

Intensity and Aphasia Rehabilitation: Current Evidence and Clinical Considerations

Presentation by

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Objectives

- ❖ Describe the factors that define intensity
- ❖ Summarize the literature on treatment intensity
- ❖ Summarize Aphasia LIFT outcomes
- ❖ Describe process and components of Aphasia LIFT
- ❖ Describe barriers and facilitators to delivering intensive treatments

Defining Intensity

“More intense” treatment can mean

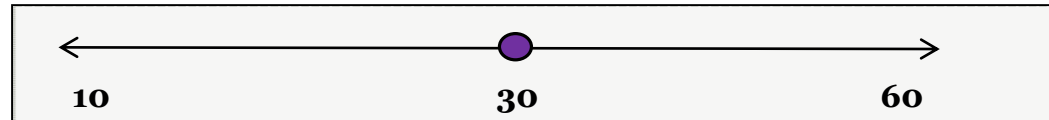
- greater number of therapeutic events in a shorter amount of time
- greater number of hours spent in therapy in a shorter amount of time
- greater number of total hours spent in therapy

Defining Intensity

- ❖ Dose form- activity/task
- ❖ Dose- number of trials or exposures
- ❖ Session frequency- times per week
- ❖ Duration
 - session- number of minutes
 - intervention- weeks/months

Intensive Aphasia Treatment

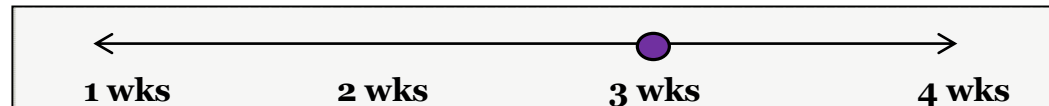
Dose



**Dose
Frequency**



**Intervention
Duration**



Cumulative Intensity = 30 trials x 5 days/wk x 3 wks = **450 productions**

Intensive Aphasia Treatment

The last 15 years of research....



Intensive Aphasia Treatment

Robey 1998

❖ 12 pre-post treatment effects

- low (≤ 1.5 hrs/wk)
- moderate (2-3 hrs/wk)
- high (> 5 hrs/wk)

> 2 hrs/wk =
positive outcomes

	Acute	Post-Acute	Chronic
High	1.39	.53	.55
Moderate	1.78	.40	.32
Low	.77	--	--

	Acute	Post-Acute	Chronic
No Tx	.63	.34	.05

Intensive Aphasia Treatment

Boghal, Teasell & Speechley (2003)

❖ 8 studies

- PICA and Token Test
- 4 positive, 4 negative
- No difference on FCP

8.8 hrs/wk for 11.2 wks (98.4 hrs)
= positive outcomes

2 hrs/wk for 22.9 wks (43.6 hrs)
= negative outcomes

More hours per week = better outcome

***Total hours of therapy were greater in more intense studies*

Intensive Aphasia Treatment

Cherney et al., (2008)

- ❖ 6 studies
- ❖ 5 clinical questions
 - time point
 - ICF domains
 - maintenance

High intensity= positive outcomes on impairment measures

	Acute	Chronic
Language Impairment	+ intensive	+ intensive
Activity/ Participation	--	equivocal
Maintenance	--	equivocal

Intensive Aphasia Treatment

Kelly, Brady & Enderby (2010)

❖ 3 studies

- high = 5-10 hrs/wk
- low = 2-4 hrs/wk

High intensity= positive outcomes for written language; trend for receptive language

❖ Significantly more withdrawals from intensive treatment

❖ Treatment delivered by trained/supervised volunteers equally effective

Intensive Aphasia Treatment

Cherney, Patterson & Raymer (2011)

- ❖ 11 studies
- ❖ Same clinical questions
- ❖ Different results

High intensity= positive outcomes on activity/participation measures

	Acute	Chronic
Language Impairment	equivocal	equivocal
Activity/ Participation	--	+ intensive

