

Translation, Adaptation, and Assessment of the Communication Assessment Tool in Tigray, Northern Ethiopia

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ABSTRACT

Background Ethiopia has experienced tremendous growth in medical education beginning in the early 2000s. Research shows a need for emphasis on empathy and compassionate care in this setting. In the United States, the Communication Assessment Tool (CAT) is a widely used, validated survey measuring provider-patient interactions.

Objective The goal of this study was to translate, culturally adapt, and pilot the CAT to allow it to be used with trainees and patients in Ethiopia.

Methods Bilingual experts translated the CAT into Tigrigna, the primary language of the Tigray region in northern Ethiopia, followed by focus group discussions, back translation, and review by the original author of the CAT. The translated tool was administered to the patients of resident physicians in 6 specialties at Ayder Referral Hospital between December 2016 and February 2017.

Results Our translation of the CAT into Tigrigna had semantic, idiomatic, and experiential equivalence. Of 1024 patients recruited, 1002 (98%) completed interviews using the CAT. Mean score was 3.09; 3% of all scores were *excellent* and 54% were *good*. Cronbach's alpha score for the full survey was 0.942, demonstrating high reliability.

Conclusions The translated CAT in Tigrigna can be used to assess communication skills in Ethiopian residents. Both mean score and percentage of excellent scores were considerably lower than scores in other countries, suggesting that there may be opportunities for improvement in residents' communication skills.

Introduction

Ethiopia has recently experienced explosive growth in opportunities for medical education. Between 2003 and 2014, the number of medical schools in the country grew from 3 to 28, which increased the need for postgraduate positions. While expansion initially focused on quantity, there is now an emphasis on *quality*,¹ including empathy and effective communication, key outcomes identified in the Ethiopia Health Sector Transformation Plan: 2015–2020.¹

The Accreditation Council for Graduate Medical Education (ACGME) and the American Board of Medical Specialties (ABMS) identified communication and interpersonal skills as 1 of 6 competencies required of physicians.^{2,3}

Ethiopia's undergraduate medical school curricula recently adopted the CanMEDS Framework, which identifies a physician's role as "Communicator" as one of the essential physician competencies.⁴

Research shows that Ethiopian providers have room to grow in this area,⁵ and that they rank lower than many of their African peers.⁶ While several studies show Ethiopian patients are satisfied with the communication of their providers,^{5,7} one study showed high levels of disrespect and abuse that was not perceived as such by patients,⁸ potentially signaling that poor communication is misunderstood and underreported.

The Communication Assessment Tool (CAT) is a simple, psychometrically sound, validated 15-question tool measuring communication tasks and behaviors in physicians.⁹ Written in English at a fourth-grade reading level and employing a 5-point, Likert-type response scale, the tool contains 14 items focused on the physician and 1 item targeting other staff. The tool has been translated, adapted, and validated in a variety of languages and practice settings.^{10–12} Prior to the current study, there were no known validated tools for assessing communication between health care providers and patients in Ethiopia.

The goal of our study was to translate and pilot the CAT in Tigray, Northern Ethiopia, with an eye to

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Editor's Note: The online version of this article contains tables of Cronbach's alpha scores when scale items are removed and distribution of scores by service type.

wider translation and adoption in medical education programs across the country.

Methods

Our study entailed the translation and cultural adaptation of the CAT into the Tigrigna language followed by pilot testing with providers in Tigray. The Tigray region in northern Ethiopia is bordered by Eritrea and has a population of approximately 5.1 million.¹³ Tigrigna, the official language of the region, is spoken by 95% of the population. In 2015, the region had 36 hospitals, 204 health centers, and 712 health posts.¹³ At the time of data collection, Ayder Referral Hospital, the data collection site, was the only referral hospital in the region and served a catchment population of 8 million.

We conducted the study in 2 phases: (1) translation and validation of the CAT, and (2) patient interviews using the validated CAT.

In phase 1, a pair of bilingual, native Tigrigna speakers conducted independent translations from English to Tigrigna. The first translator was skilled in scientific writing and familiar with the subject; the second was blind to the purpose of the study and offered a vernacular translation only. The translators synthesized their translations into a single translation with the help of a recording observer. Experts from Mekelle University College of Health Sciences (MU-CHS) evaluated the synthesized translation for semantic, idiomatic, and experiential equivalence and returned a revised translation. This revised translation was then tested with 4 groups at Ayder Referral Hospital, with members representing urban and rural, socioeconomic, and literacy differences. A total of 4 focus group discussions were held, including 2 for male religious/community leaders and 2 for women, with 8 to 16 participants each. Facilitators were selected by MU-CHS School of Public Health. Using protocols established by Beaton and colleagues,¹⁴ focus group discussion participants completed the CAT and were then interviewed to probe for understanding and clarification. Responses were examined to identify missing or minority responses, and participants were encouraged to provide synonyms for confusing words. An external observer transcribed focus group discussions. The information was used to develop a revised translation.

