internal or external resources

Type 3: Clients possessing positive strategies towards the illness and considering both internal and external resources.



Table 4.20

Frequencies of Problems in Occupational Performance Identified by the Clients

		Type 1	Type 2	Type 3	All Clients
		Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Self-care	Personal care	59 (43.1)	30 (37.5)	91 (34.0)	180 (37.2)
Self-care	Functional mobility	29 (21.2)	13 (16.2)	45 (16.8)	87 (17.9)
Self-care	Community management	16 (11.6)	13 (16.3)	38 (14.1)	67 (13.8)
Self-care - Total		104 (75.9)	56 (70.0)	174 (64.9)	334 (68.9)
Productivity	Paid/unpaid work	3 (2.2)	3 (3.8)	7 (2.6)	13 (2.7)
Productivity	Household management	15 (10.9)	11 (13.7)	56 (20.9)	82 (16.9)
Productivity - Total		18 (13.1)	14 (17.5)	63 (23.5)	95 (19.6)
Leisure	Quiet recreation	0 (0)	0 (0)	4 (1.5)	4 (0.8)
Leisure	Active recreation	13 (9.5)	7 (8.7)	16 (6.0)	36 (7.4)
Leisure	Socialization	2 (1.5)	3 (3.8)	11 (4.1)	16 (3.3)
Leisure - Total		15 (11.0)	10 (12.5)	31 (11.6)	56 (11.5)
TOTAL		137 (100)	80 (100)	268 (100)	485 (100)

Note. Type 1: Clients possessing negative strategies towards the illness and neglecting all resources

Type 2: Clients possessing positive strategies towards the illness and considering only internal or external resources

Type 3: Clients possessing positive strategies towards the illness and considering both internal and external resources.

### Identification of Problems in Occupational Performance - the Therapist Groups

Based on their perception processes, the therapists were classified into three groups - those utilizing 'procedural reasoning' or type P, 'interactive reasoning' or type I, and 'conditional reasoning' or type C. The average numbers of problems in occupational performance identified by therapists were similar among the three groups (Table 4.21). When compared with the client groups, the average numbers of problems in occupational performance identified by all therapists were similar (Table 4.19). The patterns or distributions of the problems in occupational performance identified for the clients were similar among the three groups of therapists. The proportions of problems identified in the area of self-care were the largest (66.7% - 70.3%) in all groups, followed by productivity (17.2% - 23.8%) and least in leisure (9.5% - 13.7%). Detailed frequency distributions of the problems in occupational performance identified by the clients in the three groups are illustrated in Table 4.22.

Table 4.21

#### Problems in Occupational Performance Identified by Therapists

	Type P		Type I		Type C		All Therapists	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Number of Problems Identified	7.50	2.85	7.12	2.52	7.84	2.94	7.53	2.77

Note. Type P: Therapists utilizing procedural reasoning

Type I: Therapists utilizing interactive reasoning

Type C: Therapists utilizing conditional reasoning

Table 4.22

Frequencies of Problems in Occupational Performance Identified by Therapists

		Type P	Type I	Type C	All Therapists
		Freq. (%)	Freq. (%)	Freq. (%)	Freq. (%)
Self-care	Personal care	41 (32.0)	53 (42.1)	80 (36.5)	174 (36.8)
Self-care	Functional mobility	30 (23.4)	20 (15.9)	37 (16.9)	87 (18.4)
Self-care	Community management	19 (14.9)	11 (8.7)	33 (15.1)	63 13.3
Self-care - Total		90 (70.3)	84 (66.7)	150 (68.5)	324 (68.5)
Productivity	Paid/unpaid work	3 (2.4)	5 (3.9)	4 (1.8)	12 (2.5)
Productivity	Household management	19 (14.8)	25 (19.9)	35 (16.0)	79 (16.7)
Productivity - Total		22 (17.2)	30 (23.8)	39 (17.8)	91 (19.2)
Leisure	Quiet recreation	0 (0)	0 (0)	3 (1.4)	3 (0.7)
Leisure	Active recreation	11 (8.6)	7 (5.6)	19 (8.7)	37 (7.8)
Leisure	Socialization	5 (3.9)	5 (3.9)	8 (3.6)	18 (3.8)
Leisure - Total		16 (12.5)	12 (9.5)	30 (13.7)	58 (12.3)
TOTAL		128 (100)	126 (100)	219 (100)	473 (100)

Note. Type P: Therapists utilizing procedural reasoning

Type I: Therapists utilizing interactive reasoning

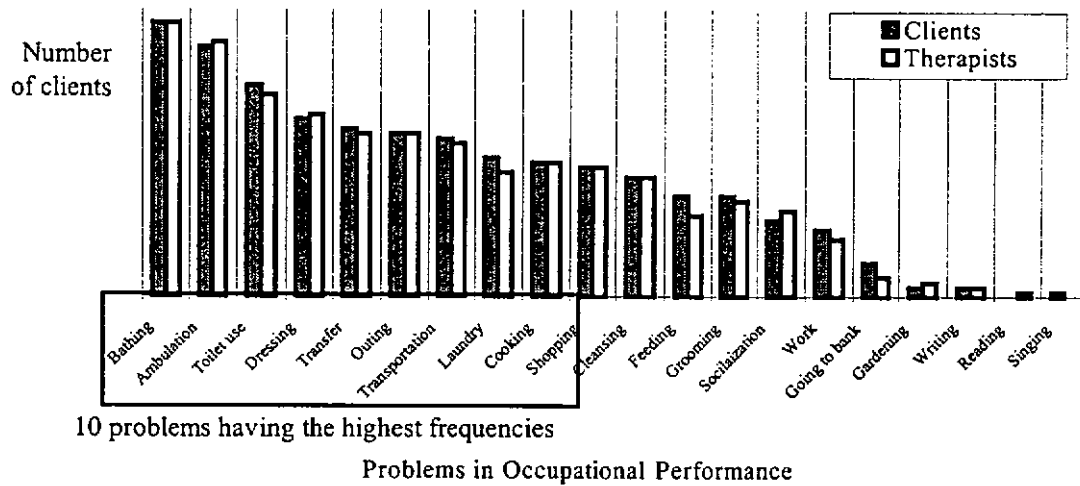
Type C: Therapists utilizing conditional reasoning

## **Comparison of Problems in Occupational Performance Identified by Clients and Occupational Therapists**

Both clients and their therapists identified a much larger proportion of problems in the area of self-care than in other areas. A higher frequency of problem identification could mean that clients and their therapists perceived that the dysfunction was centered around activities in self-care. In order to take a closer look at the individual problems identified by client and therapists, subsequent analysis was conducted on the 10 most common problems.

A total of 20 different problems in occupational performance were identified by either the clients or their occupational therapists (Figure 4.1). There were a perfect match of the ten problems in occupational performance which had the highest frequencies between the two groups. Their frequencies ranged from 45.0% to 95.0% in the client group, and 43.3% to 95.0% in the therapist group. They were dressing, toilet use, bathing, ambulation, transfer, transportation, shopping, cooking, laundry, and outings (Figure 4.1). The distributions of the frequencies of these ten problems were found to be similar between the two groups.

Figure 4.1  
Frequencies of Problems in Occupational Performance  
Identified by Clients and Their Therapists



Perception of Problems in Occupational Performance - Clients vs. Therapists

Since data was obtained from each client and their corresponding therapists, a total of 60 client-therapist pairs can be classified according to different styles of perception of problems of clients and different clinical reasoning styles of therapists (3 x 3 grid) (Table 4.23).

Table 4.23

The 3 x 3 Grid of Clients' Perception Style and Therapists' Clinical Reasoning

Therapists of different clinical reasoning styles

		Type P	Type I	Type C	
Clients of different perception style of problems	<b>Type 1</b>	Group <sub>1-P</sub> (n = 4)	Group <sub>1-I</sub> (n = 6)	Group <sub>1-C</sub> (n = 8)	18
	<b>Type 2</b>	Group <sub>2-P</sub> (n = 4)	Group <sub>2-I</sub> (n = 2)	Group <sub>2-C</sub> (n = 5)	11
	<b>Type 3</b>	Group <sub>3-P</sub> (n = 10)	Group <sub>3-I</sub> (n = 9)	Group <sub>3-C</sub> (n = 12)	31
		18	17	25	60

N = 60 client-therapist pairs

<u>Note.</u> Clients	Type 1:	Clients possessing positive strategies towards coping the illness and neglecting all resources
	Type 2:	Clients possessing positive strategies towards coping the illness and considering only internal or external resources
	Type 3:	Clients possessing positive strategies towards coping the illness and considering both internal and external resources.
Therapists	Type P:	Utilizing procedural reasoning
	Type I:	Utilizing interactive reasoning
	Type C:	Utilizing conditional reasoning

For example, one of the pairs has a client who possessed positive strategies towards coping the event of suffering a stroke and considered all the resources when he perceived his problems in occupational performance (Type 3 client), while his therapist utilized conditional reasoning when perceiving his client's problems (Type C therapist) (Group  $_{3,C}$  in Table 4.23). This pair had the highest number ( $n = 12$ ) among the 9 pairs. The lowest number was the pair of clients who possessed positive strategies but considered only internal or external resources (Type 2) and therapists who utilized interactive reasoning (Type I) ( $n = 2$ ) (Group 2-I in Table 4.23).

Clients who formed positive strategies toward coping their illnesses and considered both internal and external resources (Type 3) had the highest number ( $n = 31$ ) in all groups, followed by clients who formed negative strategies and neglected all resources (Type 1) ( $n = 18$ ), and least in clients who formed positive strategies but considered only internal or external resources (Type 2) ( $n = 11$ ) (Table 4.23).

Therapists who utilized conditional reasoning (Type C) had the highest number ( $n = 25$ ) in all groups (Table 4.23). The numbers of therapists utilizing procedural reasoning (Type P) ( $n = 18$ ) and interactive reasoning (Type I) ( $n = 17$ ) were similar (Table 4.23).

#### Comparison of Problems in Occupational Performance in the 9 Groups of Clients and Therapists

To evaluate the matching of clients' and therapists' perceptions of problems, the agreement (in contingency tables) on the 10 most commonly identified problems on the different client-therapist groups are shown in Tables 4.24 - 4.26. Percentage of agreement was used to measure how often the test scores by the two raters agree with one another (Portney & Watkins, 1993). In this study, the test scores were replaced

by the problems in occupational performance as identified by both raters, the clients and therapists.

Table 4.24 shows the extent of match of the problems between different types of clients and their therapists who employed procedural clinical reasoning, that is, groups  $_{1-P}$ ,  $_{2-P}$ , and  $_{3-P}$ . The agreement of group  $_{1-P}$  between the clients and therapists in identifying dressing as the clients' problems was 75% (Yes - Yes) (percent agreement = 0.75). It means that 75% of clients and therapists in this group identified dressing as a common problem. For group  $_{2-P}$ , it was 25% (Yes - Yes) (percent agreement = 0.25) while for group  $_{3-P}$ , it was 100% (40% Yes- Yes, 60% No -No) (percent agreement = 1.0). Therefore, the matching of the dressing problem identified was the highest between the clients and the therapists in group  $_{3-P}$ . For the problems in toilet use, transportation, shopping, and outings, group  $_{3-P}$  also showed the best matching among the other groups (percent agreements were all 80%). This was the group of clients who had positive attitudes towards their illness and considered all the internal and the external resources. For clients who had negative attitudes, that is, in group  $_{1-P}$ , bathing, ambulation, and cooking showed complete matching (percent agreements were all 100%).



Table 4.24

Agreement on the 10 Most Commonly Identified Problems between Clients and Therapists Using Procedural Reasoning (Type P)

Groups Problems		Percent Agreement					
		1-P (n = 4)		2-P (n = 4)		3-P (n = 10)	
Dressing	No	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes	
	client	No	Yes	No	Yes	No	Yes
Toilet use	No	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes	
	client	No	Yes	No	Yes	No	Yes
Bathing	No	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes	
	client	No	Yes	No	Yes	No	Yes
Ambulation	No	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes	
	client	No	Yes	No	Yes	No	Yes
Transfer	No	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes	
	client	No	Yes	No	Yes	No	Yes
Transportation	No	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes	
	client	No	Yes	No	Yes	No	Yes

Table 4.24 (Continued)

Groups		Percent Agreement						
		1-P (n = 4)		2-P (n = 4)		3-P (n = 10)		
Problems		Therapist		Therapist		No	Therapist	
		No	Yes	No	Yes	client	No	Yes
Shopping	No	50%		50%	25%		40%	
	Yes	25%	25%		25%		20%	40%
Cooking	No	100%		25%	25%		30%	
	Yes				50%		30%	40%
Laundry	No	75%		50%	25%		30%	
	Yes	25%			25%		40%	30%
Outings	No				50%		40%	20%
	Yes	50%	50%	25%	25%			40%

Note. Group 1-P: Pair of clients who possessed negative strategies and neglected all resources and therapists using procedural reasoning

Group 2-P: Pair of clients who possessed positive strategies but considered only internal or external resources and therapists using procedural reasoning

Group 3-P: Pair of clients who possessed positive strategies and considered all resources and therapists using procedural reasoning

The agreements of problems identified between the therapists who employed interactive reasoning and the three types of clients, that is, groups 1-1, 2-1, 3-1, were similar (Table 4.25). In group 2-1, therapists utilized interactive reasoning with clients who possessed positive strategies but considered either the internal or the external resources, there were 9 problems with complete matching, that is, percent agreement of 100%, as compared to 6 and 5 problems with complete matching in groups 1-1 and 3-1 respectively. Nevertheless, among these three groups, the percent agreements were over 80% in most problems, which included dressing, toilet use, bathing, ambulation, transportation, and laundry.

