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Report on

Development and Validation of Quality Assessment Tool (QAT) for Pashe Achhi Telecommunication Model

"Pashe Achhi" Telecommunication Model (PA) was designed to provide playful learning and wellbeing support for Bangladeshi and Rohingya caregivers and children in the time of COVID-19. To meet the emerging need of assessing the quality of implementation, BRAC with the collaboration of NYU Global TIES developed the Quality Assessment Instrument for Pashe Achhi Telecommunication Model. The development, refinement, and psychometric work on the instrument are described in the paper.

The first version of the instrument was generated based on PA's conceptual framework, program scripts, and literature. Subsequently, the instrument went through three rounds of empirically based revision to ensure ease and clarity in scoring, reliable scoring, effectiveness for coaching, ability to monitor changes over time, and the ability to discriminate between high- and low-quality calls. The instrument contains items pertaining to rapport building, session management, clarity in speaking, active listening, showing respect, providing emotional support, message quality, ethics, facilitator-child interaction, and caregiver participation.

1st Version of the Quality Assessment for Pashe Achhi Telecommunication Model

At the early stage, BRAC research team consulted with the global leads to identify the scopes of remote assessment. Hence recording Pashe Achhi (PA) calls and overhearing through conference calls are efficient.

Based on PA's conceptual framwork, telecommunication scripts, and literature, initially, 81 items were generated under ten themes: rapport building, session management, speaking, active listening, showing respect, providing emotional support, message quality, ethics, play leader-child interaction, and caregivers' participation. The item's response categories of the instrument were also identified in this stage. After checking the measurability through hearing some sample audios recording of calls and expert judgment, the 1st draft comprised of 65 items mostly with 5 response categories (Not at all, Rarely, Sometimes, Most Often, Always).

In addition to the instrument, a separate scoring manual was developed describing the items, providing examples, and defining and providing the example of the scoring criteria. Thus, the raters were unable to rate the calls appropriately and in a harmonious way.

In order to address the issue of consistency of the implementation of the rating, the inter-rater reliability of the instrument was checked and found to be satisfactory (α= 0.75). Finally, the tool was applied on 234 recorded audio calls. The findings indicated that the tool was capable to assess call quality, differentiate high and low-quality calls, and recommend feedback for the improvement of the Pashe Achhi model.

2nd Version of the Quality Assessment for Pashe Achhi Telecommunication Model

The promising result of the 1st version of the instrument demonstrates the need for endorsement by global leaders. Therefore, BRAC collaborated with Global TIES for Children of New York University (NYU) for the instrument's standardization.

The 2nd version of the instrument was a small modification of the 1st version, based on lessons learned from the first piloting and NYU's feedback. The 2nd version produced 61 items where a few items of the 1st version were merged, and a few were added. Afterward, the instrument was applied twice on two sets of calls (more than 600 calls) and observed that the tool could monitor the changes over time.

3rd Version of the Quality Assessment for Pashe Achhi Telecommunication Model

The development of the 3rd version of the instrument was intended for refinement since the 2nd version of the instrument is too long and the response categories were mostly frequency based rather than quality based. Besides this, identifying the psychometric properties was one of the significant objectives.

Through several virtual meetings, BRAC and NYU jointly designed the development and validation process of the 3rd version. Initially, BRAC generated 27 items with four qualitative responses that mainly focused on facilitators, caregivers, or children's behavioral cues for each item. After that, BRAC and NYU listened to some sample audios on virtual meetings to check the appropriateness and discrimination ability of the items and scoring criteria. Following a thorough item-by-item review, finally, 23 items were finalized for piloting.

After finalizing the items and scoring criteria, BRAC and NYU listened to three recorded audios (one low, one medium, and one high-quality call) at the same time to look at the rating agreement between BRAC and NYU. Here the teams agreed on 85% of cases regarding rating the calls.

The tool was then translated into local languages following standard procedure. At first, forward translation was done by five research professionals and then synthesized through group discussion. Next translated, cognitive interviews with 15 monitors and Field Researchers Assistants (FRA) were conducted through a qualitative approach to check whether items and scoring criteria were interpretable by them. Eventually, the quality assessment tool in the local language was developed and the inter-rater reliability of the tool for the local language was found (Cronbach alpha, $\alpha < .7$) satisfactory.

