Effectiveness of Michael's Game, A Card Game for The Treatment of Delusions in Schizophrenia

Feiyu Li, M.A., Axel Bouchard, M.A. & William D. Spaulding, Ph.D.
University of Nebraska – Lincoln

Introduction

Persistent positive symptoms in schizophrenia are obstacles to recovery because they affect both illness insight and treatment compliance. For many individuals, certain aspects of positive symptoms (e.g., delusional convictions) are often not reduced to satisfactory levels with extant treatments, such as anti-psychotic medication.

Michael's Game, a training module for hypothetical reasoning, was developed based on the framework of cognitive restructuring to address persistent delusional ideations that impede one's viable domains of functioning. Participants are taught to build reality tests, create alternative explanations for the evidences underlying delusional beliefs, and identify emotional and behavioral consequences of beliefs. This study investigated the effectiveness of Michael's Game for promoting insight and reducing delusional beliefs in clients residing at an adult day psychiatric rehabilitation program.

Table 1. Correlations between variables

		Spontaneity	Distress (pre)	Preoccupation (pre)	Conviction (pre)	BCIS (post)	Distress (post)	Preoccupation (post)	Conviction (post)
BCIS mean(pre-treatment)	Pearson Correlation	.636**	-.306	-.522*	-.519*	.769**	-.308	-.531*	-.503*
	Sig. (2-tailed)	.008	.249	.038	.040	.049	.246	.034	.047
Distress (pre-treatment)	Pearson Correlation	-.189	1	.818**	.817**	-.290	.988**	.775**	.779**
	Sig. (2-tailed)	.484		.000	.000	.275	.000	.000	.000
Preoccupation (pre-treatment)	Pearson Correlation	-.514*	.818**	1	.995**	-.538*	.813**	.993**	.995**
	Sig. (2-tailed)	.042	.000		.000	.032	.000	.000	.000
Conviction (pre-treatment)	Pearson Correlation	-.522*	.817**	.995**	1	-.536*	.813**	.985**	.995**
	Sig. (2-tailed)	.038	.000	.000		.032	.000	.000	.000
BCIS mean (post-treatment)	Pearson Correlation	.514*	-.290	-.538*	-.536*	1	-.315	-.566*	-.554*
	Sig. (2-tailed)	.042	.275	.032	.032		.234	.022	.026
Distress (post-treatment)	Pearson Correlation	-.196	.988**	.813**	.813**	-.315	1	.785**	.781**
	Sig. (2-tailed)	.467	.000	.000	.000	.234		.000	.000
Preoccupation (post-treatment)	Pearson Correlation	-.534*	.775**	.993**	.985**	-.566*	.785**	1	.993**
	Sig. (2-tailed)	.033	.000	.000	.000	.022	.000		.000
Conviction (post-treatment)	Pearson Correlation	-.523*	.779**	.995**	.995**	-.554*	.781**	.993**	1
	Sig. (2-tailed)	.037	.000	.000	.000	.026	.000	.000	

Table 2. Pre- and Post-scores

	Pre-treatment Mean (sd)	Post-treatment Mean (sd)	Effect size Cohen's d
BCIS	34.75(4.46)	36.94(7.21)	-.37
PDI-21_Total	4.5 (6.42)	4.19 (5.81)	.05
PDI-21 Distress	9.63 (12.23)	7.94 (9.19)	.16
PDI-21 preoccupation	11.56 (21.68)	10.06 (19.25)	.07
PDI_21 conviction	12.50 (22.36)	10.19 (19.69)	.11
Religiousness	1 (1.5)	.94 (1.39)	.04
Persecution	.63 (1.05)	.56 (1.00)	.06
Paranormal beliefs	.38 (.78)	.25 (.56)	.19
Thought Disturbance	.63 (1.32)	.69 (1.31)	-.05
Catastrophic ideation	.43 (.86)	.38 (.86)	.06
Paranoid ideation	.31 (.46)	.25 (.43)	.13

Method

Participants
Sixteen individuals diagnosed with schizophrenia spectrum disorders receiving treatment in a day rehabilitation program were separated into three groups consisting of five to six people per group.

Intervention
Michael's Game comes in the form of a written card game, with each card corresponding to a situation that the main character, Michael, has experienced. The participants in this game are asked to provide assistance to Michael as he encounters these situations. The objective of group discussion is to answer Michael's questions or to discuss the validity of his situational interpretations. Each card contains questions which help the participants through progressive stages, in order to formulate alternative hypotheses to Michael's. In addition, participants are asked to identify the behavioral and emotional consequences of the different alternatives generated.
The game was conducted according the following progression:(1) non-psychotic and non-emotionally loaded situations (cards 1-11), (2) emotionally loaded but non-psychotic situations (cards 12-32), (3) psychotic and emotionally loaded situations (cards 33-79).

Measures
Beck Cognitive Insight Scale (BCIS) (Beck et al., 2004)
Peters Delusional Inventory (PDI -21) (Peters, Joseph, & Garety, 1999)
Ongoing Performance Ratings (participation, attention, spontaneity, withdraw, disruptive, and bizarre)

Procedures
The BCIS and PDI-21 were administered prior to the beginning of the first session and after the end of the last session. The group leaders observed and evaluated participants during the sessions, rating their performance at the end of each session across six domains: attention, participation, spontaneity, withdraw, disruptive behavior, and bizarre behavior.

Results

- A paired t-test was performed to examine pre- and post- treatment effect. There was no significant difference found in scores of Beck Cognitive Insight Scales (BCIS) between pre-treatment (M = 2.5, SD = .43) and post-treatment (M = 2.6, SD = .36), t (15) = -1.44, p = .17.
- With respect to changes in delusional beliefs, there was no significant difference in overall scores of delusions between pre-treatment (M = 4.5, SD = 6.6) and post-treatment (M = 4.19, SD = 6.0), t (15) = 1.04. However, among the three factors associated with delusional beliefs – distress, preoccupation, and conviction – there was a significant difference in delusional conviction between pre-treatment (M = 12.50, SD = 23.08) and post-treatment scores (M = 10.19, SD = 20.33), t (15) = 2.66, p = .02. No significant effects were found across other factors.
- Attention ratings were positively correlated with insight, r = .56, p = .02, which indicates that participants who were more attentive during the group scored higher on Beck Cognitive Insight Scale. There was also a significantly positive correlation between participants' spontaneity and insight (r = .51, p = .04). Spontaneity was also found to negatively correlate with one's level of preoccupation (r = -.56, p = .03) and conviction (r = -.52, p = .04) of their delusional beliefs. Level of withdraw was negatively correlated with insight (r = -.52, p = .04).
- Regarding the relationship between insight and delusional beliefs after treatment, insight was negatively correlated with scores assessing preoccupation (r = -.56, p = .02) and conviction (r = -.55, p = .03). The results suggest that people who are more insightful tend to be less preoccupied with and believing of their delusional beliefs.

Discussion

The study supports the feasibility of this intervention and the ease of its dissemination to real-world clinical settings. Six group leaders completed a short training on the group, and all participants reported this approach was beneficial. Level of engagement, specifically how spontaneous one is during the treatment, appears to be a critical factor in positive changes in post-intervention scores.
The most prominent impact of Michael's Game is the reduction of conviction attached to one's delusional ideas. This outcome could be explained by participants being exposed to CBT and acquiring techniques to challenge their delusions by generating alternative explanation of their beliefs and experiences. Future studies should incorporate additional assessment pertinent to functioning, as well as other-ratings of exhibited positive symptoms, such as the BPRS.