Exploring the Factor Structure and Psychometric Properties of the Affan Oromo Version Family Assessment Device (FAD) in Ethiopia

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Abstract: While family functioning is a critical factor for family health, child socialization, and education at large, psychometrically sound assessment instruments that assist in diagnosing family environments are not available in the Ethiopian context. However, in the last couple of decades adaptations of Family Assessment Device (FAD) to several eco-cultural contexts have shown an increased interest with promising results that this device is powered with the capacity for wider international acceptability. The purpose of the current study was to examine if FAD could hold such promises in societies like Ethiopia. It attempted to explore the factor structure and psychometric properties of short-version FAD in Affan Oromo language using a sample of 223 (Female =119; Male =104) adolescent children (aged 14 to 20 years; mean 17.39) and their families (aged 42 to 58 years; mean 47.53 years) from Ambo area of Oromia. Exploratory factor analysis with direct Oblimin rotation and Principal component analysis was employed to analyze data. Exploratory factor analysis results confirmed six factors that measure Problem Solving Communication, General Functioning, Roles, Affective Responsiveness, Behavioural Control, and Affective Involvement with a factor loading ranging from 0.466 to 0.888. The factor structures were also very similar for male and female samples. Furthermore, the result depicted that all the extracted components of the Affan Oromo version FAD maintained adequate internal consistency (Cronbach alpha r_{alpha} coefficient ranging from 0.778 to 0.896) and (split half-reliability r_{tt} - assorting from 0.766 to 0.867). The results of the construct validity measured by the Brief Family Relationship Scale, also recorded statistically significant and positive correlation with FAD, suggesting that the Affan Oromo Version of FAD had adequately convergent validity. Empirical evidence done through stepwise regression analysis confirmed that FAD had adequate criterion validity. This result supports the use of the short version of the FAD (35-items) to assess the overall family functioning among the Oromo communities.

Keywords: *family functioning, family assessment device, factor structure, and psychometric properties.*

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Introduction

Family functioning is defined as welfare and performance of family members in such factors as problem-solving, communication, roles, affective involvement, affective responsiveness, behavioral control, and general functioning, family task sharing, compliance with family rules or leadership (Beavers and Hampson, 2003; Epstein et al., 2003). Several earlier studies and reviews provide consistent evidences for that positive family functioning plays a protective role form such negative outcomes as engaging in risky behavior for physical and mental health, delinquency and school failures, born with developmental delay (Boterhoven, Hafekost, Lawrence, Sawyer, and Zubrick, 2015; Juliusdottir and Olafssdottir, 2015; Igra and Irwin, 1996; Gorman-Smith and Henry, 2000; Gutman, and Eccles, 2002). Family functioning is a very complex phenomenon that can be assessed in a variety of ways. As evidences over the past four decades indicated, interest in family therapy, family functioning, and assessment has increased dramatically (Epstein and Bishop, 1981; Gurman and Kniskern, 1981; Olson, 1979; Olson and Dahl, 1980). Indeed, as the course and prognosis of many psychological and psychiatric disorders are influenced by family functioning, instruments assessing this fundamental parameter would be very useful in family dynamics research and interventional practice (Becker et al, 1981; Gavin, et al, 1999; Josephson, 2007).

Various multi-dimensional models of family assessment are found in the literature aimed at explicating the dynamics of family processes and functioning. Common among these models of assessment include Beavers Systems Model (Beavers and Hampson, 2003), Circumplex Model (Oslon and Gorall, 2003), Darlington Model (Wilkinson, 2000), and McMaster Model (Epstein et al., 2003; Miller et al., 2000). More specifically, the McMaster Systemic Model provides clinicians with a conceptual framework for assessing family functioning and treating families. It bases itself on several structural, organizational, and transactional dimensions in explaining the difference between healthy and unhealthy families (Epstein et al., 2003). Consequently, McMaster

Model identifies seven key dimensions of family life, i.e., Problem Solving, Communication, Role, Affective involvement, Affective Responsiveness, Behavioural Control, and General Functioning. An instrument developed based on this model and has wider international and cross-cultural currency is the *Family Assessment Device* (FAD) (Epestein et al., 1983). Initially, FAD was first developed by Epstein, Baldwin, and Bishop in 1983 (Epestein et al., 1983) as a screening instrument of family organization and whole family functioning according to multiple family members' perceptions. Then it was successfully validated and used not only in the West (USA, Great Britain, Europe) including Australia but also in Asia (China), South America, and South Africa (Maria et al., 2016; Morris, 1990).

Since their inception in the USA, both the short and long versions of the FAD have been translated into several languages and tested with various ethnic groups with quite strong empirical evidence of their utility in different cultures and segments of the population (Maria et al., 2016; Kazarian, 2010; Morris, 1990; Shek, 2002). Reliability (Epstein et al., 1981; Skinner, et al., 2000, Georgiades et al. 2008) and validity (Maria, Mirela, and Viorel, 2016) indices were acceptable. FAD describes structural and organizational properties of the family group and the patterns of transactions among family members which have been found to distinguish between healthy and unhealthy families (Nathan et al., 1983). As earlier scholars described, FAD has been proven useful in clinical work (Bishop et al., 1981; McAuley and Epstein, 1978), in teaching (Cleghorn and Levin, 1973), and research (Baldwin, Epstein and Bishop, 1981, Byles, Bishop and Horn, 1982). Given the potential value of this tool for varied environments, it may be crucial to examine its psychometric features against the Ethiopian context. Professional family therapy is only emerging in Ethiopia with an obvious challenge of having access to psychometrically solid assessment devices for diagnosing family functioning. The socio-cultural context in Ethiopia in general and Oromia in particular appears to be different from the FAD's source of origin suggesting that it may not be defensible to put FAD to use in Ethiopia without adaptation. There has never been this adaptation

effort not only on FAD but nearly in different measures individual and family functioning in the Ethiopian context. The objective of this research is then to examine the psychometric properties of this tool in the context of the Afan Oromo language.

Statement of the Problem

Families are complicated and ever-changing systems. This intricacy creates countless challenges for those involved in family assessment therapy and research. Without dumping the importance of internal processes and behavior of an individual, the recent broader view of human problems focuses on the context in which individual behavior occurs as well as the interpersonal relationships of the individual that conceived as a part of ongoing sequential and mutual interaction. Currently, family psychologists, family therapists, and clinicians adopted such a systematic perspective in a broadened practice to the nature and role of individuals in primary relationship networks such as marriage and family (Liddle, 1987). In the field of family therapy globally in the last 30 years, diverse clinical models of family functioning emerged. These family assessment models include the McMaster Model of family functioning (Epstein, Bishop, and Levin, 1981), the Circumplex Model of Marital and Family Systems (Olson, Sprenkle, and Russell, 1979), and Minuchin's (2017) Structural Model that focus on the importance of family organization on the functioning of the family unit.

Among many of these models, due to their well-developed validity and reliability, clinical popularity, and cross-cultural acceptability, and widely used Family Assessment device (FAD) was selected. Even though the factor structure and psychometric properties of this instrument were well documented in the western culture (Maria et al., 2016; Morris, 1990; Shek, 2002), there was no quite strong empirical evidence of its utility in the Ethiopian context. Concerning the eco-cultural context in Ethiopia in general and Oromia in particular, regardless of the potential value of family variables to diagnosis, assess, and understand health and unhealthy family functioning, there is a lack of locally developed family

assessment instruments. Consequently, in the Ethiopian context, there is insufficient research on the areas of family functioning assessment and standardized instrument development. Beneath this condition, the current study was used as a stepping stone to explore the applicability of reliable and valid family assessment instruments from the West into the Ethiopian context. The fact that the Ethiopian parent in general and the Oromo family, in particular, were more interdependent on one another in contrast to the West egalitarian family pattern, adapting Family Assessment Device into Ethiopian-eco-cultural context could produce either unidimensional or multidimensional factor structure with less or more component extraction. Despite exploring its factor structure and validating the instrument into the Affan Oromo context, it also serves as an opening step to develop a locally relevant, valid, reliable, and structured family assessment instrument. So, to achieve the stated goal, the current study addressed the following basic research issues.

