

Factors affecting clinical reasoning of occupational therapists: a qualitative study

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Abstract

Background: Clinical reasoning is generally defined as the numerous modes of thinking that guide clinical practice but little is known about the factors affecting how occupational therapists manage the decision-making process. The aim of this qualitative study was to explore the factors influencing the clinical reasoning of occupational therapists.

Methods: Twelve occupational therapy practitioners working in mental and physical dysfunction fields participated in this study. The sampling method was purposeful and interviews were continued until data saturation. All the interviews were recorded and transcribed. The data were analyzed through a qualitative content analysis method.

Results: There were three main themes. The first theme: socio-cultural conditions included three subthemes: 1- client beliefs; 2- therapist values and beliefs; 3- social attitude to disability. The second theme: individual attributions included two subthemes 1- client attributions; 2- therapist attributions. The final theme was the workplace environment with the three subthemes: 1- knowledge of the managers of rehabilitation services, 2- working in an inter-professional team; 3- limited clinical facilities and resources.

Conclusion: In this study, the influence of the attitudes and beliefs of client, therapist and society about illness, abilities and disabilities upon reasoning was different to previous studies. Understanding these factors, especially the socio-cultural beliefs basis can play a significant role in the quality of occupational therapy services. Accurate understanding of these influential factors requires more extensive qualitative and quantitative studies.

Keywords: Occupational therapy, Decision- making, Qualitative research.

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Introduction

Clinical reasoning is an essential feature of health care practice focusing on the assessment of needs, planning of intervention, dissemination and evaluation of health care. It is important because it facilitates understanding of the complexities of practice. It considers decision-making during

practice and reflection about this decision-making process can enhance practice and improve outcomes (1, 2).

For nearly three decades since Rogers and Masagatani (1982) first described clinical reasoning in the occupational therapy literature, many studies have attempted to explore this phenomenon. Although clinical reasoning is generally defined as the nu-

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merous modes of thinking that guide clinical practice, little is known about supportive as well as restricting factors that influence the quality of practice. The context of occupational therapy practice is generally regarded as significantly influencing clinical reasoning (3). Mattingly (1991) noted that the effectiveness of the clinical reasoning process largely depends on the therapist's skill at interpreting context. Fleming (1993) stated that clinical reasoning observed in occupational therapy was continuous and evolving, focusing more on individual clients and contextual factors that could influence the outcome (4-7).

There are an increasing number of professional, organizational, socio-cultural and political/economic factors influencing everyday clinical practice. Therefore these factors and solutions to the challenges associated with these factors influence practice regardless of the setting (8).

The results of some research suggest a diverse range of client and therapist-related factors within the social and physical environment influence the clinical decisions of occupational therapists (9-11). A well-organized rehabilitation team structure, political forces (7, 12, 13), and organizational considerations (12) are environmental factors that influence clinical decision making. Client-related factors include age; illness severity; lifestyle motivation; the client-therapist relationship (14), their economic resources (15), values and beliefs and client attributes (16, 17). Therapist-related factors are professional experience and worldview (1, 14, 18-20), along with personal style and values (16).

The factors affecting clinical reasoning include not only the individual mental processes of therapist but also the specific tools of practice and subtle influences such as cultural expectations embedded in the practice settings and client perceptions of what constitutes "good therapy" (21, 22). It is important to identify such factors, in order to avoid pitfalls that can limit the outcomes of therapy. Additionally, research in this area has provided the basis for educa-

tional approaches that assist practicing therapists and students to develop skill in clinical reasoning (6).

Clinical reasoning is a complex process. Occupational therapists are required to make decision considering multiple variables and factors in dynamic contexts. Therefore, perception and understanding of the factors influencing the clinical reasoning enables the occupational therapist to provide relevant services producing desirable outcomes. The purpose of this article is to identify and evaluate the factors affecting the clinical reasoning of occupational therapists in clinical settings.

