Cognitive Behavioral Therapies for the Treatment of Schizophrenia Symptoms

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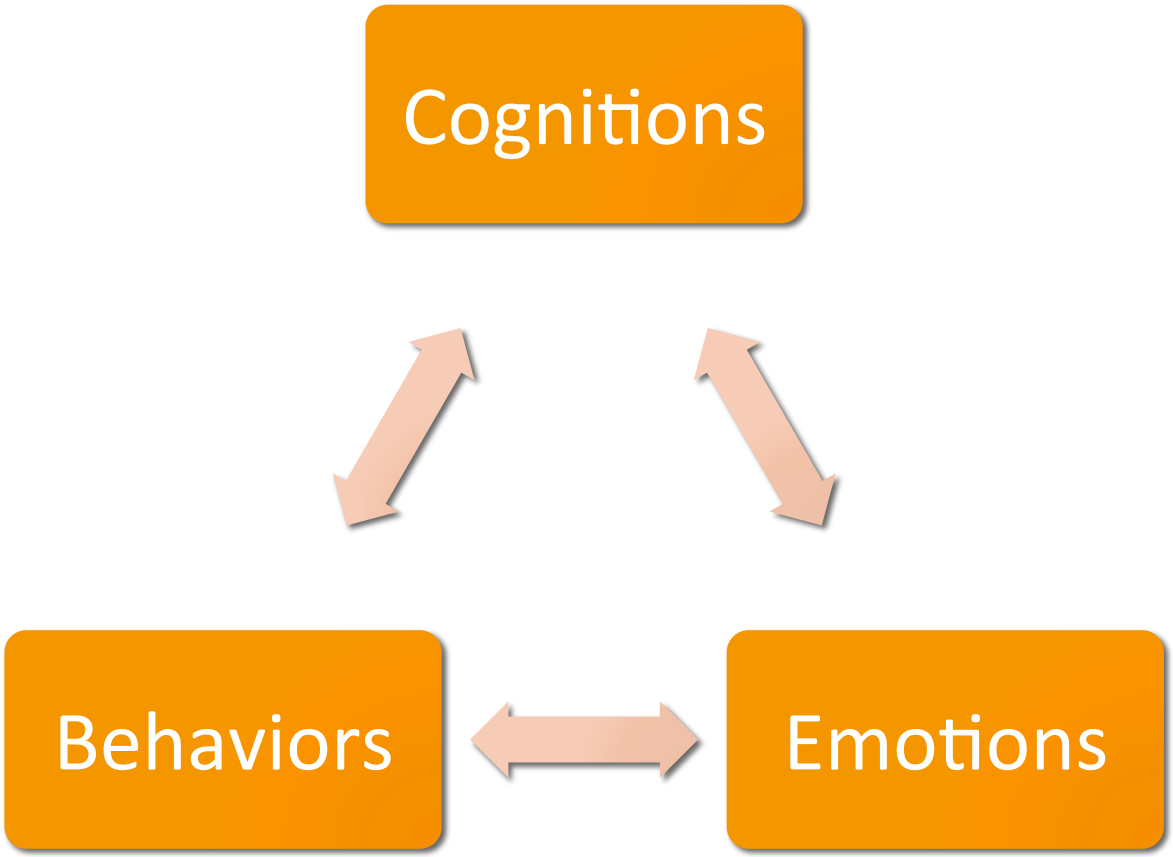
Agenda

- Cognitive Behavior Therapy Model
- About FSH
- About SLP
  - What is SLP?
  - Research on SLP
  - Behavioral interventions used on SLP
- Specific Cognitive and Behavioral Interventions Used on SLP
  - Attention Shaping
  - Behavioral Management of Auditory Hallucinations
  - “Michael’s Game”
    - FSH Pilot Study

Cognitive Behavioral Therapy for Psychosis



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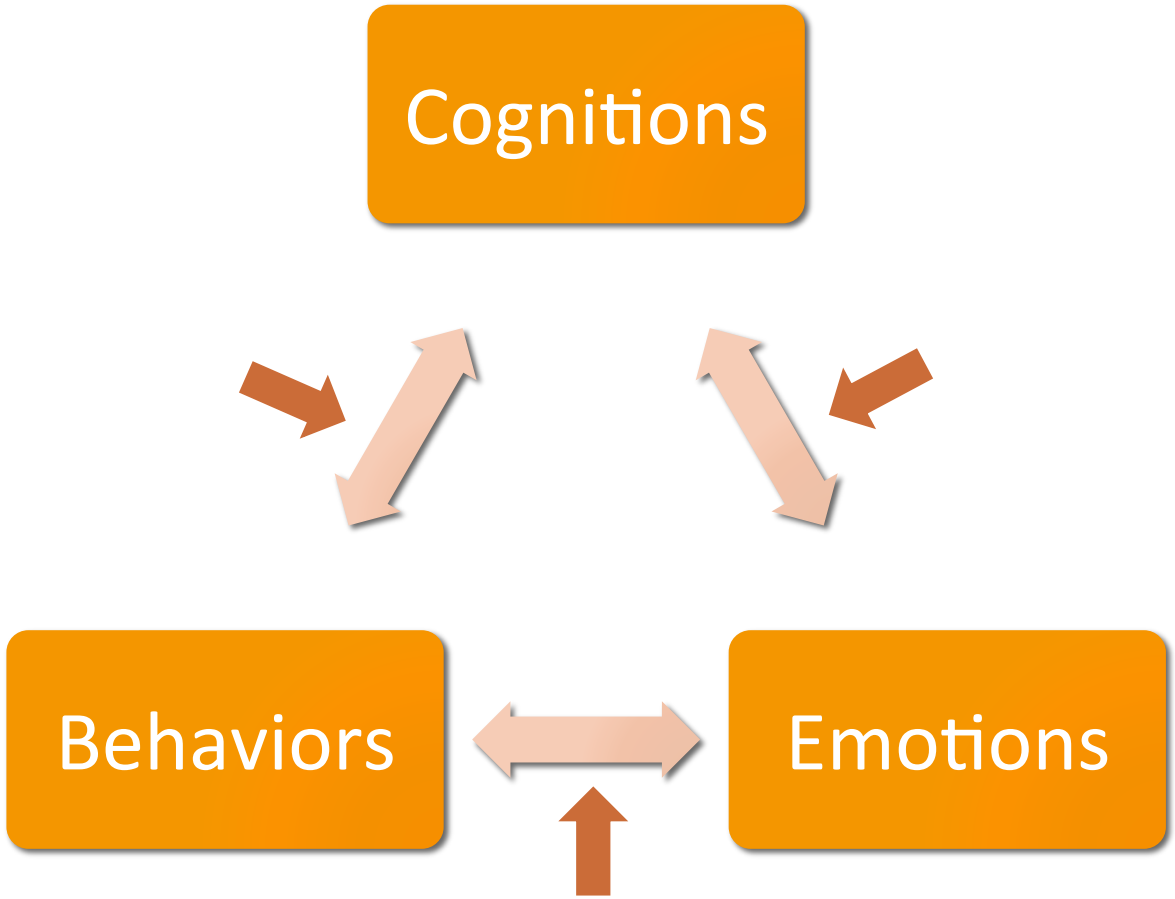