Table 4.25

Agreement on the 10 Most Commonly Identified Problems between Clients and Therapists using Interactive Reasoning (Type I)

Groups Problems		Percent Agreement					
		1-I (n = 6)		2-I (n = 2)		3-I (n = 9)	
Dressing	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes	33.3%	16.7%	50%		44.4%	
Toilet use	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes		50%		50%	33.3%	
Bathing	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes	16.7%	83.3%		50%		66.7%
Ambulation	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes		100%		100%		11.1%
Transfer	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes	16.7%	83.3%		50%		88.9%
Transportation	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes	50%		50%		55.6%	
	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes	33.3%	16.7%		50%		44.4%
	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes	83.3%		100%		55.6%	
	client	Therapist No	Therapist Yes	Therapist No	Therapist Yes	Therapist No	Therapist Yes
	Yes		16.7%			11.1%	33.3%

Table 4.25 (Continued)

Groups		Percent Agreement					
		1-I (n = 6)		2-I (n = 2)		3-I (n = 9)	
Problems		Therapist		Therapist		Therapist	
		No	Yes	No	Yes	No	Yes
Shopping	No	66.7%		50%		44.3%	11.1%
	Yes		33.3%		50%	22.2%	22.2%
Cooking	No	66.7%		50%	50%	33.3%	
	Yes		33.3%				66.7%
Laundry	No	66.7%				44.4%	
	Yes		33.3%		100%		55.6%
Outings	No	33.3%	33.3%	100%		44.5%	
	Yes		33.3%			22.2%	33.3%

Note. Group <sub>1-I</sub>: Pair of clients who possessed negative strategies and neglected all resources and therapists using interactive reasoning

Group <sub>2-I</sub>: Pair of clients who possessed positive strategies but considered only internal or external resources and therapists using interactive reasoning

Group <sub>3-I</sub>: Pair of clients who possessed positive strategies and considered all resources and therapists using interactive reasoning

For the therapists who utilized conditional reasoning, the matching of the perception of problems in occupational performance was the best with those clients who possessed positive strategies towards the illness and considered all the internal and the external resources, that is, group  $_{3-C}$  (Table 4.26). Among the three groups of client-therapists, this group had the best agreement on the identified problems in dressing (percent agreement = 100%), toilet use (percent agreement = 100%), transportation (percent agreement = 100%), shopping (percent agreement = 90%), cooking (percent agreement = 90%), laundry (percent agreement = 100%), and outings (percent agreement = 90%). The percent agreements of all the problems were over 80% in this group  $_{3-C}$ . In group  $_{2-C}$ , the matching of the perception of problems identified was moderate to good (percent agreements ranged from 60% to 100%). Complete matching was found in 5 problems. They were dressing, bathing, ambulation, transfer, and transportation. In group  $_{1-C}$ , the matching of the perception of problems identified was fair to good (percent agreements ranged from 50% to 100%).

Table 4.26

Agreement on the 10 Most Commonly Identified Problems between Clients and Therapists using Conditional Reasoning (Type C)

		Percent Agreement					
Groups		1-C (n = 8)		2-C (n = 5)		3-C (n = 12)	
Problems		Therapist		Therapist		Therapist	
		No	Yes	No	Yes	No	Yes
Dressing	client No		12.5%	60%		25%	
	client Yes	12.5%	75%		40%		75%
Toilet use	client No	12.5%	12.5%	20%	40%	25%	
	client Yes		75%		40%		75%
Bathing	client No						
	client Yes		100%		100%	8.3%	91.7%
Ambulation	client No		12.5%			8.3%	
	client Yes	12.5%	75%		100%		91.7%
Transfer	client No	25%		80%		16.7%	
	client Yes	12.5%	62.5%		20%	16.7%	66.6%
Transportation	client No	25%	37.5%			50%	
	client Yes	12.5%	25%		100%		50%

Table 4.26 (Continued)

Groups		Percent Agreement					
		1-C (n = 8)		2-C (n = 5)		3-C (n = 12)	
Problems		Therapist		Therapist		Therapist	
		No	Yes	No	Yes	No	Yes
Shopping	No client	50%	25%	40%	20%	33.3%	8.3%
	Yes client	12.5%	12.5%		40%		58.3%
Cooking	No client	50%	12.5%	60%	20%	41.7%	
	Yes client		37.5%		20%	8.3%	50%
Laundry	No client	50%	12.5%	40%	20%	50%	
	Yes client	12.5%	25%		40%		50%
Outings	No client	25%		20%		33.3%	8.3%
	Yes client	12.5%	62.5%	20%	60%		58.4%

Note. Group <sub>1-C</sub>: Pair of clients who possessed negative strategies and neglected all resources and therapists using conditional reasoning

Group <sub>2-C</sub>: Pair of clients who possessed positive strategies but considered only internal or external resources and therapists using conditional reasoning

Group <sub>3-C</sub>: Pair of clients who possessed positive strategies and considered all resources and therapists using conditional reasoning



For the clients who possessed positive strategies towards their illness and considered all resources (Type 3), the matching of perceptions of problems in occupational performance was the best with the therapists who employed conditional reasoning (Type C). As illustrated in Table 4.27, this group had most agreement for the problems in dressing (percent agreement = 1.0), toilet use (percent agreement = 1.0), bathing (percent agreement = 0.9), ambulation (percent agreement = 1.0), transportation (percent agreement = 1.0), shopping (percent agreement = 0.9), laundry (percent agreement = 1.0), and outings (percent agreement = 0.9). Group  $_{3-C}$  showed the best matching among the other groups (percent agreements of 8 problems identified were over 90%). For group  $_{3-I}$ , there were 5 problems with percent agreement of over 90% (Table 4.27). They were dressing (percent agreement = 1.0), toilet use (percent agreement = 1.0), transfer (percent agreement = 1.0), cooking (percent agreement = 1.0), and laundry (percent agreement = 1.0). For group  $_{3-P}$ , only 2 problems had a percent agreement of 90% and above (Table 4.27). They were dressing (percent agreement = 1.0) and ambulation (percent agreement = 0.9). The percent agreements of the other 8 problems in this group  $_{3-P}$  were below 90%. Therefore, the matching of clients' and therapists' perceptions of problems was better for group  $_{3-I}$  than for group  $_{3-P}$ .

Table 4.27

Agreement on the 10 Most Commonly Identified Problems between Therapists and Clients who Possessed Positive Strategies and Considered All Resources (Type 3)

Groups		Percent Agreement					
		3-P (n = 10)		3-I (n = 9)		3-C (n = 12)	
Problems	No	Yes	No	Yes	No	Yes	
<b>Dressing</b>							
	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		
No	60%		44.4%		25%		
Yes		40%		55.6%		75%	
<b>Toilet use</b>							
	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		
No	30%		33.3%		25%		
Yes	20%	50%		66.7%	75%		
<b>Bathing</b>							
	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		
No		10%		11.1%			
Yes	20%	70%		88.9%	8.3%	91.7%	
<b>Ambulation</b>							
	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		
No	10%		11.1%	11.1%	8.3%		
Yes	10%	80%		77.8%	91.7%		
<b>Transfer</b>							
	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		
No	30%	30%	55.6%		16.7%		
Yes		40%		44.4%	66.6%		
<b>Transportation</b>							
	<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		<i>Therapist</i> No Yes		
No	20%		55.6%		50%		
Yes	20%	60%	11.1%	33.3%		50%	

Table 4.27 (Continued)

Groups		Percent Agreement					
		3-P (n = 10)		3-I (n = 9)		3-C (n = 12)	
Problems		Therapist		Therapist		Therapist	
		No	Yes	No	Yes	No	Yes
Shopping	No	40%		44.5%	11.1%	33.3%	8.3%
	Yes	20%	40%	22.2%	22.2%		58.3%
Cooking	No	30%		33.3%		41.7%	
	Yes	30%	40%		66.7%	8.3%	50%
Laundry	No	30%		44.4%		50%	
	Yes	40%	30%		55.6%		50%
Outings	No	40%	20%	44.5%		33.3%	8.3%
	Yes		40%	22.2%	33.3%		58.4%

Note. Group <sub>3-P</sub>: Pair of clients who possessed positive strategies and considered all resources and therapists using procedural reasoning

Group <sub>3-I</sub>: Pair of clients who possessed positive strategies and considered all resources and therapists using interactive reasoning

Group <sub>3-C</sub>: Pair of clients who possessed positive strategies and considered all resources and therapists using conditional reasoning

The previous section looks at the individual problems. When looking at the overall mean percent agreement of all the 10 problems in occupational performance, a similar findings emerged. Table 4.28 shows the overall percent agreement of the nine groups of client-therapists.

Table 4.28

Coefficients of Agreement on the 10 Most Commonly Identified Problems

Groups	1-P	2-P	3-P	1-I	2-I	3-I	1-C	2-C	3-C
<i>n</i>	4	4	10	6	2	9	8	5	12
Overall									
Mean	0.77	0.60	0.78	0.90	0.95	0.91	0.80	0.88	0.95
Percent									
Agreement									

For the clients who possessed positive strategies to the event and considered all resources (groups  $_{3-P}$ ,  $_{3-I}$ ,  $_{3-C}$ ), the coefficient of agreement of all the 10 most commonly identified problems in occupational performance was the highest when their occupational therapists utilized conditional reasoning (group  $_{3-C}$ ) (overall mean percent agreement = 0.95) when compared to the groups where the therapists employed interactive (group  $_{3-I}$ ) (overall mean percent agreement = 0.91) and procedural reasoning (group  $_{3-P}$ ) (overall mean percent agreement = 0.78).

When looking at the group of occupational therapists who employed conditional reasoning (groups  $_{1-C}$ ,  $_{2-C}$ ,  $_{3-C}$ ), the overall mean percent agreement was the highest with the group of clients who possessed positive strategies and considered all resources (group  $_{3-C}$ ) (overall mean percent agreement = 0.95). This was followed by the group of clients who possessed positive strategies but considered only internal or

external resources (group 2-C) (overall mean percent agreement = 0.88), and then the group of clients who possessed negative strategies and neglected all resources (group 1-C) (overall mean percent agreement = 0.80).

To further assess the relationship among the overall mean percent agreements of the 10 problems identified when comparing the 3 groups of clients and the 3 groups of therapists, analysis of variance (ANOVA) was used (Portney & Watkins, 1993). It was a two-way ANOVA (3 x 3) with agreements among types of clients and styles of clinical reasoning of therapists as the two main effects. Table 4.29 summarizes the results. Significant main effect was found on the percent agreement of the problems among the three groups of therapists using different clinical reasoning styles ( $F = 10.46, p < .001$ ) but no significant effects was found among the client groups ( $F = 1.71, p = .19$ ). Moreover, no interaction effect was found between clients' types and therapists' clinical reasoning styles in relation to the matching of their perceptions of problems ( $F = 1.95, p = .116$ ).

Table 4.29

Two - way Analysis of Variance of Percent Agreement (Between Clients and Therapists) by Clients' Different Perception Types and Therapists' Reasoning Style

Source of Variation	Sum of Squares	df	Mean Square	F-Value	p
Main Effects	.393	4	.098	6.30	.000
Clients' Perception Types	.053	2	.027	1.71	.191
Therapists' Clinical Reasoning Styles	.326	2	.163	10.46	.000
Interaction Effects	.122	4	.030	1.95	.116
Explained	.535	8	.067	4.285	.001
Residual	.795	51	.016		
Total	1.330	59	.023		

Scheffe's multiple comparison test with significance level set at .05 was conducted to compare the differences between the means of the percent agreement among the three groups of therapists using different clinical reasoning styles (Portney & Watkins, 1993). Significant differences were found between therapists using procedural reasoning (Type P) and those using interactive reasoning (Type I), and between therapists using procedural reasoning (Type P) and those using conditional reasoning (Type C).

Table 4.30

Scheffe's Test on the Difference of the Percent Agreement among Therapists using Different Reasoning Styles

	Mean	<u>SD</u>	$p < 0.05$
Type P	0.74	0.16	Types <sub>P-I, P-C</sub>
Type I	0.91	0.11	
Type C	0.89	0.12	

Note. Type P-I: Therapists using procedural reasoning with therapists using interactive reasoning

Type P-C: Therapists using procedural reasoning with therapists using conditional reasoning

### Conclusion

For the clients who had reached the age of retirement, the pattern of the problems in occupational performance revealed that the activities concerned were in the area of self-care.

Due to the different perceptions of their illnesses, the clients formed different strategies towards coping their illness, and the resources they considered were different. Therapists of different years of experience used different clinical reasoning styles. Significant difference was found on the agreement of problems identified between clients and therapists using different reasoning styles.

## CHAPTER V

### DISCUSSION

#### Introduction

The findings concerning the perceptions of clients who have suffered strokes and their occupational therapists of the clients' problems in occupational performance resulting from the disease process is discussed in this chapter. The perception of clients' problems in occupational performance is based on the results of Step 1 of the COPM. This chapter is divided into 8 sections. Section one is the discussion on the subjects' characteristics. Section two describes the problems identified by the clients and therapists. Section three is the discussion on the use of protocol analysis in this study. Sections four and five are the discussions on the clients' and therapists' perception styles. They are then followed by two sections describing the problems identified by the clients and the therapists with different perception styles. The last section compares the clients' and the therapists' perceptions.

#### Subject Characteristics

Two groups of subjects were recruited for this study. One group was occupational therapists and the other was their clients who had suffered strokes.

##### The Sample - Occupational Therapists

A total of 12 therapists were recruited for this study. This group of therapists was further divided into the senior therapist group and the junior therapist group. Each sub-group had a total of 6 therapists.

In the senior therapist group, the mean age was 30.7 years ( $SD = 1.0$ ) and the mean years of experience in occupational therapy was 8.1 years ( $SD = 1.2$ ) (Table 4.1



in Chapter IV). In the junior therapist group, the mean age was 24.0 years ( $SD = 0.9$ ) and the mean year of experience in occupational therapy was 1.7 years ( $SD = 0.8$ ) (Table 4.1 in Chapter IV). When looking at the two sub-groups individually, the subjects were fairly homogenous in terms of their ages and years of experience in occupational therapy. The difference in their ages and years of experience created heterogeneity when the results were compared between the two sub-groups. However, because of the small sample size, generalizability of the results obtained to other therapists is limited.

During the recruitment of the therapists as subjects, several problems arose. Three potential subjects from two hospitals were eventually unable to participate in this study because the hospital administration would not allow participation in this study due to staff shortages. Some of the therapists recruited could not provide the minimum number of clients who fulfilled the selection criteria for this study or they were rotated to other postings and no longer provided services to clients in rehabilitation from the effects of stroke.

#### The Sample - Clients

A total of 60 clients who had suffered strokes were recruited. Five clients were recruited from every participating therapist. The mean age of the whole group of clients was 71.6 years ( $SD = 7.4$ ) (Table 4.2 in Chapter IV). They all had suffered from stroke for the first time and were receiving rehabilitation services in rehabilitation hospitals. Since they were at the age of retirement, they were likely to have similar daily routines. This enhanced their group homogeneity in terms of the stages of their illnesses, their occupational performance and therefore their probable problems in occupational performance after the event of stroke.

