The Study of Cognitive Rehabilitation Effectiveness

The SCORE clinical trial is a randomized controlled treatment trial evaluating the effectiveness of cognitive rehabilitation in post-deployment military service members who sustained a concussion.

Chapter 4:
Traditional
Cognitive
Rehabilitation for
Persistent
Symptoms
Following Mild
Traumatic Brain
Injury (SCORE
Arm 3)

Part III:
Clinician Guide
to Arm 3
Traditional &
Arm 4 Integrated
Cognitive Group
Interventions

Acknowledgements

The SCORE study team would like to express our sincere gratitude to the men and women in uniform who participated in this study. We are humbled by the trust you placed in us to provide the best care possible and to learn more about how to help those with traumatic brain injuries (TBIs) who follow you.

We would like to acknowledge the special contributions and leadership skills of Janel Shelton, the SCORE study coordinator, and the dedication and professionalism of her staff, Sylvia Davis and Gina Garcia. Their efforts were essential to the success of the study.

Finally, we would like to thank the Defense & Veterans Brain Injury Center (DVBIC) who, under the leadership of Col. Jamie Grimes in 2010, identified and entrusted us to execute this congressionally mandated study, and provided us with additional staffing and research facilitation.

Congress established DVBIC in 1992 after the first Gulf War in response to the need to treat service members with TBI. DVBIC's staff serves as the Defense Department's primary TBI subject matter experts. DVBIC is part of the U.S. Military Health System and is the TBI operational component of the Defense Centers of Excellence for Psychological Health and Traumatic Brain Injury (DCoE). Learn more about DVBIC at dvbic.dcoe.mil.

SCORE Grant Acknowledgements

(Heather Belanger, Tracy Kretzmer, and Rodney Vanderploeg) This material is based upon work supported by the Department of Veterans Affairs, Veterans Health Administration, Office of Research and Development, Health Services Research and Development Service (VA HSR&D IIR 13-196-1), and Clinical Sciences Research and Development (VA CSRD W81XWH-13-2-0095).

This work was supported by a Department of Veterans Affairs Rehabilitation Research and Development Career Development Award to Dr. Jacob Kean (CDA IK2RX000879).

(David Tate, Jan Kennedy, Douglas Cooper) This work is supported in part by the Defense and Veterans Brain Injury Centers and the Telemedicine and Advanced Technology Research Center.

SCORE Disclaimer

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Chapter 4:

Traditional Cognitive Rehabilitation for Persistent Symptoms Following Mild Traumatic Brain Injury (SCORE Arm 3)

Part III:

Clinician Guide to Arm 3 Traditional & Arm 4 Integrated Cognitive Group Interventions

Introduction

The following materials are part of "Arm 3 Traditional Cognitive Rehabilitation and Arm 4 Integrated Group Interventions" for the Study of Cognitive Rehabilitation Effectiveness (SCORE).

Patients participated in 2 hours of group therapy plus 1 hour of group homework per week. Professionals with a variety of different backgrounds, including experienced occupational therapists and speech language pathologists, delivered the intervention.

All participants also received the standard of care, which included education (see Chapter 2) and symptom-based medical management consistent with the VA/DoD Clinical Practice Guideline for the Management of Concussion/MTBI.¹

Syllabus session callouts refer to those sections in Part IV, Client Manual for Arm 3 Traditional & Arm 4 Integrated Cognitive Group Interventions, unless otherwise referenced.

¹ Department of Veterans Affairs, Department of Defense. The Management of Concussion/mTBI Working Group. (2009). VA/DoD Clinical Practice Guideline for the Management of Concussion/MTBI. Version 1.0. Washington, DC: The Office of Quality and Performance, VA, & Quality Management Directorate, United States Army MEDCOM.

1: Goal Setting

Session 1: Setting Goals

Topic: Goal Setting

V	Lecture topic	Notes	Time Allotted
	Discuss the component/s of a successful goal. Review long- and short-term	Refer to Goal Setting, Creating SMART Goals	5 Min
	goals. Discuss the benefits of writing goals.	and SMART Goal Example.	20
	Discuss the benefits of withing goals.	Refer to Benefits of Setting Goals.	Min
	Present goal-setting case study. Identify areas where goals need to be set. Identify weak areas of pre-set goals.	Refer to Specialist Smith Case Study. and Are these good goals?	20 Min
	Homework: Write two to three personal goals for self.	Refer to Setting Personal Goals.	5 Min