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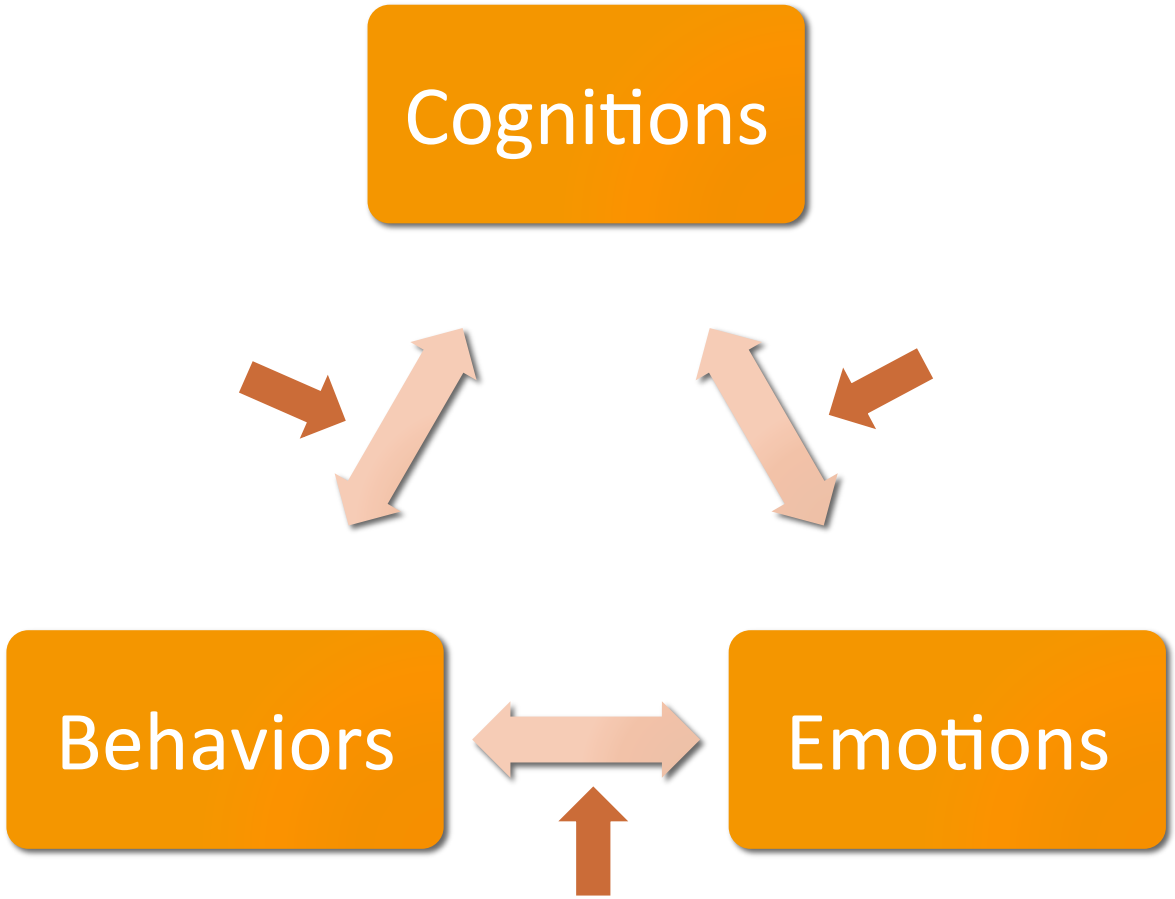


Fulton State Hospital

Fulton State Hospital

- Consists of four treatment units:
  - Maximum security (Biggs Forensic Center)
  - Intermediate security (Guhleman Forensic Center)
  - Minimum security for those diagnosed with Developmental Disabilities (Hearnes Forensic Center)
  - Sexual Offender Rehabilitation and Treatment Service program (SORTS)
- Serves as a statewide treatment facility for persons found not guilty or unable to stand trial by reason of mental disease or defect

Fulton State Hospital

- Four Treatment Programs:
  - New Outlook Program for Behavior and Mood Self-Management (NOP)
    - DBT and Positive Behavioral Support
  - Recovery and Self-Motivation (RSM)
  - Sexual Offender Rehabilitation and Treatment Service (SORTS)
  - Social Learning Program (SLP)

Fulton State Hospital: SLP

- The Social Learning Program is a highly structured, milieu-based, inpatient approach to rehabilitation
- It consists of a comprehensive integrated network of skills training techniques and supports based on learning theory
- A premium is placed on staff training and competency assessment
- Primarily serves clients with Schizophrenia