Around eighty percent of the clients in the senior therapist (76.7%) and junior therapist (83.3%) groups lived with their families (Table 4.3 in Chapter IV). The others lived with friends, lived alone or lived in old-age homes. The living arrangement can affect the client's occupational performance. A client living with family may have assistance in household tasks, while another client living alone may have to do all the household tasks by herself. The proportions of clients living with family, friends, in old-age homes and by themselves were similar in the senior and junior therapist groups. This enhanced the homogeneity of the two groups in their living arrangement and thus occupational performance. When looking at all the clients as a whole, they are heterogeneous in their different types of living arrangements. However, because of the small number of clients who lived with friends, in old-age homes and by themselves, these clients cannot represent other clients with similar living arrangements.

Since the number of clients recruited was small, the results of this study can not be generalized to clients having the same characteristics. Even for the clients who lived with their families, their occupational performance may not exactly be the same. This variability also creates problems in the generalization of the results obtained.

During the recruitment of the clients, problems arose because of the tight schedule of the clients in their rehabilitation process. A few clients did not participate in this study because they were unable to arrange time during the researcher's visit to the hospital for data collection. Another difficulty of recruiting clients as subjects for this study was the fairly stringent time frame of the testing protocol. Data had to be collected when the therapists had been working with the clients from 5 to 10 days. It

was difficult to arrange the researcher's visits when both the clients and therapists were available for the data collection and within this specified time period.

### **The Problem Identification Process of the COPM**

Occupational therapists work with clients in order to help them to resume their chosen life roles (Christiansen & Baum, 1997). Therefore, it is expected that the therapists would identify similar numbers and natures of problems in occupational performance as their clients. The overall results of this study did show that both the clients and the therapists identified similar numbers and natures of problems in occupational performance.

The mean number of problems identified by the clients was 7.7 (SD = 3.2) while for the therapists, the mean number of problems identified for their clients was 7.5 (SD = 2.8). A total of 20 problems were identified by both the clients and the therapists (Table 5.1). These 20 activities are likely to represent the major activities of elderly people in Hong Kong (Chu *et al.*, 1998).

Table 5.1

List of 20 Problems Identified by Clients and Therapists

Categories	Problems
Self-care	1. Grooming
	2. Feeding
	3. Dressing*
	4. Toilet Use*
	5. Bathing*
	6. Ambulation*
	7. Transfer*
	8. Going to Bank
	9. Shopping*
	10. Transportation*
Productivity	11. Paid Work
	12. Cooking*
	13. Cleansing
	14. Laundry*
Leisure	15. Singing
	16. Writing
	17. Reading
	18. Gardening
	19. Outing*
	20. Joining Social Activities

Note. (\*) demotes the 10 most commonly identified problems.

Most of the problems identified were the activities in the area of self-care. These include the typical self-care activities a person need to perform in order to keep healthy and clean.

In the area of productivity, household management tasks were most often identified by the clients who lived at home. The household management tasks identified included cooking, cleaning, and laundry. Table 5.2 illustrates the frequency of problems identified in these three household management tasks by the clients who lived at home. Elderly people in Hong Kong are mostly required to perform these household management tasks whether or not they live with their family (Chu *et al.*, 1998). This is because in Hong Kong, elderly people are usually left alone at home during the day, while their children go to work.

Table 5.2

Frequencies of Problems in Household Management Identified by Clients who Lived at Home

Household management tasks	Frequency	%
Cooking	23	38.3
Cleansing	19	31.7
Laundry	21	35.0

Employment was one of the problems identified in the productivity area. However, it constituted only 2.7% of the total number of problems identified in all areas. As compared to the results by Chan (1995), employment constituted 5.6% of the total number of problems identified in all areas. The smaller frequency of

employment as a problem to the clients in this study could be due to their older age. The average age of the clients in this study was 71.6 ( $SD = 7.4$ ), while in Chan's study (1995), the mean age of the clients who had suffered strokes was 62.0 ( $SD = 17.1$ ). Most of the clients in this study had already reached the age of retirement, though a few of the clients in their early 60s still worked

In the leisure aspect, there were five problems identified by the clients and six by the therapists. They included singing, writing, gardening, outing and joining social activities. Reading was the problem that was only identified by the therapists. Reading was not identified by the clients as problematic as it is a relatively sedentary activity. The clients might not have had a chance to try out this activity and so might not yet understand how difficult that can be for a stroke patient. For the therapists, they would think of the need of using both upper extremities, one for holding a book and the other for turning pages, which created problems for the clients. Although most of the problems identified in the leisure area were associated with quiet recreation, the most frequently identified one was outing, which is considered an active form of recreation. The proportion of problems identified in active recreation by the clients was the largest in the leisure area (active recreation: 7.4% of all the problems; quiet recreation: 0.8%; socialization: 3.3%) (Table 4.20). Again, when compared to the results in Chan's study conducted in Canada (1995), the proportion of problems identified in quiet recreation by clients who had suffered strokes was the largest in the leisure area (active recreation: 6.7% of all the problems; quiet recreation: 14.6%; socialization: 9.0%). The difference in the proportions could be due to cultural differences. Elderly people in Hong Kong engage mostly in active recreation such as outing and going to restaurants (Chu *et al.*, 1998). Elderly people in Canada

may enjoy quiet recreation more, perhaps due to the colder climate. Moreover, when comparing the results on the proportion of all leisure activities identified by the clients in these two studies, there was a fairly big difference. The frequency of problems in the leisure area identified by the clients in this study was 11.5%, while for the clients in Chan's study (1995), the proportion was 30.3%. This result could demonstrate that people in Hong Kong are less concerned with leisure activities as compared to people in Canada.

#### The Ten Most Frequently Identified Problems

The ten most frequently identified problems by both the clients and the therapists were the same. They were dressing, toilet use, bathing, ambulation, transfer, shopping, transportation, cooking, laundry, and outing. Their frequencies were also similar in the client and therapist groups (45.0% to 95.0% in the client groups; 43.3% to 95.0% in the therapist groups).

Since this group of clients was at the age of retirement, their life roles would be similar. Their occupational performances revolved around the activities in the area of self-care. In the areas of productivity and leisure, their occupational performances were mostly in the areas of household maintenance and going out to meet friends or traveling.

Clients were selected in the same stage of rehabilitation and thus their disability levels would be similar, and in this study, only clients with no cognitive problems were selected. In meeting the needs in their lives, physical abilities were their major deficits. For the activities in the self-care area, the clients would have problems in the more physically demanding activities such as dressing, toilet use, bathing, ambulation, transfer and transportation instead of feeding and grooming.

Although all these activities were essential to the clients' independence, when compare with activities such as feeding and grooming which require stable sitting and the use of at least one of the upper extremities, dressing, toilet use, bathing, ambulation, transfer and transportation require more control and coordination over the whole body. Clients must have fairly good trunk control, the ability to bear weight with lower extremities and the ability to shift weight when the body position change if they are going to perform the activities without other people's assistance (Pedretti, 1996). This can be illustrated by the following protocol from a client.

"I can manage eating a meal with my right hand . . . . I can't go to the toilet by myself, my left leg does not have enough strength, I'll also lose my balance once I stand up to pull my pants up after going to the toilet. . . . I think my whole left body just can't work . . . . "

Therefore, the clients found problems in these more physically demanding activities. This was the same for the household tasks and leisure activities, more essential and demanding activities such as cooking, laundry, shopping and outing were identified.

The COPM was used to guide the clients and the therapists in identifying the clients' problems in occupational performance. It is possible that the problems identified focus on the activities in the self-care, productivity and leisure areas, and therefore, the number and nature of the problems identified by the clients and the therapists were so similar. However, this was partly overcome by the COPM guideline to the clients and the therapists to think of everyday activities in general, instead of activities in the self-care, productivity and leisure areas. Therefore, the global number and nature of the problems identified by the clients and the therapists



would be similar but not in the exact details, as will be further discussed in the following sections.

### **Process of Protocol Analysis**

Before looking into the detailed analyses of the results of the problems identified by the clients and the therapists, the process of classifying the perception of problems by the clients and the therapists into different groups for the analyses is discussed.

The protocols obtained after the administration of the COPM were analyzed, and the clients and the therapists were classified into different groups. The classification of the clients was based on the subjective health process model (Schlosser, 1996) and the theory on cognitive appraisal (Lazarus & Folkman, 1984; Lazarus, 1991), while for the therapists, the classification was based on their respective styles clinical reasoning (Mattingly & Fleming, 1994).

The advantage of the protocol analysis was that the clients and the therapists followed only the prompting questions when verbalizing their thoughts. No boundary was set in the prompting questions, and so the information collected was based on the subjects' thoughts and was not restricted.

### **Strengths and Weaknesses in Protocol Analysis**

There were several strengths of the protocol analysis.

1. It helped to understand the detailed thinking processes of the clients and the therapists when they chose to identify certain problems in occupational performance but not the others.
2. The process was easy to follow by both the clients and the therapists; they were merely required to verbalize their thoughts.

3. It was conducted right after the administration of the COPM. The clients and the therapists reported their thinking processes in identifying occupational problems immediately following the act. This avoided them spending time in organizing their thoughts. Thus, it saved time of the clients and the therapists as they were busy with the rehabilitation.

Since it required the subjects to verbalize their thoughts, there were a few weaknesses in the protocol analysis.

1. It was difficult for those clients who were not very verbal.
2. As it was quite common that this group of clients had low levels of education, it was difficult for them to express their thoughts.
3. A quiet environment was required because they were taped for protocol analysis. However, since the data collection was usually done in the occupational therapy department or in the clients' ward, it was difficult to find a quiet place for the recording. This made the transcription difficult.
4. Hence, transcribing the protocols was very time consuming. The average time for transcribing the clients' protocols was 45 minutes, while for the therapists' protocols, the average time of transcription was 20 minutes.
5. The content analysis of the clients' protocols obtained was based on theories borrowed from the field of health psychology. For therapists, it was based on concepts of clinical reasoning reported by Mattingly and Fleming (1994). For both the clients' and the therapists' protocols, the content analyses was done based on the guidelines set out to these theories. Inter-rater reliability could be problematic.

### Interrater Reliability on the Content Analyses of the Protocols

As discussed in the previous section, inter-rater reliability of the content analyses could be problematic, and therefore, inter-rater reliability was tested. Two occupational therapists who worked in the field of physical rehabilitation with more than two years of experience were recruited for the inter-rater reliability study. They were requested to perform the content analyses of the protocols of all the clients and the therapists. Including the researcher, there were three raters in the reliability study. For the content analyses of the clients' protocols, the inter-rater reliability was moderate to good as shown by the percentages of agreement of 73% to 92%. For the content analyses of the therapists' protocols, the inter-rater reliability was good as shown by the percentages of agreement of 82% to 87%. This fairly good inter-rater reliability demonstrates that the rater's biases in the classification of the clients' and the therapists' perceptions into different types based on the criteria set out by the theories were acceptable.

Besides estimating the extent of rater's effect in the classification of the clients' and the therapists' perceptions, the inter-rater reliability study also tested the clarity of the classification based on the guidelines set out. The percentages of agreement of 73% to 92% for the classification of the clients' protocols and 82% to 87% for the classification of the therapists' protocols demonstrates acceptable clarity on the classification of the perception of problems by the clients and the therapists.

In the present study, the classification of clients and therapists by the researcher was adopted. Relying on just the researcher's classification created problems in its accuracy because the researcher's classification may be biased. The

inter-rater inconsistency could have been reconciled by using a majority rule or by having a discussion among the 3 raters to come up with a conclusion.

Since differences in their coping strategies and in the resources considered may affect the clients' perceptions of problems in their occupational performances, just as differences in clinical reasoning styles on the part of the therapists may affect their perceptions of their clients' problems, it was important to firstly classify the perceptions of the clients and the therapists and to further analyze the results on the problems identified by these different groups of clients and therapists. The results of the problems identified by clients and therapists with different perception styles allow occupational therapists to understand their clients and to make appropriate interventions.

### **The Clients' Perception of Their Problems**

For the clients' perceptions, eighteen of them (30%) were classified as type 1 - possessing negative strategies towards coping their illnesses and neglecting all their resources. Eleven clients (18.3%) were classified as type 2 - possessing positive strategies towards coping their illnesses but considering only either their internal or external resources. Thirty-one clients (51.7%) were classified as type 3 - possessing positive strategies and considering both their internal and external resources. Most of the clients (51.7%) were able to consider all their resources when looking into their problems after suffering from stroke (Type 3). For the clients who formed positive strategies (Types 2 and 3), most of them were able to consider both the internal and external resources when analyzing their problems.

For the type 1 clients (18 clients - 30%), they did not show determination to face their problems. They would think of reasons for their problems not related to

their resources. This is illustrated by the following example with the underlined phrases.

"No problem, I can manage it . . . . so many mosquitoes here that I can't sleep well, I want to go back home."

The following example shows another type 1 client who listed out several activities as his problems but did not attempt to relate the problems to any of his resources.

"I can't do all these now. . . . I can't go out . . . . I can't take care of myself."

This type of clients did not consider the resources they possessed. They seemed not to be able to analyze the situation and relate the resources that would explain their present situation.

For the type 2 clients (11 clients - 18.3%), they formed positive coping strategies but considered only part of the resources - either the internal or the external resources. For the clients who had positive attitudes towards the illness, they would demonstrate determination in tackling their problems. This is shown by the following examples with the underlined phrases such as:

"I have to build up my strength so that I don't have to depend on others . . . ."

This client also showed consideration of her internal resources that was her lack of strength, and therefore she was classified as type 2.

The following client showed a positive strategy towards coping the illness by facing the problems (not depending on others) and being determined to practice walking. However, he considered only his physical functioning (the inability to use the hand and leg effectively), which are internal resources.

"Because I have no sensation with this hand . . . . Now I can't move the arm . . . .  
 . . not convenient now. . . . My left leg just doesn't work . . . . I have to practice  
walking."

Some of the clients considered only the external resources. This group of clients had better external support either in terms of personal support or financial support. Following is an example. This woman considered only her external resources, which was her family's future plan to emigrate and the availability of help from her maid. She possessed positive coping strategy in that she tried to tackle the problems that arose from the situation by determining to learn walking and taking a flight as shown by the underlined phrases.

"The maid can help with these [dressing, going to the toilet, bathing, cooking, etc.] . . . . but I need to travel because I need to emigrate to the other country with my son's family, so I have to learn walking and taking a flight."

Her concern at that moment was emigration with her son's family. However, the underlying problems in her body functioning (internal resources) that she ignored could be a major factor hindering her emigration plans.

