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Translation of Well-being Assessment Instruments in African Contexts: A Mapping Review and Future Directions

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ABSTRACT

A fundamental requirement for proper measurement of well-being in diverse contexts is the appropriate translation of well-being measures into the languages spoken by the specific population. The aim of this paper is to identify measures of well-being that have been translated into African languages up to the year 2019 and make suggestions for researchers who are faced with the challenge of translating well-being instruments into local languages. Online databases were searched to identify published studies reporting the translation of well-being instruments into African languages. Some researchers were further contacted and requested to provide relevant studies. A total of 352 publications were retrieved and 44 translated measures met the inclusion criteria. Findings showed that all the translated African language versions of existing measures were published between 2006 and 2019. Although the published translations were increasingly widespread, the distribution of available studies was uneven, with very low published translation activity in East and North Africa and a preponderance of publications on translated instruments in South Africa. The authors suggest deriving population norms for relevant translations; increasing funding and other resources for translation projects; developing cross-national collaborations on translations; and making the translated versions of well-being instruments more accessible for use by other researchers.

Keywords: Adaptation; Africa; Quality of life; Psychometrics; Translation; Well-being

1. Introduction

The increasing scientific investigations of well-being and various aspects of positive psychology have resulted in greater demand for measures of the relevant constructs within this important area of research and social policy. Measures of well-being are used in a variety of research, clinical, and public policy arenas, suggesting that positive conceptualizations of health and well-being are becoming highly useful for basic and applied purposes [1-3]. Since most measures of well-being have been developed in English, researchers working in other languages have two options: either to develop a new measure in the language of interest or to adapt/translate an existing measure.

Even though translation of measures appears to be common in most parts of the world, few translations into African languages exist as available versions are mostly in European and Asian languages [4]. Efforts are being made in this direction by some African scholars in recent times; hence, a record of their modest contributions to the translation of well-being measures into African languages is pertinent. The present study reviews existing translations of well-being measures into African languages, with the main aim of identifying the existing African language versions of well-being scales. The identification of such translated measures will provide information about the work that has been done so far, and provide a direction concerning the areas that need to be covered. This endeavour is worthwhile in order to prevent duplication of efforts, save time, and conserve the limited funds available for research.

We begin with a brief conceptual clarification to highlight the scope of well-being measures for the review. We then discuss the relevance of translation and the basic procedures for proper adaptation of the research instruments. The method section presents the procedure adopted in identifying the instruments for review; then the results and discussion show the available translations within the scope of the review and describe the significance of what has been done by researchers. Recommendations and suggestions for greater impact in the assessment of well-being in African languages are made.

1.1 The scope of well-being measures in the present study

Two major conceptualisations of well-being are the hedonic and eudaimonic traditions. The hedonic tradition accentuates constructs such as happiness, high positive affect, low negative affect, and satisfaction with life [5,6]; while the eudaimonic tradition focuses on positive psychological functioning and human development—self-acceptance, autonomy; positive relationships with others; environmental mastery; purpose in life; and self-realisation [7,8]. Ryff's conceptualisation is just one of many other conceptualisations that can be classified under the eudaimonic approach. All the approaches to well-being recognise the positive dimension of human experience and functioning, regardless of differences in the terms used, components of well-being, or the preferred measurement approach. Some schools of thought also uphold that subjective experience of well-being, broadly described, has many dimensions such as life satisfaction, optimal functioning and a good QoL [9]. Considering the multifaceted or multidimensional nature of well-being [10-13] recent research continues to emphasize the consideration of these two approaches for a comprehensive understanding of well-being [14]. The two approaches are not mutually exclusive. They complement each other in the sense that aspects of eudaimonia influence the hedonic outcomes and vice versa. Interestingly, researchers have developed composite measures that were not associated with a specific theoretical approach to well-being and they combined aspects of hedonic and eudaimonic approaches along with aspects of QoL and/or wellness approaches [2,15].

