

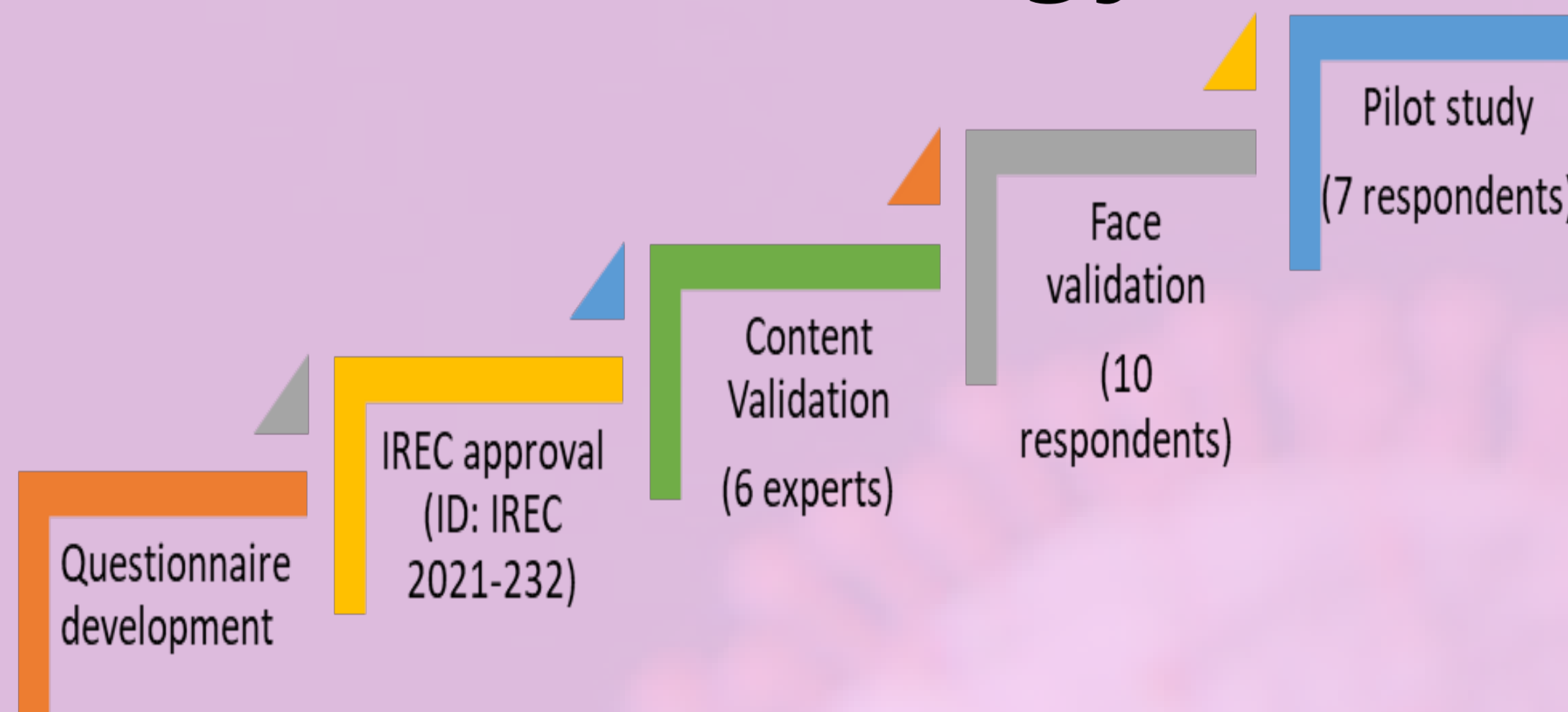
## Introduction

COVID-19 pandemic has created challenges and lead to disruptions in teaching-learning approach. In clinical teaching-learning, the disruptions will affect on the competency attainment that was aimed to be observed with this study. An instrument CAT-LC (Competency Attainment Teaching-Learning Changes) Scale was developed to measure the perceived clinical competency attainment and changes in teaching-learning approach in postgraduate orthodontic training during COVID-19 pandemic.