Most of the clients (31 clients - 51.7%) formed positive strategies on their situations and considered both internal and the external resources when analyzing their situation (Type 3). The following are some of the protocols to illustrate this. This client showed determination to tackle the problems as illustrated by her expression of the need to relearn cooking and shopping.

"Because I can't walk for a long distance, I dare not to go shopping . . .

I can't cook at the moment, the hand is just clumsy . . . . I need your help to get me cook as before . . . .

I can bathe myself, or get a glass of water by myself . . .

I can skip outings . . . but I need to go shopping because no one can help me, my children have all emigrated to Australia, I need to depend on myself."

She considered both her internal resources (body functioning, for example, clumsy hand) and external resources (lack of assistance from her family in Hong Kong).

Here is another example of a type 3 client.

"I can't walk safely at the moment because my left leg does not have enough strength . . . . I need to practice walking safely on level ground, there are no stairs or slopes in the place where I live and I seldom travel to other places."

This woman demonstrated determination to tackle her problems by facing them and identifying her need to practicing walking on level ground, which was an important demand of her living environment. She verbalized consideration of her body function - not enough strength of her left leg (internal resources), and home environment - just level ground (external resources).

The following example also shows the client determined to be independent in all her previous life tasks (positive attitude towards the illness). She considered the lack of strength in her limbs (internal resources) and the support given by her family (external resources). Again, she was a type 3 client.

"I need to put on my coat, go to the toilet, take a bath, go shopping and outing . . . . all by myself as before.

My right arm and leg just don't have enough strength to do all these . . . .

I can't speak as fluently as before. But now I am reading a newspaper everyday to practice speaking . . . .

I want to do all these things by myself, my family gives me much support. I want to join my family for all activities as before."

Different people may perceive their health situation differently. The three types of clients' perceptions could affect the way they perceive their problems in occupational performance. Based on the subjective health process model (Schlosser, 1996) and cognitive appraisal theory (Lazarus & Folkman, 1984), it is anticipated that clients who can identify more of their resources are better able to understand the problems encountered throughout their disease process. Since the type 3 clients considered all their internal and external resources, it would follow that they would have better understanding of their problems.

In this study, the majority of clients had encountered the problems resulting from their strokes for more than 10 days. Most of them had experienced problems in self-care activities because these were the major activities that they would perform in hospital settings. For the activities in the productivity and leisure areas, they might also have thought of the possible problems they would encounter. Therefore, a majority of the clients (31 clients - 51.7%) were classified as the group possessing positive strategies and considering both their internal and external resources (Type 3).

However, depending on the clients' personalities; personal skills, such as learning ability; and knowledge of their medical conditions, they had different



attitudes towards their illnesses and considered different resources when they perceived their problems due to the illness (Lazarus & Folkman, 1984; Schlosser, 1996). They might form negative strategies towards coping the illness and ignore all the resources they had (Type 1 clients). This was especially true if they had no knowledge on the disease progression and the purpose of rehabilitation they were receiving. As mentioned before, because the age of the clients selected in this study was 60 or above, their education levels would tend to be low. This was revealed by a study conducted by Chu and his collaborators (1998) on the needs of about 300 elderly people living in Hong Kong that over 90% of them did not received any form of education or received just minimal education in China. Even if they possessed positive strategies towards the illness, some of them would not have the abilities to consider all the resources they had when analyzing their situations. This was the group of clients who possessed positive strategies but considered either the internal or the external resources (Type 2).

There would be several reasons for clients to ignore all the resources or consider only some of their resources.

1. They might have negative emotional states (Fiske & Taylor, 1991; Kruglanski, 1989, 1990) or limited interests in rehabilitation activities (personality) (Tomaka *et al.*, 1997; Tomaka & Blascovich, 1994; Schlosser, 1996).
2. They might have experienced severe loss in their life roles (eventful experience) (Schlosser, 1996).
3. Their abilities to learn new information might be limited (personal skills) due to low educational level (Chu *et al.*, 1998; Schlosser, 1996).

4. They might not understand the disease progression and the rehabilitation outcomes (knowledge of the illness) (Schlosser, 1996).

Besides the above factors that affect clients' considerations of their resources, there are several other factors that affect clients' self-perceptions (Fiske & Taylor, 1991; Frijida, 1988; Hudek-Knezevic & Kardum, 1996; Lazarus, 1991; Lazarus & Folkman, 1984; Schlosser, 1996; Weiner, 1985). They include the duration of the stimulus since onset and the phase of the stroke, the client's cognitive and psychological structure. In the present study, these factors were controlled through the selection criteria. Clients' socioeconomic condition may also affect their analysis of the situation and the consideration of resources. For example, a client who lives with his family may depend more on the help of his family in taking care of self whilst another client who lives alone needs to strive for self-independence. A client with good financial support may have lesser worry on taking care of self because he can easily hire a helper to help. However, since 80% of the clients recruited in this study were living with their family, the confounding factor of their social support was minimal. According to a study on a group of about 300 elderly people in Hong Kong, over 80% were retired and over 70% of them depend on the financial support of their children or relatives (Chu *et al.*, 1998). Therefore, the socioeconomic situation of the clients in the present study was assumed to be similar and thus the effect of this confounding factor on clients' analysis of their situation was minimal.

When working with types 1 or 2 clients, occupational therapists can try to investigate the factors hindering their clients from considering their resources, and try to intervene against these factors. The health care providers can also provide standardized education program to clients at their early stage of rehabilitation or at a

time appropriate to clients so that they can understand their disease process and have more insight into their problems and needs in the future. If clients can analyze their situations and consider all their resources, they can help with the rehabilitation progression by collaborating with therapists as advocated in client-centered practice. Collaboration with clients and respect clients' choices are important. However, because the choices of some of the clients may be affected by their perception of problems, careful interpretation of clients' choices should be made by therapists in client-centered practice.

### **The Occupational Therapists' Clinical Reasoning**

The 12 therapists used conditioning reasoning when identifying the problems of most of the 60 clients (25 clients - 41.7%). The use of procedural and interactive reasoning was found to be similar to each other in proportion (procedural reasoning for 18 clients - 30%; interactive reasoning for 17 clients - 28.3%).

Therapists utilizing procedural reasoning focused on the clients' problems at the disability level. They did not attend to the effects of the illness on their clients' accomplishment of life roles. They analyzed the clients' problems in terms of body functioning (internal resources) such as fair trunk control, fair bilateral hand use. The following protocols show therapists analyzing clients' problems in terms of his internal resources.

"He is smart, he can manage his basic activities of daily living. For outdoor activities, for example, shopping, outing, his balance may be not good enough. Household tasks may be too demanding for him. His main problems are going out . . . ."

"She does not have good bilateral hand use, her trunk control is just fair. So, she has problems in dressing, toilet use, bathing, transfer . . . . "

Therapist using interactive reasoning looked into their clients' expressed concerns. As in the following example, chopsticks use, toilet use, and outings were the problems identified.

"He is concerned with feeding even though he can feed himself with a spoon. He said using chopsticks was not convenient. He sometimes uses his bare hand to pick up food which he thinks it's not hygienic . . . . therefore, chopsticks use was one of the problems on the list."

"She said that she wanted to go to the toilet by herself very much. So, toilet use was put as the priority in the problems list."

"Outing was one of the problems identified for this clients. . . . the client said that going out was the major life activity that brought meaning to her life."

In another example, a therapist using interactive reasoning respected the client's desire of not depending on others in personal care tasks during problems identification and treatment planning.

"Discussing with the client revealed that he felt uneasy being bathed by someone. He mentioned that he didn't want to depend on others in these personal tasks. So, I put bathing and toilet use training into the treatment plan."

Therapists utilizing conditional reasoning formulated the clients' problems with respect to their needs in their previous lives and in their expectations for the future. The example below illustrates that the therapist considered not only the client's needs, but also the client's internal (standing balance) and external resources (the help from

the maid and family, the living environment) through assessing and interacting with the client.

"Mainly I look at her physical abilities and her life roles . . . . she doesn't have good standing balance. She has her maid to help in the household chores. So, independence in self-care activities is the treatment priority.

The place where she lives has a lift landing, so climbing stairs won't be a problem if she stays in the area where she lives. And talking to her reveals that she seldom goes out by herself, and her family plans to accompany her whenever she goes out after discharge from the hospital."

As illustrated by the result of the Chi-square tests ( $\chi^2 = 32.50$ ,  $df = 2$ ,  $p < .001$ ), significant differences were found in the number of therapists using different clinical reasoning styles between the senior and junior therapist groups. Conditional reasoning was mostly employed by the senior occupational therapists (73.3% of therapists in the senior group versus 10.0% in the junior group) (Mattingly & Fleming, 1994). Therapists are required to understand clients as whole persons and recognize the impact of disability in the context of clients' world. This could be done when therapists had already become familiar with clients' observable problems due to stroke by their accumulative clinical experience. They could then have time to understand clients' preferences, even during the first few days of contact. Finally, they were able to integrate clients' problems, the impact of the problems in the context of their lives and their preference to formulate problem lists relevant to clients' lives.

Procedural reasoning was only employed by the therapists in the junior group (60.0% of therapists in the junior group versus 0% in the senior group). Physical problems were the most obvious problems in this group of clients, who had no

cognitive problems. In order to grasp the skills of analyzing the effects physical disabilities have on clients' problems in occupational performance, junior therapists, in the present study having less than 3 years of clinical experience, tended to neglect the influence of clients' environments or life contexts (Mattingly & Fleming, 1994). They focused their skills in identifying the particular performance components (internal resources of clients) which resulted in the problems in occupational performance of their clients.

There could be several reasons to explain for the difference in the use of clinical reasoning styles by therapists with different years of experience.

1. Therapists practicing in Hong Kong learn new knowledge and skills by attending in-service training provided by senior therapists. It helps therapists to learn more and grasp clients' problems better as they practice in the field.
2. They practice under the supervision of senior therapists so that their knowledge and skills in treating clients are further refined.
3. When working with the same types of clients, junior therapists also refine their skills by trial and error and learning through experience.
4. Experience and feedback from clients are also important in refining clinical reasoning skills.

With the above reasons and the different exposure of therapists, some junior therapists may be able to use interactive or even conditional reasoning more readily. This is illustrated by the result that 30.0% of therapists in the junior group used interactive reasoning and 10.0% used conditional reasoning. As compared to the clinical reasoning study conducted by Mattingly and Fleming (1994), therapists with more than two years of experience found conditional reasoning congruent with their

practice. In the present study, the years of experiences of the therapists in the junior group were up to 2.5 (mean = 1.7, SD = 0.8), that was why 10.0% of them utilized conditional reasoning. For the therapists in the senior group, there were 26.7% of them using interactive reasoning. They relied more on interacting with the clients. These therapists may not have developed the use of conditional reasoning and so stick to the use of interactive reasoning. Another reason is that these therapists understood the objectives of the present study was to compare their perceptions of their clients' problems with their clients' perceptions and therefore, they just reported the problems the clients had identified. This can also be the reason 30.0% of the therapists in the junior group using interactive reasoning.

The client group chosen for this study also affected the use of clinical reasoning styles. Since they were all in rehabilitation for stroke, their problems related very much to their life roles. Therefore, conditional reasoning was use for almost half of the clients (25 clients in both the senior and junior therapist groups). However, if another clients group, say, with minor hand injuries was chosen, their problems in the early phase of rehabilitation would be more focused on their hands' range of motion and strength; their use of conditional reasoning in the early phase of rehabilitation would be comparatively smaller. The clients selected in this study were all 60 years old or older. A recent study by Kivinen and her colleagues on the comparison of clients' self-perceived health and their health rated by physicians showed that the physicians brought in the clients' age factor into the rating of their health (Kivinen *et al.*, 1998). The physicians tended to rate the clients' health lower if the clients were at older. There could be a similar client-age factor affecting the therapists' perceptions in the present study; the therapists might also tend to lower

their expectations for the clients' needs in live independently due to the clients' advanced age.

Therapists use of clinical reasoning styles would not be changed even if the study were conducted in a later rehabilitation stage. Their change from using procedural reasoning to interactive and conditional reasoning would happen with accumulation of clinical experience and with training and coaching from senior therapists. In a later rehabilitation stage, the use of clinical reasoning by Type P therapists would be more inclined to conditional reasoning because of the influence of clients' choice, coaching of senior therapists and also the goals of treatment of the rehabilitation team.

However, it may be appropriate for therapists to use procedural reasoning in the very early stage of stroke onset of the clients. During this stage, clients' problems in occupational performance would be very much affected by their deficits, that is, they do not even have the very basic physical abilities to perform the basic occupational performance. For example, when a client cannot even sit up due to his unstable medical condition, occupational therapy would be focused on the clients' positioning on bed. In such case, the client is not involved in any of the activities or occupational performance, therapist would employ procedural reasoning in dealing with the client's deficits. Until the client is allowed to sit up or to perform bed mobility activities, therapist would start using interactive or conditional reasoning in helping the client to accomplish activities appropriate to the client.

Since clients' problems in occupational performance relate very much to their life roles and thus are more difficult to identify than concrete observable problems, the type of clinical reasoning style used is important. Based on the Model of



Occupational Performance (CAOT, 1991), therapists using conditional reasoning are able to understand clients' problems in occupational performance with reference to clients' problems in performance components and their environment. They also consider the impact of the problems on the clients' life roles. Therefore, guidance to junior therapists in looking at clients' problems in the context of their lives should be promoted. Guidance is especially important for clients who cannot consider all their resources during the analysis of the problems (Types 1 and 2). Working with these clients, especially the type 1 clients who possess negative strategies towards coping their illnesses, often leads to dissatisfaction of therapists as reported in a study by Chang and Hasselkus (1998). Therefore, as an alternative, these type 1 or 2 clients could be assigned to more experienced therapists. The supervising therapists can also assign clients who consider all their resources (Type 3) to the junior therapists so that the intervention provided would fit the clients' needs, and the therapists could learn from the clients' feedback.

