

Validation Of A Tamil Version Of Oral Health Impact Profile-14[Ohip-14(Tamil)]

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Abstract

The Purpose Of This Study Is To Translate And Validate The English Version Of Oral Health Impact Profile-14(OHIP-14) To OHIP-14 Tamil So That It Can Be Used As A Self-Assessing Tool For Tamil Speaking Population. The English Version Of OHIP-14 Was Translated To Tamil Language Using Forward-Backward Translation Method And Was Tested Among 1500 Individuals Aged Between 21 To 50 Years. The Study Was Carried Out In Two Phases To Check Internal Consistency And Test-Retest Reliability Using Cronbach's Alpha And Pearsons's Correlation Respectively. Internal Consistency Of All Items OHIP-14(T) And Its Seven Domains Showed Very High Cronbach's Alpha Value (<0.99) And The Test-Retest Reliability Of All Items In OHIP-14(T) And Its Domains Were Found To Be 'Excellent'(R > 0.90). The OHIP-14(T) Can Be Considered As Valid And Reliable Tool For Measurement Of Oral Health Related Quality Of Life Among Tamil Speaking Population.

Keyword: Oral Health Related Quality Of Life(Ohrqol); Oral Health Impact Profile(OHIP): Oral Health Impact Profile-14(Tamil); OHIP Translation;

Introduction

A Patient-Based Assessment Of Health Status Is Essential For The Measurement Of Health. [1] While Most Oral Diseases Are Not Fatal, They Do Lead To Significant Morbidity, Which Ends Up In Serious Physical, Social, And Psychological Consequences That Affect The Patients' Quality Of Life. [2] Since Clinical Indicators Alone Cannot Describe The Satisfaction Or Symptoms Of Dental Patients Or Their Ability To Perform Daily Activities Measurement Of The Impact Of Oral Conditions On Quality Of Life Should Be Part Of The Evaluation Of Oral Health

Needs Because. ^[3] Over The Last 20 Years, Several Researchers Have Developed Specific Instruments Aimed At The Measurement Of Oral Health ^[4] And Its Impact On The Individual's Quality Of Life. Among These, The Oral Health Impact Profile (OHIP) Is One Of The Most Widely Used With Demonstrable Psychometric Properties.

The Oral Health Impact Profile [OHIP] Was Developed By Slade And Spencer (1994) ^[5] As A Self-Rating Patient-Centred Instrument Designed To Assess The Priorities Of Care By Documenting Social Impact Among Individuals And Groups, Understand Oral Health Behaviour And Evaluate Dental Treatment.^[6] OHIP Is One Of The Most Sophisticated And Most Popular Instruments For Measuring Oral Health Related Quality Of Life [OHRQOL]. OHIP Is Grounded On A Theoretical Framework Based On WHO's International Classification Of Impairment, Disability And Handicapped Which Then Accordingly Derived A Multidimensional Model Of Oral Health.^[7] On The World Oral Health Report 2003,^[8] WHO Listed That The Impact Of Oral Health In Quality Of Life Is Important Part Of The Global Oral Health Programme.

The OHIP-14 Was Developed In English For English-Speaking Population. Therefore, When Used In A Non-English-Speaking Country That Is Culturally Different, It Should Be Translated And Validated To Ensure Its Proper Use. OHIP-14 Has Been Translated To Many Languages. OHIP-14 English Was Translated To Dutch By Vander Meule M J Et Al (2008),^[9] To Spanish By Lopez R Et Al (2006),^[10] To Japanese By Yamazaki M Et Al (2007),^[11] To Hindi By Deshpande C Et Al (2015),^[12] To Swedish By Hägglin C Et Al (2007),^[13] To Chinese By Xin WN Et Al (2006)^[14], To Turkish By Balci N Et Al (2017).^[15]

Tamil, A Member Of The Dravidian Language Family, Is Spoken Primarily In Tamil Nadu, South India. Tamil Nadu, Pondicherry And Sri Lanka Have Tamil As Their Official Language.^[16] The Purpose Of This Study Is To Translate And Validate The English Version Of Oral Health Impact Profile-14(OHIP-14) To OHIP-14 Tamil So That It Can Be Used As A Self-Assessing Tool For Tamil Speaking Population.