Well-being measures in the present paper encompass the broad assessment of well-being which includes QoL and the positive dimension of human living. QoL is recognised in this paper as an aspect of well-being that consists of objective descriptors and subjective evaluations of physical, material, social, and emotional well-being together with the level of personal development and purposeful ac-

tivity, all weighted by a personal set of values [16]. The construct is used in this paper to refer to the general QoL of individuals who may not have any current illness or physical health challenges, which precludes health-related quality of life (HRQoL) and QoL among special populations. HRQoL refers to the way health is shown to affect QoL and signifies the utility associated with a health state [17], and it is usually applied in reference to patients who are receiving medical care. The present paper seeks to identify African language translations of measures of well-being, QoL, or wellness from a comprehensive perspective that embraces conceptualisations of population well-being.

1.2 Adaptation and translation in the assessment of well-being in the African context

Translation will be useful to determine the extent to which certain conceptualizations of well-being are generalizable across cultures and groups. It will reveal whether there are indigenous dimensions of these constructs not accounted for by Western-based theories or models [18]. In the process, one can reflect the specific understanding of well-being and thereby address the difference between universalism and cultural specificity. If there are no differences in basic and practical outcomes even when the language versions are different, then it means that researchers can more confidently speak in one language about the well-being construct and its measurement. For instance, some problems with the Basic Psychological Needs Scale were identified and such observations could have implications for the validity of the universality assumption of basic psychological needs theory and/or assumptions about denotations or manifestations of the main constructs in various cultural contexts [19]. If in the course of trying to translate and adapt an instrument, it was found that there are contents of the measure that do not have equivalent terms or meanings in a particular language, there may be problems of comprehension for those who speak the native language.

In order to adequately and truly understand well-being in the African context, there is a greater need than before to translate assessment instruments for use in evaluating and describing well-being in the African context. Translations of well-being measuring instruments will stimulate discourse on well-being measurement as a veritable tool for policy evaluation and for effective monitoring and evaluation of psychosocial interventions. There are cross-cultural variations in the meanings of constructs, or some constructs may be unknown to some cultures [20,21], and substantial cultural influences on scale functioning abound [22]. Translations will enhance the denotation of culturally specific connotations of well-being that are not grasped in the original forms, thereby unraveling the fundamental aspects of well-being in the African context. Linguistic and cultural appropriateness is important in the provision of services in a culturally responsible manner [23,24] and in improving access to psychosocial services among African native language speakers.

There is some degree of sample selection bias in most of the studies on well-being in Africa due to the unavailability of local language versions of the questionnaire. Although student populations are readily available and provide an easy pull of participants, having local language versions of the well-being measures would encourage researchers to investigate the constructs among other less-studied populations. Information is needed on the nature of complete psychosocial health and levels of psychosocial well-being in communities, in order to decide when, where, and for whom interventions may be required as part of public health promotion programmes [25]. Even with the rising literacy rates in most parts of the world, the majority of the African population is not literate (even in the local language) [26], and sub-Saharan Africa, where adult literacy rates are below 50%, ranks second in lowest global literacy [27]. The African translations will be more beneficial to those who cannot understand English, and the research assistant(s) can read the items of the translated instrument to respondents.

1.3 Translation of measures

Cultural fit is the congruence of test contents

and the culture of a test-taker, while retaining the meaning and intent of the original items. Two major ways of establishing cultural fit are adaptation and validation. Translation is the first stage of the adaptation process [28], and the most rigorously investigated aspect of cross-cultural measure adaptation and development in education, behavioral sciences and health fields [29]. Translation typically takes cultural, linguistic, contextual, and scientific information into consideration [30,31]. Poorly translated instruments present problems when they are used in subsequent studies. For instance, such poor translations may generate inconsistent or unreliable data, render the findings less valid and detract from practical applications of research outcomes in solving problems. Usually, the researcher only realizes the errors in the process of translation, adaptation, and validation of an instrument during subsequent evaluation and data analysis [28]. Expert recommendations in the translations of measuring instruments into other languages abound [28,29,32-38]. Best practices in the translation of well-being measures involve some basic procedures [28] (see **Figure 1**).