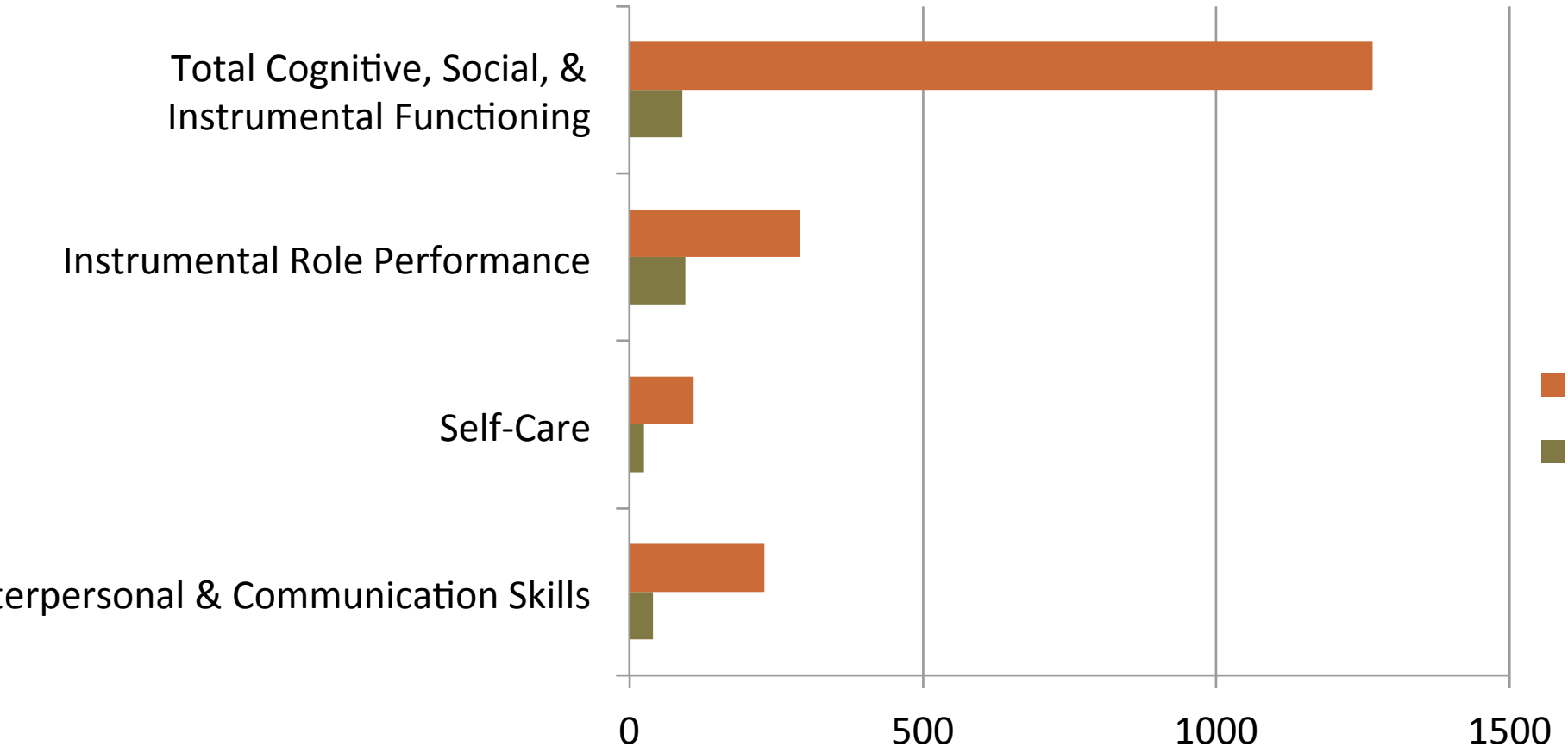
Fulton State Hospital: SLP

- Historical Development
  - SLP originally developed by Dr. Gordon Paul
  - Six-year study of inpatient treatment (Paul & Lenz, 1977)
  - Social Learning Program vs. Milieu Therapy vs. Traditional Hospital Treatment
  - Severely disabled client sample with little probability of achieving discharge
  - First application with forensic clients
  - SLP now operating at each security level and other Missouri hospitals

SLP is Proven Effective for "Treatment Resistant" People

- People who exhibit high rates of problem behavior
- People who display deficits in appropriate behavior
- People who never learned or have lost basic skills
- People unable or unwilling to set recovery goals
- People who have resided in hospitals for long periods
- People who have been diagnosed with psychotic disorders

SLP DRAMATICALLY INCREASES ADAPTIVE BEHAVIOR



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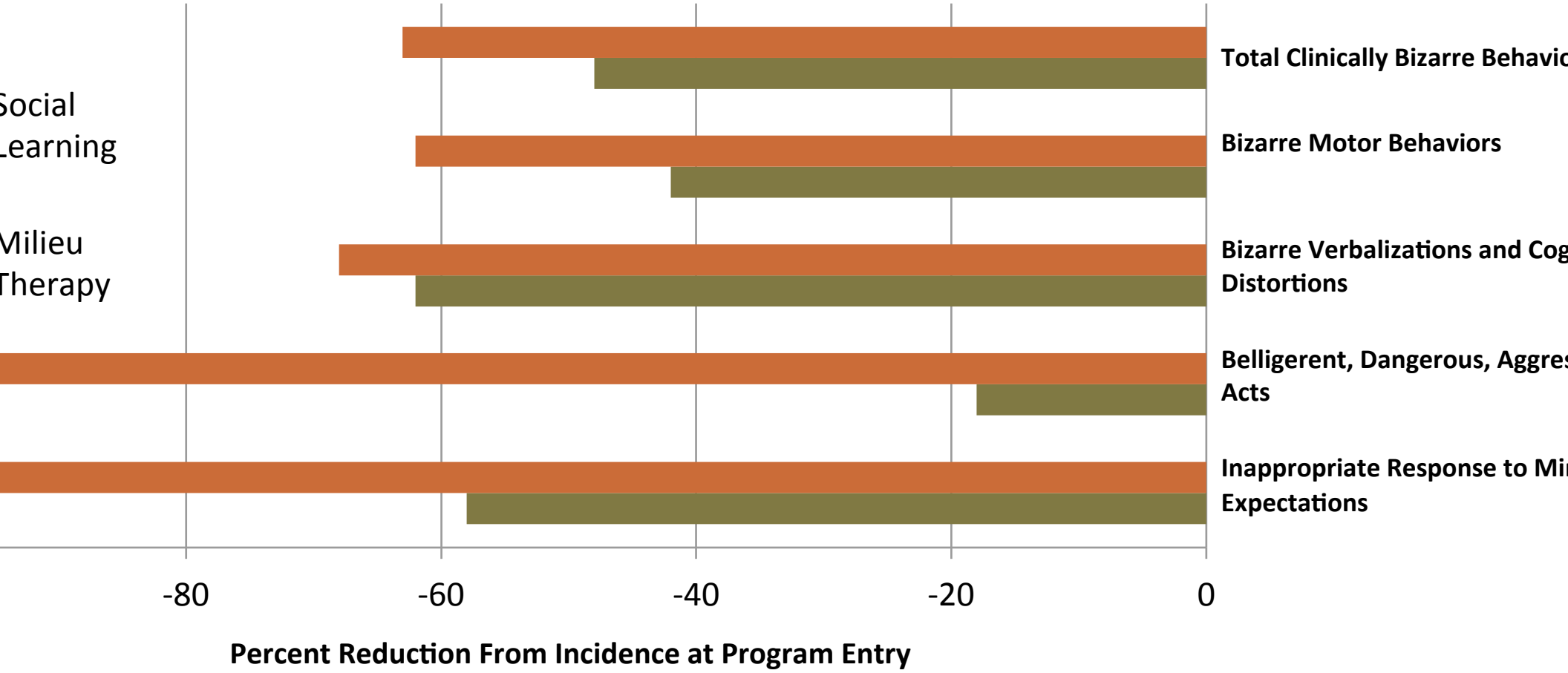
LP PRODUCES DECREASES IN MALADAPTIVE BEHAVI