Methods

This article contributes to a PhD research thesis using grounded theory methodology. It was supported by the Faculty of Rehabilitation, Tehran University of Medical Sciences and seeks to explore the clinical reasoning of local occupational therapists.

A qualitative content analysis method was used in this study to enable researchers to explore the factors that might influence clinical decision-making in occupational therapists who work in different clinical settings. Content analysis is a research method for drawing repeated and valid inferences from data that is relevant to their context, with the purpose of producing knowledge; and facts; new insights, and a guide for action (23). Qualitative content analysis is designed to reduce and categorize raw data into themes based on reasonable inference and interpretation. In this process the researcher uses inductive reasoning and careful examination to identify themes and subthemes in the data (24).

Participants

The participants in the study were twelve occupational therapists. All participants volunteered for the study, forming a convenience sample from three private rehabilitation centers and three university hospitals and day centers. All participants were key informants. Six participants were female and six were male with between 3 and

22 years of experience (with an average of 8.8 years). Four occupational therapists were PhD students; five participants had Masters Degrees while the remaining three had Bachelor degrees in occupational therapy. Five participants worked with physical dysfunction, six in pediatric centers and one worked in a psychiatric center. They were interviewed at their workplace or at the Occupational Therapy department in school of Rehabilitation, Tehran University of Medical Sciences. Recruitment continued until achieving data saturation or redundancy was achieved.

Data collection

Data was gathered through interviews with each participant. The interviews followed a semi-structured interview guide and interviews began with two open-ended questions "How do you begin with a new client? What factors influence your decision-making during your work with clients? The interviews were audio taped and transcribed verbatim. They took between 25 and 55 minutes.

Data analysis

The interview transcriptions were read thoroughly several times and reduced into meaning units (threads of meaning found throughout the transcriptions). The condensed meaning units were conceptualized and labeled with a code. The various codes were compared based on differences and similarities and classified into the sub-themes and each cluster of similar sub-themes produced themes (25).

Strategies for trustworthiness

Maximum variation of sampling (choos-

ing different participants from different settings, different academic degrees, and different job experiences) has been employed to enrich data. Member checking; peer checking; writing memo notes and reflexivity were used as strategies to increase trustworthiness. To increase data transferability all research processes have been clearly documented and 30-40% of the transcripts were peer reviewed by qualitative research specialists. Subthemes and themes were discussed and revised by three supervisors and a qualitative researcher and the participants.

Ethics approval for the study was sought and obtained from the ethics committees at the Faculty of Rehabilitation, Tehran University of Medical Sciences. All participants were assured of confidentiality of data and of their anonymity when reporting findings. Prior to data collection, each participant signed an informed consent letter explaining the purpose and procedure of the study and was thereafter identified with a number. Participants were also informed that their participation was completely voluntary and they could withdraw from the study at any time. Each interview transcript was de-identified, coded and stored securely.

Results

Analysis revealed three themes, socio-cultural conditions, individual attributions and environmental conditions. Each theme had either two or three sub-themes, identifying the conditions and factors influencing the Clinical Reasoning Process (Table 1).

Socio-cultural Conditions

This theme includes three subthemes. These include the beliefs of the client about

Table1. Emerged themes and subthemes.

Themes	Subthemes
Socio-cultural conditions:	1- Client beliefs 2- Therapist values & beliefs 3- Social attitudes r to disability
Individual attributions:	1- client attributions 2- Therapist attributions
The Workplace Environment:	1- Knowledge of managers of rehabilitation services 2- Working in a inter-professional Team 3- Clinical Facilities and resources

their disease and the role of the therapist; the attitude and confidence of the occupational therapist, and social attitudes to disability.

Client beliefs

The participants in this study believed that the awareness and belief of clients about their disease and their understanding of their problems influences the initial clinical reasoning of the occupational therapist. In such circumstances, occupational therapists need to provide an explanation about the disease and its effects. "That how much the patient has accepted his/her illness and how much he/she is familiar with the situation, how much information he/she has about his/her illness...what's willing to help himself/herself this issue is so important and can influence our clinical reasoning".

