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Original Paper

Application of the Scale for Total Impression of Drawings for the Tree-drawing Test

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Abstract

The purpose of this study is to investigate the application of the Scale for Total Impression of Drawings (STID) in the assessment of the tree-drawing test. Forty-three tree-drawing tests were evaluated by three raters using the STID. The validity of the factor structure was examined using confirmatory factor analysis (CFA). A three-factor model of "vitality" (α = 0.90), "gentleness" (α = 0.89), and "reality" (α = 0.89) was confirmed and the fit indexes were adequate (CFI =.984, RMSEA =.076).

Keywords

the tree-drawing test, the Scale for Total Impression of Drawings (STID), psychological assessment

1. Introduction

The tree-drawing test (Baum test) was developed by Koch (1949). The tree-drawing test is one of the projective drawing tests and it assesses personality, psychological development, and mental illness. The procedure of the technique requires participants to draw a tree with fruit on A4-sized paper using a pencil. The interpretation hypothesis of the tree-drawing test is a basic theory of the projective test and it can be applied to other projective drawing tests, such as the house–tree–person test and the family-drawing test. The tree-drawing test is an easy method which is used widely in several areas, such as hospitals and schools.

Previous studies showed a relationship between features of the tree-drawing and psychological traits of personality (Hasegawa, Umemura, Kaji, Nishigaki, Kawai, Tanaka, Kanayama, Kuwabara, Fukao, & Miyauchi, 2013), depression (Yan & Chen, 2012), cognitive impairment (Maserati, Matacena, Sambati, Oppi, Poda, De Matteis, & Gallassi, 2015), and schizophrenia (Kaneda, Yasui-Furukori, Saito, Sugawara, Nakagami, Furukori, Kaneko, 2010). Kuwashiro, Goma, and Morishita (2002) examined the features of tree drawings by students with school refusal and they revealed that their neuroticism

tendency was reflected in the drawing.

Kato and Suzuki (2016) developed the Scale for Total Impression of Drawings (STID). The STID was originally developed to assess Synthetic House–Tree–Person (S-HTP) drawings. The S-HTP test is a projective drawing method and participants are asked to draw a house, a tree, and a person on a single sheet of paper. The original STID includes four factors, namely, “vitality”, “gentleness”, “themes”, and “reality. Vitality and gentleness are combined into “emotional stability” as a higher-order factor. Themes and reality are combined into “context consistency”. Vitality includes the items, “confident”, “powerful”, and “imposing”. Gentleness includes “warm”, “soft”, and “bright”. Themes include “narrative”, “synthetic”, and “monotonous (reversal)”. Reality includes “steady”, “polite”, and “methodical”. Kato and Suzuki (2016) mentioned that the STID is available for assessing other projective drawing methods, such as the tree-drawing and kinetic family-drawing tests.

The assessment based on the total impression of the drawing is also important in the tree-drawing test, but proper assessment needs experience and training. If the STID is available for the tree-drawing test, it is very useful to understand drawings in clinical situations and studies. Therefore, the main purpose of this study is to investigate the application of the STID in the assessment of the tree-drawing test.

2. Method

Forty-three female university students (Mean age = 19.4, SD = 0.62) participated in the study. They were asked to draw a tree with a fruit on A4-sized paper using a pencil. Three raters evaluated the drawings using the STID. Two raters were the authors of the study and another rater who has a license as a certified clinical psychologist was added for balance.

The STID is a 5-point rating scale and includes the four factors, “vitality”, “gentleness”, “themes”, and “reality”. The theme factor evaluates the relationship between several drawn objects, such as a house, a tree and a person. This factor is removed in this study because the tree-drawing test includes a single item of a tree.

3. Result

The Intraclass Correlation Coefficient (ICC) was calculated to examine the concordance rate between raters. Result showed a significant score for every factor of STID (vitality (ICC = 0.48, $p < .01$), gentleness (ICC = 0.37, $p < .01$), and reality (ICC = 0.27, $p < .01$)).

The validity of the factor structure was examined using CFA. The three-factor model of vitality, gentleness, and reality is hypothesized as the same as the original STID’s factor structure. Vitality includes the items, “confident”, “powerful”, and “imposing”. Gentleness includes “warm”, “soft”, and “bright”. Reality includes “steady”, “polite”, and “methodical”. All factor loading scores were significant and the total fit indices were also acceptable (CFI =.984, RMSEA =.076). Cronbach’s α for each factor were sufficient (vitality ($\alpha = 0.90$), gentleness ($\alpha = 0.89$), and reality ($\alpha = 0.89$)) Table 1

shows the factor structure of STID in the tree-drawing test.

