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ORIGINAL ARTICLE

A Chinese version of a Likert-type death anxiety scale for colorectal cancer patients

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ABSTRACT

Objective: This study aimed to evaluate and validate the performance of a Chinese version of a Likert-type death anxiety scale for colorectal cancer patients.
Methods: This study assessed the death anxiety of 50 colorectal cancer patients, which were selected by convenience sampling method, by using the Chinese version of a Likert-type Templer death anxiety scale (CL-TDAS) on the first day of admission.
Results: Most of the respondents finished the entire scale in 3–5 min, and the recovery rate was 94.0%. Cronbach's α indicated that the internal consistency was 0.821 for the complete 15 items, and the correlation between the CL-TDAS and the C-TDAS (non-Likert-type) was 0.79($P < 0.05$). The structural validity of the CL-TDAS revealed that the scale items accounted for >63.78% of the total variability, and that the four-component structure of the data well fitted the model. The mean score of the CL-TDAS was 36.16 ± 9.99 (first day of admission).
Conclusion: The CL-TDAS showed reliable performance and can thus be a promising instrument for evaluating the death anxiety of cancer patients. Death anxiety varied for different periods and different genders.

1. Introduction

The idea of death or dying is a complex physio-psycho-social phenomenon that can induce anxiety to dying individuals, their loved ones, caregivers, and other people they know. As such, researchers have devoted considerable interest to this topic [1]. Death anxiety is a death-related attitudinal construct. In his book titled "The Denial of Death,"Becker stated that fear or anxiety of death is a universal instinct and defensive reaction of human beings for protecting themselves [2]. Tomer [3] posited that death anxiety appears in a person's consciousness once his/her defense mechanisms collapse. Lonetto and Templer [4] defined death anxiety as an individual's unpleasant thoughts and feelings about his/her death. Abdel-Khalek and Tomás-Sábado [5] suggests that death anxiety originates from one's awareness of death.

Death anxiety may become a lingering stress that endangers personal health. Iverach et al. [6] recently examined the notion that death anxiety/fear of death is be a transdiagnostic construct; that is, fear of death increases one's vulnerability to develop or sustain psychological disorders. Being diagnosed with life-threatening illnesses, such as cancer, provokes fears and anxiety of mortality. Knowing that cancer is the leading cause of death in China also affects a patient's mental health. When confronted with the possibility of death, patients endure negative emotional experiences, such as tension, discomfort, and fear. Nonetheless, few reports and questionnaires are available on the death anxiety of cancer patients in China.

Several self-report instruments have been developed for assessing the levels of death anxiety, such as the Templer Death Anxiety Scale (T-DAS) and its modifications [7,8], the Collett-Lester Fear of Death Scale [9], the Revised Death Anxiety Scale [10], the Corriveau-Kelly Death Anxiety Scale [11], the Multidimensional Fear of Death Scale [12], and the Spanish Death Anxiety Inventory [5].

A number of these foreign assessment scales were used only for a specific group of people (such as students or patients), indicating that results may be valid or reliable for a small sample. Moreover,

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even though several of these foreign scales have been translated to other languages, they were still mainly employed in Western countries.Death anxiety instruments have been developed for non-English-speaking populations. Death anxiety research in China is still in infancy. The T-DAS was adapted to Chinese by Anise [13] only in 2002.Their results indicated that the internal consistency was 0.6, but their paper did not provide a full report on the adaptation of the scale. The Chinese Death Anxiety Inventory was developed based on T-DAS [14]. However, this scale has been rarely applied in Mainland China.