First, is the translation of the instrument from the source language into the target language by at least two translators who are fluent in both languages.
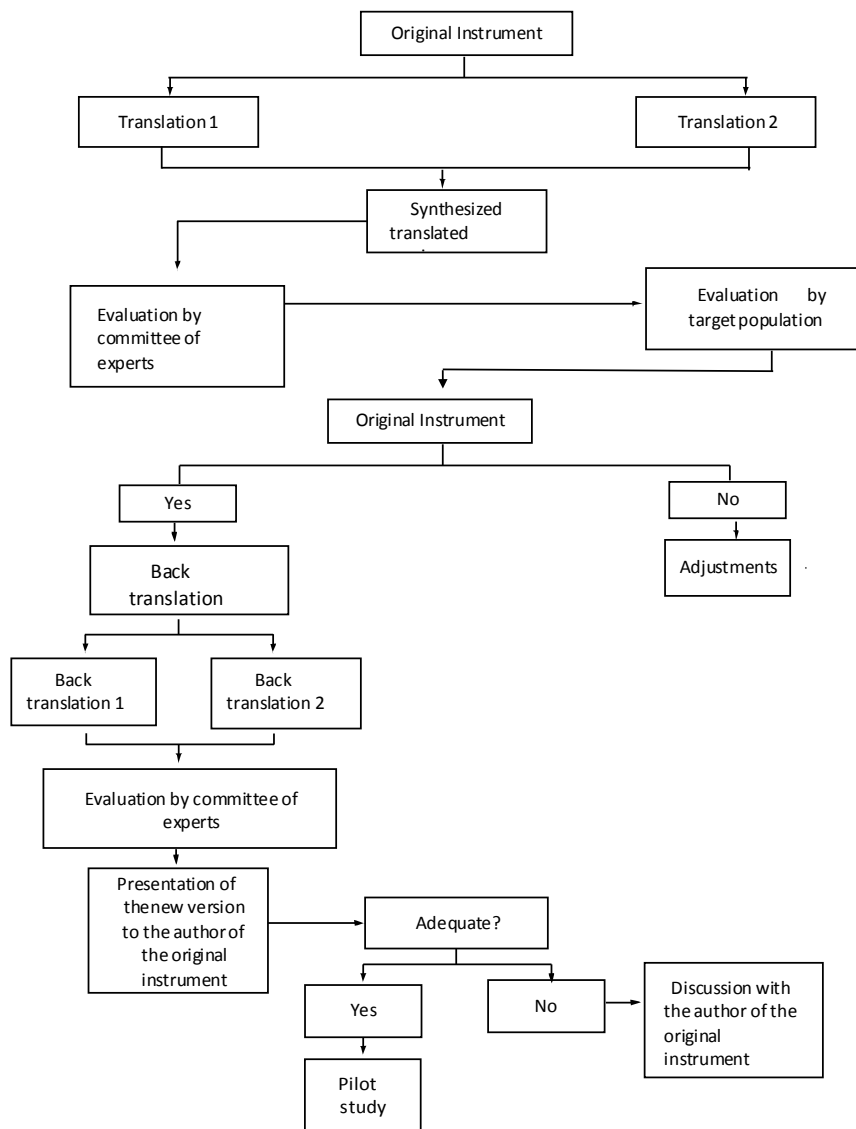

Figure 1. Procedures for cross-cultural adaptation of psychological instruments.

Source: Borsa, J. C., Damásio, B. F., & Bandeira, D. R. (2012). Cross-cultural adaptation and validation of psychological instruments: Some considerations. Paidéia (Ribeirão Preto), 22(53), 423-432.

Such a translator should be an expert in the field of interest, whereas the other translator should be a linguistic expert. Second, a synthesis of the two translations by a committee (translators, judges and authors) in order to derive a consensus version of the questionnaire is done. An agreed translation is arrived at based on considerations of semantic, idiomatic, experiential and conceptual equivalence. Further, the appropriateness of the agreed translation and instrument structure may be evaluated by experts in the field of interest and some members of the target population. We believe that the committee approach should include the translators, judges, experts, researchers, and the target group in agreeing to the translated version in the target language. This suggestion would ensure that all relevant concerns are considered in arriving at the translation.

