

# DIGITAL POSTER PRESENTATIONS

## **P14 VALIDATION OF THE PSYCHOSOCIAL IMPACT OF DENTAL AESTHETICS QUESTIONNAIRE (PIDAQ) FOR MALAYSIAN ADOLESCENTS**

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**Aims:** To validate the adapted English version of the PIDAQ

**Methods and Materials:** The published English version of PIDAQ was pilot tested on 12-17 year old adolescents. Modifications were made to the 23 items to suit the local lingo. After permission was obtained from the relevant authorities, 590 adolescents from orthodontic practices and schools answered the questionnaire. Dental occlusions were assessed by the Malocclusion Index, which is an aggregation of Perception of Occlusion Scale and the Aesthetic Component of the Index of Orthodontic Treatment Need by the subjects (MI-S) and investigators (MI-D). Data were analysed for factorial invariance, internal consistency, temporal stability, discriminant validity and gender- or age-associated scale mean differences using AMOS and SPSS.

**Results:** Confirmatory factor analysis showed good fit statistics (comparative fit index = 0.900, root-mean-square error of approximation = 0.066). Internal consistency were adequate (Chronbach's  $\alpha$  = 0.72-0.85) while temporal stability was acceptable (intra-class correlations = 0.59-0.78). MI-S and MI-D scores of severe against slight malocclusion differed significantly ( $p < 0.001$ ) for all PIDAQ subscales. Gender and age bias were not significant but gender and age interaction were statistically significant ( $p = 0.006$ ) for the social impact and aesthetic concern subscales.

**Conclusion:** Although English is the second national language, the adapted English PIDAQ demonstrated adequate psychometric properties for Malaysian adolescents. This modified instrument may be applied for this population.

**Acknowledgements:** FRGS/1/2015/SKK14/UM/02/2, Director General and Principal Director of the Oral Health Division of the Ministry of Health Malaysia; Ministry of Education Malaysia, Penang and Kedah State Education Departments, participating school principals and volunteers.



# Validation of the Psychosocial Impact of Dental Aesthetics Questionnaire (PIDAQ) for Malaysian Adolescents

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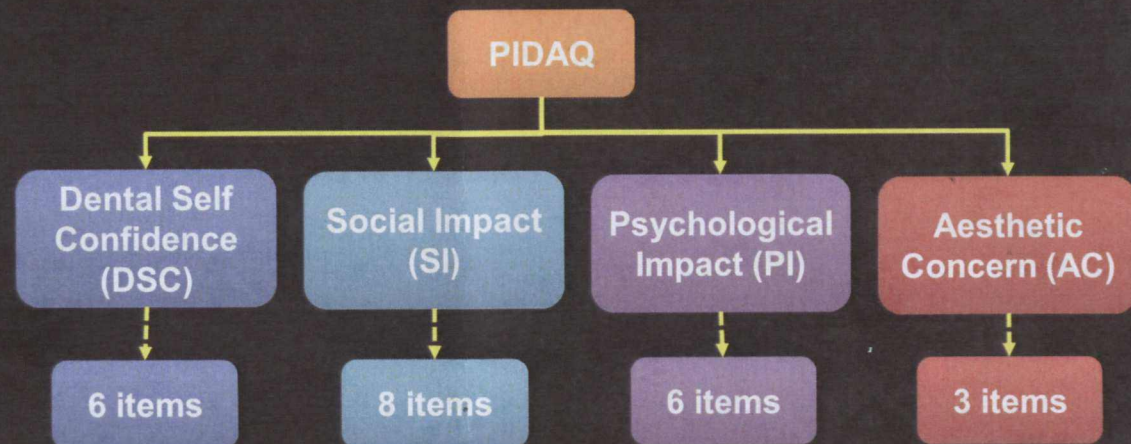
## INTRODUCTION

Oral Health Related Quality of Life (OHRQoL) is concerned in measuring objectively the impact of oral health on an individual's quality of life. Few instruments have been developed that are aimed specifically for measuring orthodontic treatment need.

One of the recently developed instrument is the psychosocial impact of dental aesthetics questionnaire (PIDAQ).<sup>1</sup> The questionnaire was originally developed in German and published in the English language. More recently, the instrument was adapted to be applied for adolescents between 11 to 17 years old.<sup>2</sup> To date there has been no published information on the adaptation of this instrument for the Malaysian adolescents.