Methodology:

The Study Was Conducted After Obtaining Ethical Clearance From The Institutional Human Ethical Committee Of Sathyabama Institute Of Science And Technology. (Sathyabama University/IHEC/ Study No 012). The Study Period Was For About 6 Months (November 2018 To April 2019). Participants, Above The Age 21 Years, Who Knew Both English And Tamil And Were Willing To Take Part In Study Were Included.

Oral Health Impact Profile (OHIP) Developed By Slade And Spencer In 1994^[5] Intends To Measure The Social Impact Of Oral Disorders I.E., Discomfort, Disability And Dysfunction, Caused By These Conditions The Original OHIP Contains 49 Questions Grouped On 7 Dimensions Based On Locker's Model Of Oral Health Adapted From The World Health Organization's International Classification Based In Impairments, Disabilities And Handicapped.^[17,18,19] OHIP 49 Consists Of 7 Domains Which Comprise Of Functional

Limitation (9 Questions); Physical Pain (9 Questions); Psychological Discomfort (5 Questions); Physical Disability (9 Questions); Psychological Disability (6 Questions); Social Disability (5 Questions) And Handicap (6 Questions). Responses Were Made On A Likert Scale And Coded As 4 (Very Often); 3 (Fairly Often); 2 (Occasionally); 1 (Hardly Ever) And 0(Never). Computing The Mean Of The Coded Response Of Each Item Describes The Severity Score Of Each Item. Since OHIP 49 Is A Long Questionnaire, Health A More Concise Instrument To Assess The Perceived Impact Of Oral Health As One Of The Several Outcomes Of Dental Care Was Required. Hence Short Version Of OHIP Was Brought Out By Reducing The Number Of Questions In Each Dimension.

In The Year 2002 Slade And Allen Developed The OHIP-14,^[20] A Self-Assessed 14 Item Questionnaire Was Framed That Focused On 7 Dimensions Of Impact Of Oral Health Similar To OHIP 49 But The Number Of Questions In Each Was Reduced To 2. This Scale With An Internal Consistence Of 0.91 Is Preferable While Detecting Quality Of Life Of Populations.

1.Translation Of OHIP 14 TO OHIP-14(T):

For The OHIP-14 To Be Translated Four Independent Translations Were Conducted, Two Forward And Two Backward Translations. Preliminary Tamil Version Of OHIP-14 Was Generated By Forward Translation Which Was Done By Two Tamil Experts Who Were Unaware About The Questionnaire To Avoid Bias And To Get Best Interpretations Of The Original Version. Following This Forward Translation Backward Translation Was Done By Two Bilingual Experts Whose First Language Was English And Were Unfamiliar With The Questionnaire. The Backward Was Then Compared With The Original OHIP-14 For The Similarity In Their Structure. The Translated Scale Was Assessed And Revised By An Expert Panel With Regard To Concept And Item Equivalence Between The Original Version And Tamil Version. The Expert Panel Comprised Of Researchers, Two Public Health Dentistry Experts, One Public Health Expert Familiar With Quality Of Life Questionnaires And A Tamil Scholar Majoring In The English Language. The Translated Scale Was Then Used For Pilot Study Done With 25 People. The Final Version Of Tamil OHIP-14 Was Generated After The Pilot Study With Minor Modifications.

2. Study Sample And Procedure:

The Study Was Carried Out In Two Phases To Check Internal Consistency And Test-Retest Reliability. In Phase One, The Study Was Carried Out Among 1500 Individuals Between The Age Group Of 21-50 Years, Who Were Selected Based On Our Inclusion Criteria. The Participants Were Informed About The Study Procedure And An Informed Consent Was Obtained Before The Start Of The Study. The Individuals Were Provided With The Questionnaire Sheet Containing Tamil Version Of OHIP-14(OHIP-14(T))On One Side And English Version Of OHIP-14 On Other Side And Were Asked To Fill Both The Questionnaires. There Are 6 Options Which Denote The Impact On Oral Health Based On Domain Namely, Pain, Psychological Discomfort, Psychological, Physical And Social Disability, Functional Limitation And Handicap Ranging From Very Often To Never. The

Individuals Were Asked To Mark The Answer Among The 6 Options Given Accordingly In Both English And Tamil.