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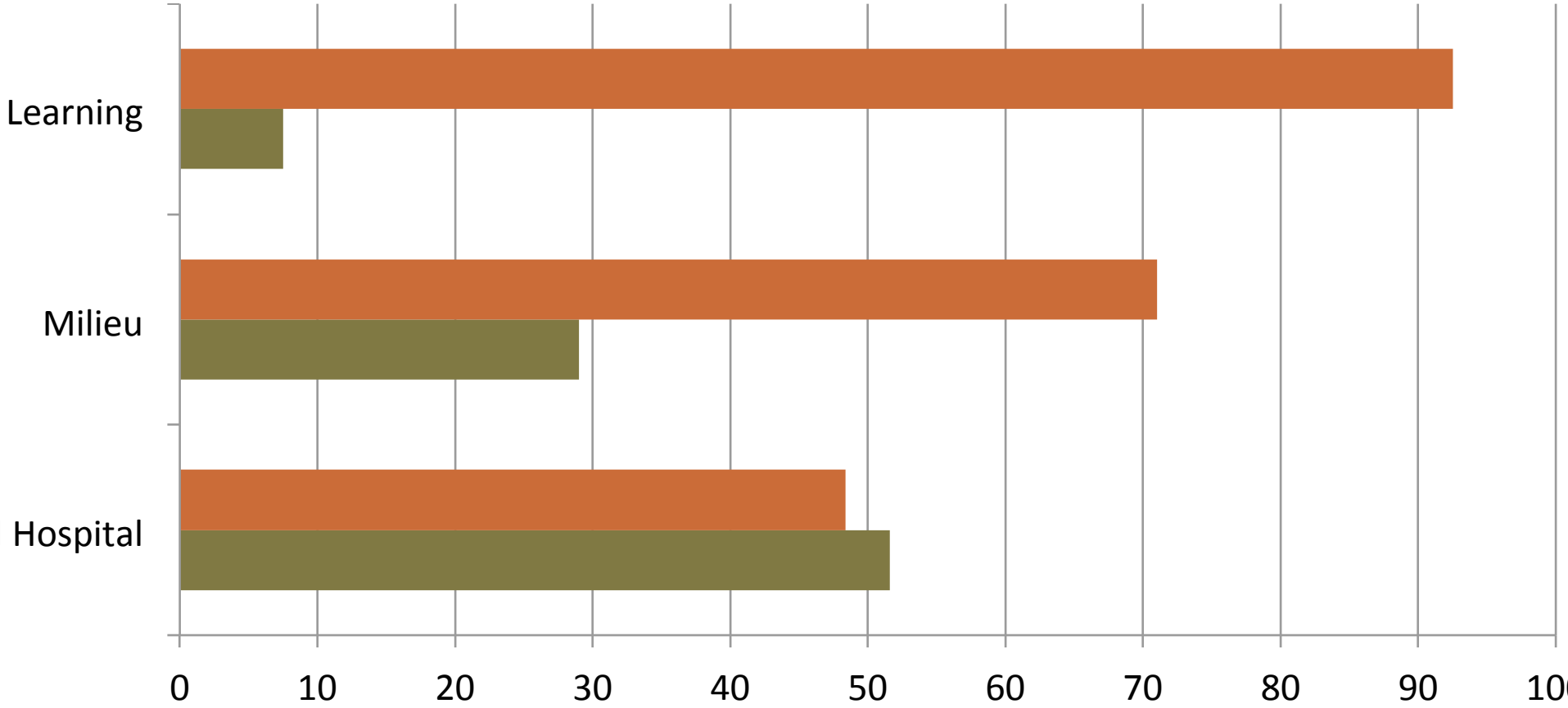
93% OF SLP CLIENTS SUCCESSFULLY DISCHARGED TO THE COMMUNITY



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SLP Program Structure

- Token economy
- Classes, groups, and activities
- Step level system
- De-centralized interdisciplinary treatment team
- Direct observational assessment

Time-Sample Behavioral Checklist (TSBC)

- Two-second observations of every client
- Provides average hourly rates of 69 different behaviors
- Nine global indexes of appropriate and inappropriate behavior
- Multiple applications for treatment planning and program evaluation

Staff-Resident Interaction Chronograph (SRIC)

- Ten-minute observations of staff-client interactions
- Provides individual and program profiles of staff-client interactions
- Global indexes of overall staff activity and staff attention received by clients
- Multiple applications for staff training, supervision, and program evaluation

Clinical Frequencies Recording System (CFRS)

- Records important events and actions as they happen
- Completed as part of ongoing staff duties
- Easy-to-use checklist format
- Weekly and monthly printouts provide:
  - Attendance and participation
  - Progress on individualized behavioral targets
  - Token earnings, expenditures, and infractions
  - Reports for clients about step-level progress

Procedures from Learning Theory to Promote Behavioral Change

- Verbal/Nonverbal Reinforcement
- Differential Reinforcement
- Shaping
- Prompting
- Modeling
- Problem-Solving Training
- Skills Training
- Cognitive Rehabilitation
- Generalization Training
- Response Cost

Attention Shaping

SILVERSTEIN ET AL., 2009

What is Shaping?

- Application of reward-based learning techniques to bring about new or modify existing behavior
- Involves differential reinforcement of successive approximations of a target behavior
  - First, reinforce a variant of behavior that is at the upper end of what the client can already achieve
  - When the initial step toward the target behavior occurs regularly, advance the criterion for reinforcement to the next step in a hierarchy
  - Fade reinforcement of the previous behavior, and limit reinforcement to only behavior meeting the new criterion
  - Repeat until the desired behavior is achieved

Goals of Attention Shaping

- Increase clients' ability to attend to tasks
- Improve clients' basic academic abilities to prepare them for regular academic classes

Use of Attention Shaping in Paul & Lentz (1977)

- Most severely impaired and floridly psychotic clients placed in Shaping classes three times per day
- Effective at preparing these clients for regular academic classes in which they were expected to work:
  - More independently
  - On a much thinner schedule of reinforcement

Effectiveness of Attention Shaping

- Spaulding et al. (1986) examined the effects of Shaping on nine inpatients with severe and persistent Schizophrenia
  - Seven subjects graduated from training, having achieved continuous work performance scores of 30 minutes for 5 consecutive sessions
- Menditto et al. (1991) examined the effects of Shaping on seven forensic inpatients with severe and persistent Schizophrenia or Schizoaffective Disorder
  - After 12 months, six of the seven clients had demonstrated substantial improvements in attentional functioning, with four graduating from Shaping classes and progressing to more traditional academic classes
  - Clients continued to perform well in those classes, with 1-year follow up showing successful completion of academic class assignments an average of 84 percent of the time

Effectiveness of Attention Shaping

- Silverstein et al. (1998) replicated the findings of Spaulding et al. (1986) and Menditto et al. (1991) using a four-session-per-week Shaping intervention with four clients who had been unable to tolerate any form of group treatment
  - All clients demonstrated improvements over the course of 50-55 training sessions, with average on-task behavior increasing to 45-55 minutes
- Bellus et al. (1999) compared academic skill performance of seven lower functioning clients in Shaping classes to a group of seven higher functioning clients in traditional academic classes over a 9-month period
  - Clients in Shaping classes increased their reading and mathematics performance close to one and two grade levels, respectively
  - In contrast, clients in traditional academic classes did not show significant performance improvement in these subjects