Intensive Aphasia Treatment

Brady, Kelly, Godwin & Enderby (2012)

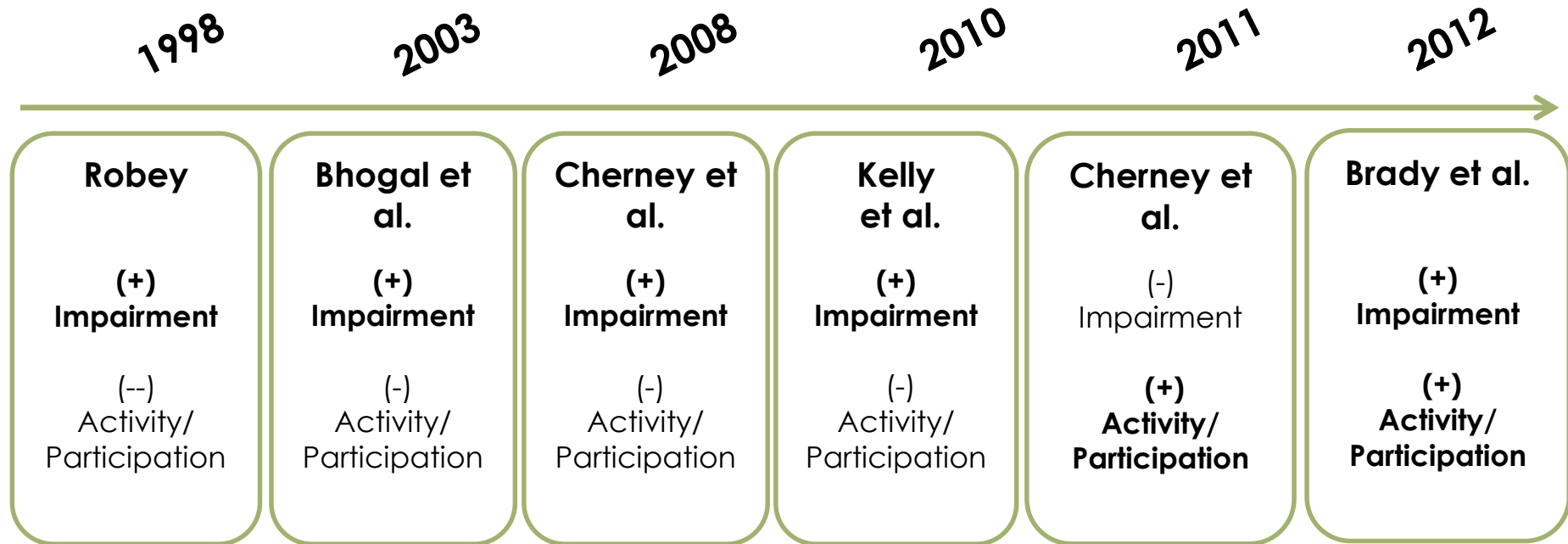
❖ 5 studies added

- high= 4-20 hrs/wk
- Low = 1.5- 15 hrs/wk

High intensity= positive outcomes for functional communication, written language, severity of aphasia

❖ More participants dropped out of high intensity treatment

Intensive Aphasia Treatment



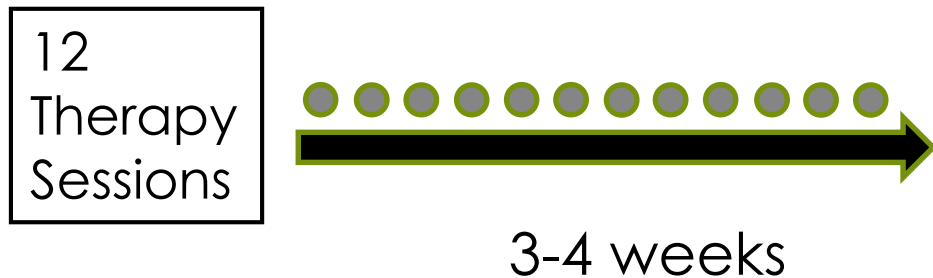
Intensive Aphasia Treatment

Some issues with current evidence:

- ❖ Too few studies
 - effects of different treatment approaches
 - effects across domains
- ❖ Dosage not controlled in most studies
- ❖ Lack of information on implementation

Intensive Aphasia Therapy

Controlled dosage



Advantage for intensive therapy immediately after treatment but it was not maintained



Intensive Aphasia Therapy

Controlled dosage

10
Therapy
Sessions



2 weeks

10
Therapy
Sessions



5 weeks

Gains in the non-intensive therapy significantly better maintained one month after treatment

Aphasia LIFT

Partnership with family and friends

- Collaborative goal-setting
- Training, support, and education

Neuroplasticity- based individual treatment

- Intensity Matters
- Salience Matters
- Repetition Matters

A positive approach

- Supportive, aphasia friendly environment
- Challenge task

Intensive Aphasia Therapy

Controlled dosage (48 hours)

LIFT
n=16



5 days/wk
3 weeks

D-LIFT
n=16



3 days/wk
8 weeks

Outcome Measures

Language Impairment

Boston Naming
Test

Functional Communication

Communicative
Effectiveness Index

Communication
Confidence Rating
Scale for Aphasia

Communication - related QOL

Assessment for
Living with
Aphasia

Assessment at pre-treatment, post-treatment and one month post

Treatment

Impairment

- **skill-based: combined SFA/PCA**

GROUP

(is a _____)

PROPERTIES

(this has / is a _____)

ASSOCIATION

(makes me think of _____)



RHYME

(word with the same ending)

FIRST SOUND

(starts with a _____)

NUMBER OF SYLLABLES

(how many beats?)

Treatment

Impairment

- skill-based: Combined SFA/PCA

Functional

- **context-based: conversation, role-playing, supported communication**

Treatment

❖ *Functional Goal:*

- To make travel arrangements for an upcoming holiday.

❖ *Approach:*

- Task analysis was used to identify the actions related to arranging travel
- A written script was developed to assist with relaying information and asking questions.