The Second Phase Was Carried Out After 2 To 3 Weeks Among 500 Individuals Randomly Selected From The Study Participants. The Participants Were Asked To Fill OHIP-14(T) Alone To Check The Test-Retest Reliability.

The Data Collected Was Entered In Windows Excel 2010 And Statistical Analysis Was Done Using SPSS Version 21 Software. For Internal Consistency Of OHIP(14)-T, The Relationship Between English Version Of OHIP-14 And OHIP(14)-T Was Assessed And Analysed Using Cronbach's Alpha. According To Bland Altman Cronbach's Alpha^[21] Of 0.70 – 0.80 Are Considered Satisfactory, Such That $0.90 \leq A$ Are Considered Excellent For Reliable Comparisons Between Groups. The Test-Retest Reliability Was Analyzed Using Pearson's Correlation. Test-Retest Reliability Coefficients (Also Called Coefficients Of Stability) Vary Between 0 And 1, Where: '1' Denotes Perfect Reliability; ≥ 0.9 Denotes Excellent Reliability; $\geq 0.8 < 0.9$ Denotes Good Reliability; $\geq 0.7 < 0.8$ Acceptable Reliability, $\geq 0.6 < 0.7$: Questionable Reliability, $\geq 0.5 < 0.6$: Poor Reliability, < 0.5 : Unacceptable Reliability, 0: No Reliability. Level Of Significance Was Set As 0.05.

Result:

The Present Study Was Carried Out Among 1500 General Population Aged Above 21 Years. Mean Age Of The Study Population Is 37 Years Of Which 658 Are Males (44%) And 842 Are Females (56%). Table 1 Shows Test-Retest And Reliability Of OHIP-14 (T). It Is Found That The Questions That Assess Pronouncing Words, Sense Of Taste, Uncomfortable To Eat, Interruption Of Meals, Bit Irritable With Other People, Difficulty In Doing Jobs, Less Satisfying With Self-Behaviour, Unable To Function Have Cronbach's Alpha Values Of 1 Which Indicate Perfect Reliability. Other Questions Such As Painful Aching, Self-Consciousness, Tense, Diet Unsatisfactory, Difficulty In Relaxing, Embarrassment Have Values Of 0.99 Cronbach's Alpha. Table 2 Shows That The Test Retest Reliability 'R' Value Is More Than 0.94 For All Domains. Therefore, It Is Considered Having An 'Excellent' Reliability.

Table 1: Test-Retest And Reliability Of OHIP-14(Tamil)

S.No	Domain	Question	Language	Mean	S D	Cronbach's Alpha Value	Pearson's Correlation	
							R	P Value
1.	Functional Limitation	Have You Had Trouble Pronouncing Any Words Because Of	English	4.1213	1.2939	1	.945	0.0001
			Tamil	4.122	1.29521			

		Problems With Your Teeth, Mouth (Or) Dentures?						
		Have You Felt That Your Sense Of Taste Has Worsen Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.2813	1.2063	1	.922	0.0001
	Tamil	4.28	1.20495					
2.	Physical Pain	Have You Had Painful Aching In Your Mouth?	English	4.0773	1.20899	0.99	.912	0.0001
			Tamil	4.0807	1.20463			
		Have You Found It Uncomfortable To Eat Any Foods Because Of Problems With Your Teeth, Mouth (Or) Dentures?	English	4.2513	1.30383	1	.961	0.0001
			Tamil	4.2513	1.30536			
3.	Psychological Discomfort	Have You Been Self Conscious Because Of Your Teeth, Mouth (Or) Dentures?	English	4.1493	1.38093	0.99	.969	0.0001
			Tamil	4.1473	1.38332			
		Have You Felt Tense	English	4.3673	1.177	0.99	.937	0.0001

		Because Of Problem With Your Teeth Mouth (Or) Dentures?	Tamil	4.364 7	1.17499			
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4.	Physical Disability	Has Your Diet Been Unsatisfactory Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.3087	1.26536	0.99	.954	0.0001
			Tamil	4.3093	1.26704			
		Have You Had To Interrupt Meals Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.3047	1.27943			
			Tamil	4.3047	1.27786	1	.948	0.0001
5.	Psychological Disability	Have You Found It Difficult To Relax Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.2347	1.26886	0.99	.932	0.0001
			Tamil	4.2327	1.27054			
		Have You Been A Bit Embarrassed Because Of Problem With Your Teeth Mouth (Or) Dentures	English	4.3067	1.22268	0.99	.955	0.0001
			Tamil	4.3073	1.22279			
6.	Social Disability	Have You Been A Bit Irritable With Other People Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.2073	1.22638	1	.939	0.0001
			Tamil	4.208	1.22654			

