Cognitive Evaluation and Intervention Guideline for the Adult Population

Site Applicability

All VCH & PHC sites – acute, rehab, community, residential

Practice Level

OT (Occupational Therapy): Basic Skill

Need to Know

Cognition refers to the mental processes involved in the acquisition and use of knowledge, the processing of information, and goal-directed behaviour. It is required to plan and participate in daily activities. Cognition involves many different but related processes such as awareness, insight, attention, concentration, memory, processing, reasoning, executive functions (e.g., initiation, problem-solving, decision-making, self-monitoring task termination), and neurobehavioral functions (e.g., inhibition, impulse control, judgment). Cognition is linked closely with visual perceptual skills, language and emotion. Individuals may experience changes in cognition due to physical or mental trauma, neurological conditions, medical events, mental health or substance use disorders.

Cognition plays a central role in all aspects of function. Occupational therapists offer cognitive screening, assessment and interventions when there are concerns about a client's function or occupational performance. Occupational therapists focus on cognitive abilities within the context of self-care, work, school, leisure, home and community activities to support the client to achieve his or her goals, which may relate to improving quality of life and reducing responsibility on caregivers and societal resources.

Occupational therapists often work as part of an interdisciplinary team. The occupational therapist's integration of cognition, participation in activities and environmental context complements the assessments and interventions of other clinicians on the team.

NOTE: This guideline does not address the formal process for assessment of capacity for financial or personal health decision-making. Once approval is given by the Public Guardian and Trustee for formal assessment of financial competency, only a certified Qualified Health Care Provider (QHCP) can direct further assessment and decision-making in this regard. Refer to ReAct Adult Protection Program (VCH intranet site) and Capability and Consent Tool for further information.

Equipment & Supplies

Refer to *VCH & PHC OT Cognitive Assessment Inventory* for a description of some standardized cognitive assessment tools available at VCH and PHC.

Practice Guideline

Cognitive Evaluation

Additional resource: Appendix A: *An OT Approach to Evaluation of Cognition/Perception* for a decision-making and clinical reasoning algorithm for occupational therapists.

Referral

Occupational therapists initiate the cognitive evaluation process on discovery of potential cognitive impairment during an initial client interview or clinical observation of function.

A referral for cognitive evaluation may also be received from a physician, an interdisciplinary team member or from the client themselves. A referral may include an order for a specific cognitive assessment tool, however the Occupational Therapist must *always* consider if a cognitive assessment by an Occupational Therapist is necessary to address functional concerns and if so, which assessment tools would be appropriate.

Screening, assessment and/or intervention should proceed only if it is ethically appropriate, the timing is appropriate and the purpose centers on the client's function or occupational performance. The occupational therapist must obtain informed consent from the client (or substitute decision maker) prior to the initiation of any assessment or intervention. As part of obtaining informed consent, the occupational therapist must identify the purpose for which the cognitive screening, assessment or intervention is being recommended (e.g. to determine supports needed for discharge planning, to explore driving safety, or supports for medication management).

Environment and Rapport

Throughout the evaluation and intervention of cognition, the occupational therapist considers the context and influence of the environment on the client's abilities. This includes the social, cultural, and physical environments (including testing location and time of day) and the influence of factors such as sleep, fatigue, mood, mental health issues, pain and medications on cognitive function.

The occupational therapist's rapport with the client, therapeutic use of self and approach can influence the client's motivation, cognitive performance, expression of goals and participation in tasks.

Cognitive Evaluation Process

While the following steps are recommended, they do not need to be conducted in the order listed and all steps may not be required.

Planning

Screening and assessment may be completed through interview, use of standardized assessment tools and/or clinical observation of functional activities. Assessments should be selected to match the client's diagnoses/heath condition, performance needs, age, culture and level of education as much as possible. They should be administered in the language of fluency, using an interpreter if needed. Background information gathered from past reports, the health record, team members, family or other supports, is useful to provide context and further information about past and current function.

Initial Interview

During the initial interview, the client's goals and values are established to guide screening, assessment and intervention. The interview process provides an opportunity to start to assess specific cognitive abilities, including the client's level of insight and awareness and to obtain a history of cognitive function.

Screening

A screen assists the therapist to answer the question, *'Are there cognitive concerns?'* in relation to cognition and function, and to start to identify what they might be. Screening is required if the occupational therapist does not yet have an overall sense of the client's cognitive function, if a basic profile of the client's cognitive abilities is required and/or if there is only limited time available for

cognitive assessment. Screening may be done at the level of task performance or at the level of impairment.

When a standardized tool is used, the occupational therapist must follow the specified administration procedures in order to obtain a valid score.

A. Level of Task Performance

This type of screening takes environmental and contextual issues into consideration and is undertaken to ensure ecological validity (resemblance to real-life settings).