Treatment

Impairment

- skill-based: SFA/PCA

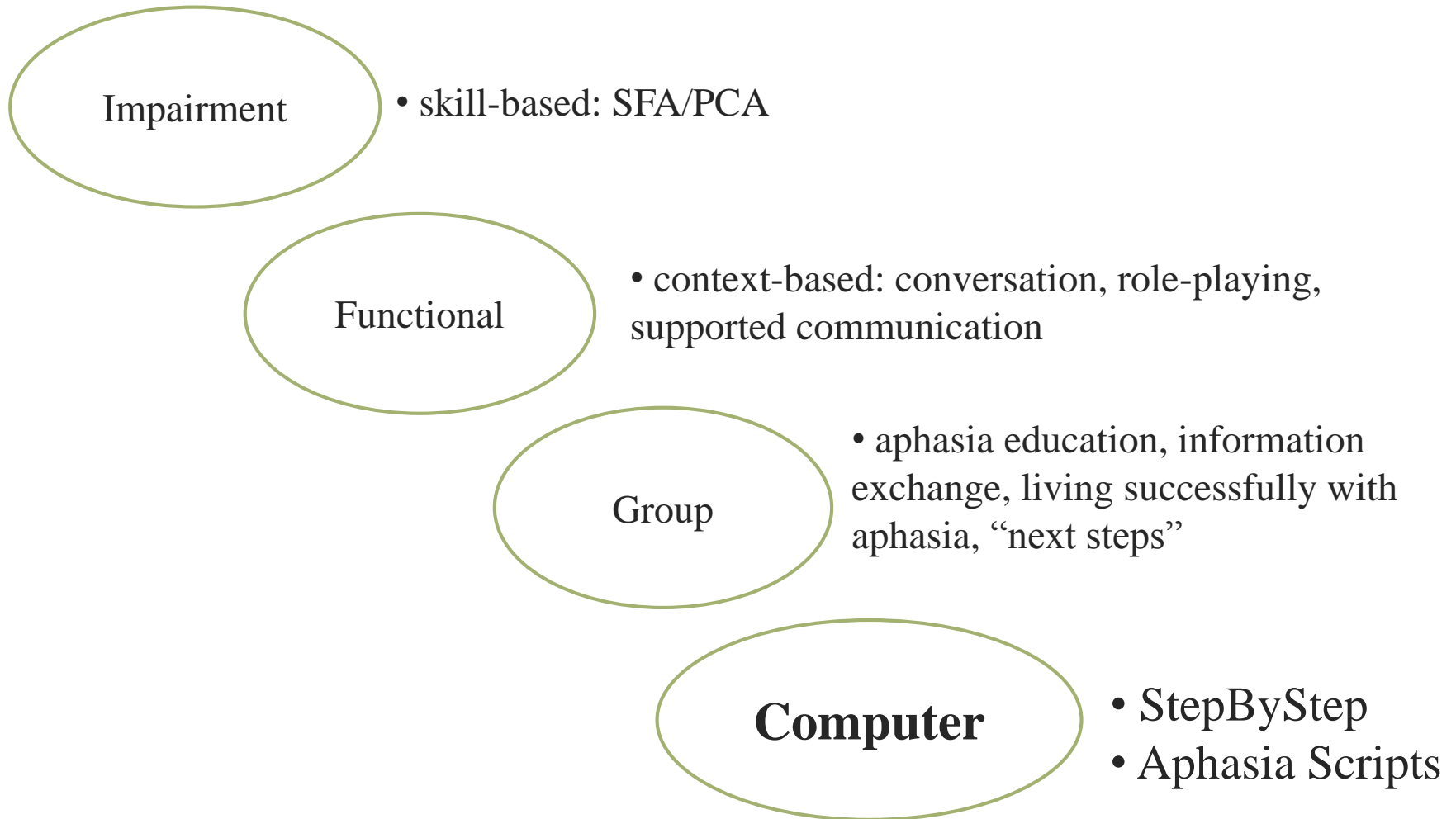
Functional

- context-based: conversation, role-playing, supported communication

Group

- **aphasia education, living successfully with aphasia, life after LIFT**

Treatment

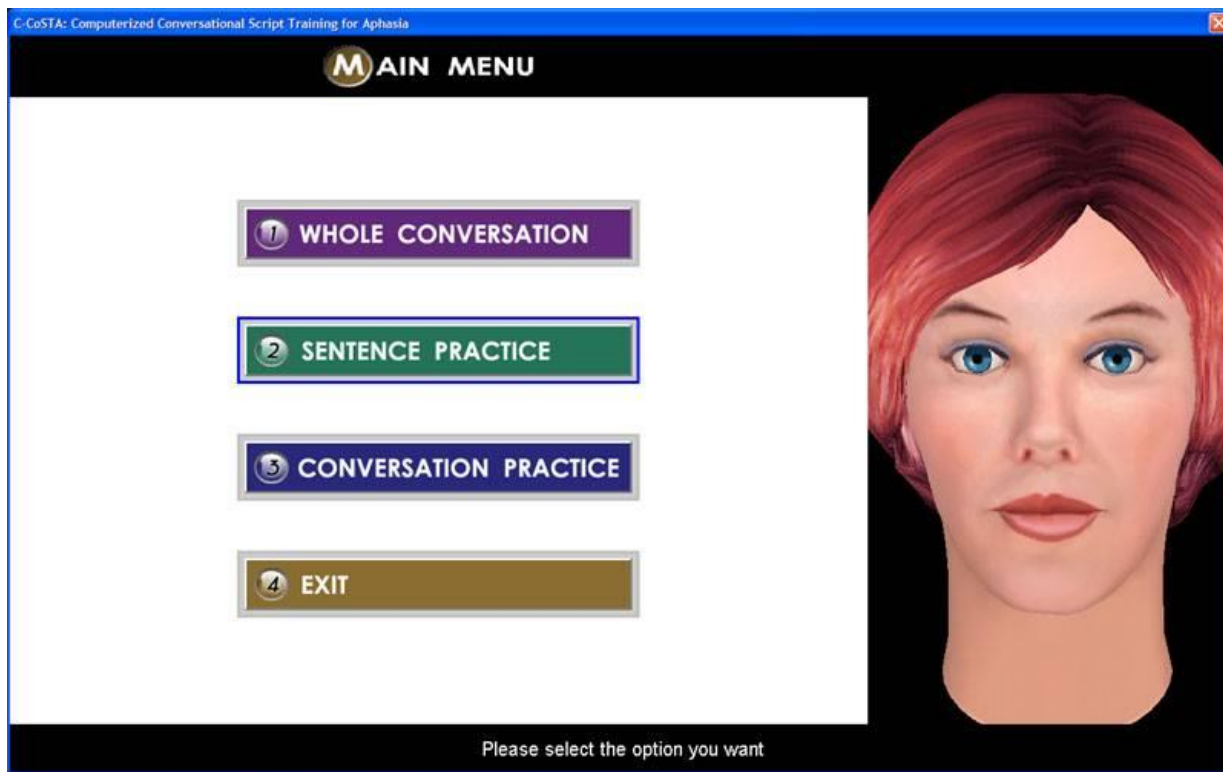


StepbyStep

- ❖ 30 words chosen for treatment were divided into three sets of 10 words
- ❖ As 10 words were treated in the impairment-based session, 20 words were treated in the computer-based sessions
- ❖ Tasks
 - word production
 - sentence production
 - spelling
- ❖ Built in cues (semantic, phono, whole word, written)
- ❖ Can add your personal photos, sounds, sentences and videos!

AphasiaScripts™

- Listen
- Rehearse
- Converse



Treatment

Impairment

- skill-based: SFA/PCA

Functional

- context-based: conversation, role-playing, supported communication

Group

- aphasia education, information exchange, living successfully with aphasia, “next steps”

**Challenge
Task**

Computer

- StepByStep
- Aphasia Scripts

Results

- ❖ At baseline, no difference between groups:
 - age
 - time post onset
 - gender
 - handedness
 - language impairment
 - functional communication

Results

- ❖ All 16 participants completed intensive LIFT