The revised translation was then back translated to English by 2 translators not involved in the initial translation and blind to the purpose of the study. The 2 back translations were synthesized into a single, final back translation, which was shared with the

What was known and gap

Assessing physicians' communication skills is important, yet there is a dearth of tools for use with patients in local settings across the globe.

What is new

Translation of the Communication Assessment Tool (CAT) into Tigrigna and validation with resident physicians' patients in Tigray, Northern Ethiopia.

Limitations

The study involved resident physicians only; data were not stratified by level of training to show progress in communication skills.

Bottom line

The translated, revalidated tool highlighted opportunities for improvement in residents' communication skills.

original author of the CAT (G.M.) to ensure the intended meaning was translated.

In the second phase of the study, we conducted a cross-sectional evaluation of the translated CAT using patient interviews to assess resident physicians' communication at Ayder Referral Hospital. Data were collected from December 2016 to February 2017. Sample size was calculated assuming a 3-month patient population of 25 000 and expected margin of error of 0.05 at 95% confidence. The final sample size was 1024, which was proportionally allocated to dentistry, dermatology, enterology, internal medicine, obstetrics and gynecology (ob-gyn), and general surgery, and met the recommendation criterion of a minimum of 20 to 30 CAT surveys per physician.⁹ We excluded minors, psychiatric patients, prisoners, medically unstable patients, and patients who didn't speak Tigrigna. Patients presenting at outpatient and inpatient services who consented were enrolled in the study using systematic random sampling based on the Kth interval for each department. Cronbach's alpha was used to examine the reliability of the overall tool as well as individual scale items.

Institutional review board approval was obtained from the University of Illinois at Chicago Institutional Review Board and the Mekelle University College of Health Sciences Institutional Review Board. All aspects of data collection were conducted in accordance with the Declaration of Helsinki.

Results

Our translation of the CAT into the Tigrigna language of Northern Ethiopia had semantic, idiomatic, and experiential equivalence. The original author of the CAT confirmed that the back translation conveyed all of the intended meaning of the original tool.

In terms of our cross-sectional analysis, a total of 1002 patients were interviewed, with 98% of the

TABLE 1
Mean Scores on Scale Items^a

Scale Item	Mean	Deviation
1. Greeted me in a way that made me feel comfortable	3.19	0.597
2. Treated me with respect	3.31	0.718
3. Showed interest in my ideas about my health	3.17	0.722
4. Understood my main health concerns	3.07	0.726
5. Paid attention to me (looked at me, listened carefully)	3.26	0.760
6. Let me talk without interruptions	3.17	0.859
7. Gave me as much information as I wanted	2.95	0.843
8. Talked in terms I could understand	3.50	0.639
9. Checked to be sure I understood everything	2.70	0.930
10. Encouraged me to ask questions	2.49	0.930
11. Involved me in decisions as much as I wanted	2.95	0.754
12. Discussed next steps, including any follow-up plans	3.07	0.878
13. Showed care and concern	3.23	0.823
14. Spent the right amount of time with me	3.19	0.683
15. Staff treated me with respect	2.72	0.848

^a N = 1002.

TABLE 2
Distribution of Scores, by Scale Item and Total Percentage

Scale Item	Low	Satisfactory	Good	Very Good	Excellent
1. Greeted me in a way that made me feel comfortable	1%	6%	67%	24%	1%
2. Treated me with respect	1%	8%	52%	35%	3%
3. Showed interest in my ideas about my health	1%	12%	59%	25%	3%
4. Understood my main health concerns	3%	13%	62%	20%	2%
5. Paid attention to me (looked at me, listened carefully)	1%	12%	51%	32%	4%
6. Let me talk without interruptions	2%	16%	53%	20%	8%
7. Gave me as much information as I wanted	6%	17%	58%	15%	4%
8. Talked in terms I could understand	1%	1%	51%	43%	5%
9. Checked to be sure I understood everything	12%	24%	48%	14%	2%
10. Encouraged me to ask questions	16%	32%	40%	1%	1%
11. Involved me in decisions as much as I wanted	3%	20%	61%	13%	3%
12. Discussed next steps, including any follow-up plans	5%	16%	52%	23%	5%
13. Showed care and concern	3%	13%	45%	36%	3%
14. Spent the right amount of time with me	2%	8%	63%	24%	3%
15. Staff treated me with respect	9%	26%	51%	12%	2%
Total score	66	224	813	337	48
Mean score	4%	15%	54%	23%	3%

interviews yielding a completed response suitable for analysis. This included surveys with patients from dentistry (n = 62), dermatology (n = 124), enterology (n = 101), internal medicine (n = 309), ob-gyn (n = 140), and general surgery (n = 266).