Table 1. Factor Structure of the STID in the Tree-drawing Test

	1	2	3
1. vitality (α = .90)			
confident	0.808		
powerful	0.936		
imposing	0.769		
2. gentleness (α = .89)			
warm		0.942	
soft		0.809	
bright		0.801	
3. reality (α = .89)			
steady			0.799
polite			0.972
methodical			0.752
factor correlation			
2	0.571		
3	0.724	0.457	

4. Discussion

The main purpose of this study was to investigate the application of the STID for assessing the tree-drawing test. The result of the analysis showed that the three-factor structure and total fit indices of the model were adequate. Therefore, it is proved that the STID's three-factor structure was suitable for assessing the total impression of tree drawings. The original STID includes the four factors, "vitality", "gentleness", "themes", and "reality". As mentioned in the previous sections, the STID was developed to assess HTP drawings. The "theme" factor is important for HTP drawings because the factor concerns the relationships between the house, the tree and the person. In contrast, participants drew just a single tree from the tree-drawing test and since the theme factor is not suitable for assessing a single object, we removed it in this study. The main concern of the study was whether the three-factor structure of vitality, gentleness, and reality is acceptable or not without the theme factor.

When using the STID as a guide for assessing tree drawings, the vitality factor reflects the size of the tree and the strength of the drawing's lines. Gentleness is concerned with soft lines, the shape of trees,

or a shadow expression. Reality is assessed based on the total balance and amount of space in the drawings, for example. Additionally, the trees are drawn is an important element to determine the total impression: a young or old tree, conifer or deciduous tree, and what seasons are also important information.

The tree-drawing test is useful for assessing depression (Murayama, Iseki, & Fujishiro, 2009) and schizophrenia (Kawasugi, Iwamitsu, Todoroki, Kobayashi, Kodaira, & Nobutou, 2022). The viewpoint of vitality will be applied in diagnosing depression and the reality factor is useful in assessing the reality testing ability of people with schizophrenia. Therefore, the STID could provide a new viewpoint for clinical psychological assessment and psychiatry.

References

Hasegawa, C., Umemura, K., Kaji, M., Nishigaki, N., Kawai, T., Tanaka, M., Kanayama, Y., Kuwabara, H., Fukao, A., & Miyauchi, A. (2013). Psychological characteristics of the NEO-FFI and the Tree Drawing Test in patients with thyroid disease. *PSYCHOLOGIA*, *56*(2), 138-153.

Kaneda, A., Yasui-Furukori, N., Saito, M., Sugawara, N., Nakagami, T., Furukori, H., & Kaneko, S. (2010). Characteristics of the tree-drawing test in chronic schizophrenia. *Psychiatry and Clinical Neurosciences*, *64*(2), 141-148.

Kato, D., & Suzuki, M. (2016). Developing a scale to measure total impression of synthetic House-Tree-Person drawings. *Social Behavior and Personality*, *44*(1), 19-28.

Kawasugi, K., Iwamitsu, Y., Todoroki, K., Kobayashi, F., Kodaira, A., & Nobutou, A. (2022). Comprehensive analysis of tree-drawing characteristics of participants with schizophrenia: Comparison with healthy controls. *Japanese Journal of Clinical Psychiatry*, *51*(8), 933-943.

Koch, K. (1949). *Der Baum-Test: Der Baumzeichen-Versuch als psychodiagnostisches Hilfsmittel. Hans Huber, Bern*.

Kuwashiro, T., Goma, H., & Morishita, H. (2002). School non-attendance: Psychological state and interpersonal relations of non-attendees as adults. *The Japanese Journal of Educational Psychology*, *50*(3), 345-354.

Maserati, M. S., Matacena, C., Sambati, L., Oppi, F., Poda, R., De Matteis, M., & Gallassi, R. (2015). The Tree-Drawing Test (Koch's Baum Test): A useful aid to diagnose cognitive impairment. *Behavioural Neurology*.

Murayama, N., Iseki, E., & Fujishiro, H. (2009). Characteristics of elderly persons showing depressed mood: An investigation using brain functional imaging and psychological tests. *Clinical Psychiatry*, *51*(12), 1187-1195.

Yan, H., & Chen, J. (2012). Application of Projective Tree Drawing Test in adolescents with depression. *Chinese Journal of Clinical Psychology*, *20*(2), 185-187.