COGNITIVE REHABILITATION IN COMMUNITY MENTAL HEALTH

BC Psychosocial Rehabilitation Advanced Practice Webinar
March 5th, 2014
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Northeast Mental Health Team and
G.F. Strong Rehab Centre – Adolescent/Young Adult Program
Learning Objectives

- Describe the definition of cognitive rehabilitation (cognitive remediation and compensatory strategy training).

- Discuss the evidence concerning the effectiveness of cognitive rehabilitation for individuals with schizophrenia, bipolar disorder and depression.

- Describe the effects of mindfulness practice on different brain structures and how it can facilitate cognitive rehabilitation.

- Describe the importance of brain health (balanced nutrition, stress management, physical exercise and mental stimulation) for cognition.

- Identify external and internal memory strategies for improving daily life functioning.
Outline

- Introduction
- Mental Health and Cognition
- Rationale for Cognitive Intervention
- Cognitive Rehabilitation - Description and Research
- Mindfulness and Cognition
- An Occupation Based Cognitive Rehabilitation Curriculum for Mental Health
- Group Narrative Case Study
Introduction

- Etiology of schizophrenia is unknown.

- ‘In mental and addictive disorders:
  - abnormalities are found in the limbic, prefrontal and frontostriatal neural **circuits**’. (Vinogradov et al, 2012)

- Evidence supports:
  - complex genetic and neurodevelopmental components
  - disruptions in synaptogenesis and neuroplasticity
  - impaired connectivity in the brain. (Balu & Coyle, 2011)
Normal Adolescent Brain Development

Image by Dr. Jay Giedd, 2009

Dynamic changes in male and female teenagers with schizophrenia.

Please note:
Language used in this study image is historical in nature, and does in no way reflect the outlook of the author of this presentation or of the BC PSR Advanced Practice.

Thompson P M et al. PNAS 2001;98:11650-11655
Mental Disorders as Brain Disorders: Dr. Thomas Insel at TEDxCaltech (April 23, 2013)
Mental Disorders as Brain Disorders: Dr. Thomas Insel at TEDxCaltech (April 23, 2013)

WHY DOES THIS MATTER?

For brain disorders, behavior is the last thing to change.

New tools can show us the presence of brain changes long before symptoms emerge.

Early detection and early intervention will give us the best outcomes.
Mental illness = Brain illness

- Cognitive impairments are common in both.
- In persons with schizophrenia cognitive impairments:
  - Predict community functioning (self-care, work, social relationships) (McGurk et al., 2012, Hodge et al., 2010; McGurk & Wykes, 2008)
  - Are predictive of response to rehabilitation (McGurk & Wykes, 2008)

http://www.tiptoptens.com/2012/10/09/top-10-causes-of-mental-illness/

Slide by Kristen La Grand, OT 2013
Mental Health and Cognition

- Cognitive impairment is most profound in individuals with schizophrenia and does not change with their clinical state. (Kruppa, et al. 2009; McGurk & Wykes, 2008; Green, 2006)

- Cognitive impairment is also seen in individuals with affective psychoses (bipolar disorder and psychotic depression). (Hill, SK et al, 2009).
Mental Health and Cognition

- Common cognitive deficits seen in individuals with schizophrenia, depression, bipolar disorder, and alcohol and substance abuse disorders:
  - Attention and vigilance
  - Verbal learning and memory
  - Working memory
  - Processing speed
  - Executive functioning
  - Social cognition

Note: Not in hierarchal order

(Hurford, et al., 2011; Velligan, et al., 2006; Wexler and Bell, 2005)
### Mental Health and Cognition

*(taken from Table 4, Vinogradov et al, 2012)*

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Higher Level Cognitive Difficulties</th>
<th>Functional Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bipolar Disorder</td>
<td>↓ Processing speed, cognitive control, learning &amp; memory <em>(Bora et al, 2010)</em></td>
<td>↓ Processing speed and verbal learning predict poorer social and work outcomes. <em>(Burdick et al, 2010)</em></td>
</tr>
<tr>
<td>Major Depressive Disorder</td>
<td>↓ Processing speed, cognitive control, learning &amp; memory <em>(Bora et al, 2010)</em></td>
<td>↓ Enduring cognitive impairment significantly affects employment. <em>(Baune et al, 2010)</em></td>
</tr>
</tbody>
</table>
‘Cognitive impairment is the strongest predictor for functional outcome.’