- ❖ Two D-LIFT participants withdrew because of illness that started after therapy (n=14 completed)
- ❖ Intensity characteristics were not significantly different
 - Dose-- 8.5 inputs vs. 8.2 inputs per session
 - Number of hours-- 47.7 vs. 47.9
 - Cumulative intensity-- 118.3 vs. 114.3

Results

Language Impairment (BNT)

- ❖ Significant positive change immediately post and one-month later for intensive LIFT ($p=.003$, $p=.02$)
- ❖ Significantly positive change immediately post and one month later for D-LIFT ($p<.001$)
- ❖ Covaried for pre-therapy BNT naming performance, there was a significant difference between groups immediately after and one-month later ($p=.04$, $p=.002$)

Results

Functional Communication (CETI)

- ❖ Significant positive change immediately post and one-month later for intensive LIFT and D-LIFT ($p < .001$)
- ❖ Covaried for pre-therapy CETI performance, there was a trend for better ratings post-therapy (not significant) and no significant differences at follow-up

Results

Functional Communication (CCRSA)

- ❖ Significant positive change immediately post and one-month later for intensive LIFT ($p=.02$, $p=.03$)
- ❖ Significantly positive change immediately post and one month later for D-LIFT ($p<.001$)
- ❖ No significant difference between groups

Results

Communication-related QOL (ALA)