#### **Identification of Problems in Occupational Performance - the Client Groups**

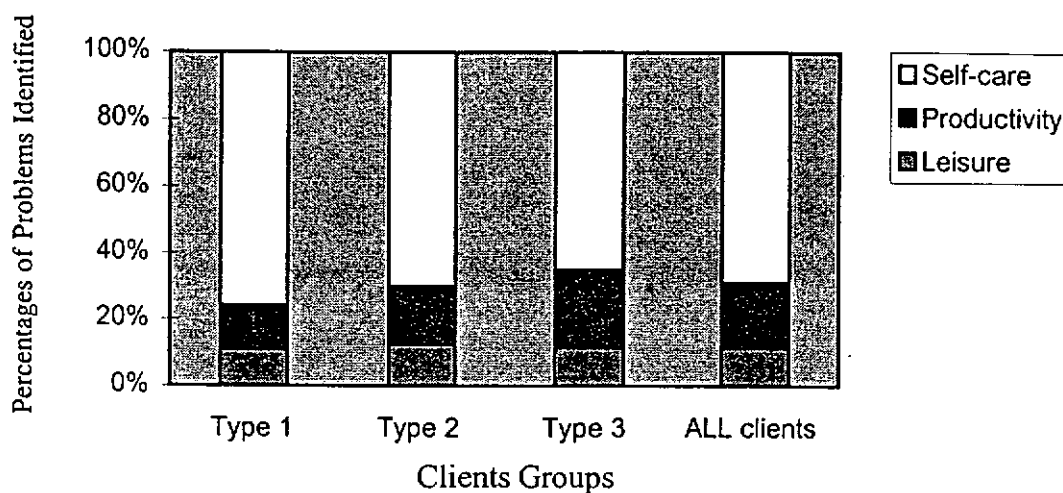
The average numbers of problems in occupational performance identified by the three groups of clients were similar. The means for the three groups ranged from 7.18 to 8.11 (Table 4.19). Type 1 clients had a slightly higher mean number of problems identified than types 2 and 3 clients. As mentioned previously, some of the clients in type 1 (possessing negative strategies and neglecting all their resources) identified problems in all activities as illustrated by the protocol below.

"I can't do all these now. . . . I can't go out . . . . I can't take care of myself."

This could be the reason for this slightly higher mean numbers of problems identified by type 1 clients.

When looking at the three areas of occupational performance, that is, self-care, productivity and leisure, the distributions of problems were similar for the three groups of clients (Figure 5.1). Since the clients were at the age of retirement and living in the same city, their occupational performances would be similar. The mean percentage of problems identified in the self-care area was 68.9% (19.6% in the productivity area; 11.5% in the leisure area) (Table 4.20). The results were similar to those reported by Chan (1995): 56.0% (self-care), 22.0% (productivity), and 22.0% (leisure), and by Law *et al.* (1994): 54.2% (self-care), 25.6% (productivity), and 20.1% (leisure). The patterns of problems identified by the clients in this study suggests that most of the clients were concerned about their independent performance in the self-care activities (Chu *et al.*, 1998).

Figure 5.1  
Distribution of Problems Identified by Clients in the 3 Aspects  
Self-care, Productivity, Leisure



- Note. Type 1 clients: Clients possessing negative strategies towards the illness and neglecting all resources
- Type 2 clients: Clients possessing positive strategies towards the illness and considering only internal or external resources
- Type 3 clients: Clients possessing positive strategies towards the illness and considering both internal or external resources.

Type 1 clients identified slightly more problems in the self-care area (75.9% of all the problems) than the other two types of clients (70.0% for type 2 clients; 64.9% for type 3 clients). In the area of productivity, type 3 clients (possessing positive strategies and considering all the internal and external resources) had a slightly higher percentage of problems identified (13.1% for type 1 clients; 17.5% for type 2 clients; 23.5% for type 3 clients). In leisure activities, the percentages of problems identified by the three groups of clients were similar (11% for type 1 clients; 12.5% for type 2 clients; 11.6% for type 3 clients). In the other words, for type 3 clients, their attention

to problems shifted from the self-care area to the productivity area, while the attention remained in the self-care area for type 1 clients. Type 3 clients related their problems to their life roles and considered all their resources when looking at their problems (Schlosser, 1996). Besides considering internal resources such as their body functioning, they also considered external resources, including the availability of support from others. Therefore, they would have wider focuses for their problems, including the productivity area, particularly household management tasks, even though they might not have had a chance to experience these activities as they were in still in hospital settings. However, given the relatively small sample in the present study, these very slight differences in the frequencies of problems identified could be just chance happenings. If this were the case, there would be no significant differences in the distribution of problems identified by the three groups of clients.

Therefore, when working with clients of older age, focus should be put on problems related to their self-care. Furthermore, understanding clients' particular needs in the productivity area and the leisure pursuits is important so that relevant problems are identified and appropriate intervention is provided. This is particularly important when dealing with clients who do not consider all their resources when analyzing their problems (Types 1 and 2).

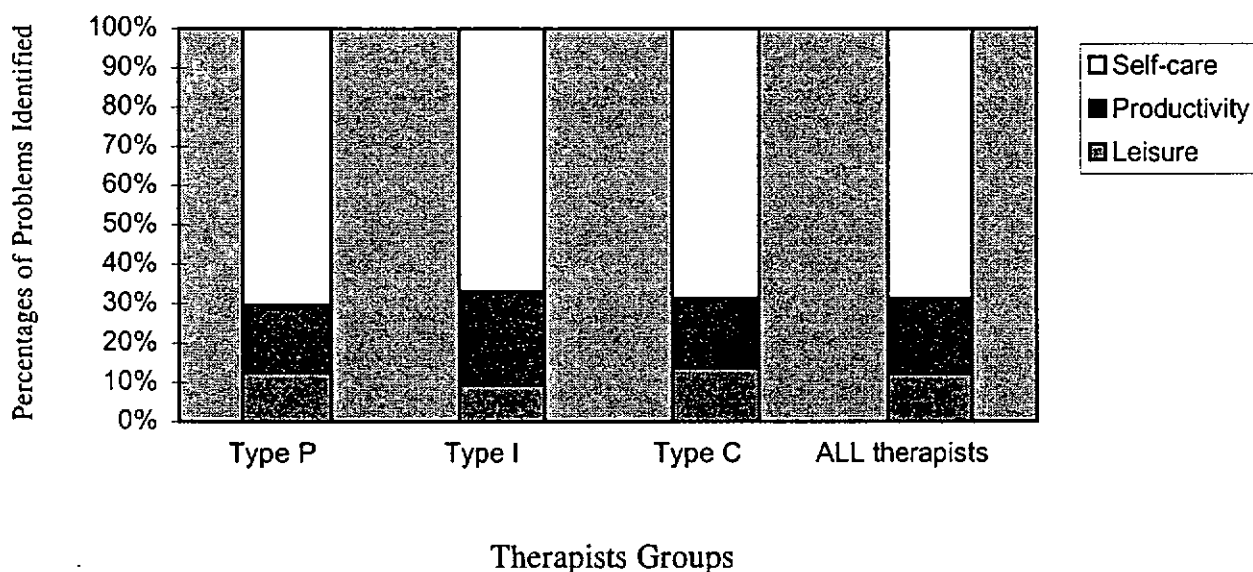
#### **Identification of Problems in Occupational Performance - the Therapist Groups**

The average numbers of problems in occupational performance identified by the three groups of therapists were similar. The means for the three groups ranged from 7.12 to 7.84 (Table 4.21).

When looking at the three areas of occupational performance, that is, self-care, productivity and leisure, the distributions of problems were similar for the three

groups of clients (Figure 5.2). Since the clients were at the age of retirement and living in the same city, their occupational performance would be similar. The mean percentage of problems identified by the therapists in the self-care area was 68.5% (19.2% in the productivity area; 12.3% in the leisure area) (Table 4.22). The results were similar to those reported by the clients: 68.9% (self-care), 19.6% (productivity), and 11.5% (leisure). The patterns of problems identified by the clients and the therapists suggested that most of their concerns focused on the clients' independent performance in self-care activities.

Figure 5.2  
Distribution of Problems Identified by Occupational Therapists in the 3  
Aspects - Self-care, Productivity, Leisure



Note. Type P: Therapists utilizing procedural reasoning  
Type I: Therapists utilizing interactive reasoning  
Type C: Therapists utilizing conditional reasoning

Therapists using procedural reasoning identified problems slightly more in the self-care area (70.3% of all the problems) than the other two types of therapists (66.7% for therapists using interactive reasoning; 68.5% for therapists using conditional reasoning) (Table 4.22). In the area of leisure, therapists using conditional reasoning had a slightly higher percentage of problems identified (12.5% for therapists using procedural reasoning; 9.5% for therapists using interactive reasoning; 13.7% for therapists using conditional reasoning) (Table 4.22). In other words, therapists using conditional reasoning tended to focus on their clients' problems in self-care, while the focus of therapists using procedural reasoning remained in the area of clients' self-care. Therapists using procedural reasoning focus more on clients' disabilities. Self-care activities are almost universal to all clients, while for the activities in productivity and leisure, different clients having different life roles and interests would have different levels of difficulty. Therefore, the therapists using procedural reasoning put more emphasis on the clients' problems in self-care activities. The therapists using conditional reasoning would be able to identify their clients' problems unique to the individuals that fell into other areas. These differences in the frequencies of problems identified by the therapists were even smaller than those identified by the clients. Again, the difference could be a chance occurrence due to the small sample of subjects in this study. If this were the case, there would be no difference in the distribution of problems identified by the therapists using different clinical reasoning styles.

Therefore, when working with clients, besides focusing on their self-care area, therapists should also understand clients' particular needs in the productivity and the leisure pursuits. This is particularly important when dealing with clients who do not

consider all their resources when analyzing their problems (Types 1 and 2). A study investigating the elements that influenced occupational therapists' clinical reasoning showed that clients' needs, therapists' internal belief of clients, and incomplete theoretical knowledge in occupational therapy created uncertainty for therapists in making clinical decisions (Higgs & Jones, 1995). On-the-job training for junior therapists or those who employ procedural reasoning to demonstrate the importance of understanding clients' needs, and training to reveal the internal beliefs of those therapists using conditional reasoning, and training in current theoretical knowledge in occupational therapy is suggested so that all therapists can provide the most relevant intervention to clients.

### **Comparison of Problems in Occupational Performance Identified**

#### **by the Clients and Occupational Therapists**

As discussed in the previous section, the distribution of problems identified were similar for the three groups of clients, as was the case for the three groups of therapists. Basically, no matter what types of clients or therapists, their general perceptions of the daily activities of the clients were similar, and they matched with the usual life roles of the elderly people living in Hong Kong (Chu *et al.*, 1998). However, when looking at the 10 most common problems identified by the clients and the therapists, the picture is different. This is illustrated in the following section.

#### The Clients' Perception Styles and the Therapists' Clinical Reasoning

Before comparing the perception of problems by the clients and the therapists, different groups of client-therapist pairs are presented.

A total of 60 pairs of client-therapists were classified according to the clients' different styles of perception of problems and the therapists' different clinical

reasoning styles (Table 4.23). These 60 client-therapist pairs were classified into 9 groups:

- Group <sub>1-P</sub>: Clients who possessed negative strategies and neglected all resources paired with therapists using procedural reasoning
- Group <sub>2-P</sub>: Clients who possessed positive strategies but considered only internal or external resources paired with therapists using procedural reasoning
- Group <sub>3-P</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using procedural reasoning
- Group <sub>1-I</sub>: Clients who possessed negative strategies and neglected all resources paired with therapists using interactive reasoning
- Group <sub>2-I</sub>: Clients who possessed positive strategies but considered only internal or external resources paired with therapists using interactive reasoning
- Group <sub>3-I</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using interactive reasoning
- Group <sub>1-C</sub>: Clients who possessed negative strategies and neglected all resources paired with therapists using conditional reasoning



Group <sub>2C</sub>: Clients who possessed positive strategies but considered only internal or external resources paired with therapists using conditional reasoning

Group <sub>3C</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using conditional reasoning

Most of the clients (51.7%) possessed positive strategies towards their illnesses and considered all the internal and external resources when analyzing their problems (Type 3). The therapists assessed their clients' problems mostly by using conditional reasoning (used in 41.7% of the clients). Therefore, this group of client-therapist pairs (Group <sub>3C</sub>) had the highest number of clients and therapists of the nine groups of pairs. The reason for the high number of client-therapist pairs in this group has partly been explained in previous section. In this study, the majority of clients had encountered the problems resulting from their strokes for more than 10 days and might have already gone through the acute stage of rehabilitation before transferring to the rehabilitation hospitals. They would have had enough time to experience their impaired body functioning and to think of the problems they will face in their daily lives. Therefore, most of them were type 3 clients. Most of the therapists employed conditional reasoning because it is their practice to understand the problems in clients' lives so as to help them to resume their life roles after suffering their strokes (Christiansen & Baum, 1997).

### The Clients' Perception Styles and the Therapists' Use of Procedural Reasoning

The following section compares the 10 problems in occupational performances most commonly identified by the clients of different perceptions and therapists using procedural reasoning. They are:

Group <sub>1-P</sub>: Clients who possessed negative strategies and neglected all resources paired with therapists using procedural reasoning ( $n = 4$ )

Group <sub>2-P</sub>: Clients who possessed positive strategies but considered only internal or external resources paired with therapists using procedural reasoning ( $n = 4$ )

Group <sub>3-P</sub>: Clients who possessed positive strategies and considered all resources and therapists using procedural reasoning ( $n = 10$ )

The overall matching of the 10 most commonly identified problems was the highest for group <sub>3-P</sub>. Among the 10 problems identified, 6 problems matched at 80% or above between clients and therapists in group <sub>3-P</sub>. Only 3 problems had this high a percentage of matching in group <sub>1-P</sub>, while there was none in group <sub>2-P</sub> (Table 4.24). Clients who possessed positive strategies towards coping their illnesses and consider all the internal and external resources (Type 3) are able to analyze their problems with reference to their needs (Lazarus & Folkman, 1984; Schlosser 1996). Type three clients seem to be most able to collaborate therapists and guide their therapists in identifying their problems and needs.

This further explains the clinical implication that clients' and therapists' perceptions on problems are better matched if clients who possessed positive strategies towards their illness and consider all the internal and external resources

(Type 3) are assigned to therapists using procedural reasoning (mostly junior therapists).

However, the results should be interpreted with caution because of the small number of subjects in these groups.

### Case Example

The following example illustrates a pair containing a Type 1 client and therapist using procedural reasoning. Their perceptions of the client's problems in occupational performance are the least matched.

Mr. A was a 67 year-old male who lived with his family. He suffered from left hemiplegia after his stroke and was admitted for rehabilitation on August 11, 1997. Mr. A was referred to occupational therapy on the same day and was assessed by occupational therapist Miss X on August 13, 1997 in order to identify his present problems. Miss X had been working as an occupational therapist for 1.5 years. The COPM and the protocol analysis were conducted on August 20, 1997, the eighteenth day since the onset of the stroke.