- the factor structure of Affan Oromo Version of the Family Assessment Device;
- whether the Affan Oromo version of the Family Assessment Device retains statistically sound indices of construct and criterion validities;
- whether there is a statistically significant relationship among the dimensions of FAD in the Affan Oromo version of this tool, and
- whether the Affan Oromo version of Family Assessment Device yields statistically significant reliability value

Operational definitions

Family Functioning: the welfare and performance of family members in terms of their problem solving, communication, roles, affective involvement, affective responsiveness, behavioral control, and general functioning as measured by Epstein et al., (1983) McMaster Family Assessment Device.

Family Assessment Device is the shortest version of the family Assessment instrument designed to identify family problem areas most simply and efficiently within the framework of the McMaster Family functioning Model.

Psychometric Properties is an attempt to test the psychometric properties (factor structure, internal consistency, relationship, construct, and criterion validity of the Affan Oromo version Family Assessment device.

Methodology

Study Design

The present study was aimed at exploring the factor structure and psychometric properties of the Affan Oromo Version Family Assessment Device (FAD). Hence, to achieve the objective of the study descriptive survey design was employed through exploratory factor analysis. This design was selected because it enables researchers to gather data on a one-shot basis, efficiently generate numerical data, provide descriptive, inferential, and explanatory information about factor structure, reliability, and validity of the instrument (Hair,2014; Tabachnick, and Fidell,2004).

Study Participants

Sampling is a process of choosing an adequate quantity of components from the population that could generalize the characteristics to the populations' features by studying the sample (Sekaran and Bougie, 2010). To obtain a sample representative of the whole population, Ambo high school was targeted and grade nine students were randomly selected. As the data from the school indicated there are about 13 sections of grade nine with an average of 60 students per class, approximately (13x60 =780 students). Thus, based on the standard of instrument validation sample size determination, an appropriate number of the respondents with the consideration of their family inclusion were

randomly selected and included in the study as described in the subsequent section. With this regard, several scholars (e.g., Bhalla and Lin, 1987; Hair et al, 1995; 2014; Bell, 2010) have suggested that in adapting an instrument from its original language to a new language, a minimum of five participants multiplied by the number of items is justifiable. Based on this suggestion, hence the instrument being validated has 35 items, therefore 7x35 items=245 respondents were selected using a stratified random sampling technique. Hence, 6 students from each of the 13 sections of grade 9 were selected through a stratified random sampling approach assuming that at least three family members including the students are filling the questionnaires. The proportionate stratified random sampling was used due to the gender and class size of the student across each 13th section.

Accordingly, 78 students (6 from each 13 section of grade 9) plus their mother and father 78 x3= 234) were randomly selected and contacted. Hence, the Affan Oromo version of FAD was distributed to all subjects of the study with the support of Ambo high school principal and vice-director; the questionnaires were further sent to the families of the adolescent participant through student respondents. Finally, the analysis of the data was done for 223 (Female=119 and Male=104) respondents who properly filled and responded to the new Affan Oromo version of Family Assessment device questionnaires. Table 1 below details the demographic characteristics of the study participants.

Table 1. Demographic Characteristics of the Study Participants

S. N	Characteristics		N (Frequency)	Percent (%)
		Female	119	53.4
		Male	104	46.6
1	Sex	**Total**	**223**	**100**
		Children	79	35.4
		Husband	70	31.4
2	Family Role	Wife	74	33.2
		Total	*223*	*100*
		Protestant	85	38.1
		Orthodox	75	33.6
3	Religion	Muslim	33	14.8
		Wakefata	27	12.1
		Others	3	1.3
		Total	*223*	*100*
		Primary Educ.	16	7.2
		Grade 7-10	88	39.5
4		12th complete	37	16.5
		10+3 or Diploma	45	20.2
	Level of education	Degree and above	37	16.6
		Total	**223**	**100%**

Measuring Instrument

In the present study, two measuring questionnaires were used, these are;

Short-Version McMaster Family Assessment Device (FAD): - FAD was originally developed by Epstein et al., (1983) and is a paper-pencil self-report instrument designed to measure family functioning. The 35-items short version of FAD was developed and validated from the 53-items long version of FAD by Maria et al., (2016) to measure seven dimensions of family functioning: Problem Solving (5-items), Communication (4-items), Roles (4-items), Affective Responsiveness (4-items), Affective Involvement (6-items), Behaviour Control (5- items) and General Functioning (7-items). This scale can be completed by family members

aged 13 years and older and consists of statements for which the respondent has to decide how well they currently describe their family. Answers are coded on a 4-point Likert scale rating degree (i.e., strongly agree, agree, Disagree, and strongly disagree), where low scores indicate better family functioning and high score indicate unhealthy family functioning. Accordingly, every respondent will have a maximum score of 140 and a minimum of 35 for the overall score, in which all the negatively worded items should be reverse scored. Because the instrument was constructed to identify health and unhealthy family functioning, respondents with the highest total score (>70) or highest mean score >2.1 were identified as having maladaptive family functioning where as participants with a total score of less than 70 or < 2.1 mean score were considered as having healthy family functioning.

Based on original research of the scale, the internal consistency of FAD was .89, whereas the reliability of each dimension were ranging between 0.72 to 0.92 (Epstein et al., 1981; Skinner, et al., 2000, Georgiades et al. 2008). The validity data provided by Epstein et al. appears satisfactory and has been subsequently validated for large sample sizes. They found that the FAD has predictive validity for several clinically relevant outcomes among children and adults, and has proved successful at differentiating between clinical and non-clinical families. Consequently, the shortest version of the FAD (35 items) scale yielded satisfactory reliability (0.60 <$α$ < 0.80) or good and ($α$ ≥ 0.80) internal consistency across all its subscales. Empirical evidence for construct validity is also reported. Scales from the short version of the Family Assessment Device showed positive correlations with perceived social support from family and satisfaction with family (Maria N, Mirela C, and Viorel R, 2016). The Oromiffa Language translated version of this short FAD is used in this research.

Brief Family Relations Scale (Bfr); **-** to test the construct validity of the Affan Oromo version of the Family assessment instrument the shortest version of the Brief family relationship scale was used. Brief Family Relationship Scale was first developed by (Moos and Moos, 1994), with

27 items consisting of Cohesion, Expressiveness, and Conflict subscales (9 items each). However, the shortest version of the Brief Family Relationship scale was adapted by Carlotta et al., 2011) containing 19-items. The shortest version of this Brief Family Relationship scale has 3 dimensions; cohesion (8-items), Expressiveness (4 - items), and Conflict (7- items). It has been used as a self-reported Likert-type scale with scale points ranging from strongly disagree to strongly agree. Brief Family Relationship scale has adequate reliability and validity at its both long and short version. Moreover, it has been previously shown by many scholars to maintain good construct validity with family assessment devices (Carlotta et al, 2013; Marshall et al., 2002; Mansfield).