Before an instrument can be used for the targeted population, it must be validated to ensure that the items are correctly measuring the scales within the intended context of the instrument. In addition, the linguistic ability of the adolescents may not be as good as adults. Therefore, the item measures should be modified if required and validated for the population and age groups.

## Instrument involved



## OBJECTIVES

To validate the adapted English version of the PIDAQ

# MATERIALS & METHODS

## Phase 1: Permission and Ethics Approval

Permission from original corresponding author

Medical ethics committee, Faculty of Dentistry, University of Malaya

Ministry of Health Malaysia

Ministry of Education Malaysia and State Departments

## Phase 2: Linguistic Validation

Modification, Content and Face Validation

Pilot test

Discussion and Modifications

Reassessment

## Phase 3: Psychometric Validation

Data collection

590 Participants

Retest

30% Participants

### Sample selection

- ☺ *Inclusion criteria:* Adolescents between 12 to 17 years old); Patients who have not had any orthodontic experience
- ☹ *Exclusion criteria:* Cleft lip and palate/Other craniofacial syndromic patients; Learning difficulties; Language difficulties (English)

## Phase 4: Statistical Analysis

Confirmatory Factor Analysis

Internal consistency

Temporal Stability

Discriminant validity

Age- and Gender- Bias

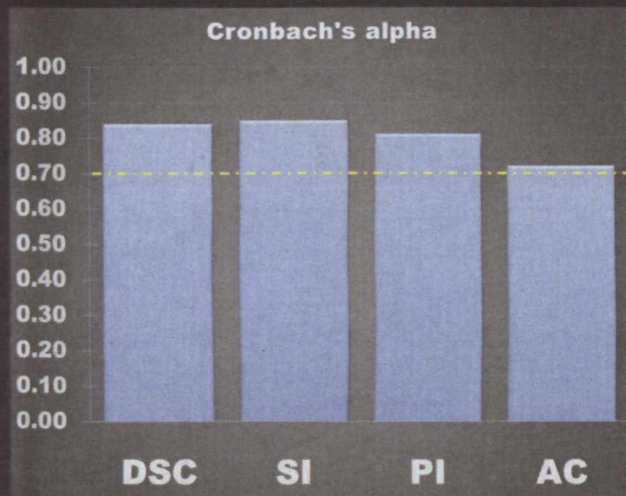
# RESULTS

## Confirmatory Factor Analysis

	Recommended	Observed
CFI	≥ 0.90	0.900
RMSEA	≤ 0.08	0.066

Good fit statistics observed

## Internal Consistency and Scale Characteristics



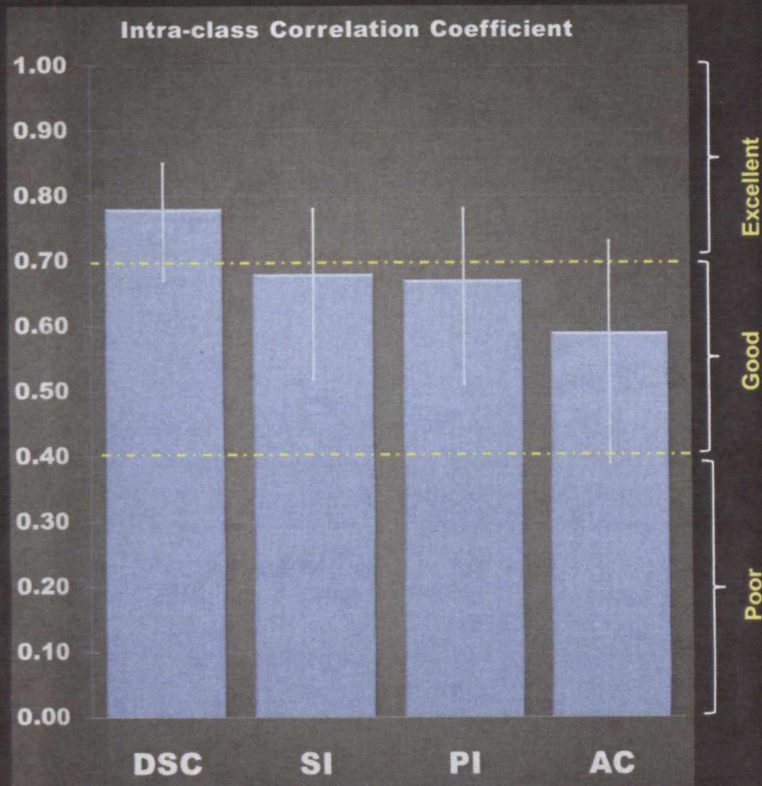
Graph showing good internal consistency

Variables	Measurement item	Cronbach's $\alpha$ if item deleted	Corrected Item – Total Correlation
Dental Self Confidence	• Proud of own teeth	0.80	0.69
	• Like to show their teeth	0.83	0.54
	• Pleased to see own teeth in mirror	0.79	0.70
	• Teeth look nice to others	0.82	0.55
	• Satisfied with own teeth's appearance	0.82	0.58
	• Find own teeth nice	0.81	0.64
Social Impact	• Hold back their smile	0.84	0.48
	• What others think	0.83	0.54
	• Teasing	0.82	0.63
	• People look strange at my teeth	0.82	0.65
	• Shy because of own teeth	0.82	0.60
	• Hiding own teeth	0.82	0.60
	• Stupid comments from others	0.83	0.53
Psychological Impact	• Boys/girls find own teeth ugly	0.82	0.62
	• Envy others for their teeth	0.79	0.57
	• Distressed because of others' nice teeth	0.76	0.70
	• Unhappy about own teeth	0.78	0.59