They also felt the acceptance of the problem by the client can influence the type of clinical reasoning and cooperation with the therapist. "That how much the patient has accepted his/her illness and how much he/she is familiar with the situation, how much information he/she has about his/her illness.... Sometimes denial is so serious in the patient that we cannot commence our main treatments from the very beginning. A part of the problem is that how much of the treatment the patient wants to undertake... this issue is so important and can influence our clinical reasoning".

The belief of the client and the family about occupational therapy services and their trust in the therapist are the facilitating factors affecting continuation of treatment and thus clinical reasoning.

"The belief of the family about occupational therapy is so important. Families are often unaware of rehabilitation services...they think occupational therapist is like a doctor....they come in five sessions and they are going to be good".

Therapist values and beliefs

The belief and confidence of the therapist in his/her capabilities and ability to attend to the demands of the client is an important

factor affecting interaction with clients and evaluation and planning for him/her.

"The first and most important thing is that the therapist believes he/she can assist the client".

More experienced participants believed considering and assessing client needs and priorities increase client participation in the treatment process.

"First ... we are trying to see the real complaint, and then with respect to client's complaint do an assessment, goals and treatment plan according to the problem and we will fix the problem so the client can trust the therapist".

The participants working in community-based centers believe they need to view their clients with a holistic perspective. This holistic approach is effective in increasing client satisfaction with the treatment process.

"Depends on therapist's perspective.... treatment can continue because our patient not only have physical problems but also they have some problems in emotional, mental and social components ,therefore , treatment program can continue to solve these problems."

The participants working in hospital state that they have to treat their client with a medical perspective. This is effective in decreasing their job satisfaction.

"... our medical doctors and expect me to do movement therapy as physiotherapists and just decrease physical problems but this is not my job. Increasing abilities and autonomy of the patient are not important".

Social attitude to disability

The interviewees suggested that the community has shortcomings in understanding disabled people and their problems. This indicates the situation of the client in the society should be considered when prescribing assistive equipment. Otherwise, because of the attitude of the society this device may be a barrier to participation in daily life in public places.

".... our society has contradictory attitudes where things are different....and in-

evitably this makes the individual face challenges. When the disabled person wants to go to a party, for example it is not acceptable for him/her to appear at that party wearing 'medical' shoes. This fact relates to the understanding of the community....If the therapist fails to consider the social attitudes to disability their reasoning and clinical decision-making may result in lack of participation in life."

Individual attributions

The second theme: individual attributions include two sub-themes: Client and therapist attributions.

Client attributions

Most participants stated the financial status of the clients was the important demographic feature influencing their clinical reasoning. The financial status of the clients can determine the number of sessions, use of assistive devices and the interventions. "I believe the financial status of the family highly affects the treatment. If he/she can attend regularly he/she can achieve a good result, but unfortunately some cannot continue because of their financial status"

The education level of the client or family is a factor participants felt influenced the treatment plan, efficiency, and treatment results.

"Parent who is a doctor or educated and has more information.... should be treated differently from the parents with little information, namely it affects the weight of my speech".

Diagnosis was another factor, considered important by most participants, in beginning clinical reasoning to determine the occupational therapy frame of reference and model.

"One of the main problems we have is the diagnosis. I should know my goal, because I have to do something with them. However I do my best to satisfy myself and get good results"

The participants suggested that the honesty of the client and their family with the

therapist influences the collection of data and planning. "The honesty of the client toward us, sometime I have to ask the patient and I cannot evaluate all patients objectively (using standardized assessments), and this can affect the treatment".

Therapist attributions

In the sub-theme of therapist attributions, the participants mentioned the competence and experience of the therapist as well as access to current knowledge all of which they felt could influence their clinical reasoning.