Method of Data Analysis

Even if the qualitative manner is indispensable in guarantying the suitability of the adaptation process, it doesn't offer any information about the psychometric properties of the new Affan Oromo version instrument. Thus, to evaluate the degree to which the new Affan Oromo version of the instrument can be considered valid and reliable for use in the designated context, statistical analysis is mandatory. To evaluate the statistical accuracy of the new (Affan Oromo) version of the Family assessment device both descriptive (i.e., means, SD, frequency, and percentage) and inferential statistics (i.e., correlation, exploratory factor analysis, Principal components, and regression) were employed.

Result of the study

Non-Psychometric Properties of the Instrument

Translation processes

Both FAD and BFR scale translation from its original English language to Affan Oromo was done based on the international translation guideline

(ITC, 2010) and other scholar's suggestions (Beaton, et al., 2007; 2005; 2000, 1994, Tanzer, 2005; Terwee et al., 2007).

Forward Translation; In preserving the clarity, comprehension, adequacy, cross-cultural values, the conceptual and literal equivalence of the instrument forward translation was carried out by two independent people whose first language was Affan Oromo (i.e., Affan Oromo Language expert and Psychologist). After this, the comparison of forwarding translation (T1 and T2) in terms of its semantic, idiomatic, conceptual, experiential equivalence, linguistic and contextual differences were made.

Synthesis of The Forward Translated Version: Following the two independent translation processes from the English language to the new Affan Oromo language, the process of summarizing the forward translated version was done. Accordingly, with the mediators of the researcher, the two independent translators came together, and sentence-by-sentence revision and comparison of the two forward translated versions of the scale were made. During this period there were several inconsistencies between the first and the second translators on the 13- items of the instruments. To solve this inconsistency, the two translators came together with the original instruments, and where some words/phrases or expression was questioned, critical discussion and clarification were made and alternative agreed words or phrases were replaced. For instance, item 7 of FAD - *when someone is upset the others know why* was inconsistent with twofold translation version (T1; *Yeroon aaru maaliif akkaan aare maattinkoo beeku*, T2; *Nam-tokko maatii keessaa yeroo aaru maaliif akka namni sun aare ni beekna*), thus, with a series discussion the item was re-translated as; (T12: "*Miseensi maatii keenyaa tokko yeroo gadduu ykn aaru maalif akka ta'e ni beeknna").*

Evaluation of the Synthesized Version by Experts: In maintaining the quality of the validated instrument inviting an expert to evaluate how far the translation of the new version of the instrument is good enough in

measuring the intended behavior of the organism is crucial. Following the synthesis of forwarding translated versions, two experts (1 from Affan Oromo Language and 1 from Psychometric profession) were invited and evaluated them with the precise knowledge of what the instrument assesses. Accordingly, the two experts forwarded their comments on the structure, layout, instrument instruction, scoring systems, adequacy of the expression, scope contained in the items, and on other important aspects of the new Affan Oromo version FAD and BFR scales. Hence, the comment and recommendations of experts on psychometric and linguistic clarity of the scales were remarkably adjusted. Finally, a single Affan Oromo version of the agreed forward translated of FAD and BFR scales was retained and ready for backward translation.

*Backward Translation***:** Based on the suggestion of scholars in the area, back-translations of the forward translated scales were conducted (ITC, 2010; Beaton et al., 2000; Sireci et al., 2006). As a result, in an attempt to ensure whether or not the Affan Oromo version of the instrument is reflecting the same item content as its original version, back-translation was made by a single independent bilingual expert (Affan Oromo native speaker and proficient in English). During this back-translation process of the new version into its source language, the major disparity was observed on 9 items of FAD and the minor disparity was observed on 4 items of BFR. As literature in the areas of instrumentation translation and adaptation elucidated back-translation does not imply that an item must remain accurately identical to the original but rather it must maintain a conceptual equivalence (Beaton et al, 2000; Oliveira and Bandeira, 2011; Sireci et al., 2006)*.* Finally, a comparison of the back-translated questionnaire with its original English version was made and all necessary alterations were made and the new Affan Oromo version of both scales (i.e., FAD and BFR) were ready for the next statistical evaluation.

Result of the Content Validation

In establishing the content validity of the Affan Oromo version of Family Assessment Device (FAD) a first literature review was used for the foundation of both scales (i.e., FAD and BFR), and their shortest version was evaluated and their consistency was verified. Secondly, their factor/components were also checked and consistent with its both original and shortest version (Epstein et al., 2003; Maria et al., 2016; Moos and Moos, 1994). Thirdly, the face-validity of the instrument was checked via the content of the instrument to which it intended to cover and range of meaning in the new context of its Affan Oromo version based on literature and its theoretical construct. Furthermore, clarity of instruction, item, scoring style, and language simplicity was checked by an expert judgment. . Finally, the Affan Oromo Version of the instruments were generate, its content validity was confirmed and provide template for the factor structure.

Psychometric Properties of the Affan Oromo Version (FAD)

Factor Analysis of the Affan Oromo Version FAD (35-items)

Before using factor analysis verifying whether or not the data set of the respondents are suitable for factor analysis is mandatory. To check the assumption of exploratory factor analysis, several preliminary tests were done. These tests include Kaiser-Meyer Olkin's (KMO) measure of sampling adequacy, Bartlett's test of Sphericity, multicollinearity/linearity, factorability of the correlational matrix, and outliers among the case. Table2 below shows sampling adequacy and suitability of data to EFA.

Table 2. Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy/Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measures of sampling adequacy		.807
Bartlett's Test of Sphericity	Approx. Chi-square	3478.833
	df	595
	Sig.	.000

As was illustrated above (Table 2) the computed Kaiser-Meyer-Olkin values were .807, greater than the suggested values of 0.6 (Kiaser, 1970; 1974), indicating that the correlations are adequate for factor analysis. Likewise, Bartlett's test of Sphericity was reached statistically significant (P<0.05, =000), confirming the factorability of the correlation matrix (Bartlett's 1954).

Strength of the Inter-Correlation among the Items

The interco-relational matrix among the items was computed and evidence from the result confirmed that the majority of the items have an acceptable level of coefficients. Consequently, the inspection done between each item showed that there were several coefficients of inter-item correlation scores greater than 0.30, that satisfy the assumptions of exploratory factor analysis. This implies that it is adequate to use exploratory factor analysis for this instrument. As one can understand from this table the factor loading of the Affan Oromo version of the Family Assessment device was statistically significant (alpha coefficient > 0.35 for a sample of 223). This implies that all the Affan Oromo versions of family assessment device items showed good factor loading and appropriate level for exploratory factor analysis without any item deletion (Haion et al. 2014). Moreover, good internal consistency for the scale (FAD-Affan Oromo Version) =.830 was observed. As a result, the current overall reliability coefficient (r=.830) before rotation was statistically significant and acceptable for this analysis. Likewise, the review of the individual items showed that almost all of them had good total item correlation ranging from 0.278 to 0.678, whereas the values of alpha if

item deleted were statistically significant and acceptable (ranging from 0.819 to 0.832). This entails that there is no item scored alpha values less than 0.70 that may lead to item removal. The computed factor loading of each item using principal component analysis and the direct Oblimin approach is annexed (please see the Appendix).

*Extraction of Factor through PCA Using Oblimin Rotation Method*

Factor extraction involves determining the smallest number of factors that can be used to best represent the interrelationships among the set of variables. In doing so, a principal component analysis was performed on the item responses of 223 subjects' capitulated completion of the distributed Affan Oromo version of the Family assessment device as displayed in Table 3 below.