1.1. Overview of the study

Considering the cultural differences between Taiwan District and Mainland China, Yang H et al. translated the English version scale and developed the Chinese version of the Templer Death Anxiety Scale (CT-DAS), which was easy to understand. Fifteen items were distributed to a group of experts, which includes a social medical expert ($n = 1$), a nurse ($n = 1$), psychologists ($n = 2$), and practitioners working in hospice care ($n = 2$). The CT-DAS was evaluated at the expert's consultationstage in terms of scale equivalence check [15] and cultural adaptability to ensure the content validity of the scale. Most of the respondents completed the entire scale in 5–10 min, and the effective recovery rate was 97.4%. The correlation between the CT-DAS and the single item test for death anxiety was 0.516. Structural equation models and factor analysis indicated that the CT-DAS was well constructed. Cronbach's α revealed that the internal consistency was 0.71 for the complete 15 items. The retest reliability was 0.831. The scale was administered by nursing students and medical staff. In this study, colorectal cancer (CRC) patients were selected as sample,a Likert-type scale was adopted, and the initial psychometric properties are evaluated. The findings of this study can be used to develop a psychometrically sound, theoretically based, andmultidimensional instrument that will improve clinical knowledge, guide the selection of interventions, and gain insight into the study of fear of death as a transdiagnostic construct. Such knowledge will be beneficial in thefields of hospice and palliative medicine, clinical psychology, and thanatology. This study is the first to replicate the Likert-type T-DAS on Chinese cancer patients, thereby expanding the scale's applicability in medical/psychological practice and applied research.

2. Materials and methods

2.1. Participants and procedure

A total of 321 CRC patients were admitted to our department from March to August 2012. Participants were selected from these patients on the basis of the following inclusion criteria: All patients were diagnosed and treated in accordance with the “CRC Treatment Guidelines 2010” published by the Chinese Ministry of Health [16]. All patients reported no history or major complaints of schizophrenia or severe mental illness.

Over a six-month period, 50 CRC patients (28 male and 22 female; age ranging from 20 to 79 years, with a mean and median age of 56.71) voluntarily joined the study. Data were collected from the participants on the first day of admission. All participants completed the scales by themselves.

The study procedures were approved by the Beijing Cancer Hospital Ethics Committee. Trained research assistants, who were also nurses, gathered the potential participants in a private treatment area. All participants were informed of the voluntary nature of participation, the confidentiality of their personal information, and the option to withdraw from the study at any time. Verbal and written informed consents were obtained from each participant. After which, participants were given coded surveys to be completed at their own pace.

2.2. Instruments

A sociodemographic survey was used to collect information about the patients' age, sex, working state, marital status, religion, and experiences associated with death that can induce death anxiety, such as professional knowledge or training about death or hospice [17], and death-related events [18].

Death anxiety was measured by using the T-DAS, which is the most commonly used death anxiety instrument worldwide and has been translated into several languages. The T-DAS is a 15-item scale originally with a true–false format but was later developed to a five-point Likert format (scored from 1 to 5, corresponding to completely disagree to completely agree) [19]. The total score of the Likert scale can range from 15 to 75, and lower scores indicate lower levels of death anxiety.

After a cross-cultural adaptation in 2010, the T-DAS was translated into Chinese (C-TDAS). The Likert-type of C-TDAS (CL-TADAS) and C-TDAS were used in this study.

2.3. Statistical analyses

We conducted data analyses with SPSS software (IBM Corporation) and considered an alpha level of 0.05 to be statistically significant.

Descriptive statistics were displayed as means ± SD for numerical variables and n (%) for categorical variables.

Cronbach's α (internal consistency) was applied to determine the scale's reliability.

The correlations between the C-TDAS and CL-TDAS scores were assessed using Pearson correlation to evaluate the criterion-related validity. The gender differences in death anxiety were computed by student's t test. To ensure validity, exploratory factor analyses were performed to investigate and confirm the underlying factor structure. Kaiser-Meyer-Olkin (KMO) and Bartlett's test of sphericity were conducted to ensure that the data were fit for factor analysis. To identify the numberof factors, eigenvalues (>1) and the scree plot were investigated. Principal component analysis (PCA) with a varimax rotation was used to extract the maximum variance from the data. Varimax rotation was used to maximize the high correlations between components and items as well as minimize the lower ones [20]. An initial communality index ($h2$) of at least 0.50 was accepted as an indicator that the variables well represented the extracted factors [21]. A component loading ofat least 0.45was used as cutoff in the present study [22].

3. Results

All participants completed the questionnaire, but only 47 questionnaires were evaluated because three questionnaires contained more than three missed items (Table 1).Experiences associated with death are presented in Table 2.

3.1. Reliability of the CL-TDAS

In this study, the CL-TDAS was used on Chinese CRC patients. An overall Cronbach's α of 0.817 (standardized, 0.821) was obtained when all 15 items were considered one scale, suggesting that this scale has a high internal consistency reliability.