- ❖ Significant positive change immediately post and one-month later for intensive LIFT ($p=.02$, $p=.007$)
- ❖ Significantly positive change immediately post and one month later for D-LIFT ($p=.005$, $p=.01$)
- ❖ No significant difference between groups

Conclusions

- ❖ Supporting evidence across ICF domains for comprehensive programs
- ❖ Distributing practice over time
 - better for picture naming (impairment)
 - did not affect functional communication or communication-related QOL

Conclusions

❖ Considerations

- Distributed comprehensive therapy may be more feasible for implementation
- 6-7 hours of therapy per week is still fairly intensive
- Not possible to identify which components contribute to the outcome

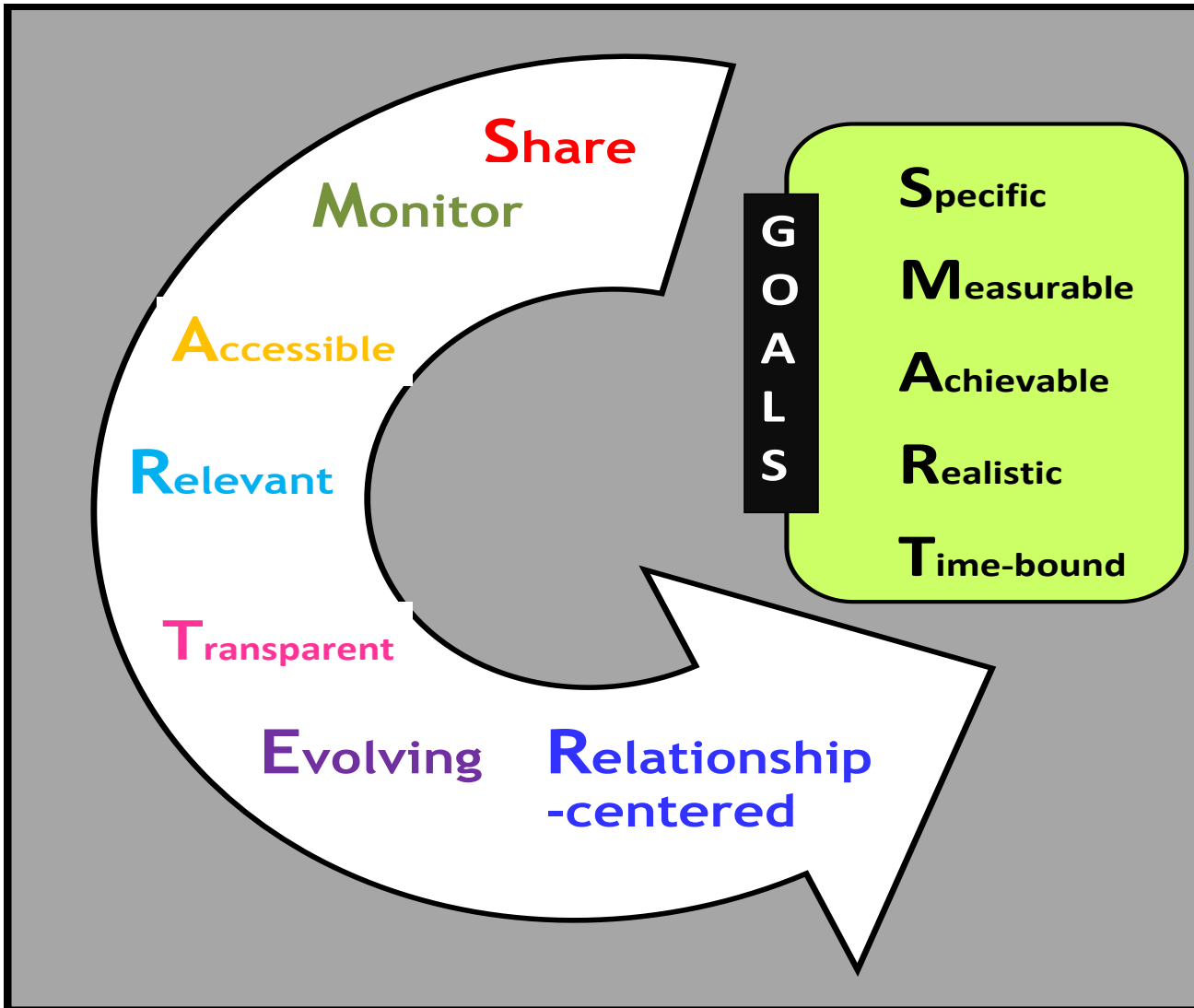
Conclusions

❖ Future Directions

- More controlled studies on intensive vs. distributed comprehensive treatments
- More controlled studies on single treatment approaches across domains



Setting Goals



Setting Goals

- **S**hared- patient and family preparation
- **M**onitored– ongoing discussions of change/lack of change
- **A**ccessible– extra time, aphasia-friendly materials
- **R**elevant– previous experience, skills, activities, interests
- **T**ransparent– links between broad goals/subgoals; record
- **E**volving– revise and revisit goals
- **R**elationship-centered– get to know patient and family

Selecting Stimuli

- ❖ Identifying meaningful words
 - picture bank as a guide (Bank of Standardized Stimuli)
 - “Blank page” approach for personal words
- ❖ Other resources available
 - 357 words from adults conversations
 - 1000 most commonly used words (across word types)
- ❖ *Consider:* high frequency words represent many different word classes

Selecting Outcome Measures

- ❖ Measure outcomes across the ICF and across time
- ❖ Select measures that correspond best with treatment
- ❖ All outcome measures don't perform the same
 - type of measure (objective vs. subjective)