Table 3. The Total Variance Explained of Eigenvalues

Components	Initial Eigen values			Rotation Sums of Squared Loadings [a]
	Total	% of Variance	Cumulative %	Total
1	5.344	15.268	15.268	5.170
2	3.862	11.034	26.302	3.602
3	3.503	10.010	36.312	3.361
4	3.022	8.634	44.947	3.314
5	2.789	7.970	52.916	2.859
6	1.687	4.819	57.735	2.866
7	1.152	3.291	61.960	1.215
8.	1.027	2.935	63.960	-

The above table displayed the Eigenvalues of a factor representing the amount of the total variance explained by that factor. According to Kaiser's criteria, only factors with eigen values of 1.0 or more are retained for further investigation. As was displayed in Table 3, the eigenvalues of the eight factors for the total samples were 15.268, 11.034, 10.010, 8.634, 7.970, 4.819, 3.291, and 2.935 respectively, accounting for 63.960% of the total variances. In addition to this, communality for

initial extraction was computed and equal to 1.00. This implies that each variable is fully (1.00 or 100%) involved in the solution and there were no items with less than 1.00 extraction communality that may be a candidate for removal from the analysis. To avoid over-factoring, the scree plot test (Gorsuch, 1983) was further employed and showed that six factors could be meaningfully extracted. Figure 1 below portrays the scree plot of the Eigen values of the initial component solution.
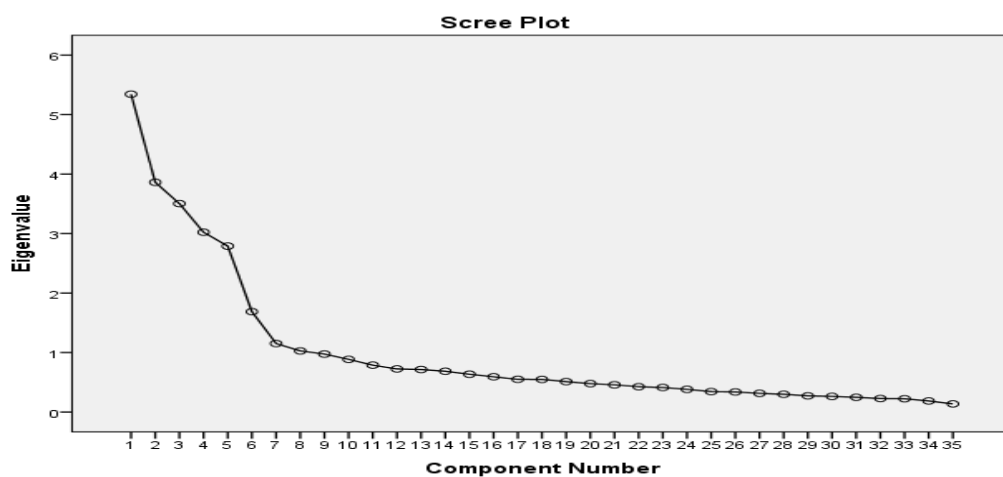
Figure 1. *Scree plot of Eigen values*

Figure 1 above showed the scree plot of eigenvalues for the initial component solution. As one can easily understand from figure 1 above, the turning points were observed at component six showing a transition point between components with high and low eigenvalues. Thus, this plot confirmed the previous observation derived from the total variance explained in Table 3 above where six factors are the best principal components of the solution. Furthermore, to generate the adequate components of the Affan Oromo Version of Family Assessment Device, Monte Carlo PCA for Parallel that could compare the actual eigenvalues with its corresponding criterion values for a randomly generated data

matrix was done. Table 4 below illustrates the comparison of Eigenvalues from PCA and criterion values from Parallel analysis.

Table 4. Comparison of Eigenvalues from PCA and Criterion Values from Parallel Analysis

Components	Actual Eigenvalues from PCA	Criterion Values from Parallel Analysis	Decision
1	5.344	1.935277	Accepted
2	3.862	1.791147	Accepted
3	3.503	1.712400	Accepted
4	3.022	1.624016	Accepted
5	2.789	1.566984	Accepted
6	1.687	1.511254	Accepted
7	1.152	1.452308	Rejected
8	1.027	1.394714	Rejected

Specifications for this run:

Date: 6/21/2019

Number of subjects   223

Number of Variables   35

Number of replications 100

Percent   95

NB: Decision Rules *1)* **Accepted** when actual Eigenvalues is > Criterion values from PA and

2) **Rejected** when Criterion values from PA are greater than actual eigenvalues

After the investigation of the Eigenvalues exceeding one showed eight components and an inspection of the scree plot revealed a clear break after the six components, Monte Carlo PCA for Parallel Analysis was computed. As was displayed above (Table 5), six components with eigenvalues exceeding the corresponding criterion values for a randomly generated data matrix of the same size were obtained. From this strong criterion of Catell's (1966) Scree test and Monte Carlo PCA for Parallel Analysis, six components of the Affan Oromo Version of Family Assessment were generated. Moreover, the table above showed that six components with stronger loading coefficient greater than 0.40 was accepted as an independent components of the Affan Oromo Version of Family Assessment Device, that suggest this six factor-solution is more likely to be more appropriate. This implies that the results of the parallel analysis support the decision from the scree plot to retain six factors for further investigation. Following the decision made here, further rotation was computed using the forced method in an attempt to determine the number of components with its number of items using both pattern and structure matrix of loading coefficient as displayed in Table 5 below.

Table 5 below reveals the rotated pattern and structure matrixes of the factor solution of the FAD items.

Table 5. Rotated Pattern and Structure Matrixes of Factor Solution of FAD items

Items	Pattern matrix Component						Structure matrix Components						Communality
	1	2	3	4	5	6	1	2	3	4	5	6	
FF2	.888						.872						.776
FF4	.871						.871						.762
FF3	.842						.827						.701
FF1	.822						.808						.676
FF5	.822						.799						.674
FF9	.691						.711						.523
FF7	.665						.683						.503
FF8	.560						.576						.345
FF6	.461						.485						.333
FF32		.810						.797					.675
FF31		.757						.760					.589
FF33		.740						.748					.570
FF30		.732						.727					.534
FF29		.662						.678					.491
FF35		.624						.621					.396
FF34		.610						.606					.386
FF10			.859						.857				.741
FF11			.850						.846				.723
FF12			.827						.836				.704
FF13			.785						.806				.655
FF19				.851						.849			.727
FF20				.844						.843			.737
FF21				.841						.843			.732
FF22				.744						.739			.552
FF18				.468						.470			.385
FF23				.451						.466			.361
FF27					.794						.787		.628
FF26					.780						.785		.620
FF28					.776						.761		.613
FF25					.701						.702		.519
FF24					.607						.615		.390
FF15						.826						.814	.679
FF16						.791						.804	.654
FF17						.767						.766	.590
FF14						.683						.700	.510

Note: This is the principal component factor analysis Loadings greater or equal to 0.40.