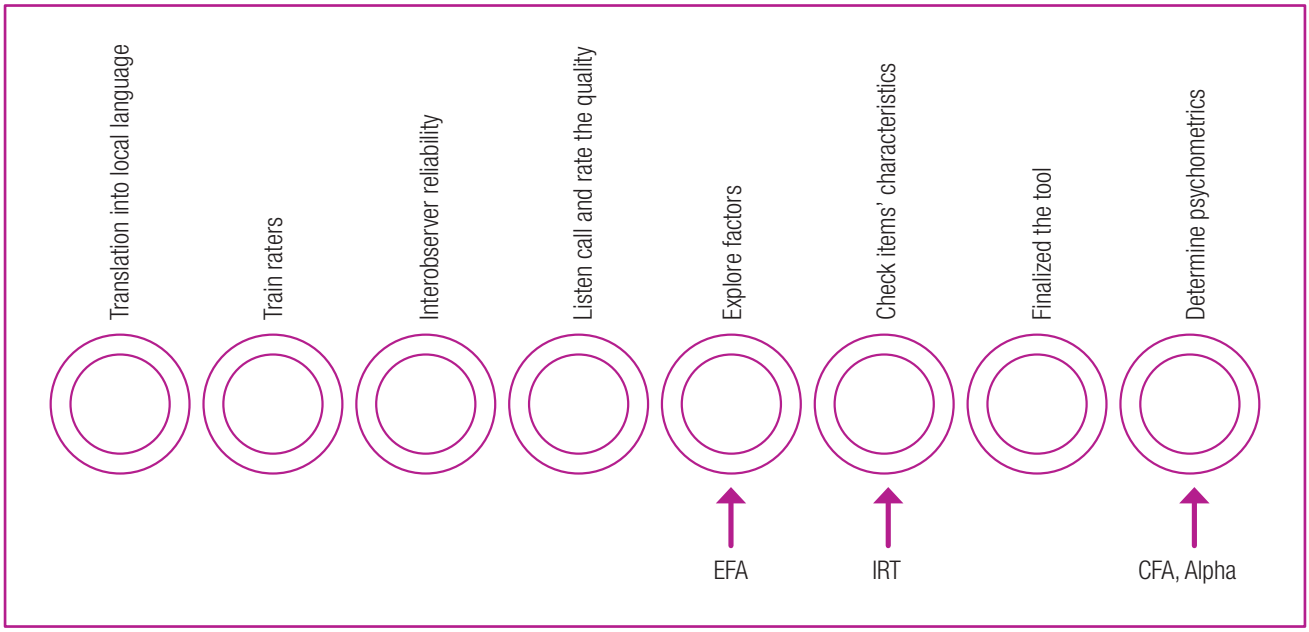

Figure 1: Process of Quality Assessment Tool Validation

Psychometric analysis was done on the instrument with the collaboration of NYU. A sample of 387 recorded calls were used and were delivered to caregivers and children of 0-6 years (Rohingya and host community) over a period of 3 to 7 months. At the initial stage of data analysis, frequency distribution, normality of data, and skewness and kurtosis of the data were checked. The findings unravel that one item (Item 22: Facilitator manages offensive or emotional situations or mother considerably digresses from topic) had a high missing value because it was very uneventful in calls. Though this was assumed during the tool development, the item was included in the tool because it helps to understand the seniors during call as well as the quality. It is a highly skillful quality of a facilitator managing an offensive situation.

The exploratory factor analysis (EFA) with 22 items (excluding item 22) suggested a two-factor structure where 20 items' factor loading ≥ 0.3. Based on Item Responses Theory (IRT), four items were also dropped due to poor discrimination and ability. However, the modification index of the structural equation model (SEM) explored a three-factor structure upon the remaining 16 items which were also aligned with the content of the items. Confirmatory factor analysis examined the factor structure of the instrument empirically and shows the instrument is close to model fit (RMSEA=0.064, CFI=0.905, TLI=0.887, and CD=.990).

The tool was finalized with 16 items along with one additional item regarding the facilitator's skills in tackling offensive situations. Analyzing the factor's content, the factors were labeled as facilitator-caregiver interaction, facilitator-child interaction, and negative affect.

Table 1: Correlation among subscales

	Full scale	Facilitator-Caregiver interaction	Facilitator-Child interaction	Negative Affect
Full scale	1			
Facilitator-caregiver interaction	0.89**	1		
Facilitator-caregiver interaction	0.75**	0.42**	1	
Negative Affect	-0.62**	-0.39**	-0.42**	1

$^{**}p < .01$

Further corelational analysis shows that the correlation between the subscales and full-scale ranges from 0.62 to 0.89. Internal consistency shows the Cronbach alpha (α) for the Facilitator-Caregiver Interaction subscale was 0.85, 0.76 for the Facilitator-Child Interaction subscale, and 0.81 for the Negative Affect subscale. The internal consistency for the full scale was 0.88.

Conclusion

This paper contributes to the emerging knowledge base on measuring quality in programs that support both caregivers' well-being and early stimulation through phone calls. It illustrates a model of measurement work that is practical and rigorous. Based on psychometrics, the Quality Assessment tool is a reliable measure for the Pashe Achhi Telecommunication Model.


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