Session 2: Analyzing Goals

High tech tracking

Topic: Goal Setting Session 2 Objectives (50 minutes) Time $\overline{\mathbf{V}}$ Lecture topic Notes Allotted Discuss homework. Refer to Setting Personal Goals Homework from Session 1. 15 Analyze personal goals to ensure Min important components are included. Refer to SMART Goal Checklist. Share goals, if desired. Practice setting personal goals. Refer to Setting Short-Term Goals. 20 Extra Clinician Reference: Goal-Plan-Min Both long and short-term Review can be used to set steps for goals. Review tips to track goals on a daily basis (key points listed below). Write goals down 15 Refer to Keep Your Eye on the Prize and Written Goal Formatting Examples. Min Post goals Make necessary modifications regularly

2: Sustained Attention

Session 1: What Is Attention?

Topic: Staying Focused Sustained and Selective Attention

000	Session 1 Objectives (50 minutes)			
$\overline{\mathbf{V}}$	Lecture topic	Notes	Time Allotted	
	Review types of attention with examples.		40	
	Sustained	Refer to What is Attention?	10 Min	
	Selective		101111	
	Alternating			
	Divided			
	Introduce internal and external	Refer to Internal/External Distractions	20	
	distractors.	Diagram.	Min	
	Identify Specialist Smith's areas of breakdown and solutions	Refer to Specialist Smith Case Study, Reducing Distractions, and Optimizing Attention for solution ideas.	15 Min	
	Homework: Identify individual		5	
	areas of attention breakdown and		Min	
	solutions			

Session 2: Reducing Distractions

Topic: Staying Focused Sustained and Selective Attention

$\overline{\mathbf{V}}$		Notes	Time Allotted
	Lecture topic	You will need access to a large screen to play the video file.	
	Review homework from Session 1.	Homework: Reducing Distractions	15
	Compare various styles of application between group members.	Refer to Optimizing Attention (in Session 1) for examples.	Min
	Activity:	Refer to Distractions Log.	
	Instruct client to fill out attention lapse log during exercise.	Play one or more instructional videos (not included) totaling 10 to 15	20
	Review strategies that can be used to promote maintaining focus examples. Sitting in front of class Taking notes	minutes. Refer to <i>Optimizing Attention</i> in Session 1 during lectures.	Min
	Metacognition: Discuss client performance and distractibility.	Refer to Distractions Log.	15 Min

3: Memory and Learning

Session 1: Memory Strategies

Topic: How We Remember & Why We Forget	
Memory and Learning	

Memory and Learning				
Session 1 Objectives (50 minutes)				
$\overline{\mathbf{V}}$	Lecture topic	Notes	Time Allotted	
	Discuss the importance of memory and learning and how it can affect you daily.	Refer to Effects of Memory and Learning Difficulties.	5	
	Identify strategies that can improve memory and learning.	Refer to Internal Memory Strategies.	Min	
	Introduce case study and identify areas in which he is experiencing difficulty with memory and attention.	Refer to Specialist Smith Case Study. Discussion	20	
	Allow patients to come up with individual strategies or strategies learned in previous sessions.		Min	
	Introduce specific strategy PQRST/SQ3R.			
	Discuss the strengths of PQRST/SQ3R.	Refer to PQRST/SQ3R.	20 Min	
	Present the steps of PQRST/SQ3R.			
	Homework : Provide reading to apply PQRST/SQ3R.	Refer to <i>Global Warming</i> reading activity in Session 2.	5 Min	

Session 2: Global Warming and PQRST/SQ3R

Topic: How We Remember & Why We Forget Memory and Learning

V	Lecture topic	Notes	Time Allotted
	Review homework		
	Present quiz for comprehension of materials.	Refer to Global Warming Reading Activity, Quiz and	15 Min
	Compare various styles of application and modifications of that system between group members.	Answer Key.	
	Discuss how this strategy may be applied in daily and future tasks.	Refer to PQRST/SQ3R Project Guidelines Example.	15
	Reading textbooks, manuals, important articles, research, proposals, extended outlines, etc.	Refer to Construction Guidelines Using PQRST/SQ3R.	Min
	Discuss modifications and adaptations to PQRST to make it more individualized.		
	Identify reasons it is difficult, time consuming.	Refer to Pros and Cons of PQRST/SQ3R Methods.	20 Min
	Identify pairing other internal strategies (visualization, association).		