Based on the COPM, Mr. A identified the following problems: feeding, grooming, dressing, toilet use, bathing, ambulation, transportation, shopping, cooking, laundry, and outing (Table 5.3). Mr. A was then interviewed, and he explained:

"I can't do anything at the moment . . . . I can't dress myself, go to the toilet, get up and walk."

Mr. A identified each activity as having problems, and he just repeated the above statement despite such prompts as:

"How did you come up with these problems?;

When you come up with these problems, what are you thinking of?"

His coping strategy towards the illness was considered to be negative because he did not show determination to regain independence in those activities. He showed no consideration of resources when identifying his problems, even with prompting.

Occupational therapist, Miss X, identified the following problems in the COPM: dressing, toilet use, bathing, transfer, ambulation, shopping, cooking, laundry and outing (Table 5.3). The following is Miss X's protocol.

"He has problems in dressing up because he has no upper limb control.

He doesn't manage well with one-hand technique and also his obesity makes him quite clumsy. For wearing pants, his dynamic standing balance is not very good . . . . For taking bath, he cannot wash one side of his limbs. His legs have problems and cannot be lifted . . . . He needs to hold the handrail and have help to walk . . . . "

From the protocol, Miss X focused on Mr. A's deficits in the physical performance components (poor control of limbs, clumsy, not good in balance) when identifying his problems in occupational performance (dressing, bathing).

Table 5.3

List of Problems Identified by Mr. A and Miss X

Subjects	Mr. A (The Client)	Miss X (The Therapist)
Problems		
1. Grooming	*	
2. Feeding	*	
3. Dressing	*	*
4. Toilet Use	*	*
5. Bathing	*	*
6. Ambulation	*	*
7. Transfer		*
8. Shopping	*	*
9. Transportation	*	
10. Cooking	*	*
11. Laundry	*	*
12. Outing	*	*

Note. (\*) denotes the problems identified.

Table 5.3 illustrates that Mr. A identified all activities as problems. These activities were identified in the first step of the COPM when he was asked to tell what activities he did in a typical day. Transfer was not included because this was not usually included in our activities of a typical day. Miss X did not identify feeding and

grooming as Mr. A's problems. She might have thought that Mr. A could manage these two tasks with the non-affected arm. Miss X could have missed out transportation because she believed that Mr. A could adequately maintain himself within the area where he lived. She might have lowered the expectations for the activities that Mr. A could perform due to his old age and disabilities (Kivinen *et al.*, 1998). Out of the 12 problems, 8 problems were commonly identified. The matching of the problems identified was 66.67%, which was comparatively low.

#### The Clients' Perception Styles and the Therapists' Use of Interactive Reasoning

The following section compares the 10 most commonly identified problems in occupational performance between clients of different perception styles and therapists using interactive reasoning. They are:

Group <sub>1-I</sub>: Clients who possessed negative strategies and neglected all resources paired with therapists using interactive reasoning ( $n = 6$ )

Group <sub>2-I</sub>: Clients who possessed positive strategies but considered only internal or external resources paired with therapists using interactive reasoning ( $n = 2$ )

Group <sub>3-I</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using interactive reasoning ( $n = 9$ )

The overall matching of the 10 most commonly identified problems was high for all three groups (groups <sub>1-I</sub>, <sub>2-I</sub>, <sub>3-I</sub>). The average percentages of agreement of the 10 problems between the clients and the therapists in the three groups were all over 90% (Table 4.25). Among the 10 problems identified by clients and therapists, all three

groups matched 80% or above in 8 problems. Therapists utilizing interactive reasoning intend to understand clients' experience and needs, and interact with them within their perceived life world. Therefore, the matching of their perception of clients' problems with the clients' own perception was good.

During clinical practice, the good collaboration of therapists using interactive reasoning with their clients enhances the clients' participation in the treatment in accordance with client-centered practice (Law, Baptiste, & Mills, 1995, Mattingly & Fleming, 1994). Therapists focus clients' subjective feeling and adjust their intervention plans to suit the subjective needs of the clients (Mattingly & Fleming, 1994). However, therapists in this group should shift their focus to clients' needs in their environment once collaboration is sought. This is especially important if the clients are unable to consider all their internal and external resources when analyzing their problems, as is the case with types 1 and 2. Therapists should guide these clients through the disease process and lead in working towards re-attaining their previous life roles or chosen future roles.

In contrast to the results of this study showing a good match of the perceptions of problems between clients and therapists using interactive reasoning, another study (Brown & Bowen, 1998) showed that a group of therapists frequently identified problems not addressed by their clients. They often identified the problems in performance components which were of no interest to their clients. However, in the study conducted by Brown and Bowen (1998), the type of clinical reasoning the therapists used was not investigated. This might be the reason for the discrepancy of the results in these two studies, as most of the therapists in the study by Brown and

Bowen would use procedural reasoning and focus on primarily on performance components instead of the clients' problems in occupational performance.

Again, the results of this study should be interpreted with caution because of the small number of subjects in these groups, group  $_{2-I}$  in particular. The mean percentage of agreement of 95% could have been inflated as there were only two pairs of clients and therapists in this group.

#### The Clients' Perception Styles and the Therapists' Use of Conditional Reasoning

The following section compares the 10 most commonly identified problems in occupational performance by clients of different perception styles and therapists using conditional reasoning. They are:

Group  $_{1-C}$ : Clients who possessed negative strategies and neglected all resources paired with therapists using conditional reasoning ( $n = 8$ )

Group  $_{2-C}$ : Clients who possessed positive strategies but considered only internal or external resources paired with therapists using conditional reasoning ( $n = 5$ )

Group  $_{3-C}$ : Clients who possessed positive strategies and considered all resources paired with therapists using conditional reasoning ( $n = 12$ )

The overall matching of the 10 most commonly identified problems was the highest for group  $_{3-C}$ . Among the 10 problems identified, all 10 problems matched at 80% for clients and therapists in group  $_{3-C}$ . The numbers of problems matching at 80% or above decreased from group  $_{2-C}$  (9 problems) to group  $_{1-C}$  (5 problems) (Table 4.26). The mean percentage of agreement of the 10 problems in group  $_{3-C}$  was also the



highest (95%) among the three groups (group <sub>1-C</sub>: 80%, group <sub>2-C</sub>: 88%) (Tables 4.28 & 5.4).

Table 5.4

Mean Percent Agreement of the 10 Most Common Problems of the 9 Pairs of Clients and Occupational Therapists

Therapists	Clients	Type 1 clients		Type 2 clients		Type 3 clients	
		Mean	SD	Mean	SD	Mean	SD
Therapists using		0.78	0.18	0.60	0.21	0.77	0.13
	'procedural reasoning'						
Therapists using		0.88	0.14	0.95	0.16	0.81	0.12
	'interactive reasoning'						
Therapists using		0.79	0.14	0.88	0.14	0.95	0.06
	'conditional reasoning'						

Note. Type 1: Clients possessing negative strategies towards the illness and neglecting all resources

Type 2: Clients possessing positive strategies towards the illness and considering only internal or external resources

Type 3: Clients possessing positive strategies towards the illness and considering both internal or external resources.

Clients who possess positive strategies towards coping their illness and consider all the internal and external resources (Type 3) are able to analyze their

problems with reference to their needs (Lazarus & Folkman, 1984; Schlosser 1996). Therapists using conditional reasoning also consider clients' internal and external resources when analyzing their problems (Mattingly & Fleming, 1994). Therefore, the matching of perceptions of problems in this group of client-therapist pairs was the highest. The matching of perception of problems was also good when therapists using conditional reasoning were paired with clients who considered part of their resources (Type 2). The resources type 2 clients consider may be the same as those considered by the therapists. Part of the problems identified by clients of type 2 and therapists using conditional reasoning would then be the same.

In clinical practice, therapists using conditional reasoning should guide their types 1 and 2 clients to think of their needs and problems in their lives. Building rapport with these two types of clients is important so that clients can follow therapists' guidance in dealing with the disease's impairments.

The results presented should be interpreted with caution because of the small number of subjects in these groups.

### Case Example

This example shows the best match on the perception of client's problems in occupational performance by a type 3 client and an occupational therapist using conditional reasoning.

Mrs. B was a 69 year-old widow who lived on her own. She suffered from left hemiplegia after her stroke on March 15, 1997. She was transferred for rehabilitation on March 20, 1997 and was referred to occupational therapy the next day. Her occupational therapist, Miss Y, had been working in the field for 10 years. Initial occupational therapy assessment was conducted on the day of referral. On March 31,

1997 which was the sixteenth day since the stroke, the COPM and protocol analysis were conducted.

Based on the COPM, the problems identified by both Madam B and Miss Y were exactly the same. This is illustrated in Table 5.5.

After the administration of the COPM, Mrs. B was interviewed. The following prompting questions were given by the researcher.

"How did you come up with these problems?;

When you came up with these problems, what were you thinking of?"

Here is how Mrs. B explained her responses.

"I enjoy keeping myself and the place clean. So, going to toilet and taking shower are important to me. . . . I can't use my body effectively. . . my left arm and left leg just don't listen to my commands . . . . I live by myself and I expect that I will return home afterwards, it is important that I can take care of myself . . . . I enjoy buying and cooking food that I like . . . . doing housework is necessary to keep my place tidy, no one is available to help me . . . . It is important that everyone has hobbies to healthy . . . . for me, I enjoy going out and visiting my friends. And so, taking transportation is a must in order to facilitate me keeping these hobbies."

Mrs. B demonstrated a thorough analysis and understanding of her condition at the moment. She faced the problems by expressing the expectation that she would return to her previous living environment after rehabilitation. She demonstrated positive strategy towards coping her stroke. She considered both her body functioning (internal resources), as well as her social and cultural environment (external resources), when reflecting on the problems she faced in occupational performance.

Her occupational therapist, Miss Y, had the following mental picture when she identified Mrs. B's problems.

"Mainly, I look at her physical abilities . . . . and her life roles . . . . Self care tasks such as dressing, toilet use, bathing are just basic daily activities . . . . She lives alone and has no family members to help her, she needs to perform the daily tasks independently and safely when she gets back home."

From the protocol, it is evident that, by using the conditional reasoning, Miss Y demonstrated the perception of Mrs. B's problems through the analysis of her deficits in the performance components (physical abilities), the effects of Mrs. B's environment (living alone, no family members to help) on her needs (to perform daily tasks independently and safely) and her expected life roles (go back home in the future). Both the client and the therapist formed the mental picture on her future life.

Table 5.5

List of Problems Identified by Madam B and Miss Y

Subjects	Madam B (The Client)	Miss Y (The Therapist)
Problems		
1. Dressing	*	*
2. Toilet Use	*	*
3. Bathing	*	*
4. Ambulation	*	*
5. Transfer	*	*
6. Shopping	*	*
7. Transportation	*	*
8. Cooking	*	*
9. Laundry	*	*
10. Household Cleansing	*	*
11. Outing	*	*
12. Joining Social Activities	*	*

Note. (\*) denotes the problems identified.

As shown in Table 5.5, of the 12 problems, all were identified by both the client and the therapist. Perfect matching on the perceptions of problems in occupational performance was found.

### Type 3 Clients and the Therapists Clinical Reasoning

Since type 3 clients are able to consider all their internal and external resources when analyzing their problems, their perceptions of problems in occupational performance might reflect their needs and problems in the context of their overall lives (Lazarus & Folkman 1984, Schlosser 1996). In the following section, their perceptions of problems are compared with the perceptions of the therapists who used different clinical reasoning when identifying clients' problems to examine the difference in the matching of perceptions with the clients among different therapists. Comparison are made in the following groups:

Group <sub>3-P</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using procedural reasoning ( $n = 10$ )

Group <sub>3-I</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using interactive reasoning ( $n = 9$ )

Group <sub>3-C</sub>: Clients who possessed positive strategies and considered all resources paired with therapists using conditional reasoning ( $n = 12$ )

The overall matching of the 10 most commonly identified problems was the highest in group <sub>3-C</sub>. Among the 10 problems identified, all 10 problems matched at 80% or above for clients and therapists in group <sub>3-C</sub>. The numbers of problems matching at 80% or above decreased from group <sub>3-I</sub> (8 problems) to group <sub>3-P</sub> (6 problems) (Table 4.27). The mean percentage of agreement of the 10 problems in

group <sub>3-C</sub> was also the highest (95%) among the three groups (group <sub>3-P</sub>: 78%, group <sub>3-I</sub>: 91%) (Tables 4.28 & 5.4).

Clients who possessed positive strategies towards coping their illnesses and consider all their internal and external resources (Type 3) are able to analyze their problems with reference to their needs (Lazarus & Folkman, 1984; Schlosser, 1996). Therapists using conditional reasoning also consider clients' internal and external resources when analyzing their problems (Mattingly & Fleming, 1994). Therefore, the matching of perceptions of problems in this group of client-therapist pairs was the highest. The matching of perception of problems of type 3 clients was better with therapists using interactive reasoning. Therapists utilizing interactive reasoning intend to understand clients' experience and needs, and to interact with them within their perceived life world. Therefore, the matching of their perceptions of clients' problems with the clients' own perception was good. Therapists using procedural reasoning concentrate on clients' body functioning and ignore the effects of clients' environment and life roles on their problems (Mattingly & Fleming, 1994). The matching of perception of problems with type 3 clients was the lowest in comparison with the therapists using interactive and conditional reasoning. These results of good matching of perceptions of problems between therapists using conditional reasoning and their clients are further confirmed by the results of a study conducted by Alnervik and Sviden (1996). It investigated the clinical reasoning patterns used by occupational therapists in describing treatment sessions with clients, concluding the need for therapists to understand the meaning of disability from clients' points of view.

In clinical practice, therapists should think expansively on clients' problems. Their thinking should not be just limited to the clients' disabilities, observable

problems, or their own preferences. They should follow the practice guidelines in the Model of Occupational Performance, and look into clients' problems in occupational performance by relating to their problems in performance components, their environment and the clients' individual preferences (CAOT, 1991).

The results should be interpreted with caution because of the small number of subjects in these groups.