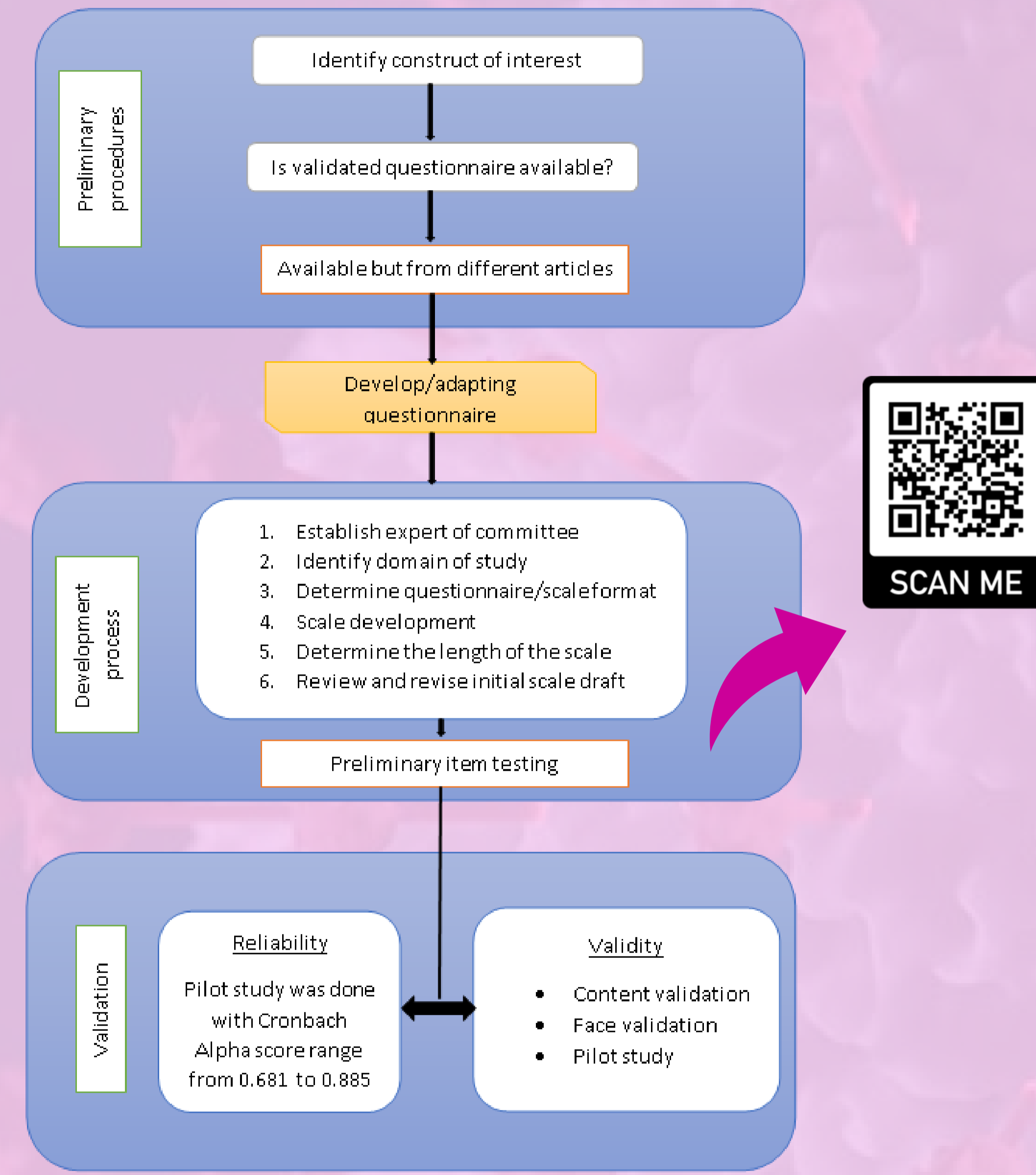
## Aim

To evaluate the relevancy of the CAT-LC Scale that was developed to assess the level of perceived clinical competency attainment and changes in teaching-learning in orthodontic postgraduate training during COVID-19 among residents of Orthodontic postgraduate program.