It may include:

1. Unstructured clinical observation of the client during functional activities, such as activities of daily living (ADL).
   As examples, the occupational therapist may evaluate the client's ability to:
   - Be aware of self and environment
   - Plan, initiate and self-monitor the task
   - Attend to the task
   - Sequence steps
   - Follow instructions
   - Recall relevant information

2. Structured clinical observation using a framework such as the Ranchos Los Amigos Scale (RLA).

3. Use of standardized tools such as:
   - Kettle Test
   - Executive Function Route-Finding Task (EFRT)
   - UCSD Performance-Based Skills Assessment (UPSA)

B. Level of Impairment

The following standardized screening tools are the most commonly used and easily administered for the purposes of screening at the level of impairment:

- Standardized Mini Mental Status Examination (SMMSE)
- Montreal Cognitive Assessment (MoCA)
- Modified Mini-Mental Status (3MS)
- Trail Making Test A and B

Screening tools may be administered by other members of the health care team when it is within scope of practice and required for reasons *other* than function.

The use of multiple impairment level screens is *not* recommended because any one screening tool is sufficient to determine if further assessment is required. As an example, the occupational therapist should not perform both an SMMSE and MoCA because the results from either will indicate if further assessment is required. If another team member has already administered a cognitive screen, then the occupational therapist may choose to screen only through task performance or proceed with an in-depth assessment.

In-Depth Assessment

In-depth assessment assists the therapist to answer the question, '*What specifically is impaired?'* in relation to cognition and function. An in-depth assessment is indicated if the results from the screening process demonstrate that a client has cognitive impairment and more detail is required, or the client's functional performance indicates the presence of cognitive impairment, but screening is not sensitive enough to measure it.

As with screening, when a standardized assessment tool is selected for in-depth assessment the occupational therapist must follow the specified administration procedures in order to obtain a valid score. The entire test should be administered unless the test is designed to use subtests without compromising the validity.

Referral to and collaboration with other disciplines such as psychiatry, geriatric psychiatry, speech-language pathology and neuropsychology may be indicated.

A. Level of Task Performance

This type of in-depth assessment takes environmental and contextual issues into consideration and is undertaken to ensure ecological validity (resemblance to real-life settings).

It may include:

1. Unstructured clinical observation during functional activities including familiar, novel, or complex tasks (such as in the areas of activities of daily living (ADL), instrumental activities of daily living (IADL), work, and/or leisure).
   As examples, the occupational therapist may evaluate the client's ability to:
   - Plan a sequence of steps to complete a task
   - Initiate the task and know when to end the task
   - Attend to a task and to multi-task
   - Follow simple or complex instructions
   - Follow several steps in a process/sequence
   - Anticipate and understand cause and effect
   - Carry over of learning
   - Recall relevant information
   - Self-monitor performance and evaluate results
   - Problem solve, use judgment and make decisions
   - Interpret signs and symbols
   - Read and perform computations required for daily living

2. Standardized assessment tools such as:
   - Assessment of Motor and Process Skills (AMPS)
   - Texas Functional Living Scale (TFLS)
   - Multiple Errands Test (MET)
   - Executive Function Performance Test (EFPT)

B. Level of Impairment

These tools (and others) are not usually within the repertoire of other members of the health care team and provide a broader profile of cognitive status.

If an in-depth understanding is required of the client's global cognitive profile, then the following assessment tools may be considered by the occupational therapist:

- Cognitive Assessment of Minnesota (CAM)
- Cognistat (Neurobehavioral Cognitive Status Examination)
- Lowenstein Occupational Therapy Cognitive Assessment (LOTCA) and geriatric version (LOTCA-G)

If an in-depth understanding is required of the client's specific cognitive impairments (such as attention, memory, executive functions), then the following assessment tools may be considered by the occupational therapist:

- Rivermead Behavioural Memory Test (RBMT-3)
- Test of Everyday Attention (TEA)
- Behavioural Assessment of Dysexecutive Syndrome (BADS)

Analysis

Clinical analysis must be completed to link screening/assessment findings to the purpose of the evaluation and the development of an intervention within the client's individual context and goals. The analysis of results must consider the influence of environment and context on cognitive function and how the cognitive impairment impacts function of daily activities.

Some factors to be considered include:

- age at time of injury/illness, time since injury/illness and results of intervention to date
- injury/illness extent and severity, transience/permanence, potential for progression
- other medical conditions
- medications and side effects
- fatigue
- sleep
- pain
- language barriers
- mental health (e.g. anxiety, depression, thought content)
- vision and hearing
- readiness for change and lifestyle choices
- level of education
- current/past substance use
- environment (e.g. lighting, noise, disruptions)

Recommendations and Intervention

Recommendations are shared with the client, family/caregiver (if consent provided) and team. Intervention plans are developed in collaboration with the client and/or family/caregiver. Functional goals are identified based on the client's wishes, values, beliefs, culture and access to potential resources and support systems. The intervention plan considers the client's phase of recovery and required or desired participation in specific occupations (e.g. activities of daily living, independent living, driving, school, work, leisure).