All participants considered the competence and experience of the therapist important in diagnosing the effect of problem on performance and developing the therapeutic relationship. "Due to my good experience, when I see the patient's hand, even if I do not see the graphs and the doctor's instruction, from the cleft areas I can guess what kind of surgery has been done"

All the participants indicated enjoying current knowledge and using modern methods are significant factors influencing their reasoning and their clinical decisions. "All subjective and objective information I get from the patients, for example the Para-clinical information, I match them with the data I already have. Sometimes I match them with other information to gain a series of objectives and plans.

"In this way I could be a person with up to date knowledge. Maybe it is clinical reasoning".

Participants working in hospitals stated

"... Should have updated information. Least what I have experienced, and I think we need to know the new research papers. If not read the new articles and updated here soon realize that you do not know anything. You must be prepared to respond to any question".

According to the participating occupational therapists, their reasoning in clinical tasks is affected by numerous factors such as their personal attitudes, the support of the health environment and financial con-

straints. "For example an important thing is the financial condition. More important is the therapist. I found out in my task that many therapists work to have an income."

Another participant added: "For example, I myself do not like the diagnosis of Down's syndrome... Often I prefer not to visit a patient because I do not have a good attitude".

Another therapist insisted it is important to love your work. "What I have experienced is when you love working with the patients; this makes it a very different and gives positive result."

The Workplace Environment

This theme labeled environmental conditions has three sub-themes including knowledge of the managers and directors of centers, teamwork and facilities.

Knowledge of managers of rehabilitation services

The lack of knowledge of the managers of services is the first sub-theme relating to the workplace environment of the therapist. Lack of understanding and recognition of occupational therapy by hospital directors potentially affects reasoning and clinical decision-making.

The factors relating to this subtheme include: inappropriate expectations of occupational therapy services and considering Occupational Therapy the same as medicine or physiotherapy. "Hospital centers instead of paying attention to quality see the daily figures booklet (income & numbers treated). This changes our treatment plans. Absolutely the quality will decrease. I have to devote less time to the patients. I often tend to consult."

Working in an inter-professional team

How to work in a team is the second sub-theme influencing the clinical reasoning of the occupational therapist.

Lack of knowledge about Occupational Therapy and lack of cooperation from the physicians, unrealistic expectations beyond the role of the occupational therapist and

lack of timely referral to occupational therapy are some of the issues influencing the reasoning and planning of the occupational therapist.

"One of our problems is that the patients are not referred in a timely manner.... Another is the lack of knowledge of our physicians about occupational therapy. Naturally, the understanding of the role of the occupational therapist is ambiguous in the treatment team."

Cooperation or non-cooperation of physiotherapists and other members of the rehabilitative team and even occupational therapists with each other in clinical environments are also factors that impede or facilitate clinical reasoning.

"The patient refers to the physiotherapists and physiotherapist says to patient that you does not need occupational therapy services...patient comes to occupational therapists and occupational therapist says to patient that you doesn't need physiotherapy and this reduces the teamwork at least between physiotherapist and occupational therapist."

Limited clinical facilities and resources

Clinical facilities and resources is the third sub-theme of workplace environments.

The limited number of occupational therapy clinics in the community is a factor that impedes occupational therapist's clinical reasoning. Occupational Therapy clinics available in capital cities either depend on public and academic centers or are administered privately. Many clients have to travel long distance to access occupational therapy services. This fact influences planning and implementation of interventions in clinical reasoning process.

"Sometimes the distance is so far and we only visit once a week... We have educational consultancies for example for the patients in other cities. They contact to the clinic in the morning. Many take cameras... they take films and then I explain for them and answer their questions".

The existence or lack of physical facilities

in occupational therapy clinics can facilitate or impede the reasoning and decision-making of the occupational therapist. Some participants mentioned environmental conditions that are crowded and noisy affected their reasoning. "The noise... disrupts the concentration... when you are evaluating, the noise bothers you. The environment should be quiet and appropriate in terms of light, moisture, no heavy traffic so that the patient can give information easily."