	• Others have nicer teeth	0.78	0.59
	• Feel bad about own teeth	0.78	0.59
Aesthetic Concern	• Wish to look better	0.81	0.45
	• Don't like own teeth in mirror	0.71	0.48
	• Don't like own teeth on photos	0.61	0.57
	• Don't like own teeth on video	0.57	0.60

Table showing that the item measures for the related variables were highly correlated

# RESULTS

## Temporal Stability



Graph showing that the ICC ranged between good to excellent

## Discriminant Validity

\*p < 0.05



Graph showing that for all variables there was statistical significant differences between those with no or slight malocclusion and those with severe malocclusion

# RESULTS

## Age and Gender Bias

Source	F	p value	$\eta p^2$
<b>Dental Self-Confidence</b>			
Age	1.298	.255	.003
Gender	0.102	.750	.000
Age x Gender	2.739	.099	.007
<b>Social Impact</b>			
Age	1.181	.278	.003
Gender	0.039	.843	.000
Age x Gender	7.621	.006	.019
<b>Psychological Impact</b>			
Age	1.235	.267	.003
Gender	2.037	.154	.005
Age x Gender	0.866	.353	.002
<b>Aesthetic Concern</b>			
Age	2.115	.147	.005
Gender	0.003	.955	.000
Age x Gender	7.614	.006	.019

Gender and age bias were not significant but gender and age interaction were statistically significant ( $p=0.006$ ) for the social impact and aesthetic concern subscales

# DISCUSSION

Initial testing demonstrated that the published version was not suitable for the linguistic understanding of the adolescents in Malaysia. Therefore modifications were made to suit the local lingo. The answer for the item “don’t like own teeth on video” for the Aesthetic Concern subscale had to be modified as the use of video may not necessarily be easily accessible to our adolescents.

# CONCLUSIONS

Although English is the second national language, the adapted English PIDAQ demonstrated adequate psychometric properties for Malaysian adolescents. This modified instrument may be applied for this population.

# ACKNOWLEDGMENT

FRGS/1/2015/SKK14/UM/02/2, Director General and Principal Director of the Oral Health Division of the Ministry of Health Malaysia; Ministry of Education Malaysia, Penang and Kedah State Education Departments, participating school principals and volunteers.

# REFERENCES

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2. Klages U, Erbe C, Sandru SD, Brüllman D, Wehrbein H (2014) Psychosocial impact of dental aesthetics in adolescence: validity and reliability of a questionnaire across age-groups. Qual Life Res. 24(2):379-90. doi: 10.1007/s11136-014-0767-8. Epub 2014 Aug 5.