Third, back-translation of the synthesized version from the target language into the source language is carried out by two independent translators who were not involved in the previous step. The back-translation process helps to identify words that were not clear in the target language and to identify inconsistencies or conceptual errors in the final version. There are also suggestions that the bilingual translators can work in teams where two or three persons will handle the forward-translation, and another two or three expert translators will do the back-ward translation [39]. This option may be adopted when it is important to save time and still achieve the same goal. Fourth, the back-translated versions are sent to judges who make comments on the translations, followed by a committee approach and focused group discussions by the experts, judges, translators and some members of the target population. A sample evaluation form adapted from the Warwick-Edinburgh Mental Well-being Scale (WEMWS) that can be used by the judges for the documentation is shown in Appendix A. When the number of items is more than 10, other rows should be added, and the item statement should be typed in the first column and numbered consecutively. The pre-final version of the instrument is the outcome of the panel discussions. Fifth, pilot testing of the translated version is done using a sample of

participants from the target population. The pilot sample completes the translated language version to provide feedback based on item difficulty and clarity. Revisions may be made to the instrument if necessitated by the outcome of the pilot testing. Sixth, a validation study is conducted with a representative sample from the target population in order to establish the reliability and validity of the instrument. In general, there should be a core translation process (forward and back-translations), qualitative evaluation/harmonisation, pilot testing, finalisation, and quantitative validation [40].

2. Method

2.1 Search strategy

The search for translated well-being instruments in Africa was conducted using online databases including PsycINFO, Medline, Google Scholar, Embase, Psychological Abstracts, Social Science and Psychological Abstracts, ADIS, and AJOL with no restrictions on language or time period. The names of the specific measures of well-being and positive psychology constructs were used one after the other in combination with 'translation', cross-cultural, and language to capture all relevant instruments. The measures of interest were chosen from recent reference lists from published reviews of the psychological well-being literature [2,41-44]. Names of instruments that were included in the search are shown in Appendix B. Colleagues and researchers on well-being were also contacted to provide their works or other studies they know to the researchers for inclusion in the study.

2.2 Inclusion and exclusion criteria

The well-being assessment instruments were included in the review if they: (1) were designed to be used in population studies or as generic tools across contexts; (2) were designed for assessing well-being, including concepts such as QoL, wellness and any other positive psychology construct; (3) were translated in a native language spoken in Africa; (4)

have more than one item; and (5) presented in a study written in the English language. Instruments were excluded if: (1) the primary focus was disease specific (e.g., HRQoL for patient samples) or context-specific (e.g., pregnancy); (2) were not measures of well-being, quality of life or positive psychology constructs (3) there was no translation into an African language; (4) have a single item (5) they were published in a language that is not English. Single item measures represent a weak solution to the challenge of assessing such complex construct as well-being [45]. Although single item measures are parsimonious in terms of administration time and may have specificity, they are less useful when constructs are unidimensional, and thus, have a bad reputation for lack of content validity, poor internal consistency reliability and less sensitivity [46]. Given the complex and multidimensional nature of well-being, single item measures are unable to truly capture the various components of important well-being constructs.

2.3 Data extraction

The authors extracted the data independently from the full texts of the selected studies that met the inclusion criteria. In order to ensure consistency and accuracy of data extraction, we developed a standardized data extraction form using Microsoft Excel and used it to extract data from each selected full-text article. Any discrepancies in extracted data were resolved by discussions between the two authors. Details extracted included the name of the instrument, its acronym, authorship, date of publication, name of translators and year of publication, target language of translation and country, method(s) of translation, study population, psychometric properties of the translated version in the validation study, other measures included in the study, and any other important information (e.g., modification of the response format in the translated version which differs from the original version).

3. Results and discussion

The present author's search yielded 317 publica-

tions, and 36 studies were provided by the contacted author(s) which sums up to a total of 353 publications. After removing duplicate publications from the identified publications, 95 studies were assessed for eligibility, and 51 of these articles that did not meet the inclusion criteria were excluded. For ease of organization, the translated instruments reported in the 44 translated measures identified as meeting the inclusion criteria for this review were grouped into core well-being (**Table 1**), QoL (**Table 2**) and positive psychology (**Table 3**) categories. The grouping was based on the present author's explicit identification of the instrument with one of these groups and it made the Tables wieldy. Quality of life is an indicator of well-being and the present classification does not imply any conceptual separation. Well-being measures were not separated into the theoretical categories of hedonic, eudaimonic, or wellness) because there is a wide disparity in the conceptualization of well-being by most of the existing instruments, even when compared to other measures assumed to be within the same category [2]. Besides, some measures have been shown to incorporate aspects of both approaches, while some do not have any implicit association with any of the approaches [2]. The overarching goal of this paper is to know the translated measures of well-being in African languages.