One participant identified the lack of recognition of Occupational Therapy had an effect on their reasoning. "What affects the treatment is that insurance department (health cover) does not recognize our treatment and it is a catastrophe. Shockingly this old necessary field is not covered by insurance coverage."

Discussion

This study explored the factors influencing clinical reasoning of occupational therapists. The factors influencing the clinical reasoning of the participants as mentioned above are threefold. The socio-cultural theme includes the subthemes of client beliefs; therapist values and beliefs along with the social attitudes to disability.

The occupational therapists participating in this study stated that the knowledge and belief of the client and their family about the disease and occupational therapy influences the clinical reasoning process of the occupational therapists. Many clients when coming for occupational therapy deny their problem and/or have limited information about it. Further research is required about why the clients deny their problems. From the perspective of the participants, evaluating the knowledge and acceptance of the client in relation to the disease and occupational therapy services may indicate the expectations of the clients from such services. That is consistent with Coply (26) and other researcher findings (17,27,28) in which occupational therapists can identify achievable goals and outcomes with clients if they explore and perceive their unique values and beliefs about his/her conditions.

Participants believed that to encourage the cooperation of clients and their families, it is important to consider their beliefs, for example respecting their religious beliefs. These results emphasize the importance of a 'client-orientation' and interactional reasoning. According to the studies done by Mattingly and Fleming study (1) and others (29,30) considering the spiritual aspects of clients and respecting the associated values and beliefs is essential for successful treatment.

When considering the second sub-theme the therapists in this research considered confidence in their abilities as the necessary prerequisite to achieving their clinical objectives. Participants in this study stated that therapist experience, access to new/current professional knowledge and the clinical situation or context: such as expectations of clients or physicians affect the confidence of individual occupational therapists in his/her abilities. According to Chapparo (16) therapist perceptions of their ability to complete planned actions has a direct effect on their feeling of self-efficacy and self-confidence. When therapists, because of organizational constraints, have a tenuous sense of self-efficacy, their actions do not always result in appropriate reasoning and thus positive therapy outcomes.

Experienced participants who were faculty members or clinical supervisors indicated considering all relevant aspects of a problem and presenting plans pertinent to the situation; attending to the wants and priorities of the clients and their families; not acting with prejudice and finally reflection about feedback influences the satisfaction of clients with occupational therapy services and their continued cooperation with occupational therapy. This result support Hooper (1997) and Unsworth (2004) and Rassafiani (2009) studies that worldview of the therapist affects thinking and clinical reasoning. The worldview of therapists may be positive or negative effects on clinical reasoning (1,19,20, 22).

The sub-theme of social attitudes to and acceptance of disability is a factor affecting

the formation of therapeutic plans, their implementation and follow-up. The participants in the research stated that traditional beliefs and limited awareness in society about disability, limits the clinical reasoning of the therapists within their clinical environment. Disabled people in Iranian society are either isolated or pitied (31). Consequences of such an attitude include a limited number of support services such as vocational education centers, life skills services, and recreation centers that could empower and increase participation of disabled people.

Individual attributions are the second theme found in this study. The first sub-theme demographic features of clients such as the financial situation, diagnosis and severity of the disability, age of client, and geographical position of the clients are important in clinical reasoning. All participants highlighted the significance of economic status and diagnosis upon clinical reasoning especially relating to assessment, planning and implementation of therapeutic interventions. Many clients of private occupational therapy centers cannot afford therapy due to lack of health insurance coverage for occupational therapy. In addition, many occupational therapists provide or limit their services in proportion to the financial status of the clients. Kuipers (14) and Lutfey (15) argued that some demographic features of clients influence health professional decision making. Further research is required about the importance of this factor in clinical reasoning.