		Have You Had Difficulty Doing Your Usual Jobs Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.2493	1.20891	1	.957	0.0001
			Tamil	4.25	1.20905			
7.	Handicap	Have You Felt That Life In General Was Less Satisfying Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.4173	1.23889	1	.953	0.0001
			Tamil	4.416	1.23826			
		Have You Been Totally Unable To Function Because Of Problem With Your Teeth Mouth (Or) Dentures?	English	4.5613	1.20853	1	.957	0.0001

Discussion

Oral Health Impact Profile (OHIP-14) Was Developed By Slade And Allen As A Self-Assessment Scale Of Oral Health Consisting Of 14 Questions. This Questionnaire Has Been Translated To Many Regional Languages Such As Dutch,^[9] Spanish,^[10] Japanese,^[11] Hindi,^[12] Swedish.^[13] Aim Of This Study Was To Develop Tamil Version Of Oral Health Impact Profile

The Original English Language Oral Health Impact Profile (OHIP14-E) Was Translated Into Tamil, Following The International Guidelines For Cross Cultural Adaptation Of Self-Reported Measures.^[22,23] These International Guidelines Suggest A Small-Scale Field Test To Be Performed Prior To The Implementation Of A New Instrument.^[22,23] The Final Testing Of The OHIP-14(T) Was Discussed With Professional Colleagues Of The Department Of Public Health Dentistry And Bilingual Experts. We Had Confidence In The Quality Of The Translation Process,

The Discussions Had Some Small Issues But Had No Difficulties With Semantic, Experimental, Or Conceptual Equivalence. Further, No Patients Were Discarded For Omitting Any Of The 28 Questions, Suggesting That The Formulations Were Clearly Understandable For Tamil Speaking Individuals. Patients Showed No Signs Of Misunderstanding In The Questions Of The OHIP-14(T). Hence It Showed That The Questions Were Comprehensive And That The Cross-Cultural Adaptation Of The OHIP-E Had Been Accomplished Successfully.

Patient's Level Of Participation Was Seemingly Good Even After Answering 28 Questions. Hence, The Length Of The Questionnaire Was Not Considered As An Interference For The Collection Of Data. The Original OHIP-E Study Had No Specific Reference Period But Showed Good Reliability. Our Study Showed Good Reliability Even After A Two To Three Week Reference Period Was Followed. However, Some Studies In Which Reference Period Was Followed Also Showed Good Reliability.

Internal Consistency Of All Items OHIP-14(T) And Its Seven Domains Showed Very High Cronbach's Alpha Value(>0.99) Recommended By Most Of The Authors.^[21,24,25] The Test-Retest Reliability Of All Items In OHIP-14(T)T And Its Domains Were Found To Be Qualified As Excellent. Most Of The Studies Done In Other Translated Versions, Irrespective Of The Composition Of The Sample Selected Showed Similar Findings.^[9,26,27]

To Conclude, OHIP-14(T) Showed Good Psychometric Properties With Perfect Internal Consistency And Reliability And Hence Can Be Used As A Reliable Measure To Assess Self-Perceived Oral Health Related Quality Of Life In Tamil Speaking Population.

Table 02. Cronbach's Alpha, Test Re-Test According To The Domain

Serial No.	DOMAIN	QUESTION	Cronbach's Value	Pearson Correlation	
				R Value	P Value
1	Functional Limitation	Question 1 And 2	1	0.9335	0.0001
2	Physical Pain	Question 3 And 4	0.99	0.9365	0.0001
3	Psychological Discomfort	Question 5 And 6	0.99	0.953	0.0001
4	Physical Disability	Question 7 And 8	0.99	0.951	0.0001
5	Psychological Disability	Question 9 And 10	0.99	0.9435	0.0001
6	Social Disability	Question 11 And 12	1	0.948	0.0001
7	Handicap	Question 13 And 14	1	0.955	0.0001

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