CRITICALLY APPRAISED PAPER: A MULTICENTER, RANDOMIZED CONTROLLED TRIAL OF INDIVIDUALIZED OCCUPATIONAL THERAPY FOR PATIENTS WITH SCHIZOPHRENIA IN JAPAN

Pari Kumar, BS, Mary Muhlenhaupt, OTD, OTR/L, FAOTA

Jefferson College of Rehabilitation Sciences, Department of Occupational Therapy, Philadelphia, PA

Learning Objectives

1. Discuss randomized controlled trial results evaluating effect of individualized and group OT interventions on functional cognition and other outcomes for individuals with schizophrenia and schizoaffective disorder
2. Describe critically appraised papers as a resource to promote the use of peer-reviewed research findings in OT practice

Abstract Synopsis

- Based on the article "A multicenter, randomized controlled trial of individualized OT for patients with schizophrenia in Japan," by Shimada, et al.
- Results suggest that combining individual OT with group OT can improve cognition, intrinsic motivation, medication adherence, and treatment satisfaction for individuals with schizophrenia and schizoaffective disorder.
- These findings have implications for OTs working in psychiatric settings.

Research Objectives, Design Type, Level of Evidence

1. Evaluate the effectiveness of an individualized occupational therapy program in improving cognition, intrinsic motivations, social functioning, medication adherence, symptoms and treatment satisfaction in individuals with schizophrenia.
2. Randomized controlled trial - Level I study (AOTA, 2016)

Participant Selection

- Recruited by OT referral from six psychiatric hospitals in Japan
- Inclusion: ages 20-65, recently admitted to a psychiatric hospital, and met DSM-V criteria for schizophrenia or schizoaffective disorder
- Exclusion: diagnosis of mental retardation, drug or alcohol disorder, neurological disorder, or a physical disability requiring separate intervention.
- Study was explained, and if interested, completed written informed consent

Intervention and Control Groups

Group 1: GOT (n=68)

- Group physical fitness, handicraft, cooking, music and recreation activities, and psychoeducation
- Voluntary progress at individual pact
- Delivered by OTs working at each specific psychiatric hospital
- Administered 1-2 hours 3-5 times per week for 3 months in psychiatric hospital ward or OT room

Group 2: GOT + IOT (n=68)

- Same intervention as Group 1 (GOT)
- Individual OT (IOT) that included:
  - **Motivational interviewing:** Improving motivational deficits through promoting independence
  - **Self-monitoring:** Physical exercise, positive feedback, metacognitive training
  - **Individualized visits:** Support strategies for carrying out ADLs upon discharge
  - **Handicraft activities:** constructive activities focusing on concentration and efficiency
  - **Psychoeducation:** illness management and relapse prevention programs, crisis plan
  - **Discharge planning:** post-discharge and weekly action plan , skills training
- Delivered by OTs who received training on the IOT protocol

Outcome Measures

Tool	Abbreviation	Areas Assessed	Pre	Post
Brief Assessment of Cognition in Schizophrenia Japanese	BACS-J	Memory, motor speed, verbal fluency, attention, executive function	✓	✓
Schizophrenia Cognition Rating Scale Japanese	SCoRS-J	Memory, learning, attention, problem solving, motor skills, social cognition, language	✓	✓
Social Functioning Scale Japanese	SFS-J	Engagement, communication, independence, and employment	✓	✓
Global Assessment of Functioning	GAF	Psychosocial and occupational function	✓	✓
Intrinsic Motivation Inventory Japanese	IMI-J	Interest, enjoyment, value, usefulness, and choice	✓	✓
Morisky Medication Adherence Scale	MMAS-8	Medication adherence	✓	✓
Positive and Negative Syndrome Scale	PANSS	Schizophrenia symptoms	✓	✓
Client Satisfaction Questionnaire	CSQ-8J	Treatment satisfaction		✓

Results

Large Effects

- **Schizophrenia symptoms:**
  - Positive score ($F[1, 126] = 2.775$, $p < 0.01$, Cohen's $d = 0.85$)
  - Psychopathology score ($F[1, 126] = 0.262$, $p < 0.01$, Cohen's $d = 0.52$),
  - Total score ($F[1, 126] = 1.761$, $p < 0.01$, Cohen's $d = 0.59$).