The researchers did not have any dates for the inclusion of translations and therefore articles were included regardless of when the study was presented. Findings showed that all translated versions were published between 2006 and 2019. However, the majority of the translations (83.33%) were published between 2010 and 2019, indicating that translations of the measures in Africa in published literature have generated a reasonable amount of interest in the last 10 years, and have increasingly gained significant attention since that time. Most of the translations were from English to an African language, except two studies on the adaptation of a French translation in an African French-speaking country [47]. Adaptations of French language measures will be important in Francophone Africa especially when there is a specific dialect of French spoken in the African country.

Table 1. Translated wellbeing measures in African languages.

Instrument	Developer(s)	Translators(s)	Method(s) of translation	Language (Country)	Study population	Reliability	Validity	Other measures included	Remark
Affectometer 2 (AFM-2)	Kammann & Flett (1983)	Wissing et al. (2010)[*]	FT; BT; Committee	Setswana (South Africa)	Community sample ((≥ 15 years)	PA = 0.68 (α) NA = 0.77 (α)	CFA; Convergent and Discriminant validity	SOC, SwLS	
General Psychological Well-being Scale (GPWS)	Khumalo et al. (2010)	Khumalo et al. (2010)*	FT; BT; Committee; PT	Setswana (South Africa)	Community sample (≥ 18 years)	0.89 (α)	PCA, CFA; Convergent, Divergent, and Criterion validity	CSES, FORQ, GHQ; MHC-SF, PHQ-9, SwLS, SOC	
National Well-being Index	International Well-being Group (2015)	Møller et al. (2018)*	FGD	isiXhosa (South Africa)	Community sample	NA	NA	-	Qualitative study
National Well-being Index	Cummins et al. (2003)	Tiliouine et al. (2006)*	FT; BT; Committee; PT	Arabic/French (Algeria)	Community sample (≥ 18 years)	0.81 (α)	EFA	-	
Perceived Wellness Survey (PWS)	Adams et al. (1997)	Rothmann & Ekkerd (2007)[*]	FT; BT; Committee	Setswana (South Africa)	Police officers (18 to 60 years)	0.81 (Wellness) 0.74 (Unwellness)	PAF	-	
Personal Well-being Index	Cummins et al. (2003)	Tiliouine et al. (2006)[*]	FT; BT; Committee; PT	Arabic/French (Algeria)	Community sample (≥ 18 years)	0.85 (α)	EFA	-	
Personal Well-being Index- Adult version	Cummins et al. (2003)	Møller et al (2015)[*]	NA	IsiXhosa (South Africa)	Community sample	NA	NA	NA	NA
Personal Well-being Index - child-version	Tomyn & Cummins (2011)	Matzdorff (2015)[*+]	FT; BT; FGD; PT	Afrikaans (South Africa)	School children	0.68 (α)	CFA	SLSS, OLS, CHS	
Questionnaire for Eudaimonic Well-Being (QEWB)	Waterman et al. (2010)	Bolshoff (2012)[*+]	FT; BT; Committee	Afrikaans (South Africa)	College students (M_{age} = 21.03; SD = 4.09)	0.82 (α)	Convergent, Divergent validity and CFA	SWB, MHC-SF, SwLS, MLQ, SOC, PHQ	EFA = 3 factors instead of 6
Questionnaire for Eudaimonic Well-Being (QEWB)	Waterman et al. (2010)	Bolshoff (2012)[*+]	FT; BT; Committee	Setswana (South Africa)	(M_{age} = 21.85; SD = 5.04)	0.72 (α)	Convergent, Divergent validity and CFA	SWBS, MHC-SF, SwLS, MLQ, SOC, PHQ	3 factors instead of 6
Spiritual Well-Being Scale (SWBS)	Paloutzian & Ellison (1982)	Bolshoff (2012)[*+]	FT; BT; Committee	Afrikaans (South Africa)	College students (M_{age} = 21.03; SD = 4.09)	0.93 (RW) 0.79 (SW)	CFA	QEWB, MHC, SwLS, MLQ, SOC, PHQ	