(Medalia, A. 2009 and Hurford, et al, 2011)
Cognitive Rehabilitation

1. Cognitive remediation (CR) therapy

2. Compensatory approaches/Strategy Training
Cognitive Rehabilitation

- Based on model used for clients with brain injury.
- Predominant focus of the Occupation Based Cognitive Rehabilitation Curriculum for Mental Health introduced in 2013.

Model involves:
- Education – on the brain
- Process training – to relieve or remediate cognitive impairment
- Strategy training – teaching means to compensate for impairment
- Functional activities training – generalizing training to everyday life.

Malia, K., 2009
Definitions ... changing

Cognitive remediation therapy for schizophrenia is:

**2010** “a behavioral training based intervention that aims to improve cognitive processes (attention, memory, executive function, social cognition or metacognition)” Cognitive Remediation Experts Workshop, 2010 cited in Wkyes et al. (2011)

**2012** “an intervention targeting cognitive deficits using scientific principles of learning with the ultimate goal of improving functional outcomes. Its effectiveness is enhanced when provided in a context (formal or informal) that provides support and opportunity for improving everyday functioning” Cognitive Remediation Experts Working Group, 2012 cited in Medalia & Saperstein, 2013

Slide by Kristen La Grand, OT, 2013
Meta-Analyses

- McGurk et al. (2007)
  - 26 studies

- Wykes et al. (2011)
  - 40 studies
Wykes et al. 2011

- 40 studies
- 47% inpatients
- 45% outpatients
- 31 individual remediation
- 9 group treatments
- 21 drill and practice exercises
- 19 drill plus strategy
- 11 included psychiatric rehabilitation

Outcomes examined were cognition, symptoms and functioning
Therapy Characteristics and Effect Size (Wykes, 2011)

- Exclusive cog remed
- PSR plus drill & practice
- PSR plus drill and strategy
Summary of Wykes Meta-analysis

Meta-analysis of 40 randomized controlled trials (N=2104) of cognitive remediation therapy including drill and practice, strategy coaching in individuals with schizophrenia (Wykes et al, 2011):

- **Small to moderate effect** of cognitive remediation on cognition and functioning. Effect became stronger when clients were clinically stable.

- **Cognitive Remediation + Psychiatric Rehabilitation** (supported employment or education, assertive community team, medication management, housing, coping skills, ADL and socializing) = **Better Functional Outcomes**

- Transfer of training to community functioning is better supported when integrated with other rehabilitation (including strategic approaches).

Bowie, McGurk, Mausbach, Patterson & Harvey, 2012

- 107 outpatients with schizophrenia
- Randomly assigned:
  - cognitive remediation
  - functional adaptation skills training
  - combination
- 12 weeks duration, once a week 120 minutes
- Combination of models and resources
Effect Sizes in Bowie et al.’s 2012 Study

Slide by Kristen La Grand, OT
Cognitive Remediation

Recommended Inclusion Criteria  (from Table 3, Hurford I et al., 2011)

- Age 13 – 65 years
- Premorbid IQ over 70
- Reading level equal to or greater than 4th grade.
- No active substance or alcohol abuse.
- No traumatic brain injury within the past 3 years.
- Psychiatrically stable enough to attend sessions to completion.
<table>
<thead>
<tr>
<th>Research Program</th>
<th>Program, Web site, or Software Package</th>
<th>Additional Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cognitive enhancement therapy</td>
<td>A version of PSS CogReHab software <a href="http://www.cognitiveenhancementtherapy.com/">http://www.cognitiveenhancementtherapy.com/</a></td>
<td>Social cognition remediation in small groups</td>
</tr>
<tr>
<td>Neurocognitive enhancement therapy (NET)</td>
<td>Modified version of PSS CogRehab software <a href="http://www.neuroscience.cntr.com/PSS/psscr.html">http://www.neuroscience.cntr.com/PSS/psscr.html</a></td>
<td>Vocational Rehabilitation</td>
</tr>
<tr>
<td>Thinking Skills for Work</td>
<td>CogPack software <a href="http://www.Cogpack.com">http://www.Cogpack.com</a></td>
<td>Vocational rehabilitation, supported employment</td>
</tr>
<tr>
<td>Posit Science</td>
<td>Posit Science <a href="http://www.positscience.com">http://www.positscience.com</a></td>
<td></td>
</tr>
<tr>
<td>Neuropsychological Educational Approach to Rehabilitation</td>
<td>Cognitive Remediation for Psychological Disorders: Therapist Guide</td>
<td>Bridging Groups</td>
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</tbody>
</table>
Client Perspectives

‘Psychosocial rehabilitation and recovery are recognized as the gold standard for mental health treatment.’

