

Interpersonal functioning of the people with schizophrenia: Associations with theory of mind and working memory

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Learning Objectives

- ◆You will be able to find interpersonal function of the people with schizophrenia.
- ◆You will be able to understand associations with theory of mind and working memory in the interpersonal deficit.
- ◆You will be able to find the focus of intervention to improve interpersonal function for schizophrenia.

Introduction

It is necessary to receive an information such as a surrounding and others expression when people interchange with others .

What function does people need to understand others?

Theory of Mind

Theory of mind imputes mind to others. It is an important social cognitive function to understand and inference of other people’s mental states; beliefs, thoughts, intentions, and emotions etc...

Working memory

Working memory influences theory of mind. It is system to maintain information temporarily and handle them. Function of working memory is to keep particular pieces of critical information briefly in mind, strong them until the opportunity to use them arrives.

How does interpersonal function of the person with schizophrenia?



The person with schizophrenia have various difficulty for interpersonal interchange that is related to every scene of daily life. They have difficulty to answer that others expect correctly because they tend to misunderstand meaning of the behavior of others. Most of them experience stresses caused by interpersonal relationship with family, friends, and neighbor et al. That stresses make their symptoms worth.

Objective

To investigate associations with theory of mind and working memory in the interpersonal functioning of the person with schizophrenia.

Methods

◆Subjects: 155 patients with schizophrenia in psychiatry hospitals and out-patients

◆Interpersonal function assessment

Life Assessment Scale for the Mentally Ill “Interpersonal relations” (LASMI-I) (Iwasaki, 1994)

It is constructed in Conversation (7items), Group activity (2items), and Relationship (4items).

◆Working memory

Trail Making Test Part B (TMT-B) (Figure 1)

It is a timed test that requires to quickly combine encircled numbers and characters in ascending order.

◆Theory of mind

Story were read aloud and cards drawn the picture on were displayed in front of subjects.

After reading the story, subjects were asked questions about main character’s belief.