Answer key: global warming quiz

Glo	bal Warming Quiz
1	What does the acronym GHG stand for? Greenhouse gases
2	What is the term used to describe the process of gases trapping heat? Greenhouse effect
3	Which gas is currently considered responsible for most of the warming? Carbon dioxide (CO ₂)
4	Name another type of gas that traps heat in the atmosphere. Nitrous Oxide
5	What is another term used to describe global warming? Climate change
6	When was the term "greenhouse effect" first labeled? 1824
7	What does IPCC stand for? International Panel on Climate Change
8	Since 1910, how many glaciers has Montana's Glacier National Park lost? 150-27=123
9	Which animal has decreased from 32,000 breeding pairs to 11,000 in the past 30 years in Antarctica? <i>Adelie Penguins</i>
	What does the term "bleaching" mean?
10	Die off of coral reef in response to stress
	The government has been looking at certain areas to decrease GHG emissions. What is the
11	term for the areas they are looking at controlling? Wedges
	What is carbon sequestration?
12	The process of emissions being trapped and stored underground
13	List three ways that emissions can be decreased.
	Change in vehicle fuel economy, increase wind power, increase solar power, biofuels, natural gas, carbon sequestration, increase in plants and trees for absorption, other
14	In your own words, explain what the article discusses about possible future weather conditions due to global warming.
	Increases in storms and hurricanes followed by increases in floods and droughts.
15	In your own words, explain how global warming will affect the future of plants and wildlife.
	Affects breeding and living conditions in arctic areas, causing animals to move to cooler areas, changing habitats. Increase in migration; changes in habitat may cause natural cycle to become extinct (examples:
	foxes, butterflies, penguins, spruce bark beetle).

4: Planning and Organization

Session 1: Planning and Problem Solving

Topic: I	Missio	n Ready	
Plannin	g & O	rganizat	ion

Session 1 Objectives (50 minutes)			
$\overline{\mathbf{A}}$	Lecture topic	Notes	Time Allotted
	Introduction of organization, time management and planning with groups (e.g., family, office, organizations/clubs)	nagement and planning with groups	
	-		10 Minutes
	Discuss how organization and planning for groups might differ when compared to organization and planning for individuals.		
	Activity: Members of group will role play as a manager/leader of a Platoon organizing and planning for a convoy from Fort Sam Houston to Fort Hood	Refer to Preparing to Haul Medical Supplies to Fort Hood (client manual). Refer to Goal-Plan-Review.	25 Minutes
	Review performance on activity Identify strengths and weaknesses of group organization and planning	Discussion	10 Minutes
	Present homework and discuss expectations	Refer to Problem Solving Homework: Using the T-Account Method	5 Minutes

Session 2: Case Studies, Planning, & Tips

Topic: Mission Ready Planning and Organization

$\overline{\mathbf{V}}$	Lecture topic	Notes	Time Allotted
	Homework: Problem-solving homework		10 Min
	Activity: Specialist Smith case study (motor pool) Use Specialist Smith case study to help with group exercise.	Complete Case Study Exercise Refer to Specialist Smith Case Study, Goal-Plan-Review, and Problem Solving Homework: Using the T-Account Method	30 Min
	Review: Performance on group activity Discuss uses of time management strategies and individual applications.	Refer to Tips to Help If You Have Problems with Planning, Time Management and Organization.	10 Min

Case study exercise

<u>Instructions</u>: The client's assignment is to design a system to manage the duties for the maintenance of the motor pool vehicles. Refer to the Specialist Smith case study.

Client may use the T-Account method or Goal-Plan-Review techniques.

1. Factors for clinician to consider:

- Has the service member integrated all of the pertinent information into a solution?
- Has the service member employed any attention and memory compensatory strategies learned in SCORE?

2. Questions to ask if the group exercise is not progressing:

- Does this system need to be visible for all workers in the motor pool?
- What maintenance tasks will you need to track?
- Is there a time frame involved when tracking maintenance?
- Who will be responsible (i.e., just you?)?
- Where should you place this tracking mechanism?