Interventions

Additional resource: *An OT Approach to Cognitive Intervention*.

Cognitive interventions should be provided at the earliest opportunity and be graded to maximize potential for improvement and participation. Interventions may range from basic attention and awareness activities through to interventions addressing complex, multifactorial problem solving and metacognition. Discharge planning may include referrals to other health care or community based programs to support further goal achievement.

Prior to initiation of cognitive interventions, the occupational therapist needs to ensure there are functional, client centred goals related to cognition. Many aspects of general health and well-being affect cognition, including medical issues, medication side effects, fatigue/poor sleep, pain and mood. The occupational therapist needs to ensure that these issues are addressed and refer to other health care professionals as appropriate.

Specific Cognitive Intervention Strategies

Cognitive intervention strategies encompass a range of evidence-based approaches that are selected to align with the client's needs and goals. The client's functional abilities are considered along a continuum in terms of the severity of the cognitive deficit, level of insight and capacity for new learning. Understanding where the client currently sits on this continuum helps the therapist to determine which strategies are appropriate and how to apply them. The occupational therapist needs to evaluate the outcomes of the interventions selected and modify or change the plan as needed.

Many cognitive intervention strategies are optimized when used together and may be categorized as follows:

Remedial/Process Training
Remedial/process training exercises are designed to improve a particular cognitive deficit. These training exercises usually involve pen and paper tasks, remedial games or computer tasks. They are likely most effective for clients with mild cognitive deficits, good insight and a high capacity for new learning. The exercises must be contextualized and personalized, provide the "just right" challenge and be linked to function. Alternatively, clients with severe cognitive deficits and a low capacity for new learning may benefit from this approach with basic remedial activities/exercises that may promote attention and a general awareness of self, task and environment.

NOTE: Insufficient evidence exists to distinguish the effects of remedial/process training from spontaneous recovery or from other cognitive interventions. Remedial/process training should not be used in isolation, but instead together with other strategies as listed below.

Task-Specific Training
This approach focuses on assisting the client to perform a specific functional task so that cognitive deficits no longer interfere. The therapist facilitates learning or re-learning a task through practice of the task, consistency, structure/routine, backward or forward chaining, errorless learning and/or repetition. Clients with mild cognitive impairment may need less repetition, consistency and structure. For these clients, the therapist needs to include more variety, whole practice of a task and varied contexts to promote generalization. Such clients may also benefit from trial and error learning.

External Strategies (Compensatory Strategies)
This approach focuses on teaching a client to use other people or aids to compensate for cognitive difficulties. Examples include: day timer, calendar, lists, alarms, cues/reminders from others, etc. External strategies require less cognitive capacity than internal strategies.

Internal Strategies (Metacognitive Strategies)
This approach focuses on strategies used within the client's own thinking processes. Examples include: problem solving, reasoning, self-talk, anticipation, self-monitoring, enhanced awareness of learning style, rhymes, mnemonics, mental retracing, visualization, etc. Such strategies are emphasized in the CO-OP Approach and Toglia's strategy training approach. The clients most likely to succeed with use of internal strategies are those with mild deficits, good insight and a high capacity for new learning.

Environmental Adaptation
This approach focuses on adapting or modifying the stimulation or cognitive demands of the environment. For clients with more severe cognitive impairment, the occupational therapist and others are responsible for modifying the environment. For clients with milder impairments, the occupational therapist teaches the client to be able to modify his/her own environment.

Social Skills Training
This approach focuses on the therapist teaching the client to use effective and appropriate social skills, such as maintaining or enhancing the relationships in their life and/or social roles required for independent living. This approach may involve the use of one-to-one or video feedback, peer input, role play, task-specific training or social skills in context, positive reinforcement and/or specific behaviour therapy principles and techniques.

Education
Education is provided to the client, his/her family, friends and/or caregivers to improve awareness and understanding of the client's strengths and challenges. It includes education about brain function, cognition and cognitive strategies.

Expected Patient/Client/Resident Outcomes

Clients experiencing cognitive impairments which impact their functional abilities are provided with the opportunity to participate in an occupational therapy cognitive evaluation. The goals of an occupational therapy cognitive evaluation are to identify the impact of cognition on the client's day-to-day function and to provide information to the client, family/caregivers and interdisciplinary team to support informed decision making for care planning. Interventions and recommendations are client-centred, focused on function and outcomes can be measured via repeated assessments, the level of goal attainment and/or client/family satisfaction.

Evaluation

The evaluation of the guideline will include review of occupational therapists' documentation of screening, assessment and intervention of cognition.

Documentation

Assessments, interventions, and ongoing progress notes related to the client's cognitive status will be documented in the health care record and team and client communication tools, such as a kardex. Cognitive evaluation will be documented on approved forms in site specific formats.

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