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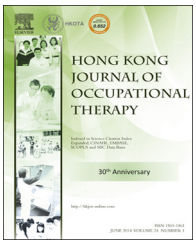

ORIGINAL ARTICLE

A Psychometric Study of the Kinetic-House-Tree-Person Scoring System for People with Psychiatric Disorders in Taiwan

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Summary *Objective/Background:* The Kinetic-House-Tree-Person (KHTP) drawing test is widely used by psychiatric occupational therapists in Taiwan; however, very little support has been provided through studies examining its psychometric properties. The aim of the study is to validate a scoring system for the KHTP on a group of people with psychiatric disorders.
Methods: A total of 66 individuals with psychiatric disorders were recruited for this study along with 53 college students as a comparative group. Each participant completed the KHTP test. Half of the individuals with psychiatric disorders (33 people) completed the KHTP again following a 2-week period. The KHTP scoring system contains 54 items representing drawing characteristics. Two independent raters determined the score of the drawings, with the validity and reliability of the KHTP scoring system being subsequently examined by the Rasch and traditional analysis.
Results: The results reveal both validity and unidimensionality of the KHTP scoring system, demonstrating acceptable test—retest reliability. The intraclass correlation coefficient of the scoring system's inter-rater reliability was .76, with significant statistical differences found between the KHTP scores of college students and individuals with psychiatric disorders.

Conflicts of interest: The authors declare that they have no conflicts of interest.

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Conclusion: The KHTP scoring system has acceptable construct validity, inter-rater reliability, and test–retest reliability. Because drawing tests have the advantage of expressing nonverbal characteristics, the scoring system should prove to be very useful for those who are unwilling or unable to communicate verbally. This study therefore provides valuable information for clinical application, particularly for the psychiatric rehabilitation professions.
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Introduction

The Kinetic-House-Tree-Person (KHTP) drawing test is widely used in evaluating the psychological status of individuals (Burns, 1987), including aspects such as the concept of self and self-esteem (Groth-Marnat & Roberts, 1998). A modified form of the standardized HTP drawing test, the KHTP test not only maintains the standardized features, but also provides kinetic interaction between the drawn person, house, and tree, as well as extended information such as projections and perceptions that the drawers perceive towards self, others, and the surrounding environment (Burns, 1987). The KHTP addresses dynamic interactions between people and the environment that other drawing tests, such as the Draw-A-Person test and Human Figure Drawings do not emphasize (Goodenough, 1926; Chie & Haruo, 2004).

In addition to the aforementioned advantages, compared with standardized tools commonly used to detect psychopathology, the KHTP serves as an alternative tool that can identify complex personality traits and alexithymia characteristics for the college students (Fukunishi, Mikami, & Kikuchi, 1997). That is, the KHTP test can reduce the potential embarrassment of using a standardized symptom checklist and therefore minimize the stigma issue for the people at risk. In addition, the KHTP not only can assist to express the distress or discomfort of the persons at risk, but also can be used to improve self-awareness (Burns, 1987). Furthermore, the administration of the KHTP provides a way to establish rapports with the examinees (Polatajko & Kaiserman, 1986).

According to the results of a national survey among occupational therapists in Taiwan, the KHTP test is one of the most frequently used evaluative tools in Taiwan (Hsiao, Pan, Chung, & Lu, 2000). Although there are currently very few studies providing a description of the psychometric qualities of the test, a scoring system for the KHTP test has now been developed based on an extensive review of the literature and clinical experience. Its aim, essentially, is to identify the psychiatric symptoms of people with psychiatric disorders in an objective and systematic way, which would reduce the bias and subjectivity of the interpretation (Li, Chen, Helfrich, & Pan, 2011).

A previous study by Pan, Chen, Li, and Chen (2007) found that the scores of the KHTP scoring system had strong correlations with symptom severity relating to depression, anxiety, and psychotic disorders (r = .308–.835). Li, Pan, Chen, Chung, and Hsiung (2006) also found that the KHTP scoring system is capable of predicting 10.5% of the variance in quality of life. The validity of the KHTP scoring system was subsequently evaluated using the Rasch measurement model, with the results showing that the test was unidimensional, whereas the item difficulty was found to range between 11.3 and 76.6 (Pan et al., 2007).

Different ways of measuring the characteristics of the drawers have been developed by many scholars in an attempt to capture the meanings of the drawings, as well as the effects of art activities on the well-being of clients (Bonder, 1993; Tanaka & Sakuma, 2004; Groth-Marnat & Roberts, 1998; Lally, 2001; Polatajko & Kaiserman, 1986; and Thompson & Sheena, 1998). A study of the KHTP test in the early stages of its professional use in Taiwan revealed that there were cultural differences between people with mental illnesses in the United States and those in Taiwan. Examples of such differences included the structure of the house, the activities chosen for the drawings, and the colours most frequently used (Drake, Lo, Hwang, & Shih, 1995).

The primary aim of this study is to investigate the psychometric qualities of the KHTP scoring system when used among people with psychiatric disorders in Taiwan. There are three specific hypotheses in this study, including, (a) the KHTP scoring system will demonstrate acceptable to good inter-rater and test–retest reliability; (b) the KHTP scoring system will demonstrate good construct and concurrent validity; and (c) there will be statistically significant differences of the KHTP total scores between the group of patients and college students.

Methods

Participants

A total of 66 people with psychiatric disorders were recruited to participate in this study. The sample was obtained from the day-care unit of the Department of Psychiatry at a medical centre in northern Taiwan. The participants were first given a letter explaining the purpose of the study and were then asked to complete the KHTP test after signing an informed consent form. A total of 33 people with psychiatric disorders in the patient sample were tested again following a 2-week period to determine test–retest reliability. A total of 53 college students were also recruited to participate in the study so as to establish the discriminative validity of the KHTP scoring system. The study protocol was reviewed and approved by the Ethics Committee at the National Taiwan University Hospital (Taipei, Taiwan). Of the total 53 college students recruited, 50 were ultimately selected as a matching sample in terms of age, sex, and the materials used. Principles outlined in the Declaration of Helsinki were followed for this study.

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