#### Comparison of the Perception of Problems

##### of the Nine groups of Client-Therapist Pairs

To further compare the differences in the perceptions of problems by the clients and the therapists, a two-way analysis of variance (ANOVA) was used with the mean percentage of agreement among the three types of clients (Types 1, 2, and 3) and the 3 types of therapists (using procedural, interactive, and conditional reasoning styles) as the two main effects (Portney & Watkins, 1993). The detailed results are shown in table 4.29. Significant main effect was found only on the overall mean percentage of agreement of the problems among the three groups of therapists using different clinical reasoning styles ( $F = 10.46, p < .001$ ) but not among the client groups ( $F = 1.71, p = .19$ ). Moreover, no interaction effect was found between client types and therapists' clinical reasoning styles in relation to the matching of their perceptions of problems ( $F = 1.95, p = .116$ ). Scheffe's multiple comparison test with significance level set at .05 (Portney & Watkins, 1993) showed that there were significant differences between therapists using procedural reasoning (Type P) and those using interactive reasoning (Type I), and between therapists using procedural reasoning (Type P) and those using conditional reasoning (Type C).



There was no significant difference in the matching of perceptions of problems of the three types of clients with their therapists. There could be several reasons to explain this phenomenon.

1. Classification of clients into different types are based on theories borrowed from other disciplines. When the theories were adopted to the clients in this study, a certain amount of judgment was involved.
2. The distinction among these three types of clients may not be clear. This was vague especially for type 2 and type 3 clients. They were classified based on whether they considered either the internal or external resources, or both kinds resources when analyzing the problems.
3. Moreover, with type 2 clients, there were two sub-types. One was those who considered their internal resources, while the other considered their external resources.
4. The classification of clients into different types made the number of subjects within any one type so small that it might affect the results of this study.

Since the numbers of subjects in the 9 groups of client-therapist pairs were small, it is reasonable that there was no interaction effect on the agreement of the perception of problems between the client types and the therapists' clinical reasoning styles.

The therapists' use of different clinical reasoning strategies did affect the matching of perceptions of problems with the clients. As shown by the results of the Scheffe's test, significant difference was found mainly from the therapists using procedural reasoning with those using interactive or conditional reasoning. In other words, the use of interactive or conditional reasoning strategies did not make a

difference in the matching of perceptions of problems with their clients. Therapists who use procedural reasoning are usually those having less clinical experience, while those using interactive and conditional reasoning tend to be more senior (Mattingly & Fleming, 1994). This could be a reason for the results of the two-way ANOVA and the Scheffe's test showing no significant difference was found on the matching of perceptions of problems between therapists using interactive and conditional reasoning with their clients.

The results further imply that training in clinical reasoning for therapists using procedural reasoning or to junior therapists is important, especially if they work with clients who suffer from such problems affecting the accomplishment of their life roles as stroke. The training could be in the form of workshops with case examples emphasizing practice based on the Model of Occupational Performance. Based on the practice guidelines stipulated in the Model, junior therapists can also be provided with checklists or assessment kits to help them to go through the whole process of analyzing clients' problems. However, perhaps on-the-job coaching by senior therapists is suggested would be even more effective. Another suggestion, which was mentioned earlier, would be the appropriate assignment of clients to therapists. Type 3 clients could be assigned to therapists who employ procedural reasoning so that the clients could guide the therapists' thinking into more expansive ways of looking at the clients' problems.

### **Conclusion**

For therapists to recommend therapies that meet the needs and expectations of their clients, it is important for there to be a match between the therapist's perceptions of the client's needs and of the client's perceptions of his needs. These perceptions

depend on the mechanisms used in forming them and the clients' resources when analyzing the problems. Focusing on the client's strategies in coping with his illness and how the illness affects his world are an important part of creating this match of perceptions between therapist and client. If both the clients and the therapists consider clients' resources similarly and their expectations on clients' needs in the future are congruent, their collaboration to work towards clients' meaning and productive future lives was enhanced.

## CHAPTER VI

### CONCLUSION

#### Introduction

In the previous chapters, perceptions of the problems in occupational performance for the clients from both the clients and their therapists were presented. In this chapter, the findings of this study and their clinical implication will be concluded. The final section of this chapter specifies the limitations of the study.

#### The Clients' Problems in Occupational Performance

Based on the results of the COPM, most of the problems of this group of clients were in the area of self-care. The self-care activities most problematic were mainly those that are more physically demanding, included dressing, going to the toilet, bathing and ambulation. Since the clients selected were cognitively competent and able to communicate, body dysfunction was the major disability that hindered their performance of the activities. Their living environments were also among the factors affecting their problems in the self-care. Comparing, say, a client living in a lift-landing flat and another client living in a hut, their demands in overcoming slopes and stairs would be different. Problems in mobility were thus different for these 2 clients.

For activities in the areas of productivity and leisure, besides the demand for physical abilities, the clients' specific problems depended very much on their roles and interests, surroundings, and availability of support. A client who lived on her own might be required to perform household cleaning, laundry, cooking and shopping. For another client living with his family and a maid, he would not have

been required to do the household tasks even before his illness; such household tasks definitely would not be among the occupational problems of this client. Of course, problems in leisure are affected by the individuals' interests. Some clients might prefer outings, while others enjoyed gardening. Culture may also affect the clients' problems in leisure. Most of the clients in the present study expressed problems in active recreation more than in quiet recreation. In Chan's study (1995), the clients identified problems more frequently in quiet recreation than in active recreation.

Even given that they all commonly had suffered strokes, the clients in this study had different problems in occupational performance.

### **The Clients' Perception Styles**

Clients can have different perceptions of their problems. According to the subjective health process model (Schlosser, 1996) and cognitive appraisal theory (Lazarus & Folkman, 1984), their perception styles can be classified into three types.

In the present study, type 1 clients are those who possessed negative strategies toward coping their illnesses and neglected all their resources when analyzing their problems. Type 2 clients possessed positive strategies toward coping their illnesses but considered only part of their resources, either internal or external resources. Type 3 clients possessed positive strategies toward coping their illness and considered both their internal and external resources.

Clients with positive strategies would choose to face their problems. They would express determination to go back to their previous lives. The clients with

negative strategies acknowledged their problems but would show no determination to regain their independence.

Internal resources referred are the resources the clients had in their body, for example, their body functions. Those resources that were around them or in their environment were their external resources, examples being their family support and their living environment.

Over 50 percent of the clients were classified as type 3. These clients' perceptions of their problems were regarded as 'accurate'. After their detailed analyses, the problems they identified reflected their actual needs in the contexts of their lives.

### **The Occupational Therapists' Clinical Reasoning**

According to Mattingly and Fleming (1994), therapists use different styles of clinical reasoning when providing services to clients. In this study, the clinical reasoning styles used by the therapists were procedural, interactive and conditional.

Procedural reasoning is used when therapists associate disease and disabilities with the particular procedures and treatment activities that are used to maximize clients' functioning. Interactive reasoning is used when therapists intend to understand and interact with clients, focusing on them as persons instead of merely focusing on their disabilities. Conditional reasoning is a process in which therapists attempt to understand clients as whole persons, and the impact the disability has in the context of their lives. Instead of just putting emphasis on observable problems and preferences of the clients, therapists using this reasoning style attempt to visualize clients' functions and dysfunctions in a broader social and temporal context.

The 'accuracy' of the therapist's perceptions of the client's needs is affected by the therapist's style of clinical reasoning. When using conditional reasoning, therapists identified clients' problems by considering the impact of disabilities on the clients' lives, including the clients' internal and external resources. The problems identified reflected clients' problems in their lives overall.

Therapists' clinical experiences affect their use of clinical reasoning (Mattingly & Fleming, 1994). This study showed that significant differences were found in the use of clinical reasoning strategies between the senior and junior therapists ( $\chi^2 = 32.50$ ,  $df = 2$ ,  $p < .001$ ). Senior therapists tended to use conditional reasoning, while the junior therapists used procedural reasoning.

#### **Perception of Problems between the Clients and Therapists**

The matching of the perceptions of problems identified by type 3 clients and therapists using conditional reasoning was the best among the client-therapist pairs. Type 3 clients identified their problems by considering their internal and external resources. The problems identified reflected the needs in their overall lives. Therapists using conditional reasoning also considered clients' internal and external resources when identifying their problems.

Since therapists using interactive reasoning intended to understand and interact with clients, and were concerned with clients' experiences and preferences, the matching of the perceptions of problems between this group of therapists and their clients were good, as illustrated by the results of this study.

When comparing the matching of the perceptions of problems among the three types of clients and the therapists using conditional reasoning, the type 1 clients showed the least matches of problems identified, followed by the type 2

clients. These type 1 clients seemed not to be able to analyze their problems in relation to their needs. Therefore, special guidance should be given to types 1 and 2 clients to help them to get through the disease process and lead more effective lives in the future.

Training on clinical reasoning is recommended for therapists using procedural reasoning and to junior therapists. Therapists using conditional reasoning can act as role models and discuss their clinical reasoning on different clients with the aim of improving the clinical reasoning skills of junior therapists. Their ways of practice could be reinforced in order to provide services most relevant to clients, helping smooth their return to society. Assigning type 3 clients to junior therapists can also help them to develop a broader view of their clients' needs and problems. Therapists using interactive reasoning would find it helpful if they and their clients considered the clients' living contexts when identifying their problems in occupational performance.

With the results of this study, it is hoped that occupational therapists can understand their clients' perceptions better and find ways to refine their clinical reasoning skills so as to assist all their clients in returning to productive and meaningful lives.

#### **Limitations of the Study**

Generalization of the results of this study is limited by the sampling method, research design, and the resources that were available to the researcher.

First of all, the results collected on the perception of problems in occupational performance encountered were limited by the participants of the study. The clients posed two limitations.



1. The clients selected were cognitively competent elderly persons who had suffered strokes. The evidence gathered was thus restricted to clients with these characteristics.
2. The clients' aspects of their personalities, motivation, and severity of disabilities that may affect their self-perception were not controlled in the study. These became the unknown and the confounding factors for the study.

For the occupational therapists, although the decision to select the junior and the senior groups purposefully maximized the differences in the levels of experiences of these two groups so that better generalization of results could be made, appropriateness of this restriction needs further investigation and research. The non-probability convenience sampling method used in this study also limits generalization of the evidence gathered to other clients suffering from stroke and occupational therapists in the field. Readers should be cautious when interpreting the results. They should ensure that there are similarities between characteristics, such as age, types of setting, life roles, and working experience, of the clients and therapists who participated in this study and their own target groups.

Second, the statistical conclusions reached in this study were based on a limited sample, particularly when the clients and the therapists were classified into the three groups based on the mechanisms of their perceptions and the nine groups of client-therapist pairs. Readers should be aware that statistical inferences made on this report were based on small effect sizes. Further studies on this area with a larger number of subjects are suggested.

Third, the themes identified in the qualitative analyses revealed only the subjective feelings and evaluations of the participants in this study. No

generalization of the results was attempted, even though some of the findings were triangulated with their quantitative counterparts. Readers should be selective in extracting evidence.

Finally, the mechanisms of clients' and therapists' perceptions employed in this study were confined by the subjective health process model (Schlosser, 1996) and the cognitive appraisal theory (Lazarus & Folkman, 1984) borrowed from other disciplines, and the clinical reasoning study (Mattingly & Fleming, 1994). In addition, only those components related to the consideration of resources affecting the perception process of clients and therapists were employed. As a result, the evidence gathered was by no means exhaustive. Rather, the researcher regards it more as an impetus to stimulate more research in substantiating the interpretation of clients' and therapists' perception of problems in occupational performance the clients encountered.

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## Appendix I

### Client Information Sheet

#### *Perception of Occupational Performance between Clients and Occupational Therapists*

The research project looks at how you perceive your problems in daily activities after stroke. This will help us, as occupational therapists, to increase understanding of our clients' problems.

In the study, you are invited to participate in two parts. In the first part, the researcher who is an occupational therapist will perform a screening exercise to you. After that, you will be invited to participate in the second part of the session. During the second part, the researcher will administer the Canadian Occupational Performance Measure to you with which you will be asked to identify your problems in performing activities of daily living. Also you will be asked to rate the importance of these activities. After the assessment, the researcher will have a short discussion with you about how you decide on your identified problems. Part one will take about half an hour, while part two will take less than one hour.

The data collected is strictly for research purposes. If you would like, the researcher can release the results to you and your treating therapist. This may be helpful for your therapy.

Thank you for your participation.

Investigator,

Karen P.Y. Liu  
Chetwyn C.H. Chan, Ph.D.

## 研究項目資料( 供中風人仕)

**研究題目** : 中風人仕及職業治療師對中風者的功能障礙之看法

**策劃機構** : 此項研究是由香港理工大學復康治療學系所策劃。

### 研究目的

: 此項研究的主要目的要找出你於中風後怎樣看自己在日常生活上的問題。研究結果有助我們職業治療師理解中風病患者的問題，因而提供較適合的治療。

**研究生** : 是一名職業治療師。

### 研究過程

: 這項研究分為兩部份。研究生於首部份會為你進行一項殷別測驗，以確定你是否需要進行研究的第二部份。至於第二部份，研究生將會為你進行一項名為 Canadian Occupational Performance Measure 的評估。這項評估的目的是助你找出你在中風後日常生活上的問題。評估進行後，就你所列出的問題，研究員會和你有簡短的討論。討論部份會進行錄音，方便研究生處理內容之用。

首部份及第二部份將需時半小時及一小時。

**其他**: 搜集了的資料只會用作研究用途。研究員可以提供搜集了的資料給你及你的職業治療師。資料可能有助你的治療。

多謝閣下的參與及合作。

研究生 : 廖佩儀小姐

研究僱問 : 陳智軒博士 啟

## Appendix II

### Consent Form (For Client)

Project Title : Perception of Occupational Performance between Clients and Occupational Therapists

Investigators : Karen P.Y. Liu, The Hong Kong Polytechnic University  
Chetwyn C.H. Chan, PhD., OT(C), The Hong Kong Polytechnic University

This project is to study how people feel about their problems with daily activities.

I agree to participate in a screening test and an interview using the Canadian Occupational Performance Measure. The screening test will assess my mental ability, while the interview will help me identify any problems that I have with my daily activities. My participation will take about one hours. I also agree to let the investigators obtain information on my date of stroke, hospital admission dates from my medical records.

The study carries no risks to me. There will be no direct benefits for me. My name will not appear in any document or reports. I can refuse to answer any questions in the interviews. All information collected in this study will be kept confidential.

I am free to withdraw my consent and stop participating at any time. This will not affect my present or future care. I HAVE BEEN GIVEN THE CHANCE TO ASK QUESTIONS. I AM SATISFIED THAT ALL MY QUESTIONS HAVE BEEN ANSWERED. My signature means :

1. I have read this form or someone had read this form to me
2. I understand my involvement in the study
3. I voluntarily agree to participate.