Clinician is not the expert but takes on the role of coach/guide and provides a supportive and hopeful environment.

Clients have the potential to recover and achieve a maximum degree of self-sufficiency.

(Dr. Mary Jansen
PSR Canada Conference 2012)
Rationale for Cognitive Intervention

Families and mental health consumers are requesting:

- **Cognitive Behavioral Therapy**: an evidence-based practice of Psychosocial Rehabilitation (PSR)

- **Cognitive Remediation**: a ‘promising practice’ of PSR i.e. substantial ‘research to support the practice, but not enough to designate it an EBP.’ *(Dixon, L. et al. 2010)*

- 2010 Needs assessment completed by mental health consumers at the Northeast Mental Health Team:
  - Memory and Concentration rated #5 for recovery.
Cognitive Remediation

‘Behavioural shaping’, via computer or pen/paper, to target neuropsychological functions:

- Attention and concentration
- Memory
- Planning
- Monitoring one's work or behaviour and making adjustments based on feedback

‘Potential to improve neuropsychological functioning and life skills when used with other PSR interventions.’

Dr. Mary Jansen, 2012
PSR Canada Conference
Cognitive Remediation Therapy

- **Computer exercises**
  - Drill and practice training

- **Non-computerized exercises**
  - Attention process training
  - Drill and practice
  - Problem solving exercises

- **Strategy-coaching approach**
  - Neuropsychological Educational Approach to Rehabilitation (NEAR) method
  - More effective than separate drill and practice or strategy coaching

Holistic approach = Cog rem + all aspects of individual’s goals for recovery.
Cognitive Remediation for Social Cognition

**Social Cognition**
- Aspects of cognition critical for social functioning and interpersonal relationships.
- ‘Ability to recognize social cues, accurately perceive emotions of others and manage emotions in social situations.’ (Galletly and Rigby, 2013)
- ‘CRT + Emotion Perception remediation = improved emotion recognition, emotion discrimination, social functioning, and neurocognition for individuals with schizophrenia.’ (Lindenmayer et al., 2012)
Cognitive Remediation for Cognitive Biases

Cognitive Biases

- Errors in processing info can cause cognitive illusions/perceptions or biases that deviate from reality leading to delusions. (Galletly and Rigby, 2013)

Photo with permission from Dr. Todd Woodward, UBC
http://www.uke.de/kliniken/psychiatrie/index_17380.php#Metacognitive_Training_for_Patients_with_Schizophrenia_MCT
Cognitive Remediation for Cognitive Biases

- Remediation of Cognitive Biases
  - **Metacognitive training (MCT):** group program, Educates individuals about their cognitive biases and teaches strategies to deal with biases to improve functioning.’ (Moritz et al., 2010)
  - **MCT+** (for individuals with psychosis): MCT + Cognitive Behavioural Therapy (CBT)
  - ‘Combination of psycho-education, cognitive remediation and CBT.
Challenges for Designing Cognitive Remediation Training

- In neuropsychiatric illness, ‘multiple genes of small effect may cause complex overlearned maladaptive patterns of neural functioning’. (Balu and Coyle, 2011)

- Pathophysiology of the brain itself may limit ability to learn. (Vinogradov et al, 2012)

- Social/emotional environment must be considered due to its influence on motivation and adherence to treatment. (Vinogradov et al, 2012)

- CR needs to be delivered as designed and researched (fidelity) before it becomes evidence-based practice.
Cognitive Remediation

Conclusions:

- Cognitive stimulation + One-to-one coaching from a therapist in a rehabilitation setting appears to yield best functional outcomes. (Vinogradov et al, 2012)

- However:
  - Cognitive remediation is costly (computer software, yearly licensing fees for web-based programs, therapist time).
  - Further studies (preferably of larger scale) needed to focus on functional outcomes (such as independent living, school) other than work.