## Methodology



## Methodology



## Content Validation

ITEM	Expert 1	Expert 2	Expert 3	Expert 4	Expert 5	Expert 6	Experts in Agreement	I-CVI	UA
Q1-Q65	65	65	65	65	59	65	384	64.00	59
Proportion relevance	1.00	1.00	1.00	1.00	0.91	1.00		0.97	0.91

Based on above calculation, this instrument achieved a positive scale-level content validity index/average (S-CVI/Ave) of 0.97 and scale-level content validity index/universal agreement of 0.91 therefore met the satisfactory level of content validity according to Davis 1992 which is at least 0.80

## Face Validation

ITEM	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	Agreement	I-FVI	UA
Q1-Q65	65	65	52	54	51	60	60	65	52	49	580	58.0	17
Proportion relevance	1.00	1.00	0.80	0.83	0.78	0.92	0.92	1.00	0.80	0.75		0.89	0.26

Based on above calculation, this instrument achieved a positive scale-level response validity index/average (I-FVI/Ave) of 0.97 and scale-level response validity index/universal agreement of 0.26 therefore met the satisfactory level of content validity according to Mahadi et al 2018 which is at least 0.80.

## Pilot Study

Domain	Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of items
Domain B (Practice)	0.859	0.882	5
Domain C (Training)	0.732	0.758	9
Domain D (Alternative clinical teaching methods)	0.681	0.814	9
Domain E-i (Self-perceived competency)	0.814	0.787	9
Domain E-ii (Self-perceived competency in clinical skills)	0.885	0.888	19
Domain F (Other's perceived competency)	1.000	1.000	6

A seven (7) sections questionnaire was distributed to the selected respondents. The practice subscale consisted of 5 items ( $\alpha=0.859$ ). The training subscale consisted of 9 items ( $\alpha=0.732$ ). The alternative clinical teaching methods subscale consisted of 9 items ( $\alpha=0.681$ ). The self-perceived competency subscale consisted of 9 items ( $\alpha=0.814$ ). The self-perceived competency in clinical skills subscale consisted of 19 items ( $\alpha=0.885$ ) and the last subscale of other's perceived competency consisted of 6 items ( $\alpha=1.000$ ).

## Discussion

This validation study were based on the guidelines of validations process by MSB Yusoff, 2019 from both his paper on content validation and response validation process.

In content validation phase, the number of experts can implicate on the acceptable cut-off score of CVI (content validation index). According to Davis 1992, by having at least two experts in responding to the measured items, the acceptable CVI values should be at least 0.80. While in face validation phase, the raters can be the non-professional users who works with the result of the test or can be the general public too. Raters' understanding and interpretation of the items will determine the precision of the scale item in measuring the targeted construct. Mahadi et al in 2018 had set the cut-off score of FVI(face validation index) to be at least 0.80 of the acceptable value.

Cronbach's alpha reliability coefficient ranges between 0 to 1. George & Mallery 2003 provided rule of thumb the items are in acceptable value ranges from  $>0.6$  until  $>0.9$  which is rate from acceptable to excellent.

## Conclusions

With the two-validity index that was obtained from both studies (content validation & face validation) and supported by reliability analysis of Cronbach Alpha within value Of 0.600 until 1.000, it can be concluded that CAT-LC Scale is relevant to be used as an instrument to assess the perceived clinical competency attainment level among the residents of the orthodontic programme that was affected by COVID-19 pandemic.

## References

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## Acknowledgements

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