The second sub-theme in individual characteristics relates to the therapist. The participants consider therapist experience as one of the most important factors influencing the diagnosis of problem-effects on function; type of evaluation, planning method, and performance of therapeutic interventions. They emphasized that many of the reasoning mistakes in the process of treatment are due to the lack of experience of the therapist in clinical tasks. Being updated and taking advantage of recent knowledge were the factors related to this

sub-theme of characteristics of the therapist. Well-developed therapist knowledge influences the development of trust of clients and their families, thereby influencing planning. According to the participants, therapist motivation to work is another factor influencing clinical reasoning. They also indicated that therapist interest in his/her specialization and particular diagnosis, along with salary can influence the therapist reasoning and thus performance. According to the Schell and Cervero (10) study the beliefs of therapists regarding occupational therapy, the ability of occupational therapists in treating their clients, their knowledge, comments and interests in their profession and client and the motivation of occupational therapists affects the process of clinical reasoning. A component of treatment is related to whether the therapist is able and wants to enable the client. These factors are also present in this study.

The third theme discussed in this article is the workplace environment. Lack of knowledge of managers and the policies applied to the organizations providing rehabilitative services have negatively influenced the process of clinical reasoning, including the expectation of providing services similar to medical and physiotherapy services; income generation regardless of the quality of services, allocating limited facilities and space to the occupational therapy sector and not employing enough occupational therapists for the number of clients. Rogers and Massagatani have also emphasized that the expectations of the therapeutic environment can influence the clinical reasoning of the therapists (32). Brace (1987) in his studies also identified the influence of the number of clients, physical facilities and the prevailing traditions of the department on therapist reasoning (32). Another sub-theme identified in this meaning unit was teamwork. The cooperation or non-cooperation of team members and the specialists with the occupational therapist is another condition influencing on the clinical reasoning process of the occupational therapists participating

in the study. Lack of knowledge of physicians or their neglect of occupational therapy services and consequently, their lack of cooperation are other impediments affecting the clinical decisions of occupational therapists. The participants also emphasized the overlaps in some tasks between physiotherapists and occupational therapists, resulting in negative effects on teamwork and also the competition between occupational therapists to gain higher income are other reasons affecting the clinical decisions. Studies suggest that many therapists enter negotiations with other specialists of the treatment team when decision-making is difficult and examine their decisions (33). Support of colleagues, teamwork, and less competition between team members could lead to use of desirable therapeutic methods by the therapists (11).

Availability or lack of appropriate physical facilities can facilitate or impede the clinical reasoning of occupational therapists. Limited facilities and equipment for conducting interventions and lack of culturally appropriate tests are barriers to appropriately evaluating therapy results. According to the participants most of the clients face financial difficulties and lack of health insurance is another factor limiting the clinical reasoning of occupational therapists. Various studies support these findings. Schell (2005) and Unsworth (2004), in their studies, found that insurance and what the client can afford are factors influencing the reasoning of the therapist when providing services (1,34). Another study supporting these findings indicates that the physical environment and accessible facilities influence clinical decisions (8). This study indicates that therapists base their clinical reasoning upon the available devices, space and the geographical location of their clinics.

Conclusion

Results of this research indicate that numerous complex factors can influence the clinical reasoning of occupational therapists. The knowledge and situation of the

clients; the attributions of the therapists, social attitudes to disability and the workplace conditions of the therapists can positively or negatively influence reasoning and clinical decisions. In this study, the influence of the attitudes and beliefs upon reasoning was different to other studies. Understanding these factors, especially the socio-cultural basis can play a significant role in the quality of occupational therapy services and has a role in training occupational therapy students in clinical reasoning in this social context. Correct understanding of these influential factors requires more extensive qualitative and quantitative studies with occupational therapists working in specialized clinical settings.

Limitation of research and suggestions

In this study, participants mainly worked at academic and state hospitals and/or clinics in pediatrics or with physical dysfunction. To increase the credibility of the findings of this research, it is necessary to explore the reasoning of therapists working in other contexts.

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