Issue of Fidelity to make it evidence-based practice.
2. Compensatory Approaches

- Errorless Learning
- Compensatory Strategies
- Adaptive Approaches
Compensatory Approach

- **Errorless Learning Strategies**
  - Used across various disciplines and fields to facilitate new learning in individuals with impaired memory.
  - Goal: To limit or eliminate incorrect or inappropriate responses (mistakes) during the learning process.
  - New task is broken into small components; each component is overlearned; relies on implicit memory.
  - Appears helpful for teaching new information, technical procedures, face-name association.
  - Client is given information and cues freely and repeatedly until information is successfully learned.
  - Best if taught in the context where it will be used.

(Hurford et al., 2011; Wykes & Reeder, 2005)
Compensatory Approach (Adaptive) Cognitive Adaptation Training (CAT)

- CAT therapist works with client and family.
- Client’s home may be reorganized and modified.
- Strategies used/taught include signs, calendars, checklists,
- Strategies are based upon client’s level of impairment in executive function and whether behavior is due to apathy or disinhibition or a combination of the two.
Compensatory Strategies
Teaching Compensatory Strategies

- **Insight** into difficulties is needed.
- Assess individual’s **strengths** and weaknesses.
- Learning style/Learning preferences
Compensatory Strategies for Memory (External)

- **Low Tech**
  - Day planner, calendar (on the fridge), school agenda
  - White board, bulletin board (by the phone, desk)
  - Written checklists, post-it notes, to-do lists
  - Alarm clock, kitchen timer
Memory Strategies (External/High Tech)

- Cell phone (www.ohdontforget.com) - schedule free text messages
- Watch with alarm signals: Timex Datalink watch; medication reminders
- SmartPhones – calendar, memo pad, iPrompts
- Apps: some examples
  - Remember the Milk – to do lists, prioritize each task
  - Clear – simple, no alerts, to do list
  - myHomework – student planner, reminders, class schedule
  - Any.do
  - EEBA (Easy Envelope Budget Aid) – keep track of money/spending
Compensatory Strategies for Memory (Internal)

- **Practice, practice, practice**/overlearn the material (to consolidate the new info)

- **Chunk information**
  - E.g. 6047456689  604-675-6689

- **Visualization**, Make a story

- **Mnemonics**: use acronym; My Very Educated Mother served Nachos (list of planets in order from the sun)

- **Categorization**

  **Grocery List**: eggs, milk, bread, broccoli, soap, toothpaste, kleenex, carrots, chicken wings
  **Place the items in categories**: dairy, meat, toiletries, vegetables
Compensatory Approaches

- **Adaptive Approaches**
  - For clients who are not able to benefit from cognitive remediation or compensatory strategy training.
  - Clinician works with client and family:
    - to set up and organize the environment
    - to choose adaptive aids (signs, checklists, organizing clothing (winter/summer), timers for clock radios, lights, fans etc.)
What is the optimal learning environment for you?

How do you learn best?
Can You Remember These Items?

<table>
<thead>
<tr>
<th>Wallet</th>
<th>Notepad</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facility badge</td>
<td>USB stick</td>
</tr>
<tr>
<td>Apple</td>
<td>Pen</td>
</tr>
<tr>
<td>Combination lock</td>
<td>Water bottle</td>
</tr>
<tr>
<td>Orientation letter</td>
<td>Sandwich</td>
</tr>
<tr>
<td>Smart phone</td>
<td>Pocket hand sanitizer</td>
</tr>
</tbody>
</table>
What Strategy Did You Use?
Mindfulness and Cognitive Rehabilitation

- Mindfulness is a cognitive strategy as it helps with sleep, mood, stress and anxiety.
- Mindfulness is an integral part of the Brain Fitness and SmartBrains programs.
- Clients are introduced to Mindfulness practice at each group session.
- Mindfulness helps to regulate emotions and can increase awareness and attention.
- Need to be able to pay attention before learning and retaining new information.
What is Mindfulness?

- “Paying attention in a particular way: on purpose in the present moment and non-judgmentally” (Jon Kabat-Zinn, PhD)

Lovingkindness Meditations

Approach conflict with curiosity and compassion.