Effectiveness of Attention Shaping

- Silverstein et al. (1999) sought to determine the effectiveness of integrating Shaping and skills training procedures
  - All clients demonstrated significant increases inattentive behavior
  - For one client who did not respond initially to the 15-minute reinforcement schedule, a continuous reinforcement schedule was implemented which eventually led to increases from 10 percent to over 80 percent of the time in keeping his eyes open, with subsequent greater spontaneity and participation, and responses that were more relevant to the group

Effectiveness of Attention Shaping

- Silverstein et al. (2009) conducted a multisite study in which clients were assigned to receive either the UCLA Basic Conversation Skills Module (BCSM) augmented with Shaping or in the standard format
  - Clients receiving social skills training augmented with Shaping demonstrated significantly more attentiveness in group sessions and higher levels of skill acquisition
  - Significant relationships were found between changes in attentiveness and amount of skills acquired

Effectiveness of Attention Shaping

- Silverstein et al. (2014) conducted the first randomized clinical trial of Shaping with clients diagnosed with schizophrenia who were being treated in a partial hospital program
  - Shaping was effective in improving attention in this type of programs
  - Effects of Shaping generalized outside of the immediate treatment context to both other treatment groups and real-world functioning
  - Contingent reinforcement was a critical ingredient of Shaping

Attention Shaping at FSH

- Our current arrangement for Shaping is to offer a worksheet class in the morning (e.g., focusing on math, money, time, etc.), and another worksheet class in the afternoon (e.g., focusing on language)
- We also offer a communication skills class two days per week
- We can have up to five clients in Shaping at a time
- Our clients earn tokens and soda for appropriately participating (i.e., meeting their individualized targets) in Shaping

Basic Attention Shaping Procedures

- Assign each client an individualized target that must be met to earn a token
- Announce that Shaping is beginning and invite clients individually to come to class
- Greet each client at the door and hand them an attendance token if they are on time
- Prompt each client to begin working on the assignment for the day and tell them how long they will have to work in order to earn the first shaping chip and soda
- Step back and allow the clients to work independently

Attention Shaping Targets

1 x RTR	1 x 30 seconds	3 x 2	2 x 7
2 x RTR	1 x 1	3 x 3	2 x 8
3 x RTR	2 x 1	3 x 4	2 x 9
4 x RTR	3 x 1	3 x 5	2 x 10
5 x RTR		3 x 6	

Attention Shaping: Broken Concentration

- Each time the client is not working or breaks from working because of such behaviors:
  - Close their book and move it away from them
  - Identify the specific behavior the client engaged in that stopped them from working, and the consequences of that behavior
  - Praise them for the amount of work they were able to do up to the time they broke concentration
  - Identify the requirements and consequences for getting back on task.
  - When the client starts working again, give verbal praise

Attention Shaping: Shaping Chips & Soda

- When a client works for one targeted time period (a subtarget) without any disruption:
  - Praise the client for having completed one time period
  - Give them a shaping chip and offer them a cup of soda
  - After they finish their soda, prompt them to begin work again if they have additional subtargets to meet

Attention Shaping: Tokens

- Tokens are earned if the client is able to successfully work for his/her entire target
- If a token is earned:
  - Praise the client for what they accomplished during the class
  - Collect the shaping chips the client earned, hand them a token, and prompt them to come to the next shaping class for more opportunities to earn tokens
- If a token is not earned:
  - Praise them for whatever they were able to accomplish during the period
  - Tell them why they did not earn the token
  - Prompt them to come to the next shaping class and try again

Attention Shaping: Graduation

- When a client can consistently work for two 10-minute periods, the treatment team should consider starting the transition period to regular groups and classes
  - This involves fading out the food reinforcers that the client receives during Shaping, and alternating Shaping with regular academic classes, or with more advanced psychoeducational or therapy groups

Attention Shaping: Graduation

Transition Week	Changes in Procedure
1	Client earns a shaping chip (no food reinforcer) after the first 10-minute period Client earns a shaping chip and a food reinforcer after the second 10-minute period, and trades in shaping chips for a token at the end of class
2	Client earns a shaping chip after the first 10-minute period (no food reinforcer) Client earns another shaping chip at the end of the second 10-minute period (but no food reinforcer), and trades in shaping chips for a token at the end of class
3	Client attends 1 regular class or group and 1 Shaping each day (earning only shaping chips and tokens)
4	Client graduates from Shaping and attends all regular classes

Attention Shaping

Video demonstration

Behavioral Management of Auditory Hallucinations

BUCCHERI & TRYGSTAD, 2010

Behavioral Management of Auditory Hallucinations

- Assumptions and goals
  - Learn strategies and share what works for you
  - Everyone is different
  - Learn from each other
  - Becoming experts of managing your own symptoms
  - Symptom management leads to empowerment

Behavioral Management of Auditory Hallucinations

- Structure
  - Assessment
  - One hour session once a week
  - One strategy per week

Behavioral Management of Auditory Hallucinations

- Assessment
  - Unpleasant Voices Scale (UVS—Inpatient Version; Gerlock et al., 2010)
  - Command to Harm Safety Protocol
  - Characteristics of Auditory Hallucinations Questionnaire (CAHQ; Buccheri et al. 1996; Trygstad et al., 2002)
  - Auditory Hallucinations Interview Guide—Inpatient Version (AHIG-IP; Buccheri et al. 1996)

Behavioral Management of Auditory Hallucinations

- Strategies
  - Symptom self-awareness
  - Talking with someone
  - Listening to music with or without headphone
  - Watching TV or something that moves
  - Saying stop and go away
  - Using earplugs
  - Relaxation
  - Doing something you like
  - Take prescribed medication
  - Avoiding drugs and/or alcohol

Behavioral Management of Auditory Hallucinations

- Advantages
  - Low-cost
  - Adaptable
  - Normalizes discussion of AH
  - Helps clients practice and learn skills that help them

Behavioral Management of Auditory Hallucinations

- Effectiveness Research
  - Frequency, self-control, clarity, tone, distractibility and distress improved after intervention (Trygstad et al., 2002).
  - Decrease in anxiety and depression after intervention (Trygstad et al., 2002).
  - Long-term outcomes:
    - Frequency, self-control, and clarity continue to demonstrate improvement at 3, 6, 9, and 12 months; distractibility demonstrates improvement at 6, 9, and 12 months post-intervention (Buccheri et al., 2004).