 - sensitivity/specificity, validity/reliability
- ❖ Consider more than one perspective
 - PWA, caregivers, and researchers/clinicians



**Aphasia LIFT sounds
amazing but....**

Barriers and Facilitators

Patient-related

Barriers

- Medically Unstable
- Sensory, motor and cognitive deficits
- Post-stroke fatigue

Facilitators

- Carefully planned treatment
- Motivation!
- Support system

Barriers and Facilitators

Institutional

Barriers

- Limited staff/resources
- Time constraints
- Prioritization of other disorders
- Access to services

Facilitators

- Computer-based treatment
- Trained volunteers or AHA
- Group therapy
- Telerehabilitation

Intensive Aphasia Therapy

Can intensive treatment be made more cost-effective?

- ❖ 9 hrs/week for 11 weeks vs. standard (3hr/week)
 - individual + computer
 - individual + group
 - individual + SLPA

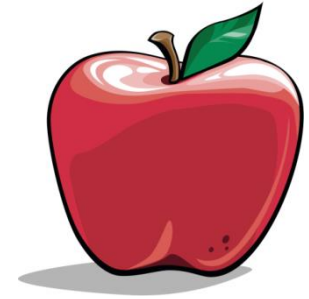
- ❖ Cost was 30% lower per hr/per client for intensive treatment groups that used computer therapy and group therapy

Intensive Aphasia Therapy

Can “intensive” therapy be administered without extending the amount of time a patient spends in treatment?

Platform Naming Treatment

- Present picture: Attempt word
- Picture + Written Word: Attempt word
- Picture + Spoken Word: Repeat word
- Pause
- Picture: Attempt word
- Picture + semantic description+written word: Attempt word
- Picture: Attempt word
- Picture + phonologic features+written word: Attempt word
- Picture + Spoken Word: Repeat word
- Picture+Written Word: Produce word



Summary

- ❖ Intensive treatment may be effective for some patients in some contexts for some treatment approaches
- ❖ Distributed treatment may be more effective for some treatment approaches
- ❖ Increased exposure and repetition during therapy can increase intensity within treatment sessions
- ❖ Computer and group-based therapy may facilitate increased intensity (with additional benefits)



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