Time

5. Prospective Memory and Assistive Technology

Session 1: The Memory System

Topic: Remembering to Remember
Prospective Memory and Assistive Technology

	<u> </u>	
Session 1 Objectives (50 minutes)		
$\overline{\mathbf{V}}$	Lecture topic	Notes
	Defining the types of memory	

Lecture topic	Notes	Allotted
Defining the types of memory Sensory	Refer to The Memory System.	
Short-term (working memory)	Refer to The intemory System.	5 Min
Long-term	Defente Destation Manage Defention	
Prospective memory definition	Refer to Prospective Memory Definition.	
Review memory strategies (external/compensatory strategies)	Refer to External Memory Strategies, including Assistive Technology	
Notebook, calendar, checklists Electronic organizer, computer		10
All other options (tape recorder, alarms, timers, watch with beeper, medication dispenser, highlighter)	Refer to Prospective Memory, Environmental	Min
No tech (environmental modification)	Modification	
Group use Specialist Smith Case Study to identify prospective memory problems	Refer to Specialist Smith Case Study.	10 Min
Group identify potential basic memory strategies that Specialist Smith Case Study can use to help with identified problems		15 Min
Homework: Present homework and discuss expectations Homework: Implement one new	May refer to External Memory Strategies, including	
memory strategy (from External Memory Strategies, including Assistive Technology) or initiate changing strategies currently used to be more efficient.	Assistive Technology	10 Min

Session 2: Prospective Memory Exercise

Topic: Remembering to Remember Prospective Memory and Assistive Technology

Session 2 Objectives (50 minutes)

V	Lecture topic	Notes	Time Allotted
	Give list of tasks/activities that must be completed prior to end of treatment session. There are eight tasks. Divide tasks among group members, so group members have different tasks to remember. Clients will be instructed to remember to complete these tasks, using external memory strategies. At the same time, the therapist will lead discussion on a topic (for instance, the pros & cons of technology for learning).	Refer to <i>Prospective Memory Exercise</i> Client manual, prospective memory strategies (group). Play one or more power point presentations totaling 15-20 minutes.	25 Min
	Homework: Discuss completed homework assignment		15 Min
	Clients will review their proficiency in "Prospective Memory Exercise" task. Discuss strategies and functional application.		10 Min

Prospective Memory Exercise

- 1. When the clock strikes half past the hour, please tap your pen several times.
- 2. Please throw something in the room's trash can at __ minutes past the hour.
- 3. Please open and close your SCORE manual, two times, at __ minutes past the hour.
- 4. Please stretch your arms, in sitting, at __ minutes past the hour.
- 5. Please stand up at __ minutes past the hour.
- 6. Please scratch your left shoulder at __ minutes past the hour.
- 7. Please readjust your chair at __ minutes past the hour.
- 8. Please step outside the room for less than 1 minute at __ minutes past the hour.

6. Alternating Attention

Session 1: What Is Attention?

Topic: Juggling Duties Group Alternating Attention			
Session 1 Objectives (50 minutes)			
	Notes		
Lecture topic		For this session, you will need a deck of playing cards (not included) for each client.	Time Allotted
Review : Types of alternating and divided attention with examples			
Sustained	Refer to What is Attention? Refer to YES/NO Trivia and Deck of		5
Selective			Min
Alternating	-		
Divided			
Activity: Alternating attention task Card sorting	Refer to YES/NO Trivia and Deck of Cards and Answer Key.		
Discuss client performance and distractibility with speed challenge.			20
Discuss difference between divided and alternating attention with difficulty of task.			Min
Discuss strategies that would be helpful during this activity.	_	repeating, writing it visualizing the letter.	
Introduce case study; identify Specialist Smith's areas of breakdown.	Refer to S	pecialist Smith Case Study.	10 Min
Review: Environmental strategies	Refer to C	ptimizing Attention.	10 Min
Homework: Client to identify individual areas of breakdown and solutions	Refer to Sin Session	pecialist Smith Juggling Duties 2.	5 Min

Answer key: YES/NO trivia questions and a deck of cards



YES/NO Trivia Answer Key

Alternating and Divided Attention Task

Ensure each client has a deck of cards.

Please answer each of the following questions with a Yes or No. At the same time, I will give you instructions on how to separate this deck of cards.

- 1. Start with cards facing down. Turn over cards one at a time.
- 2. If the card you turn up has the letter <u>e/a/n/I/h</u> (select one) place it face down in a separate pile. If you need to, you may stop sorting while you respond to questions.
 - E in the name: ace/one, three, five, seven, eight, nine, ten, and queen (32 cards)
 - A in the name: ace and jack (8)
 - N in the name: one, seven, nine, ten, queen, and king (24)
 - I in the name: five, six, eight, nine, and king (20)
 - H in the name: three and eight (8)

This activity can be graded by separating into suits (spades, aces, clubs, hearts), reds vs. black, ascending/descending order, etc.