Behavioral Management of Auditory Hallucinations Course

Behavioral Management of Auditory Hallucinations Course used for individual therapy

Case Study

“Michael’s Game”

KHAZAAL ET AL., 2006

“Michael’s Game”

- Evidence-based Cognitive Therapy approach to psychotic symptoms
- Card game for the treatment of delusional ideas
- Training module for hypothetical reasoning

“Michael’s Game” Goals

- Reduce distress associated with delusional ideas and hallucinations
- Improve clients’ coping ability
- Increase clients’ cognitive flexibility in developing alternative ideas to avoid tendency to “jump to conclusions”
- Build hypothetical reasoning skills
- Build empathy towards Michael to increase insight into one’s own mental illness

“Michael’s Game” Intervention

- Clients are instructed to help Michael find alternatives to the erroneous conclusions that he draws from situations in each card
- Can be utilized in a group or individual therapy context
- Group context allows clients to become collaborative partners of a fictitious character, Michael, with cards containing impersonal information which may actually reflect some of their own problems

“Michael’s Game” Intervention Techniques

- Developing a therapeutic alliance based on the clients’ perspectives
- Normalizing psychotic symptoms
- Cognitive restructuring techniques aimed at developing alternative explanations to delusions
- Reality testing
- Connecting beliefs to emotions and behavior

Examples of “Michael’s Game” Cards

Non-psychotic and non-emotional card:

Michael goes on an errand. When he gets back home, his sink is overflowing and the water is running. He thinks that he has left the tap on and the plug in.

Emotional and non-psychotic card:

Michael is walking on the main street. He notices Dave on the opposite sidewalk. Dave is accompanied by a woman and doesn’t greet him, even though Michael is looking in their direction. Michael tells himself, “Dave is ashamed of me and he would rather ignore me in front of his friends.”

Psychotic card:

Michael is bike riding on a small country road, when, a tractor pulls onto the road. It starts driving along behind him at a slow pace. Michael thinks that he is being followed.

Examples of "Michael's Game" Card Objectives

- Describe the situation (the facts)
- Identify Michael's initial hypothesis
- Identify alternative hypotheses
- Identify emotional and behavioral consequences Michael might face as a result of the different hypotheses
- Search for arguments for or against a hypothesis
- Identify additional information that would be helpful in validating the hypotheses
- Evaluate likelihood of each hypothesis

“Rules” of the Game

- “Michael’s Game” developers (Khazaal et al., 2006) indicate that the game can be played by two to eight clients
- “The program is designed to be playful and led in a non-judgmental and supporting atmosphere” (Khazaal et al., 2011)
- “Clients are partners” (Khazaal, et al. 2006)
  - Clients will give answers to Michael’s questions and relieve him of his anxiety in order for him to regain a sense of self-control
- Aims to stimulate curiosity as well as intellectual and emotional investment
- Each client chooses his or her own degree of participation
  - Pay close attention to verbal and non-verbal cues; provide appropriate level of encouragement as well as degree of intimacy that can be revealed within the group
- All hypotheses are allowed
  - This encourages everyone to feel comfortable in sharing ideas

“Michael’s Game” Effectiveness Research

- Khazaal and colleagues (2006) introduced Michael’s Game as a cognitive therapy intervention for psychotic symptoms aimed at the treatment of delusional ideas
  - In a sample of 55 outpatients, they found significant differences in clients’ levels of preoccupation and conviction, indicating a reduction in self-reported delusional beliefs.
- Khazaal and colleagues (2011) found moderate effect sizes for improvement in a sample of 107 outpatients’ levels of preoccupation and conviction of delusional beliefs
- Khazaal et al. (2015) found additional support for this intervention through an RCT in outpatient settings
  - Clients showed improvement at mid-point and post-test, with reductions in distress, preoccupation, and conviction of delusional beliefs

“Michael’s Game” Case Study

Michael’s Game used in individual therapy context

“Michael’s Game”

Video Demonstration

“Michael’s Game”on a Competency Restoration Unit at FSH

A PILOT STUDY

JENNIFER H. LEWEY, M.A., SUPERVISED BY NIELS C. BECK, PH.D.

“Michael’s Game” as a Pilot Study on a Competency Restoration Unit at FSH

- **Rationale**
  - FSH administrative and clinical staff identified a need for a subgroup of clients within the Competency Restoration Program who had a longer than average length of stay for restoration
    - Significant delusional ideation
  - No treatment targeting cognitive remediation is provided to clients on this program at this time
- **Research Question**
  - Can we offer an evidence-based treatment designed to target delusional ideation that might assist in restoring these clients to competency?

Method

- Pilot Study – MU IRB Reviewed; Classified as Program Evaluation/Quality Assurance Project
- Open referral process from Treatment Team
- Carefully selected eight clients; closed-group format
- Intervention was delivered twice weekly for four-month time period
- Three measures were selected to assess progress related to delusional beliefs and competency restoration

Inclusion & Exclusion Criteria

INCLUSION CRITERIA

- Adult inpatients ranging in age from 18 to 79
- Admission date within one month prior to open referral time period (with the exception of *Sells* Order clients)*
- Primary diagnosis within Psychotic Spectrum
- Delusional thinking present
- Likelihood of regular attendance in group

EXCLUSION CRITERIA

- Adult inpatients diagnosed with Intellectual Disability
- Any inpatient likely to be found Permanently Incompetent to Stand Trial (PIST)
- Likelihood of not maintaining regular attendance in group

