



RESEARCH ARTICLE

PSYCHOMETRIC TOOL FOR THE ASSESSMENT OF EMPATHY LEVELS AMONG DENTAL PRACTITIONERS IN CHENNAI

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ABSTRACT

**Context:** The important element for effective patient management is doctor-patient relationship. The key factor contributing in strengthening such relationship is doctor's or health professional's empathy. The term empathy in medicine means ability to recognize and understand the feelings of the patients thereby facilitating social relationship.

**Aim:** The present study aims to detect the empathy levels among practicing dental students at SRM dental college & hospital, Chennai.

**Methods:** The English version of Toronto Composite Empathy Scale (TCES) comprising of 52 questions was translated to Tamil language and distributed to interns and postgraduate students of SRM dental college & Hospital, Chennai.

**Results:** The results showed that there is significant difference in empathy levels among interns and postgraduate students ( $p < 0.001$ ). The internal consistencies of each of the four subscales in the TCES were acceptable (Cronbach's alpha: 0.515-0.792). Test-retest reliabilities ranged from 0.421 to 0.634.

**Conclusion:** The Tamil version of the TCES is a reliable and valid tool for the measurement of empathy in both professional and personal life, in dental students.

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INTRODUCTION

Empathy has been defined as the ability to 'perceive the internal frame of reference of another with accuracy as if one were the other person but without ever losing the 'as if' condition'. (Rogers, 1959) Yarascavitch et al. (2009) designed a new questionnaire, the Toronto Composite Empathy Scale (TCES) for the purpose to incorporate the cognitive and emotional dimensions of empathy, in both personal and professional life. This scale combined questions from four scales related to empathy: JSPE-HP, (Hojat et al., 2002) Interpersonal Reactivity Index, (Davis, 1983) E-Scale (Leibetseder et al., 2007) and the short form of the Empathy Quotient. (Wakabayashi et al., 2006) The TCES consists of 52 questions, 26 for the professional setting and another 26 for personal life, equally divided into cognitive and emotional empathy in each case. This results in four subscales consisting of 13 items each: the Personal Cognitive subscale, the Personal Emotional subscale, the Professional Cognitive subscale and the Professional Emotional subscale. The personal and professional subscales ask the respondent to rate how often he/she responds in certain ways in situations involving friends or people in general (personal subscales), or patients

(professional subscales). Each item is answered on a 6-point scale, where 1 = 'At no time' and 6 = 'All the time'. Possible scores for each subscale range from 13 to 78, where higher scores refer to greater levels of empathy. The aim of the present study was to report on the development and psychometric properties of the Tamil version of TCES in practicing dental students, including its internal consistency, test-retest reliability. In addition, we reported on post graduate department wise differences found on the measure.

MATERIALS AND METHODS

The study was conducted in the SRM Dental College and hospital, Ramapuram, Chennai, and was approved by the Institutional Review Board of SRM University. All interneers and postgraduate dental students were judged capable to participate in the study. Twenty five students, selected randomly from the set, participated in the pilot study. The English version of the TCES was translated into the Tamil language. The modified guidelines of the American Association of Orthopedic Surgeons (AAOS) to health and quality of life<sup>7</sup> were followed in order to translate the TCES. The pre-final version was then piloted with the 25 dental students. As the questionnaire used in the pilot study was

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**Table 1. Means & Standard deviations by gender, test-retest means & reliability and Cronbach's alpha**

S.No.	Subscales	Male Mean (SD)	Female Mean (SD)	Test Mean (SD)	Retest Mean (SD)	r (correlation)	Cronbach's Alpha
1	Personal cognitive	37.64 (6.81)	37.96 (6.10)	38.60 (5.99)	41.30 (6.08)	0.497*	0.515
2	Personal emotive	34.27 (6.65)	35.75 (7.57)	35.20 (6.28)	37.07 (6.88)	0.634*	0.649
3	Professional cognitive	38.61 (8.74)	39.25 (6.87)	38.67 (8.32)	41.53 (7.21)	0.421*	0.792
4	Professional emotive	34.82 (7.93)	34.17 (7.11)	34.97 (6.32)	36.97 (6.68)	0.58*	0.564