I will be given a copy of this consent form. If I have any questions concerning the study I can contact Karen P.Y. Liu at 7302 or Dr. Chetwyn C. H. Chan, the consultant researcher, at 2766.

Name of Participant

Signature of Participant

Date

Signature of Investigator

Date

Signature of Witness

Date

### 同意書〔 供中風人仕 〕

研究題目 : 中風人仕及職業治療師對中風者的功能障礙之看法

研究生 : 廖佩儀小姐

研究顧問 : 陳智軒博士

#### 研究目的

: 此項研究的主要目的是找出你於中風後怎樣看自己在日常生活上的問題。

本人願意參加以下兩項活動：

- 1、 殷別測驗；
  - 2、 面試及討論，以 Canadian Occupational Performance Measure 評估本人的日常生活上的問題。討論部份會進行錄音。
- 殷別測驗需時約三十分鐘；面試及討論部份需時少於一小時。

本人同意研究員獲取本人醫療報告上的有關職業治療報告的資料。本人明白此項研究對我沒有傷害，也沒有直接得益。本人的一切資料絕對保密。在面試及討論中，本人有權拒絕回答研究員所發問的問題。

本人可以隨時撤回同意書及停此參與此項研究而不會對日後的護理有所影響。本人已經明白研究的原因及過程。

以下的簽署，代表本人：

- 1、 已閱讀或經別人閱讀而明白此同意書；
- 2、 明白於此項研究中的參與；
- 3、 同意參與此項研究。

本人將會得到此同意書的副本。如有任何有關此項研究的疑問，可致電7302 與廖小姐或2766 與陳博士聯絡。

\_\_\_\_\_  
參加者姓名及簽署

\_\_\_\_\_  
日期

\_\_\_\_\_  
研究員姓名及簽署

\_\_\_\_\_  
日期

\_\_\_\_\_  
見證人簽署

\_\_\_\_\_  
日期

## Appendix III

**Perception of Occupational Performance  
between Clients and Occupational Therapists  
Client Data Base Sheet**

→ Includes clients'

Age \_\_\_\_\_

Gender \_\_\_\_\_

*(If not, please fill out in the appropriate space.)*

Diagnosis : \_\_\_\_\_

**Social Situation:**

Marital Status	<input type="checkbox"/> Single	<input type="checkbox"/> Married	
	<input type="checkbox"/> Divorce/Separated	<input type="checkbox"/> Widowed	
Living	<input type="checkbox"/> Alone	<input type="checkbox"/> Lives with Others	
		<i>Pls. Specify</i> _____	
Support Available at Discharge	<input type="checkbox"/> Yes	<input type="checkbox"/> No	
		<i>Pls. Specify</i> _____	

**Home Situation:**

Comment: \_\_\_\_\_

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**Management Statistics:**

Date of Admission \_\_\_\_\_

Date of Referring to Occupational Therapy \_\_\_\_\_

Date of Initial Occupational Therapy Assessment \_\_\_\_\_

## Appendix IV

### Covering letter and Questionnaire to Occupational Therapists

Dear Therapist,

Perception of Occupational Performance between Clients and Occupational Therapists

Thank you very much for participating in this study. Enclosed please find a questionnaire which will help us to plan the upcoming information session on the study. The information collected are kept confidential.

Please kindly fill it out and send it back to me within 7 days from today with the enclosed envelop. Your assistance and cooperation are much appreciated.

If you have further questions, please do not hesitate to contact Karen Liu at 7302 7302. Thank you.

Yours sincerely,

Karen Liu & Chetwyn Chan, Ph.D.

Please fill out the following questionnaire and send it back with the envelope provided.

**Part I : Concerning YOU**

Age :  25-29     30-34     35-40     41-45     46-50

Sex :  Male     Female

Years of Experience as Occupational Therapist : \_\_\_\_\_ years \_\_\_\_\_ months

\_\_\_\_\_ years \_\_\_\_\_ months in Stroke Rehabilitation

\_\_\_\_\_ years \_\_\_\_\_ months working with the elderly aged 65 or above

Name of institution you are working in (optional) :

**Part II : Concerning Your Assessment Protocol**

Average length of stay for stroke rehabilitation : \_\_\_\_\_

Time of referral to occupational therapy after admission : \_\_\_\_\_

Time of completing the initial occupational therapy assessment after referred for occupational therapy : \_\_\_\_\_

Is there a standard assessment protocol used for clients suffered from stroke?

Yes     No

Types of assessment tools used with clients, post-stroke :

*Thank you very much !*

## Appendix V

### Occupational Therapist Information Sheet

#### *Perception of Occupational Performance between Clients and Occupational Therapists*

This research project looks at how you perceive your clients' problems in occupational performance after they suffered from stroke. This will help us, as occupational therapists, understand our clients' problems better and hence, to provide better treatment.

In this study, you will assist in recruiting clients who are suffering from stroke and screen them according to the selection criteria.

Your clients will be invited to participate in this study which consists of two parts. In the first part, the researcher, an occupational therapist, or you (if it is part of your standard assessment protocol) will perform cognitive screening exercise, the Neurobehavioral Cognitive Status Examination, to your clients. If your clients are cognitively competent, they will proceed to the second part. In the second part, the researcher will administer the Canadian Occupational Performance Measure and also interview them to identify their problems in occupational performance.

Soon after your clients' interview, you are invited to participate in an interview with the researcher. During the interview, you will be asked to identify your clients' problems in occupational performance. The interview will take about an hour.

You are also requested to disclose the results of the initial assessment to the researcher.

The data collected from the assessments is for research purposes. If you would like, the researcher can release to you the results of the interview with you, and if your clients agree, the researcher can release the results of the interview with your clients to you.

Thank you for your participation.

Investigator,

Karen P.Y. Liu  
Chetwyn C.H. Chan, Ph.D.



## Appendix VI

### Consent Form (For Occupational Therapist)

Project Title : Perception of Occupational Performance between Clients and Occupational Therapists

Investigators : Karen P.Y. Liu, The Hong Kong Polytechnic University  
Chetwyn C.H. Chan, Ph.D., OT(C), The Hong Kong Polytechnic University

This research study investigates clients' and occupational therapists' perception of clients' problems in occupational performance, that is, self care, productivity and leisure.

I agree to assist in identifying clients for participating in the study.

I agree to participate in the study and follow the set testing protocols. Also, I agree to participate in an interview with the researcher to identify my clients' problems in occupational performance. The interview will take about an hour.

The study carries no risks to me. There will be no direct benefits for me. My name will not appear in any document or reports. I can refuse to answer any questions in the interviews. All information collected in this study will be kept confidential.

I am free to withdraw my consent and stop participating at any time. I HAVE BEEN GIVEN THE CHANCE TO ASK QUESTIONS. I AM SATISFIED THAT ALL MY QUESTIONS HAVE BEEN ANSWERED. My signature means :

1. I have read this form
2. I understand my involvement in the study
3. I voluntarily agree to participate.

I will be given a copy of this consent form. If I have any questions concerning the study I can contact Karen P.Y. Liu at 7302 or Dr. Chetwyn C. H. Chan, the consultant researcher, at 2766.

Name of Participant

Signature of Participant

Date

Signature of Investigator

Date

Signature of Witness

Date

## **Appendix VII**

### **Pre-study Information Session for Participating Occupational Therapists**

**LOCATION** : Hong Kong Polytechnic University

**DATE** : January 1997

**DURATION** : 1 hour

#### **Purpose of the Session :**

1. Describe purpose of the study, time period, selection of clients, role of participating therapists.
2. Give briefing to the therapists on the testing protocols of the study.
3. Obtain written consent from the therapists who agree to participate in the study.

#### **Purpose of the Study :**

To investigate the perception of dysfunction between clients suffering from stroke and their occupational therapists

#### **Period of the Study :**

From January 1997 to June 1997

#### **Selection of Clients :**

1. clients under their care;
2. diagnosed to have stroke for the first incidence as confirmed by medical record or computerized tomography scan or magnetic resonance imaging;
3. aged 65 or over;
4. independent in daily activities prior to the stroke as reported by clients themselves;
5. referred for occupational therapy in less than five working days;
6. having no apparent cognitive or communication problems;
7. having no depressive features;
8. having no other active medical problems such as myocardial infarction, diabetes mellitus;
9. those who voluntarily give written consent to participate in the study.

#### **Role of Therapists**

1. approach and invite clients to participate in the study
2. explain to potential clients the Client Information Sheet (Appendix VI)
3. obtain written consent from potential clients for participating the study (Appendix VII)
4. fill out the Client Data Base Sheet (Appendix VIII)
5. inform researcher of potential clients by phone within the day of clients signing the consent form
6. give the original Client Data Base Sheet and the client consent form to the researcher later when she visits the hospital
7. follow data collection process

## Data Collection Process

Before briefing on the data collection process, the following information collected from the questionnaire sent two weeks before are discussed and confirmed :

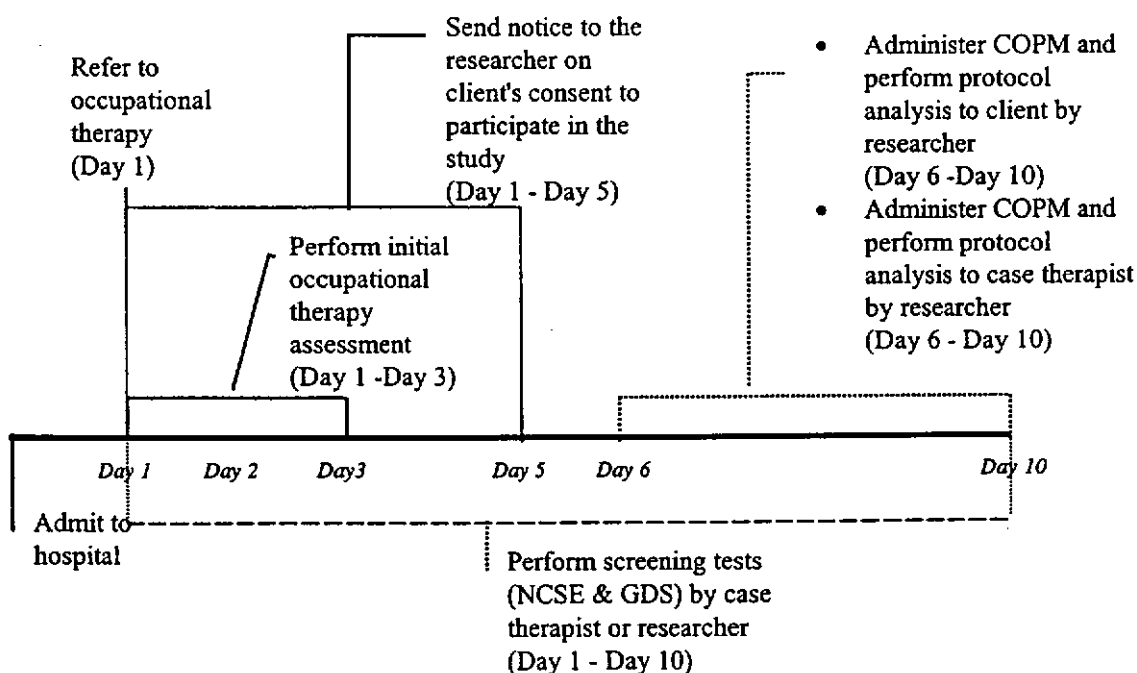
1. length of stay in rehabilitation hospitals for stroke rehabilitation (4 weeks to 2 months);
2. time for referring clients to occupational therapy (within the third day of hospital admission);
3. time to perform initial occupational therapy assessment (within 72 hours of receiving the referral);
4. assessment protocols used for clients suffering from stroke.

### Testing Protocols

- A. Perform initial occupational therapy assessment to clients by case therapist within 72 hours after receiving the referral according to the standard assessment protocol.
- B. Notify the researcher on the consent of suitable clients within the fifth day after receiving the referral by phone at 7302 .
- C. Inform also the result of the NCSE if it is part of the standard assessment protocol.
- D. The researcher will select clients and collect data by interviewing both the clients and the therapists.

Figure I.

### Diagrammatic Representation of the Data Collection Process



## Appendix VIII

### Guidelines on the COPM Test Form

#### Step 1: Identification of Occupational Performance Issues

To identify occupational performance problems, concerns and issues, interview the client, asking about daily activities in self-care, productivity and leisure. Ask clients to identify daily activities which they want to do, need to do or are expected to do by encouraging them think about a typical day. Then ask the client to identify which of these activities are difficult for them to do now to their satisfaction.

Record these activities in Step 1A, 1B, or 1C.

#### Step 1A: Self-care

Personal Care (e.g. dressing, bathing, feeding, hygiene)

Functional Mobility (e.g. transfers, indoor, outdoor)

Community Management (e.g. transportation, shopping, finances)

#### Step 1B: Productivity

Paid/Unpaid Work (e.g. finding/keeping a job, volunteering)

Household Management (e.g. cleaning, laundry, cooking)

Play/School (e.g. play skills, homework)

#### Step 1C: Leisure

Quiet Recreation (e.g. hobbies, craft, reading)

Active Recreation (e.g. sports, outings, travel)

Socialization (e.g. visiting, phone calls, parties, correspondence)

## Appendix XI

### Chinese Instructions of the COPM Test Form for Clients

#### Step 1 : Identification of Occupational Performance Issues

試想一日面裡，由早上起床到晚上睡覺，有那些日常生活的活動是你想做或需要做。

包括：日常自理	如穿衣服、洗澡、進食、梳洗 如由床過椅、由睡房去勳所、上街 如乘交通工具、出外購物、往銀行、交費用
工作	如上班、做義工 如清潔家居、洗衣、煮食
娛樂	如做手工、閱讀 如運動、去旅行、晨運 如探訪親友、用電話、嫻會、寫信

中風後，有那些活動

有困難/不能自己做到/需要別人幫助？

## Appendix X

### Modified Chinese Instructions of the COPM Test Form for Occupational Therapists

#### Step 1 : Identification of Occupational Performance Issues

試想一日面裡，由早上起床到晚上睡覺，有那些日常生活的活動是 (Name of Client) 想做或需要做。

包括：日常自理	如穿衣服、洗澡、進食、梳洗 如由床過椅、由睡房去盞所、上街 如乘交通工具、出外購物、往銀行、交費用
工作	如上班、做義工 如清潔家居、洗衣、煮食
娛樂	如做手工、閱讀 如運動、去旅行、晨運 如探訪親友、用電話、嫻會、寫信

(Name of Client) 中風後，有那些活動  
有困難/不能自己做到/需要別人幫助？