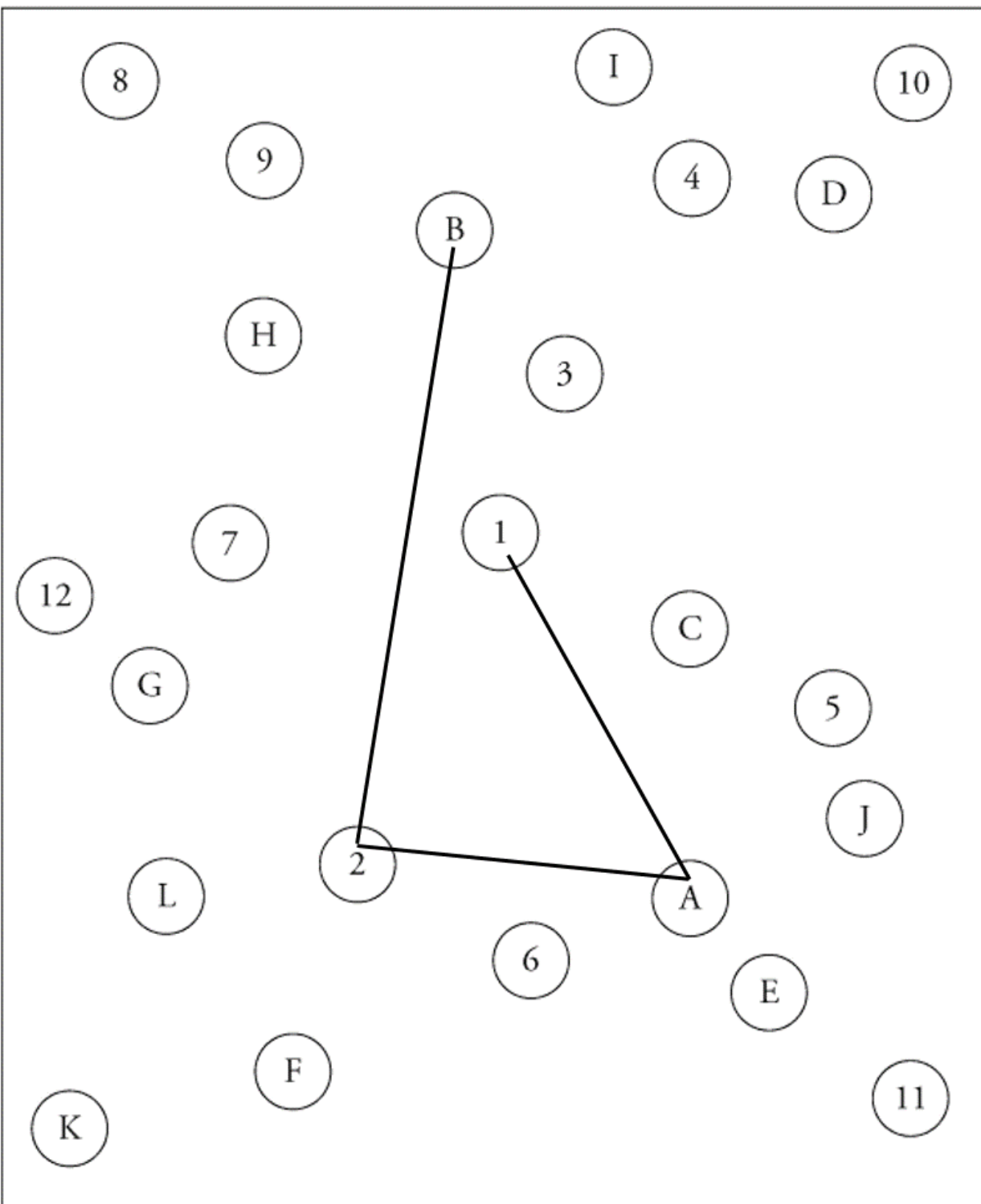
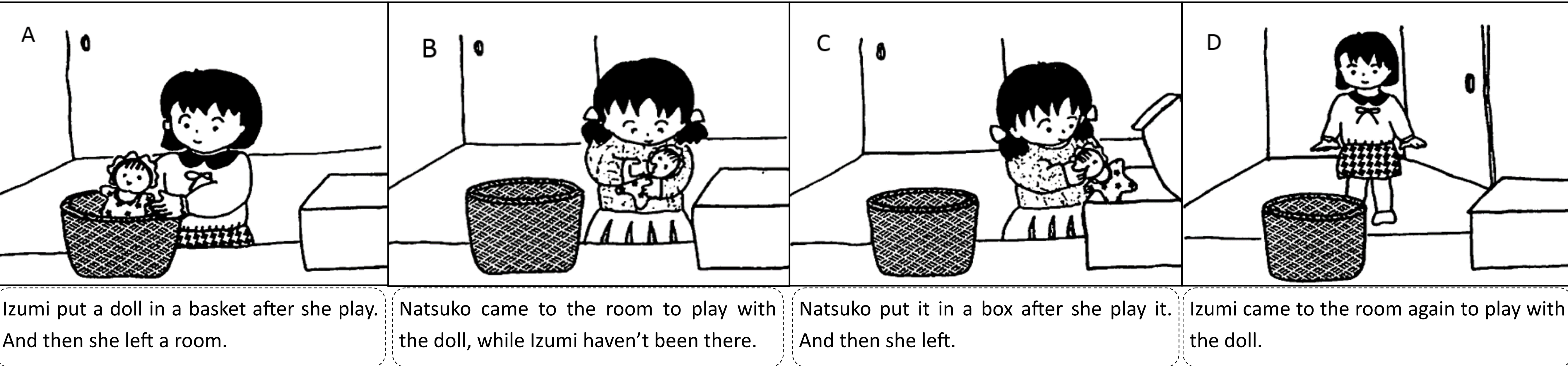