The above table showed the final rotation of the retained Affan Oromo Version of Family Assessment components with its extracted communality. As it was displayed above (Table 5), in the context of our situation the Affan Oromo version of the Family assessment device has been retained with six components that fit all the necessary assumptions of the exploratory factor analysis. The Principal Component Analysis using Oblimin rotation revealed that the presence of eight components with eigenvalues exceeding 1, explaining 15.268%, 11.034%, 10.010%, 8.634%, 7.970%, 4.819%, 3.291%, and 2.935% of the variance respectively. On other hand, an inspection of the scree plot using Catell's (1996) scree test done, showed a clear break after six components, and

it was decided to retain six components for further investigation. In the end, the Mont Carlo PCA for Parallel Analysis was computed (see Table 6) and showed that six components with eigenvalues exceeded the corresponding criterion values for a randomly generated data matrix. The final six components solution explained a total of 57.735% of the variance where component 1 contributing 15.268%, 2 contributing 11.034%, 3 contributing 10.010%, 4 contributing 8.634%, 5 contributing 7.970% and 6 contributing 4.819% (see Appendix E). This implies that the Affan Oromo Version of Family Assessment Device yields six components where Component 1(9 -items, component 2 (7- items), Component 3 (4-items), Component 4 (6-items), component 5 (5- items), and component 6 (4-items) in both pattern and structure matrix.

Moreover, the Oblimin rotated solution confirmed the presence of a simple structure with all components showing several strong loadings and all variables loading substantially only on one component. On other hand, the commonality of all components showed strong (>.3) loading values that imply that all the items were well fit with the other items in its components. From this, it is possible to deduce that the interpretation of the six components was not consistent with the previous research on the FAD scale where they produce seven components of family assessment devices. This may be because of the culture, nature of subjects, number of respondents, the translation process, and other dynamic influences. Consequently, the result of this analysis confirmed that the shortest version of the Family Assessment Scale should be used with its components except for factor I and II which was merged as one in the Ethiopian context of Affan Oromo language.

Generally, Component 1 was defined by items portraying the expression of problem-solving communication skills in which 9 items loaded on this factor and accounted for 15.268% of the variance. As the context in Ethiopian in general and Oromo culture, in particular, is considered these components aimed at describing a family's ability of communication to confront problems they face around their house. This implies that the major components of the Family Assessment device in the Affan Oromo

version was significantly loaded on component 1 and attributed to the *Problem-solving communication skill* of the family members. Component 2, the second factor Affan Oromo version FAD restraining 7 items and explaining 11.034% of the total variance was elucidated as *General Family Functioning.* Components 3 enclosing 4 items and donating 10.10% of the total variance was leveled as *Roles that family members play* in their everyday life around the home. Component 4 explained 8.634% of the total variance including six items was named as the *Affective involvement* of each family member with each other. This component reflects the interdependence of the family members and the degree to which persons in the families are emotionally interested in each other. Component 5 contributed 7.97% and contained 5 items that were attributed as *Behavioural Control*. This factor is describing how every family member expresses and maintains standards of behavior, norms, values, custom, and ethics that appear to be behavioral control of the family members. Finally, component 6 representing 4.82% and containing 4 items is attributed to *Affective responsiveness* where every family member is expressing their emotional involvement and reaction to each other's as observed in Table 6 above.

Test of Gender Difference in Factor Structure

To see if there is congruence or not in factor structure, the Affan Oromo Version of FAD items were subjected to separate factor analyses by gender to test the criterion reliability of the item. Table 6 below shows the result of factor structures and its explained variance across participants' sex.

Table 6. Comparison of Factor and Its Explained Variance between Male and Female

Female		Male	
Factors	% of Variance	Factors	% of Variance
Problem-solving Communication	5.471	Problem-solving Communication	5.74
General functioning	4.09	General functioning	4.40
Role	3.94	Role	4.17
Affective Involvement	2.85	Affective Involvement	3.53
Behavioural Control	2.12	Behavioural Control	2.78
affective responsiveness	1.85	affective responsiveness	1.37

As it is illustrated above (Table 6) the maximum total variances explained by the factors were alike for both female and male participants. The variance accounted for the first six factors of females are' 5.47%, 4.09%, 3.945, 2.85%, 2.12%, and 1.85% with a total variance of 57.91%. On the other hand, the variance explained for the five factors of males were; 5.74%, 4.40%, 4.17%, 3.53%, 2.78%, and 1.37% with a total variance of 60%. Moreover, the visual inspection across each factor confirmed that there was a strong resemblance of the factors between males and females. Further, the slight difference might be attributed to the role of gender difference in our culture and the number of respondents' variation among males and females.

Reliability of the Affan Oromo Version Family Assessment Device

The following Table 8 shows the result of reliability estimates coefficients of each newly generated six components of Affan Oromo version FAD.

Table 7. Cronbach alpha (r$_{alpha}$) and Split-half (r$_{tt}$) Reliability coefficient for each Six components of the Affan Oromo Version of Family Assessment Device

S. N	Name of the Affan Oromo version FAD factors	Cronbach's alpha Coefficient (r$_{alpha}$)	Split-half (r$_{tt}$)	No of items
1	Problem solving communication (PSC)	.896	.797	9
2	Roles (ROL)	.865	.867	4
3	Affective responsiveness (AR)	.778	.804	4
4	Affective Involvement (AI)	.800	.781	6
5	Behavioural Control (BC)	.789	.791	5
6	General functioning (GF)	.832	.766	7
	Overall item reliability coefficient	= 0.817		35

As displayed above in Table 7, the internal consistency and split-half measure for each of the six components of the new Affan Oromo version of Family assessment devices were generated. The computed Cronbach's alpha values of the reliability coefficient were revealed a statistically significant and acceptable level of reliability across each of the six factors of the new Affan Oromo version Family assessment device (FAD). The magnitude of the internal consistency coefficients ranged from .778 to .896. Hence all of the factors were scores >0.5 Cronbach alpha coefficient, all the components of the new Affan Oromo version of FAD possess intra-factor reliability and stipulate the acceptable or adequate level of reliability in utilizing the instrument in the context of the new language version. Based on the theoretical assumption of reliability several scholars stated that the closer Cronbach's alpha coefficient to 1.0 is the greater the internal consistency of the items in the scale (Gliem, and Gliem, 2002; George and Mallery, 2003). Furthermore, George and Mallery had provided the rules of thumb e. i., if the value of alpha is >0.9 = Excellent, >0.8 =Good, >0.7 = Acceptable, >0.6 = Questionable, >0.5 =Poor, and <0.5 = Unacceptable. From this theoretical assumption, it is possible to conclude that all the factor of the Affan Oromo version of Family assessment device has an acceptable (ranging from .778 to .896) Cronbach alpha and 0.766 to .797 split-half reliability coefficient. This implies that all six components of the

new Affan Oromo version family assessment device had adequate sound for the usability of the instrument into the context it was adapted.

Validity of the Affan Oromo Version Family Assessment Device

To test the construct validity of the instrument, the convergent validity of the Affan Oromo version FAD was estimated by computing correlations between the Affan Oromo version of FAD components and Brief Family Relationship subscale. Moreover, the criterion validity was tested with sex, Family relationship as a predictor of Family functioning. Table 8 below reveals the constructs validity results of FAD components as measured with BER subscales.

Table 8. Construct Validity of the FAD (N=223) As Measured with BFR Subscales

Factors of FAD scale	PSC	ROL	AR	AI	BC	GF	Cohe	Exp	CR
Problem-solving communication (PSC)	1.00								
Roles (Rol)	.505**	1.00							
Affective responsiveness (AR)	.498**	.523**	1.00						
Affective involvement (AI)	.497**	.402**	.461**	1.00					
Behavioural control (BC)	.536**	.349**	.396**	602**	1.00				
General Functioning (GF)	.710**	.455**	.442**	573**	.608**	1.00			
Factors of BFR scale									
Cohesion (Cohe)	.359*	.411**	.402**	278**	.234**	.338**	1.00		
Expressiveness (Exp)	.377**	.469**	.389**	346**	.391**	.407**	.454**	1.00	
Conflict resolution (CR)	.297**	.242**	.241**	.188*	.340**	260**	.157*	.211**	1.00

**Correlation is significant at the 0.01 level (alpha value) *Correlation is significant at the 0.05 level (alpha value)

As one can easily understand from the above table, there is a statistically significant inter-correlation among the components/subscales of the Affan Oromo Version Family assessment device ranging from 0.349** to 0.710** Cronbach's alpha values (P<0. 01). Moreover, the highest intercorrelation was found between Problem-solving communication and general family functioning (r=0.710**, P<0.01), while the weak but statistically significant intercorrelation was observed between Role and Behavioural control subscales of the FAD instrument (r=0.349**, P<0.01).