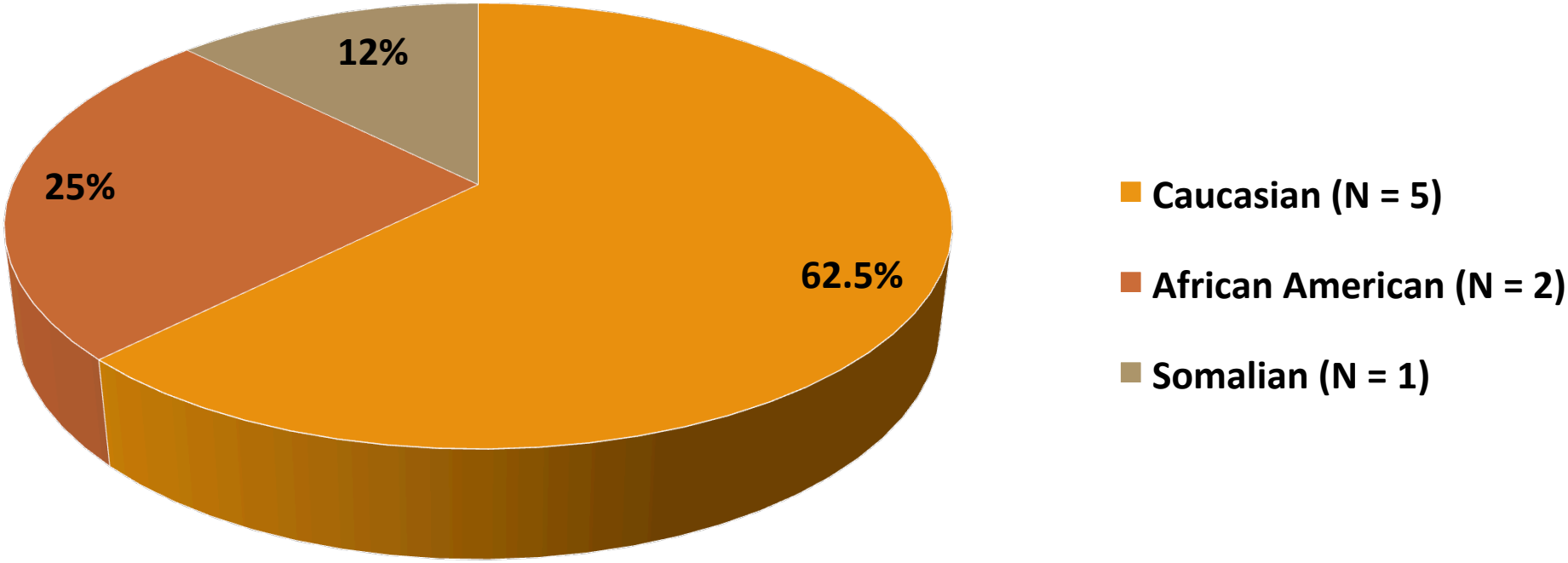
Selected Measures

- **Peters et al. Delusions Inventory - 21** (PDI-21) (Peters et al., 2004)
  - Measures clients' level of distress, preoccupation, and distress regarding various delusional beliefs
- **Maudsley Assessment of Delusions Schedule** (MADS) (Taylor et al., 1994)
  - Six questions selected to assess insight into principal delusion
- **Evaluation of Competency to Stand Trial - Revised** (ECST-R) (Rogers et al., 2004)
  - To provide empirical estimate of clients' progress toward competency restoration

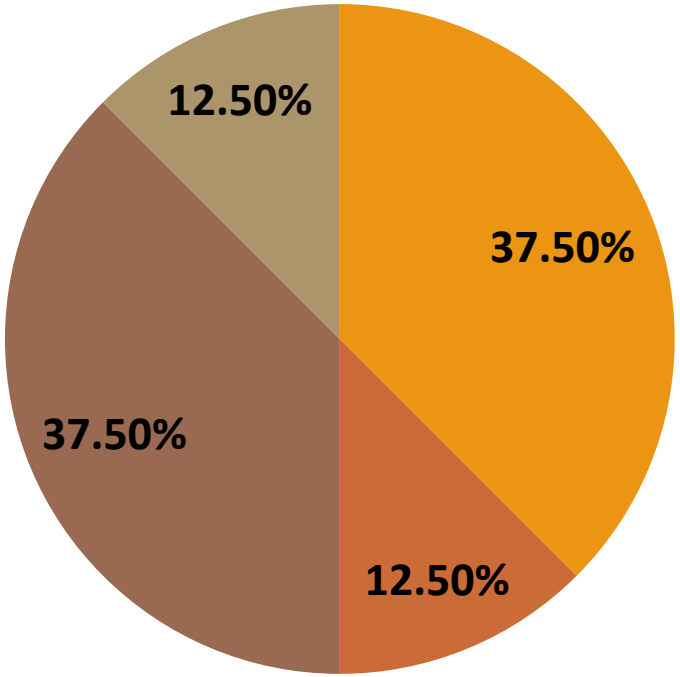
Results

(N = 8)