Mind Full, or Mindful?
What is Mindfulness?

- [http://www.youtube.com/watch?v=F6eFFCi12v8](http://www.youtube.com/watch?v=F6eFFCi12v8)
Mindfulness and the Brain

- Posterior cingulate cortex (experienced meditators), left amygdala (Taylor et al, 2011)

- Reduced pain related activation, increased activity in the anterior cingulate cortex. (Zeidan et al, 2011)

- Increased gray matter in hippocampus and areas involved in learning and memory (Holzel et al. 2011)

- Increased functional connectivity: auditory/visual networks, auditory cortex and areas associated with attentional processes.(Kilpatrick et al, 2011)

Image from www.mindfultime.com
How can Mindfulness Help?
(Slide by: Drs. Vo and Locke, 2012)

- Helps us to become present
- Change ruminative cognitive patterns
- ‘Responding’ vs. ‘Reacting’
- Coping across a range of stressors
- Changes our relationship with stress, pain
- Emerging: Neuroplasticity changes

Cognitive Rehabilitation in Community Mental Health
Vancouver Coastal Health
Standardizing Cog Rehab

- **Cognitive Rehabilitation Curriculum** (teaching modules/powerpoints for groups) developed in 2012 – 2013 by group of mental health occupational therapists and spearheaded by Kristen La Grand, VCH Clinical Resource Therapist Mental Health and Addictions.

- Manual and educational materials introduced to VCH mental health teams/tertiary facilities, mental health sites in BC and other provinces at CAOT conference in June 2013 and OT Cognitive Expo October 2013

- Goal: To standardize provision of cognitive rehab and to ensure equitable access for all mental health consumers
Current OT Cognitive Rehab Groups

- **Brain Fitness** and **SmartBrains** (2 separate groups)
  - Clients identify areas of cognitive concern and occupational priorities
  - Education given on the brain and brain function
  - Education on cognitive compensatory strategies
  - Weekly SMART goals + homework
  - Introduction to cognitive software
  - Clients engage in brain healthy activities
    - **Mindfulness**, brain healthy snacks, yoga stretches
Current OT Cognitive Rehab Groups
In Community Mental Health

New Initiatives

- Gastown Vocational Services and Early Psychosis Intervention program: joint cognitive remediation group (research project with UBC Dr. Colleen Bremner).

- Early Psychosis Intervention program and Northeast Mental Health Team
  - **CogConnect group**: Trial of cognitive remediation and social cognition for young adults (19 – 30 years) with schizophrenia (based on Cognitive Enhancement Therapy)
An Occupational Based Cognitive Rehabilitation Curriculum for Mental Health

Vancouver Coastal Health
How to Be Your Own Brain Fitness Coach

I. Debunk Myths
1. Understand how the brain works, how it impacts work and life.

II. Address Basics
2. Healthy Nutrition
3. Aerobic Exercise
4. Stress Management
5. Mental Stimulation
6. With Meditation
7. With Reframing
8. With Biofeedback
9. With Cognitive Training

III. Cross-train your Brain

IV. Coach Yourself
10. To Self-Monitor
11. To Prioritize Options
12. To Develop, Implement and Iterate your Own Plan

From SharpBrains.com
4 Pillars For Brain Health
(Sharpbrains, 2009)

- Balanced nutrition
- Stress Management
- Physical Exercise
- Mental Stimulation
SmartBrains Session 3
Memory

Don't Forget

From: An Occupational Based Cognitive Rehabilitation Curriculum for Mental Health, 2013
Mindfulness

- Start with a mindfulness exercise: settle our minds; make it easier for our brains to learn and work.
Weekly Check-In
Goal Set from Last Week

From: An Occupation Based Cognitive Curriculum for Mental Health, 2013
After We Pay Attention, How Do We Learn?

- Learning Process (P. Wolfe)

- Sensory Memory
  - Sight, sound, smell, taste, touch

- Short-Term Memory
  - Initial Processing
  - Elaboration & Organization
  - Retrieval

- Long-Term Memory

- Rehearsal
Can You Remember These Letters?

- List # 1

K Q Z
N L R
X O J
B T K
Can You Remember These Letters?

- List #2

- B L T
- MAC
- MOT
- SOS
Can You Remember These Letters?