Continue activity until client has completed at least 10 minutes, you may repeat the sorting order.

	Questions	Answer	Response
1	Is today Monday (fill in day of the week)?	Y	
2	Is the year 2011?	N	
3	Is it night time?	N	
4	Are we in Houston?	N	
5	Are there 256 days in a year? 365	N	
6	Is this an Air Force base?	N	
7	Did you have breakfast?	Y/N	
8	Do you like playing sports?	Y/N	
9	Are the Spurs your favorite sports team?	Y/N	
10	Have you been to the dining facility today?	Y/N	
11	Is it rainy outside?	Y/N	

12	Did you drive here today?	Y/N
13	Is the Fourth of July Holiday coming up?	Y/N
14	Do you enjoy meals-ready-to-eat (MREs)?	Y/N
15	Is today your birthday?	Y/N
16	Are there 5,280 feet in a mile?	Y
17	Are there 3 quarts in a gallon?	N
18	Does mixing the colors yellow and blue make purple?	N
19	Is a group of fish called a pod?	N
20	Does 14 + 17 equal 31?	Y
21	Is Mercury the closest planet to Earth? Venus or Mars	N
22	Are there 12 ounces in a pound? 16	N
23	Was Buzz Aldrin the first man to walk on the moon?	N
24	Do you have your ID card with you?	Y/N
25	Are there 3 feet in a yard?	Y
26	Including the end zone, are there 120 yards on a football field?	Y
27	Are there 30 miles in a marathon? 26.2	N
28	Is a baker's dozen twelve? 13	N
29	Are opossums part of the marsupial family?	Y
30	Is a group of lions called a pack? pride	N
31	Does an average baby weigh 8 pounds? 7.5	N
32	Is Camaro made by Chrysler? Chevy	N
33	Is Benjamin Franklin on the 100 dollar bill?	Y
34	Was China recently afflicted with a tsunami?	N
35	Is salt removed from water in the process of desalination?	Y
36	Is a president's term in office 5 years? 4	N
37	If you can run 2 miles in 13 minutes, will it take you 36 minutes to run 4? 26	N

38	A brief you will be attending lasts 1 ½ hrs. Will it end at 1145 if it starts at 0930? 1100	N
39	Is the voting age 21? 18	N
40	Is New York City in the West Coast time zone?	N
41	Is New Orleans at sea level? Below sea level	N
42	Are Representatives to Congress elected to 2-year terms?	Y
43	Are there 100 members of the U.S. Senate?	Y
44	Do state governors control the National Guard in times of peace?	Y
45	Does the U.S. Coast Guard operate as part of the Army during war time? Navy	N
46	Does "Semper Fi" means always faithful? Marines	Y
47	Was the Army the first branch of the U.S. Armed forces to be created? <i>June 14, 1775</i>	Y
48	Are there 6 fighting branches in the US Military? 5	N
49	Does the Army have the motto "This We'll Defend"?	Y
50	Are the Blue Angels part of the Air Force? Navy	N

Session 2: Juggling Duties

Topic: Juggling Duties Group Alternating Attention

V			Notes	
	Lecture topic		For this session, you will need a deck of playing cards (not included) for each client.	Time Allotted
	Homework: Discuss completed homework assignments.	Refer to Specialist Smith Juggling Duties. Refer to YES/NO Trivia and Deck Cards and Answer Key in Session 1.		15
	Compare various styles of application between group members.			Min
	Activity: Card sorting, Alternating attention task			
	Remind client to use a strategy to remember task.			
	Discuss client performance and distractibility with speed challenge.			20 Min
	Discuss application of attention strategies to improve performance.			
	Generalization of this activity	D. C.		
	Identify group members' problems with doing multiple tasks and problem solutions.	Attention in	ategies in <i>Optimizing</i> Session 1 and <i>Everyday</i> Attention Tasks, for	15 Min
	Discuss limitations of alternating and divided attention and alternatives.	campies.		

Appendix A: Acronyms

DVBIC Defense and Veterans Brain Injury Center

PQRST preview, question, read, state/summary, and test SCORE Study of Cognitive Rehabilitation Effectiveness

SMART Specific, Measurable, Attainable, Realistic, Timely (goals)

SQ3R survey, question, read, recall or recite, and review

TBI traumatic brain injury