SD- Standard Deviation

\*P&lt;0.001

successful, the same without any corrections was used as the final questionnaire. The final form of the questionnaire consisted of two sections. The first one was an informed consent form of their voluntary participation in the study; they were asked to provide their names (to allow comparison of the TCES scores for test-retest purposes), gender and similar personal data, highlighting that their personal data were confidential and accessible only by the research team. The second section was the Tamil version of the TCES. The questionnaires were distributed to all the interns and postgraduates of the SRM Dental College who are well versed in Tamil language (read and write), over a 1-month period on December 2014. The questionnaires were administered in their respective departments. The questionnaires were collected at the same time. To check the test-retest reliability, the questionnaire was given again for a second time (1-2 weeks interval) to a random sample of the 25% of the participants. After the initial and the retest questionnaires were matched, all personal data were erased. Questionnaires were coded and data were entered into an Excel file and checked for accuracy. Analyses were carried out with SPSS version 16.0 for Windows (SPSS Inc., Chicago, IL, USA). Amongst those who were retained for the analyses, chi-square test was used to compare students who had completed the TCES and those who had not on gender and year of study, whilst Mann-Whitney test was used to compare the age of these two subgroups. In addition to descriptive statistics, t-tests were used to examine gender differences on the empathy scores, whilst Pearson's r was used to determine how similar the personal and professional dimensions were in both the cognitive and emotional subscales. Cronbach's alpha was used to measure internal consistency, and Pearson's r was used for examining the test-retest reliability.

## RESULTS

Total of 134 students agreed to participate in the study with a response rate of 86.5%. Nearly all of the students completed the entire set of questionnaires (including the TCES) in 15-20 minutes. Fourteen of the 134 students omitted 10% or more of the TCES items and were therefore excluded. Amongst the remaining students, interns were 68 in number and remaining 52 were postgraduates. The mean age of the participants were 25 years, and 44(36.7%) of them are males and 76(63.3%), females. Overall, the mean score on the Personal Cognitive subscale was 37.84 (SD = 6.34), the mean score on the Personal Emotional subscale was 35.21 (SD = 7.25), whilst the mean score on the Professional Cognitive subscale was 39.02 (SD = 7.58), the mean score on the Professional Emotional subscale was 34.41 (SD = 7.39). To check the test-retest reliability, the questionnaire was randomly administered to 30 students (25%) 1-2 week after the first administration. Of the 30 approached, all the 30 participants agreed to complete the questionnaire a second time (response rate 100%). All the 30 students completed all the questions in the TCES and therefore completed the questionnaire twice. All four empathy subscale scores in the test and retest distribution were significantly

correlated. The internal consistencies of each of the four subscales were generally acceptable, with Cronbach's alphas ranging from 0.515 to 0.792. Among the 52 postgraduates participated, the postgraduate students in the department of periodontics have the highest empathy level regarding personal cognitive and professional cognitive subscales. The postgraduate students of orthodontics have the highest empathy level regarding personal emotive subscale and students doing oral pathology have the highest empathy level regarding professional emotive subscale. The postgraduate students of oral and maxillofacial surgery has least empathy levels regarding personal and professional cognitive subscales. The postgraduate students of endodontics has least empathy levels regarding personal emotive subscale and the postgraduate students of oral medicine and radiology has least empathy levels regarding professional emotive subscales. Among the 68 interns participated in the study, personal emotive subscale was found higher, followed by personal cognitive and professional cognitive. Among the four subscales, professional emotive was found least among the interns. This may be due to the relatively short period of time that the students have been interacting professionally with patients, compared with peers in their personal lives.

## DISCUSSION

All subscales demonstrated acceptable or good internal consistency. The high correlations found for the pairs of two cognitive and two emotional subscales suggest good validity. We also found good test-retest reliability for the scale; to our knowledge, this is the second time that test-retest reliability has been measured with the TCES after to a study by Tsiantou *et al.* (2013) Although we report on a single sample of dental students, our results are strengthened by our very high response rate (86.5%) compared with the rates of other studies. (Sherman and Cramer, 2005) In particular, the response rate was higher than the 36.5% reported for the English version of the TCES. (Yarascavitch *et al.*, 2009) In the present study, the questionnaires were distributed during class hours, whilst distribution of questionnaires in other surveys was via email, and this difference may explain the different response rates. (Yarascavitch *et al.*, 2009; Nunes *et al.*, 2011) Although the TCES consists of 52 questions, the measure can easily be answered in a relatively short period of time. To put together, our results indicate that the Tamil version of the TCES is a reliable and valid tool for the measurement of cognitive and emotional empathy, in both professional and personal life, in Tamil dental students.

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