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Cultural adaptation of the Adolescent Pediatric Pain Tool in Turkish children with cancer

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ABSTRACT

Purpose: Pain is very common among pediatric cancers. This study aimed to assess the reliability and validity of the Turkish version of the Adolescent Pediatric Pain Tool (APPT).

Methods: In this methodological study, language validity and content validity of the words in the third section of the scale, which was administered to children with cancer, were tested using the Q-sort method. The APPT was used to measure test-retest reliability once for each of the 1st, 2nd and 3rd weeks of the chemotherapy protocols for 30 children. A reliability test was conducted using the APPT for 96 children with cancer.

Results: The number of words included in the third section of the APPT was reduced to 56 following the completion of the language and content validity using the Q-sort method. In the test-retest method, results from the three measures taken showed that the intra-class correlation coefficient was good. The internal consistency of the scale was also good ($\alpha = .78$) in terms of the total number of body areas marked on body outline diagram, pain severity, pain intensity ratings, total number of word descriptors, and total number of sensory, affective, evaluative and temporal word descriptors. Correlations were found between the total number of body areas marked on the body outline diagram and the total number of word descriptors ($r = .53$), the pain severity and pain intensity ratings ($r = .95$), and the total number of word descriptors ($r = .38$).

Conclusions: The Turkish version of the APPT was determined to be valid, reliable and easy to use for pediatric cancer patients.

1. Introduction

Pain is a very common experience among pediatric populations and functions as one of the most prevalent factors that impair quality of life. Children and adolescents who experience pain may have their daily life activities seriously compromised, and most of them tend to face a number of problems, including but not limited to sleep difficulties, eating disorders, and decreases in school success (McKillop and Banez, 2016). Clinical decisions to treat pain, as well as clinical trials for pain interventions, rely on the accurate assessment of pain. Given the multidimensional nature of pain, a comprehensive assessment should include not only the intensity, but also the location and the quality of pain as outcome measures in clinical trials (McGrath et al., 2008; Pope et al., 2017).

Savedra et al. (1993) are credited with establishing the validity and reliability of the Adolescent Pediatric Pain Tool (APPT), which is identified as being a multidimensional self-report tool that evaluates the intensity and influence of the pain experience (Fernandes et al., 2014). Versions of the APPT have been developed in English, Spanish and Portuguese for use in studies that serve to provide a deeper understanding of the pain experience and to examine the effectiveness of pain management interventions. APPT is used in practice or research to characterize multiple dimensions of pain and to compare different painful conditions (Fernandes et al., 2015; Jacob et al., 2003, 2008). The APPT has been particularly most commonly used to assess the cancer pain (Bossert et al., 1996; Jacob et al., 2007; Van Cleve et al., 2004).

The incidence of childhood cancer has been steadily increasing over the last few decades ("Childhood Cancer Statistics," 2017). A high degree of symptom-related suffering is experienced by children early in cancer therapy, especially symptoms of pain (30.2%) (Levine et al., 2017). Children with cancer who undergo active treatment and post-

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treatment have been shown to experience clinically significant levels of pain, and they are also exposed to many painful procedures (Tutelman et al., 2017). However, most pain assessment scales are observational and tend not to define quality and location of the pain. In a systematic review, it was found that pediatric observational scales exhibited low quality of evidence and could not clearly define the pain characteristics (Andersen et al., 2017). This is an important finding insofar as that when the pain is not sufficiently defined, it is not possible to have an effective pain management. The APPT addresses this shortcoming in pain assessment, as it is a multidimensional tool that can be used for a wide range of ages and that is designed to assess pain location through a BOD (body outline diagram) or a word graphic rating scale, even in children who lack verbal and cognitive abilities. This study aims to introduce the APPT in Turkish and thereby contribute to the global literature. With this purpose in mind, the study was carried out to test the reliability and validity of the APPT in pediatric cancer patients in Turkey.

2. Methods

2.1. Participants and settings

The sample universe consisted of children and adolescents who were being treated at the Pediatric Oncology and Hematology Divisions of a university hospital located in Izmir and who had undergone chemotherapy between March-August 2017. Children and adolescents were eligible to participate if: 1) they and their parents volunteered to participate; 2) they were 7–18 years of age; 3) they stated that they experienced pain during chemotherapy; and 4) they were able to speak, read, write, and understand Turkish. As the APPT does not include any items, and is made up of three sections, 30 children participated in the research for the test-retest reliability and 96 children participated for reliability analyses.