Ethnicity

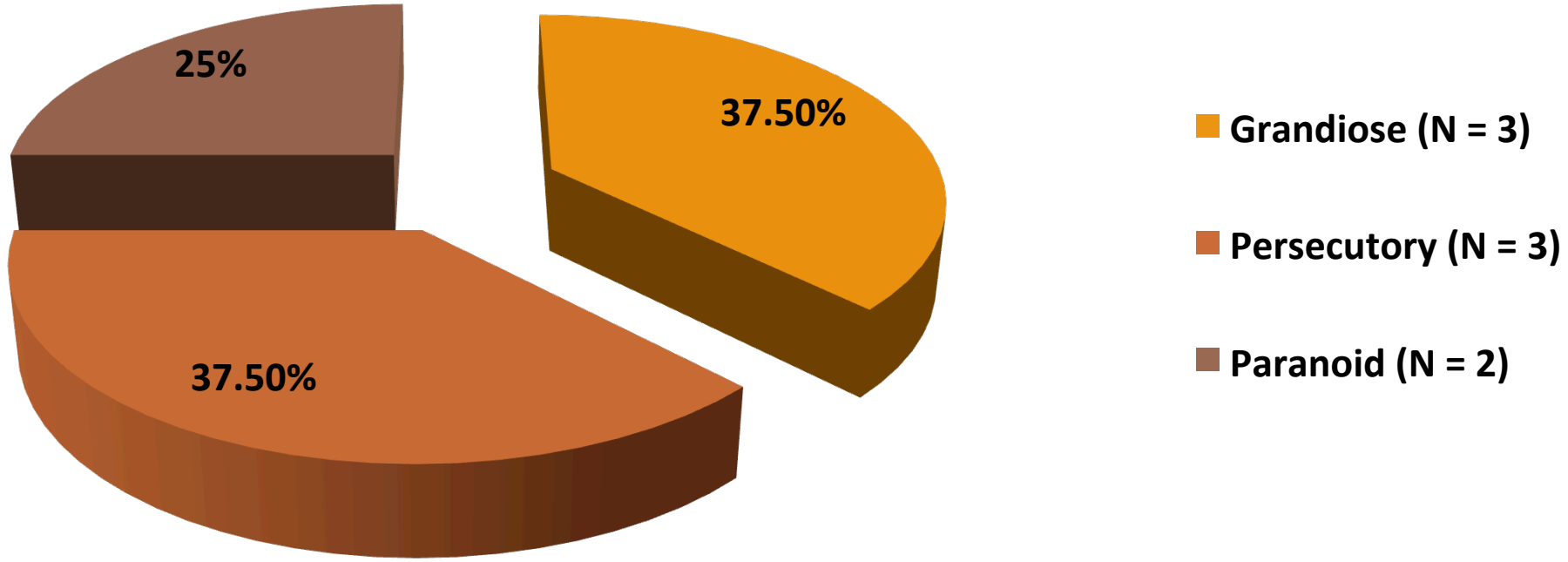


Primary Diagnosis

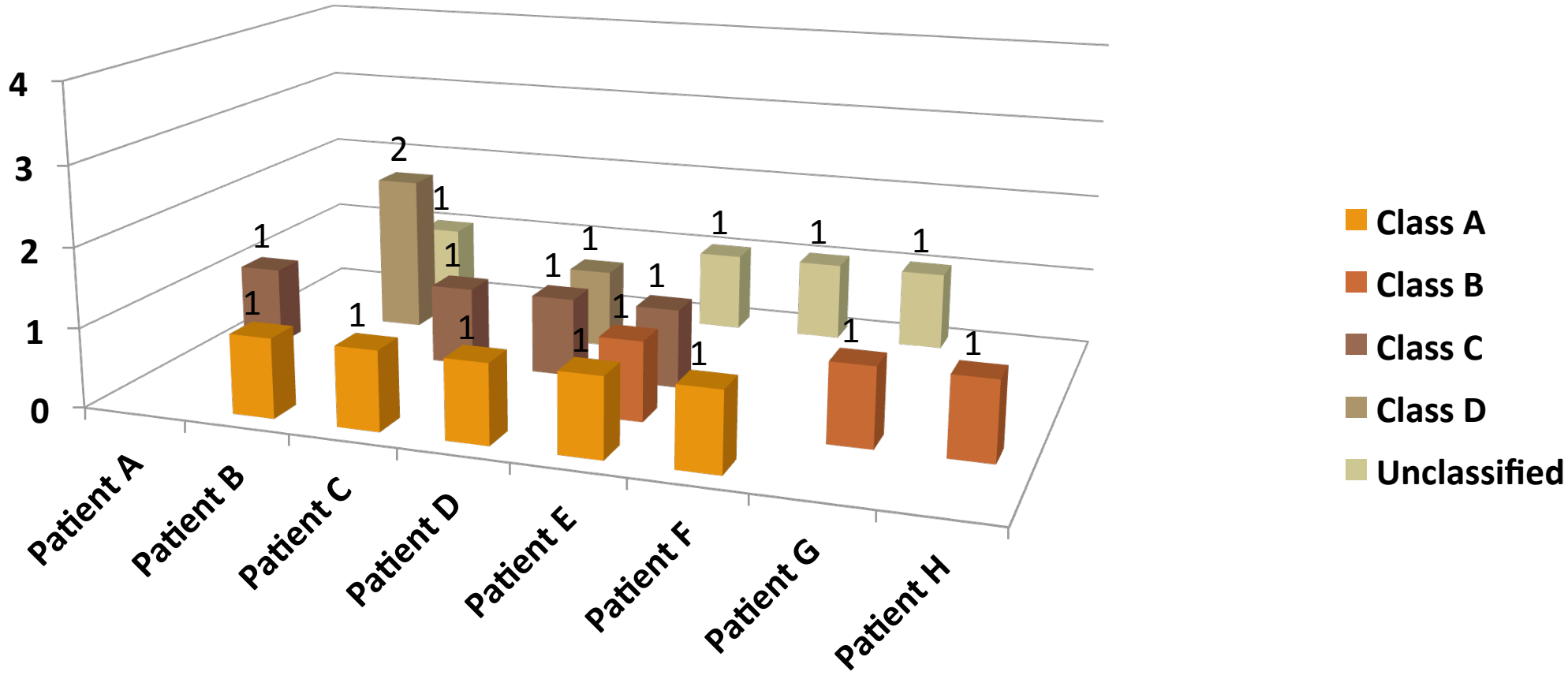


- Schizophrenia (N = 3)
- Schizoaffective Disorder (N = 1)
- Delusional Disorder (N = 3)
- Unspecified Schizophrenia Spectrum or Other Psychotic Disorder (N = 1)

Types of Principal Delusion



Index Offense Charges



Note. **100% Serious Felony Charges; 75% Facing Multiple Charges; 25% Facing Single Felony Charge**

Additional Sample Descriptors

- **Average Age** $M = 40.13$
- **Marital Status**
  - Single 87.5%
  - Divorced 12.5%
- **Length of Admission**
  - Range: 4 Days to approximately 49 Months (4.08 years)

Assessment Administrations

Pre-Test	**Mid-Point**	**Post-Test**
Baseline	*2-Months*	*1-2 Weeks Following Treatment*
MSE	PDI-21	MSE
PDI-21		PDI-21
MADS		MADS
ECST-R		ECST-R

lote. **Some data is missing due to high psychological acuity and clients' right to refuse to complete testing.**

PDI-21 *Sample Questions*

Examples:

Do you ever feel as if people are reading your mind?

(please circle)

NO **YES** →→→

Not at all distressing 1 2 3 4 **Very distressing** 5

Hardly ever think about it 1 2 3 4 **Think about it all the time** 5

Don't believe it's true 1 2 3 4 **Believe it is absolutely true** 5

Do you ever feel as if you can read other people's minds?

(please circle)

NO **YES** →→→

Not at all distressing 1 2 3 **4** **Very distressing** 5

Hardly ever think about it 1 **2** 3 4 **Think about it all the time** 5

Don't believe it's true 1 2 **3** 4 **Believe it is absolutely true** 5

PDI-21 *Case Example*

OVERALL & SUBSCALES	PRE-TEST *M*	MID-POINT *M*	POST-TEST *M*
Overall Average	10	6	5
Distress	10	10	5
Preoccupation	23	19	11
Conviction	29	19	13

Selection of Clients' Reflections

- **What did you think of Michael's Game?**
  - "I thought it was pretty cool. It was fairly common sense questions."
  - "I liked it; I thought it was helpful."
  - "I thought it was kind of fun actually."
  - "I enjoyed it. I think it helped use different parts of our mind that we don't normally use; thinking hypothetically."
- **What did you learn?**
  - "How to understand situations and maybe to think more than to judge people. To think about situations more. When I get in a situation, maybe I need to analyze a little further instead of jumping to conclusions and try to look at all sides."
  - "To think about alternative ideas."
  - "I developed a cognitive balance between illusion and reality."
  - "Different scenarios and different ways to look at a situation in depth and put yourself in someone else's shoes; we were able to dissect a situation."

Limitations

- Small sample size (*N* = 8)
- Limited time frame for treatment dosage (four months); Clients received approximately half of full "Michael's Game" intervention (39 cards completed out of 80 cards total in protocol)
- Client population with higher psychological acuity
  - Challenges with assessment administration
  - Clients' varying psychological acuity throughout group course

Overall Findings

- Most clients showed a decrease in their delusional thinking
- These results support findings outlined in Khazaal et al. (2015), which showed significant treatment effects
- Posttreatment, six out of eight (75%) were found Competent to Proceed, thus meeting the overall treatment objective on this competency restoration program
- Most clients had positive reflections about the group and what they learned
- Michael's Game is effective as an adjunctive treatment for inpatients on a Competency Restoration unit who suffer from significant delusional ideation

Recommendations & Future Research

- Given this study's small sample size, more research in this area is needed, particularly with:
  - (1) Clients of higher psychological acuity
  - (2) Use of "Michael's Game" as an adjunctive treatment for competency restoration
- Provide at least four months' treatment dosage to clients (approximately 40 cards) twice weekly given their short stay on an admissions ward
- Consider that some clients may not be an ideal fit to receive this intervention in group format

QUESTIONS?

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