In an attempt to test the convergent validity of the instrument intercorrelation analysis was made with brief family relationship subscales. As a result, depicted in the above table, the convergent validity computed between the six factors of FAD and the three components of BFR showed statistically significant and positive correlation ranging from .188* to 0.469** (P<0.01). Among all the convergent validity, the highest correlation was found between role subscale of FAD and expressiveness factors of BFR scale (r=0.469**, P<0.01), hence the weak but statistically significant intercorrelation was found between affective involvement of FAD component and conflict resolution subscale of BFR (r=.188*, P<0.05). This implies that the Affan Oromo version of the Family assessment device has adequate convergent validity in the context it was adapted as compared with the subscale of the Brief family relationship (BFR) instrument. In addition to the construct validity, the criterion/concrete validity of the Affan Oromo version Family Assessment device was computed to see if there is a relationship or not between some of the independent variables of the study (i.e., sex, Parental relationship). As a result, Table 9 below display the criterion validity of the FAD simply by testing for gender and the parental relationship could predict the instrument.

Table 9. The correlational matrix between factors of FAD and BFR as a measure of criterion validity based on the gender of respondents (Male, N=104, and Female, N=119).

Males Factors	PSC	ROL	AR	AI	BC	GF	COHE	EXP	CONF	Females factors
PSC	1.00	.538**	.572**	.549**	.620**	.768**	.402**	340**	.376**	*PSC*
ROL	.456**	1.oo	.577**	.434**	.426**	.498**	.487**	.418**	.310**	*ROL*
AR	.403**	.453**	1.00	.475**	.435**	.497**	.443*	.346**	.236**	*AR*
AI	.437**	.355**	.443**	1.00	.643**	.646*	.303**	.272**	.264**	*AI*
BC	.418**	.235**	.343**	.553**	1.00	.705**	.299**	.385**	.458**	*BC*
GF	.636**	.401**	.373**	.487**	480**	1.00	.410**	.366**	.355**	*GF*
COHE	.303**	.318**	.350**	.242*	.244**	.249**	1.00	.473**	.231**	*COHE*
EXP	.422**	.523**	.436**	.416**	.392**	.448**	.421**	1.00	.264**	*EXP*
CONF	**.216***	**.278****	**.146***	**.349****	**.217***	**.267****	**.211***	**474****	**1.00**	***CONF***

NB: *PSC-Problem solving communication, Rol-role, AR- affective responsiveness, AI-Affective involvement, BC-behavioural control, GF-general functioning, COHE-Cohesion, EXP- Expressiveness, CONF-Conflict, FAD-Family assessment device, BFR-Brief family relationship.*

The visual inspection done across each factor based on participants' gender right to left diagonal for male and left to right diagonal for female showed statistically congruent Cronbach alpha values across each component. For instance, if we see the relationship between problem-solving communication and roles, for males (r=.422, P<0.01) and for females (r=.538, P<0.01), whereas the relationship between PSC and EXP for males (r=.422, P<0.01) and for female (r=.349, P<0.01). This means while considering gender as criterion validity all factors of the Affan Oromo version FAD maintain a similar association for both male and female respondents which was theoretically valid. This implies that this instrument maintains statistically significant criterion validity. Table 10 below on other hand illustrates the results of stepwise regression of the Affan Oromo version (FAD) factors based on participant's gender and Family relationship as criterion validity test.

Table 10. Stepwise regression of the Affan Oromo version FAD factors based on Gender and Family relationship (N=223)-Criterion validity test

Independent variables	Dimensions of FAD	R	(R^2)	Beta	Sign.
	Factor 1 (PSC)	.036	(.0013)	.054	.585
	Factor 2 (ROL)	.080	(.0064)	.102	.221
	Factor 3 (AR)	.121	(.015)	.152	.067
	Factor 4 (AI)	.100	(.010)	-127	.128
	Factor 5 (BC)	.130	(.017)	.162	.049
Sex	Factor 6 (GF)	.014	(.0002)	-021	.827
	Factor 1 (PSC)	.052	(.0027)	.078	.439
	Factor 2 (ROL)	-.026	(.00068)	-.034	.693
	Factor 3 (AR)	-.033	(.0011)	-.041	.624
	Factor 4 (AI)	-.126	(.0156)	-.160	.061
	Factor 5 (BC)	.007	(.00049)	.008	.921
Family Relations	Factor 6 (GF)	-.024	(.00058)	-.035	.718

NB: PSC-problem solving communication, Rol-roles, AR-affective responsiveness, AI-affective involvement, BC-behavioural control, and GF-general function.

In an attempt to check the criterion validity of the instrument on the predictive power of independent variables (i.e., Sex and family relationship), stepwise regressions analysis was carried out with the six extracted factors of FAD as a dependent. The overall inspection of the standardized regression coefficients of beta values for each dependent variable against gender showed that excluding behavioral control (beta values =.162, P, <.049) there were no statistically significant differences between males and females in predicting the retained factors of Affan Oromo Version FAD. Even if BC is the only factor predicted by the gender of the respondents its power is very weak. This implies that all the retained factors of FAD confirmed criterion validity where no theoretical assumption has been found to predict FAD factors based on gender. While considering family members as independent variables (adolescent child, Father, and Mother) the result of the study confirmed that there were no statistically significant differences between adolescent child, father, and mother participants of the study in predicting the retained components of Affan Oromo Version family

assessment device. This means that all factor of the Affan Oromo version family assessment device yields good criterion validity.

Discussion

The result of the current study revealed that all the Affan Oromo versions of FAD items had more than 0.450 loading factors with Cronbach alpha values greater than 0.817 if the item was deleted. This implies that no items were identified as item removal for further investigation. The six first-order latent hypothetical domains of Affan Oromo version family functioning showed a moderate level of intercorrelation. This result robustly confirmed the conceptual and psychometric interdependence of the components conceived by the McMaster Model of family functioning (Epstein et al, 2003; 1983; Miller et al., 2000). In the Affan Oromo language of Ethiopian Context, the factor structure of the shortest version FAD was considered similar to the components that initially projected by the FAD apart, from a restructuring of a few items.

Consequently, the factor structure result showed that *component 1* was mainly a collection of items from problem solving and communication factors. In the Ethiopian Context of Affan Oromo language items from problem-solving and communications were combined as single components which could be re-named as *problem-solving communication skills*. This implies that in the Oromo culture of the Ethiopian context families equipped to address family problems were also maintained apparent and open communication skills with each other. Furthermore, this result suggested that problem-solving communication is a momentous attribute in the Oromo culture of the Ethiopian context as it explains most of the variance of the components of the family assessment device. The result of the current study was congruent with the study done in the Chinese language where six subscales were retained and emotional problem solving and expression of feeling was attributed to communication skills (Kwok and Alice, 1994; Wong, et al., 2011). However, an inconsistent result was reported by Maria et al., 2016; Epstein et al., 1983; 2003; Miller et al., 2000

describing that FAD has maintained seven factors and each of the problem solving and communication retained independent of each other.