- List #3

- WIN
- SIT
- LIE
- NOT
Can You Remember These Letters?

- List #4

- How
- Is
- This
- Class
Memory Boosters

- Regular physical activity (30 minutes/day)
- Stress reduction techniques such as mindfulness, deep breathing, progressive muscle relaxation
- Activities good for the heart are also good for the brain!

Image: An Occupation Based Cognitive Rehabilitation Curriculum for Mental Health

Photo by Peter Morgan, Free Mindfulness
Memory Strategies

- Draw a $10 bill.
Intent to Learn
Teaching Compensatory Strategies

‘The process of learning is enhanced when contextualization, personalization, and choice are experienced during the educational activity. (Medalia, 2009)
Teaching Tools
(Medalia, 2009)

- Promote metacognitive awareness (‘thinking about your thinking’) and self-monitoring
- Use of intrinsically motivating activities
- Active use of information.
- Multisensory strategies
- Frequent feedback and positive reinforcement
- Control over learning process
- Application of newly acquired skill in contextualized formats
- Challenging but not frustrating (errorless learning).
Learning Style
(Medalia, 2009)

Explore client’s learning style:

- **Time factors**
  - Time of day when most rested.

- **Sensory style** (auditory, visual, tactile)
  - Preference for how information is communicated.

- **Organizational style**
  - Preference for looking at the ‘big picture’ first vs the details.

- **Social learning style**
  - Preference for learning independently or receiving frequent guidance.
Brody is a 21 year old man with 1 year of college education. He was diagnosed with schizophrenia at the age of 18 during his first year of university. He lives in the basement suite of his parents’ home.

Parents notice that he has difficulty getting up in the morning, does not seem motivated to take care of himself, forgets his appointments at the Early Psychosis Intervention Program, needs reminders to take his medications, seems forgetful, speaks very little and is aware that he is not thinking as well as he did before his illness began.

OT cognitive screen showed difficulty with verbal and visual memory, and executive functioning.

Brody would like to improve his cognition and not rely on his parents. He would like to get out of the house and perhaps go to the gym or ride his bike. He also wonders about going to school but is not sure what to take.
Case Study

- Name 2 strategies/recommendations for memory that will help Brody improve his functional, social and occupational performance.
Some suggestions...

- Work with Brody to construct a **daily schedule** (with check-off lists for each day).

- Use only one calendar or day timer. E.g. Consider a large schedule in his suite and **to-do lists on his phone**.

- Ask Brody to review his schedule in the morning and evening.
  - **Reminders** to set his alarm on his phone.
  - **Post it notes** in bathroom to cue him to shower, brush teeth, take medications.
  - **Alarm watch** to cue him to look at his schedule.
Case Study

- How would you teach the strategies?
Some suggestions....

Before strategy training, consider:

- Readiness for change; motivation to learn new skills.

- Begin by identifying what Brody CAN do, what he wants to do (his goals) and then address the gaps.

- **Principles of adult learning**: be practical and direct; learn by doing; use prior experience; teach in informal situation; **involve Brody** in the learning process (collaboration; communication in a partner-like relationship); present options not instructions.
Some suggestions....

- **Normalize that everyone use compensatory strategies** – it lessens our cognitive (brain) load.

- Check in with Brody – what are his **beliefs** about the using strategies (e.g. does he think it will improve or not affect his ability to be more independent? Motivational interviewing techniques are helpful here!)

- Have **Brody generate** the external strategy if possible.

- When teaching the strategy, **reduce distractions** and ensure you have Brody’s attention. Use **repetition, consistency, and structure**.

- Use **direct instruction approach**: present the strategy and explain the reason for it; probe for his understanding of it; use guided practice; then independent practice.
Case Study

- What can family members do to help Brody improve his memory so that he becomes more independent?
Some suggestions...

- Family members can:
  - Repeat instructions when asked.
  - Turn off the radio, TV, etc. when having a conversation.
  - Ask Brody to repeat/paraphrase what he was just told if necessary.
  - Put things in writing when possible.
  - Review plans in a consistent manner.
  - Use memory aids (calendar on fridge)
  - Remind him of his goals.
Questions?
Thank You!
References


Clinical Handbook of Psychotropic Drugs – 18th Edition


References


References


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