Moderate Effects

- **Intrinsic motivation:**
  - Interest/enjoyment ($F[1, 126] = 16.605$, $p < 0.01$, Cohen's $d = 0.55$)
  - Perceived choice ($F[1, 126] = 19.124$, $p < 0.01$, Cohen's $d = 0.62$)
  - Total score ($F[1, 126] = 21.773$, $p < 0.01$, Cohen's $d = 0.61$)
- **Treatment satisfaction:**
  - Total score ($t = 3.282$, $p < 0.01$, Cohen's $d = 0.59$)

Small Effects

- **Medication adherence:**
  - $F[1, 126] = 8.458$, $p < 0.01$, Cohen's $d = 0.35$)
- **Cognition:**
  - Working memory ($F[1, 126] = 6.471$, $p = 0.02$, Cohen's $d = 0.28$)
  - Verbal fluency ($F[1, 126] = 21.099$, $p < 0.01$, Cohen's $d = 0.27$)
  - Attention ($F[1, 126] = 22.924$, $p < 0.01$, Cohen's $d = 0.30$)
  - BACS-J composite score ($F[1, 126] = 14.160$, $p < 0.01$, Cohen's $d = 0.44$)
- **Intrinsic motivation:**
  - Value/usefulness ($F[1, 126] = 10.673$, $p < 0.01$, Cohen's $d = 0.46$)

No Effects

- **Social functioning:**
  - ($F[1, 126] = 0.702$, $p < 0.01$, Cohen's $d = 0.36$)

Limitations

- Focus on those with acute schizophrenia
- No long-term follow-up evaluation of participants' function
- Cognitive interventions offered in long-term hospitalizations were not examined
- Potential co-intervention bias
  - Participants received usual support care from other members of the hospital team
  - Medication intervention
    - Individuals may have been non-compliant with medication at baseline but compliant during post assessments, affecting results
  - All participants received individual support from OTs (consultation on living challenges, discharge support, social and community resources) regardless of assigned group
- Reliability and validity of measures used was not reported
- Self-report measures may introduce bias in outcomes
- Number of sessions per subprogram in the IOT groups was not measured
- Optimal time and frequency for either IOT of GOT were not measured

Implications

- Level I study, large sample size , adequate power, evaluators blind to group assignment - findings are significant, not likely due to chance
- IOT and GOT can improve cognitive functioning, intrinsic motivation, medication adherence, and treatment satisfaction for individuals with schizophrenia and schizoaffective disorder
- GOT demonstrated positive changes - not as significant as IOT and GOT
- Feasible to combine IOT with GOT for persons with acute schizophrenia
- IOT informs areas for individualized intervention to improve cognition and other outcomes
- OTs in psychiatric settings have support to add individual sessions to short-term group programming to increase cognitive function and adaptive behaviors among individuals with acute schizophrenia

Developing CAPs in Entry-level Doctoral Coursework

- CAP assignments in online course simultaneous to Level 2 Fieldwork: Evidence-based Practice and the Data Driven Decision Making Process
- AOTA's Evidence Exchange - Critically Appraised Paper repository
  - CAP Worksheet
  - Written guidelines on developing a CAP
  - CAP Developer Training
- Students develop 2 CAPs using AOTA's Worksheet
- Encouraged to submit to AOTA and/or to state association conferences

References

American Occupational Therapy Association. (2016). AOTA Evidence-Based Practice Project 2: CAP Guidelines. Retrieved from https://www.aota.org/Practice/Researchers/Evidence-Exchange.aspx

Shimada, T., Ohori, M., Inagaki, Y., Shimooka, Y., Sugimura, N., Ishihara, I.,... Kobayashi, M. (2018). A multicenter, randomized control trial of individualized occupational therapy for patients with schizophrenia in Japan. *PLOS One, 13*(4): e0193869. https://doi.org/10.1371/journal.pone.0193869

April, 2019

Critically Appraised Paper: A multicenter, randomized controlled trial of individualized occupational therapy for patients with schizophrenia in Japan

Pari Kumar, BS and Mary Muhlenhaupt, OTD, OTR/L, FAOTA

CAP Poster at AOTA Annual Conference, April 5, 2019 in New Orleans, LA

Additional Resources from AOTA

- Mental Health Evidence-based Practice Resources at https://www.aota.org/Practice/Mental-Health/Evidence-Based.aspx
    - Adults with Serious Mental Illnesses
    - Alzheimer's Disease and Related Disorders
    - Children's Mental Health
- Mental Health - Fact Sheets at https://www.aota.org/About-Occupational-Therapy/Professionals/MH.aspx
- Mental Health: Official Documents, TIPS for Living Life to its Fullest, Fact Sheets at https://www.aota.org/Practice/Mental-Health.aspx
- Mental Health: SIS Quarterly Practice Connections at https://www.aota.org/Publications-News/SISQuarterly/mental-health-practice-connections.aspx
- EBP Resource Directory at https://www.aota.org/Practice/Researchers/EBP-Resource-Directory.aspx

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AOTA's Evidence Exchange: resources for CAP development and information about submitting CAPs to AOTA

Resources outside of AOTA

Greenhalgh, T. (2019). *How to read a paper: The basics of evidence-based medicine* (6th ed). Hoboken, NJ: John Wiley & Sons Ltd.

Series of 10 articles by T. Greenhalgh to introduce those without expert background in statistics to finding articles and appraising their value ran in British Medical Journal from July 19, 1997 through – September, 1997. These articles (that represent chapters in the book above) are frequent current citations in literature about critical appraisal skills. Full text copy of the articles is available through PubMed: https://www.ncbi.nlm.nih.gov/pubmed