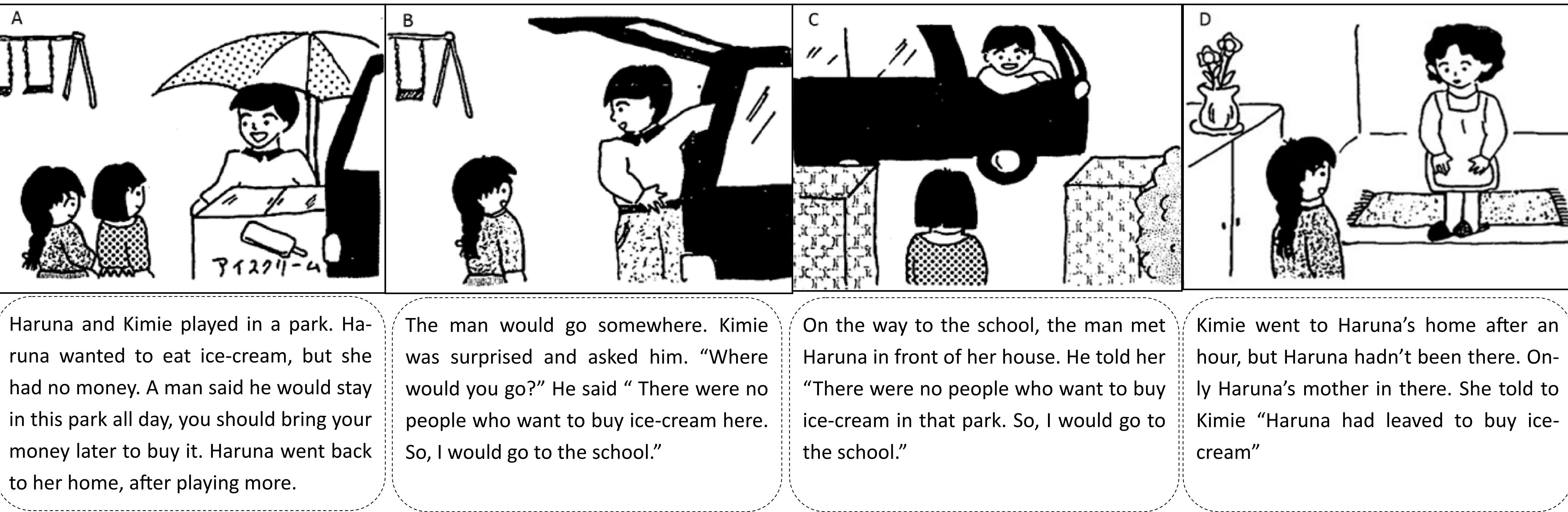
Figure 1 Trail Making Test Part B (TMT-B)

●First-order false belief task (The Sally and Ann task): Where is a doll? (Koyasu et al, 1998)



Question: Does Izumi think were the doll is? Correct Answer is “the basket”.

●Second-order false belief task (Ice-cream van’s task): Where is an Ice-cream van? (Koyasu et al, 1998)



Question: Does Kimie think where Haruna go to? Correct Answer is “the park”.

◆Ethical considerations

This study was approved by port facilities and University of Tsukuba Faculty of Medicine, Ethics Committee.

Results

Figure 3 Demographic

	<i>n</i>		<i>mean</i>	<i>SD</i>
inpatient : outpatient	53 : 102	age	46.0	12.8
male : female	79 : 76	onset of illness	25.6	8.5
		duration of illness (years)	19.7	12.2
		Daily dose of neuroleptic (cpz equiv) (mg)	711.8	662.0