Our translated survey returned an overall Cronbach's alpha score of 0.942, demonstrating high reliability. Overall mean score was 3.06 (range 2.49–3.50; TABLE 1). Items 9 and 10, “checking for understanding” and “encouraging patients to ask questions,” recorded the lowest mean scores and were more closely evaluated using other measures.

The average proportion of *excellent* scores was 3%, 23% of scores were *very good*, and 54% of scores were *good* (TABLE 2). Inter-question correlation matrix revealed an average score of 0.55, and all score items had values ≥ 0.331 .

Removing scale items did not dramatically alter Cronbach's alpha scores, resulting in a maximum decrease of only 0.005 (provided as supplemental material). This included our 2 scale items of greatest interest: “checking for understanding” and “encouraging questions” (items 9 and 10; see supplemental material). Removing these items from the instrument had little effect on the reliability of the questionnaire.

At the level of provider type, ob-gyn had the highest percentage of *excellent* (5.9%) and *very good* (28.3%) scores while internal medicine had the highest percentage of *low* scores (5.9%). Ob-gyn also had the highest mean score of 3.19 (see supplemental material).

Discussion

We found the Tigrigna version of the CAT to be a reliable and valid measure of provider communication and interpersonal skills, which can be used for additional translations and broader adoption in Ethiopia.

Items 9 and 10, “checked to be sure I understood everything” and “encouraged me to ask questions,” respectively, recorded the lowest overall scores and had the highest percentage of *low* ratings (12% and 16%, respectively). However, removing these items from the overall scale had little effect on the reliability of the questionnaire.

The mean score in our study at 3.06 was lower than a recent study in Rwanda (mean 3.60)¹⁵ and considerably below the norm established in the United States (mean 4.68).⁹ Our study also had a lower percentage of *excellent* scores. The 3.4% *excellent* responses were lower than those in a study in Rwanda (15.7%), and adaptations of the CAT into Italian (range 36.9% to 69.2%),¹⁰ and considerably lower than the scores of the original application of the CAT (76.3%).^{9,10,15} This may reflect real differences in provider communication skills and provide a guide to target potential educational interventions. Of note, those items with the lowest scores (items 9 and 10, as above), as well as 2 of 3 items with the next lowest scores (“gave me as much information as I wanted” and “involved me in decisions as much as I wanted”; items 7 and 11, respectively), are related to the construct of shared decision-making.¹⁶ Patients’ expectations for participation in the health care encounter have evolved with time, which requires clinicians to have familiarity and facility with approaches for engaging patients and families. Our data may reflect a disconnect between evolving expectations of patients in Tigray and the approaches currently taught by local medical educators. Evaluating cohorts of ethnically similar immigrant physicians might be one way to differentiate between true communication skills and cultural feedback norms. Recent studies from Rwanda and Mali point to the value in abandoning paternalistic communication approaches in favor of approaches that focus on empathy, psychosocial regard, and recognition of power imbalances.^{16,17} The Rwanda study pointed to the value of empathetic communication, particularly in the case of low literacy patients.¹⁷ A study in Tanzania showed a link between patient-centered communication and treatment adherence.¹⁸

Our study represents the first attempt to explore the communication skills of physicians in Ethiopia, and our validation of the assessment tool enables comparison of these results to those obtained from

providers in other medical education systems and cultures. Data were not stratified by level of training to show progress in communication skills, and the study evaluated resident physicians only, not attending providers, which may have yielded different results.

A next step would be to translate the Tigrigna version into Amharic, the national language of Ethiopia. Further research should assess for differences in CAT scores for residents at different levels, faculty physicians, male versus female physicians, and across different settings (hospital, ambulatory clinic, health center).

Conclusion

Our Tigrigna translation of the CAT is semantically, idiomatically, and experientially equivalent to the original tool. Scores were considerably lower than scores in other countries, suggesting opportunities for resident physicians in Ethiopia to improve their communication skills. Future research should analyze residents’ scores by year of training to identify variation in communication skills based on experience.

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