Component 2, general functioning involves all the items originally suggested as a general family functioning subscale of family assessment device with a factor loading ranging from .610 to .810 pattern matrixes and 0.606 to 0.797 structural matrixes. In its Affan Oromo version, this component is aimed at measuring the overall family functioning as it was implied originally. This is congruent with the study done in several countries confirming that the general family subscale is an independent subscale of Family assessment device (Maria et al., 2016; Daniel, 2002; Epstein, et al., 1983; 2003; Miller et al., 1985; 2000; Monica Pellerone et al., 2017; Ty a. Ridenour et al., 1999).

Component 3, Role, included all items from its original short version of the family assessment device with a factor loading ranging from 0.785 to 0.859 pattern and 0.806 to 0.857 structure matrix. Consequently, the Affan Oromo version components of FAD seem adequate for assessing the routine family tasks like cooking, gardening, taking out the garbage, as well as necessary family functioning (e.g., affective and instrumental) and other family functioning in the Oromo culture context. This result is consistent with its long and short version components in measuring families' daily routine activities (Maria et al., 2016'; Miller et al., 2000; Kwok and Alice, 1994; Sawyer et al., 1988).

Component 4, Affective involvement, composed all items included in its original short version with a factor loading ranging from 0.451 to 0.851 pattern and 0.466 to 0.849 structure matrix. Overall, like its long and short version, the Affan Oromo Version of this factor is aimed at measuring the extent of commitment, concern, satisfaction a person feels towards family members, the degree to which family as whole show interest in and value the activities, and degree of involvement and investment among family members. This result was supported with the earlier studies indicating that both short and long version is aimed at measuring emotional engagement among family members (Maria et al.,

2016; Miller et al., 2000; Kazarian, 2010; Kwok and Alice, 1994; Roncone et al., 1998; Shek, 2002).

Component 5, *Behavioural control,* contains the whole items included in its inventive short version with a factor loading ranging from 0.607 to 0.794 patterns and 0.615 to 0.787 structure matrix. Likewise, in its original short version, this factor was defined as assessing the family's ability to monitor and control the behaviors of its member in the Ethiopian context of the Affan Oromo version. Furthermore, this factor accentuated more on whether the family has "Rules or Norms" to guide and maintain the standard of its family members. It is consistent with the notion that a family in which there is high control is also highly organized in planning household activities (Epstein et al, 1983; 2003; Robertson, and Hyde 1982; Monica Pellerone et al., 2017).

Component 6, named Affective responsiveness, holds all items in its original short version with loading factors assorting from 0.683 to 0.826 pattern and 0.700 to 0.814 structure matrix. Similar to its initial short and long version this factor was inclined to measure the ability of the family to respond to a range of stimuli with the appropriate quality and quantity of feeling within the family members in the Ethiopian Affan Oromo eco-cultural setting. The congruent result was reported in describing that affective responsiveness is attributed to the expression of feeling as playing a significant role among family members (Maria et al., 2016; Daniel, 2002; Morris, 1990; Miller et al., 2000, Kwok and Alice, 1994). Moreover, the result of the present study confirmed that family functioning is a multi-dimensional scale that was originally described; however, the number of dimensions varies from culture to culture.

Hence, the Affan Oromo version of FAD was accounting 57.735% of the variance for the overall all components of the family assessment device, it seems very good and adequate as compared to other language versions of the instrument like Chine's version accounted (Kwok and Alice, 1994, 38.5%) and Romanian language Version (Maria et al., 2016, 55%). Though it seems relatively good in explaining variance

contributing to the overall FAD score, it is suggested that further study is significantly important in the Ethiopian setting. Consequently, in the Oromo cultural context, it would be important if factors could be developed based on this factor analysis through Operationalizing suitable items that adequately reflect the true nature of the Ethiopian eco-cultural perspective and the fundamental theoretical model of family assessment device.

Inspection of gender difference in the factor structure of Affan Oromo version Family assessment device and its total explained variance also showed that there was a similar factor structure with very few differences in contributing to each factor between male and female participants. This result is consistent with the study done in Chines, (Kwok and Alice, 1994), Romanian, (Maria et al., 2016), French (Mario et al., 2012), and Italian (Monica et al., 2017) language. Besides, the result of the current study revealed that all the six factors of the Affan Oromo version Family assessment device maintain statistically significant convergent validity as measured with three subscales of brief family relationship inventory (assorting from .188* to 0.469**, P<0.05, 0.01). The congruent study result was also observed in explicating that there is a positive and strong correlation between the FAD subscale and BFR components (Carlotta et al., 2011). Moreover, the result of several studies confirmed that FAD maintains adequate convergent validity with numerous McMaster family Model; Brief family relationship scale (Carlotta et al., 2016; Roosa, and Beals, 1990), Family environment scale (Kwok and Alice, 1994; Perosa, 1990), Multidimensional Student's Life Satisfaction Scale and Rosenberg self-esteem scale (Maria et al., 2016).

Consequently, the criterion/concrete validity test done with some independent variables of the study such as gender and family relation signified that the FAD had adequate criterion validity that was theoretically and conceptually suggested by several scholars in the areas. The stepwise regression analysis result showed that apart from the behavioral control subscale of FAD there were no statistically significant gender differences in predicting the subscales of family

assessment devices. This result was somewhat incongruent with the study done in Chine's language where gender difference is observed on the communication subscale of FAD (Kwok and, Alice, 1994). Likewise, the regression analysis confirmed that there were no statistically significant differences between adolescent children, mother and father family members in predicting any of the components of family assessment device. This implies that since the family is functioning as a whole unit, there is no reason to expect different aspects of family functioning will be independent of each other. Moreover, the six extracted Affan Oromo version FAD demonstrated statistically significant and strong internal consistency and split-half reliability. This result is congruent with several study results confirming satisfactory to excellent internal consistency and test-retest reliability (Maria et al., 2016; Epstein et al., 1983; 1997; Kwok and Alice, 1994; Monica et al., 2017). Generally, the current study can be inferred to non-clinical adolescent children and their parents in study areas. However, further research can be directed at determining whether perceived dimensions of family functioning differ for clinical and non-clinical respondents in the Ethiopian Context.

Conclusion and Recommendation

The recent study was born out of an attempt to explore factor structure and Psychometric Properties of the Affan Oromo Version of Family assessment device. In doing so, both forward and backward translation was made in a way that evaluated and synthesized a single Affan Oromo version of the instrument was constructed. The factor derived from exploratory factor analysis of Affan Oromo version FAD was similar to that originally proposed dimensions except for some re-structure made between problem-solving and communication as one factor in Affan Oromo language with adequate factor loading. Moreover, the factorial structure and its dimension were quite stable and similar across the gender of the respondents. Consequently, the six extracted factors of the Affan Oromo version of the Family Assessment device were statistically significant and preserved high internal consistency and split-half reliability. Similarly, the new Affan Oromo version factors of the

Family Assessment Device showed statistically significant intercorrelation with adequate convergent and criterion validity.

To recapitulate, the current study offers underpinning shore up for the factor structure and psychometric properties of the short version (35-items) FAD in Affan Oromo language, as a culturally valid measure of perceived family functioning of the Oromo community. Nevertheless, this study was restricted in its focus on Oromo families around Ambo town. Extra demographically various sample of the target group has to be measured in future investigation. Besides, future studies will be inspired to recount the validity and reliability of Family assessment devices to other variables like parenting styles, adolescent-parent attachment styles, family size, socio-economic status, psychological wellbeing, etc. Therefore, in an attempt to appropriately use this instrument in the Ethiopian eco-cultural context vigorous efforts are exerted to develop a locally sound family assessment device in both clinical and non-clinical settings of our context.