Figure 4 Performance of theory of mind tasks

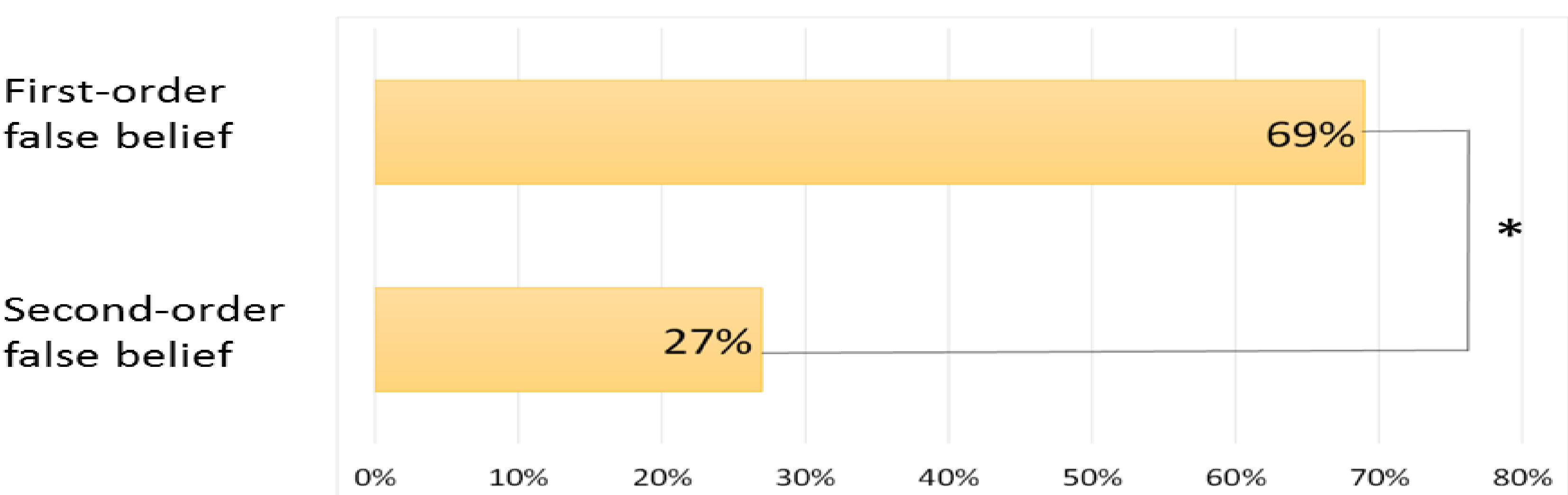


Figure 5 Comparison of LASMI-I score and TMT-B time by result of false belief tasks

	LASMI-I ^a				TMT-B ^b
	total score	conver-sation	group activity	relation-ship	(sec)
First-order false belief					
correct	14.0	6.0	1.0	5.0	102.0
incorrect	13.5	6.0	1.0	5.0	112.0
Second-order false belief					
correct	12.0	5.0	1.0	5.0	75.0
incorrect	14.0	7.0	1.0	6.0	111.0

Mann-Whitney U test, value is median value, a: *n*=155, b: *n*=135, *: *p*<.05, **: *p*<0.1

◆Subjects had more errors second-order false belief task than first-order false belief task (*p*<.05). (Figure 4)

◆LASMI-I scores of subjects who answered second-order false belief task correctly were better than subjects who answered incorrectly. (Figure 5)

◆Subjects who answered correctly in second-order false belief task had a shorter time of TMT-B required than subjects who answered incor-rectly (*p*<.01). (Figure5)

◆LASMI-I total score were significantly correlated with TMT-B in case the subjects who can answer correctly in second-order belief task (*r*_s=.42, *p*<.01).

Discussion

◆It was confirmed that theory of mind and working memory were related to interpersonal function of the person with schizophrenia.

◆Understanding with second-order belief needs maintain much information more than understanding of first-order belief.

◆Obtaining more than second-order belief promotes the understanding of social concept, complicated interpersonal relations and feelings between characters such as a novel or a drama (Perner & Wimmer, 1985).

◆It was thought it is necessary for the people with schizophrenia to promote theory of mind in order to improve the interpersonal function.

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