2.2. Data collection

After permission was granted from the author who developed the APPT, the translation-back translation method was used for language validity. A target language version is translated back into the source language version in order to verify translation of the tool in the back-translation method. The back-translation method requires the use of at least 2 translators working independently (Maneesriwongul and Dixon, 2004). The content validity was performed following the final version of the APPT. Researchers organized face-to-face interviews with the children who complied with the research acceptance criteria to inform them on the research objectives. A pilot study was performed with 10 children diagnosed with pediatric cancer, and using the Q-sort method, the words included in the third section of the scale were evaluated. Q-sort method is used to investigate the perspectives of participants who have different positions on an issue by having them rank and sort a series of statements (Fifolt et al., 2017). After the final version of the scale was obtained, the APPT was applied to 30 children once a week, three times in total, and test-retest reliability was conducted. For the reliability study, the APPT was applied to 96 children. Demographic data were recorded by the researchers.

2.3. Instrument

Adolescent Pediatric Pain Tool: The Adolescent Pediatric Pain Tool (APPT), originally developed by Savedra et al. (1993) as a multidimensional (location, intensity, quality, and temporal pattern of pain) measurement instrument for self-report of pain by English speaking children and adolescents between the ages of 8 and 17. It was modeled after the McGill Pain Questionnaire in adults (Melzack, 1975). The APPT is an especially unique tool for its ability to measure pain quality (nature of the pain) and the temporal pattern of pain (how pain changes over time). The sensory, affective, and evaluative dimensions of pain have been obtained by a series of descriptive studies conducted with 1223 multi-ethnic, English speaking children and adolescents (Wilkie et al., 1990). A new term to define pain duration was added in subsequent studies, resulting in the development of a list of 67 pain quality descriptors to assess four dimensions of pain (Savedra et al., 1995).

2.4. Statistical analysis

Descriptive statistics of the children who participated in the test-retest reliability part of the study were evaluated in terms of numbers, percentages and means. Three measures taken of the total number of body areas marked on the BOD, pain severity, pain intensity ratings and total number of word descriptors were compared via the non-parametric Friedman test and intra-class correlation coefficient. Numbers, percentages and means were used to evaluate the descriptive statistics of the children who participated into the validity part of the study. Pearson's correlation coefficient was calculated to assess the relationship between the total number of body areas marked on BOD, pain severity, total number of sensory, affective, evaluative, and temporal word descriptors and total number of word descriptors. To assess reliability, Cronbach's alpha was used. Data were analyzed with SPSS 19 software.

2.5. Ethics

Ethical approval (2016-77) was acquired for the research by the Ege University School of Nursing Ethical Committee, and permission to conduct the study was granted from the university where the research was conducted. Both the children and their parents gave their consent to participate in the study.

3. Results

3.1. Validation of Turkish version

Language Validity: Certain words can have different meanings in different cultures and can be synonymous with different words in spoken language. Colloquialisms too can often differ from culture to culture. These variations are common to all languages. However, because of these variations, careful translation of an instrument into another language is necessary (Van Cleve et al., 2001). The APPT word list was translated literally, remaining loyal to the original English language, to allow for the assessment of discrepancies, such as the use of regional idioms or concepts that are difficult to translate. Our early attempts to develop a Turkish word list based on the APPT involved us working with five language experts who were fluent in both English and Turkish. These experts conducted five different translations, which were assessed by the researchers to produce a consensus version. We conducted a more formal process to develop a standard Turkish translation of the words from the APPT, using back-translation. As the Turkish equivalents of the words, ‘hitting-pounding’, ‘terrible-awful’, ‘pin like-like a pin’, and ‘dying-killing’ are similar, four words were excluded (hitting, terrible, pin like, killing), and thereby the number of words was reduced to 63 words.

Content Validity: The content validity was done to assess whether the items within the scale represent the measurement area. It is quantified by content validity index (CVI) and determined using a rating system (1 = not relevant, 2 = sometimes relevant, 3 = quite relevant, 4 = highly relevant). The higher score indicates further agreement of members of panel on the necessity of an item in an instrument (Zamanzadeh et al., 2015). The numeric value of CVI is determined by Lawshe Method. In this method, at least 5 and at most 40 expert opinions are needed (Gilbert and Prion, 2016). In our study that is number of 10 pediatric pain experts, if CVI is bigger than 0.62 according to