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Appendix: **Summary of Items and Factor Loading from Principal Component Analysis with Direct Oblimin Method (N=223), Affan Oromo Version of Family Assessment Device**

	Items in both Affan Oromo Version and its Original Language i.e. English	Item loading	Corrected Item Total Correlation	Cronbach Alpha If Item deleted
FF1	Rakkoowwaan yeroo hundaa maatii keenya mudatu ni furra **(We resolve most everyday problems around the house)**	**.731**	.567	.819
FF2	Yeroo hunda murttoo rakkkoo nu mudate furuuf murteesinnerrati ni hojjenna **(We usually act on our decisions regarding problems)**	**.810**	.608	.817
FF3	Akka maatiitti mari'annee rakkoodhaaf furmaata erga keenyee booda, furmaatichis bu'a qabeessa ta'uufi ta'uu dhisuusaa irratti ni mari'anna (**After our family tries to solve a problem, we usually discuss whether it worked or not)**	**.765**	.545	.819
FF4	Wantoota nama aarsaaniifi tasa miira namaa muddan ni to'annam (**We resolve most emotional upsets that come up)**	**.839**	.549	.819
FF5	Rakkowwan jireenya keessatti nu mudatan tooftaalee garaagaraa fayyadamuudhaan furuu ni yaalla (**We try to think of different ways to solve problems)**	**.748**	.496	.821
FF6	Miseensota maatii keenyaa keessaa wayita namni tokko aaru yookaan mufatu, warri kaan immoo maaliif akka aare/aarte ni beekna **(When someone is upset the others know why)**	**.496**	.326	.826
FF7	Namoonni akkuma isaaniitti fakkaatetti dhufanii yaada isaanii dubbatu malee, qajeelfama waliif hin kennan **(People come right out and say things instead of hinting at them)**	**.694**	.387	.824
FF8	Walii keenyaaf iftoomina qabna (**We are frank with each other)**	**.578**	.407	.824
FF9	Waanta namni tokko hojjete yoo hin ta'u ta'e, walitti himna	**.714**	.474	.821

	(**When we don't like what someone has done, we tell them**)			
FF10	Namni tokko waa tokko akka hojjetu wayita barbaaddu, hojjechuu isaaniifi hojjechuu dhabuu isaanii mirkaneeffachuu qabda (**When you ask someone to do something, you have to check that they did it**)	**.581**	.433	.823
FF11	Hojiin maatii keenya keessatti haalaan hin heddummaatu (**Family tasks don't get spread around enough**)	**.611**	.386	.824
FF12	Kaffaltiiwwa jireenya maatii keenyaaf barbaachisan kaffaluuf yeroo mara rakkoo guddaatu maatii keenya keessa jira (**We have trouble meeting our bills**)	**.633**	.336	.826
FF13	Walumaa galatti dirqamani mati keenya keessatti kenamu quubsaa mitit (**We are generally dissatisfied with the family duties assigned to us**)	**.591**	.429	.823
FF14	Mariirsiifannaafi jaalala waliif qabnu waliif ibsuuf kaka'umsa hin qabnu (**We are reluctant to show our affection for each other**)	**.507**	.378	.824
FF15	Miseensonni maatii keenyaa tokko tokko miira isaaniitti dhagaa'ame hin ibsatan (**Some of us just don't respond emotionally**)	**.518**	.348	.825
FF16	Jaalala waliif qabnu ifatti walitti hin agarsiifnu (**We do not show our love for each other**)	**.556**	.329	.826
FF17	Maatii keenya keessatti jaalalaafi mararsiifannaa qabnu waliif ibsuuf akka dhimma sadarkaa lammaffaatti ilaallama (**Tenderness takes second place to other things in our family**)	**.505**	.327	.826
FF18	Miseensonni maatii keenyaa xiyyeeffannoo kan waliif kennan yoo waan isaan fayyadu walirraa argatan qofa (**You only get the interest of others when something is important to them**)	**.468**	.316	.826
FF19	Yeroo baa'ee fedhii dhuunfaa keenyaf dursa ykn xiyyeeffanna laana (**We are too self-centered**)	**.707**	.416	.823
FF20	Walii keenya gidduutti hariiroo gaarii kan uumnu yookaan fedhii nuti walii keenyaaf	**.666**	.362	.825

	qabnu kan dabalu wayita waan nutti tolu walirraa argannu qofaadha (**We get involved with each other only when something interests**)			
FF21	Jaalala kan walitti agarsiifnuu fi hariiroo gaarii kan waliin qabannu yoo fedhii dhuunfaa keenyaa walirraa arganne qofaadha (**We show interest in each other when we can get something out of it personally**)	**.640**	.374	.824
FF22	Hariiroon maati keenya gidduu kan jiraatu yoo dantaa walirraa argatu ta'ee qoofaadha (**Our family shows interest in each other only when they can get something out of it**)	**.590**	.448	.822
FF23	Yoo waan gaarii waliif kan qabu ta'eyyuu, jireenya walii keenyaa gidduu akka malee ni seenna. (**Even though we mean well, we intrude too much into each others' lives**)	**.450**	.356	.825
FF24	Wayita rakkoon yookaan balaan tasaa nu mudatu waan goonu wallaallee bitaa nutti gala (**We don't know what to do when an emergency comes up**)	**.595**	.534	.832
FF25	Maatii keenya keessatti yoo seera cabsite akka salphaatti jalaa ba'uu dandeessa (**You can easily get away with breaking the rules**)	**.690**	.489	.832
FF26	Waa'ee bartewwan qulqullinaan wal qabatanii maal godhamuu akka qabu sirriitti adda baasnee hin beeknu (**We have no clear expectations about toilet habits**)	**.708**	.678	.830
FF27	Seerota yookaan qajeelfamoota kamiiniyyuu daangeffamuu hin qabnu (**We don't hold to any rules or standards**)	**.715**	.347	.833
FF28	Maatii keenya keessatti waan kamiyyuu raawwachuun ni danda'ama (**Anything goes in our family**)	**.637**	.577	.833
FF29	Maatii keenya keessatti wal hubannaan waan hin jirreef karoorafi wixxinee qopheessuun ulfaataadha (**Planning**	**.659**	.488	.833

	family activities is difficult because we misunderstand each other)			
FF30	Maatii keenya keessatti miira gaddaa nutti dhagaa'ame ifatti walitti haasa'uun hin dandeenyu (**We cannot talk to each other about the sadness we feel)**	**.580**	.329	.829
FF31	Maatii keenya keessatti wantoota nu sodaachisanii fi nu yaaddessan irratti waliin hin mari'annu (**We avoid discussing our fears and concerns)**	**.651**	.433	.832
FF32	Maatii keenya keessa miirota badoo hedduutu jiru (There are lots of bad feelings in the family)	**.609**	.376	.833
FF33	Maatii keenya keessatti dhimma tokkorratti murtii qabatamaa dabarsuun rakkisaadha (**Making decisions is a problem for our family)**	**.673**	.278	.833
FF34	Maatiin keenya wal tumsinee akka gaariitti waliin hin tarkaanfannu (**We don't get along well together)**	**.466**	.448	.831
FF35	Yaadaafi fedhii keenya iftoominaan waliif ibsina (**We confide in each other)**	**.494**	425	.832

Reliability Coefficients alpha = .830