Table 1 continued

Instrument	Developer(s)	Translators(s)	Method(s) of translation	Language (Country)	Study population	Reliability	Validity	Other measures included	Remark
Spiritual Well-Being Scale (SWBS)	Paloutzian & Ellison (1982)	Bolshoff (2012)[*+]	FT; BT; Committee	Setswana (South Africa)	(M_{age} = 21.85; SD = 5.04)	0.91 (RW) 0.61 (SW)	CFA	QEWB, MHC, SwLS, MLQ, SOC, PHQ	
The Mental Health Continuum Short Form (MHC-SF)	Keyes (2006)	Keyes et al. (2008)[*]	FT; BT; Committee	Setswana (South Africa)	Adults (≥ 30 years)	0.72 (α, EWB) 0.77 (α, SWB) 0.77 (α, PWB) 0.74 (α, Total)	Convergent and Discriminant	SOCS, GHQ, AFM, SwLS, GSES, NGSES, CCES, N-COPE	
The Mental Health Continuum Short Form (MHC-SF)	Keyes (2006)	Schutte & Wissing (2017)[*]	FT; BT; Committee;	Afrikaans (South Africa)	Students (18-67 years)	Ω = 0.90	CFA, Bifactor ESEM	-	
The Mental Health Continuum Short Form (MHC-SF)	Keyes (2006)	Schutte & Wissing (2017)[*]	FT; BT; Committee	Setswana (South Africa)	Students (17-46 years)	Ω = 0.86	CFA, Bifactor ESEM		
Warwick-Edinburgh Mental Well-being Scale (WEMWS)	Tennant et al. (2007)	Wissing & Temane (2013)	FT; BT; Committee	Setswana (South Africa)	Students and community-dwelling adults ((≥ 18 years	-	Convergent and discriminant validity	AFM-2, SOC, SwLS, GHQ, NGSES, SRS, CSES, FORQ, PHQ-9, GPWS	
Well-Being Manifestation Measure Scale (WMMS)	Masse et al. (1998)	Peppe et al. (2018)[a]	NA	French (Gabon)	Old adults (60 to 98 years)	7 dimensions (α = 0.60 to 0.71)	Criterion validity	NEO-PI-R, SPS, CLSCO	

Note: *primary validation of translation; [#]Translated version included in publication; [+]Thesis project; [a]Adaptation only; FT = Forward translation; BT = Backward translation; PT = Pilot testing; CFA = Confirmatory Factor Analysis; EFA = Exploratory factor analyses; PAF = Principal Axis Factoring; NA = Negative Affect; PA = Positive Affect; RW = Religious Well-Being; SW = Spiritual Well-Being; CHS = Children's Hope Scale; CCES = Community Collective Efficacy Scale; CSES = Coping Self-Efficacy Scale; EWB = Emotional well-being; FORQ = Fortitude Questionnaire; GHQ = General Health Questionnaire; GSES = Generalized Self-Efficacy Scale; GPWS = General Psychological Well-being Scale; MLQ = Meaning in Life Questionnaire; N-COPE = Coping Strategy Scale; NGSES = New General Self-Efficacy Scale (NGSES); OLS = Overall Life Satisfaction (OLS); PHQ-9 = Patient Health Questionnaire; SwLs = Satisfaction with Life Scale; SRS = Self-Regulation Scale; SOC = Sense of Coherence Scale; SWB = Social Well-Being.

Table 2. Translated measures of positive psychology constructs in African languages.

Instrument	Developer(s)	Translators(s)	Method(s) of translation	Language (Country)	Study population	Reliability (α)	Validity	Other measures included	Remark
Basic Psychological Needs Scale (BPNS)	Deci & Ryan (2000); Gagne´ (2003)	Schutte et al. (2018)[*]	FT; BT; Committee PT	Afrikaans (South Africa)	Students (M_{age} = 19.78)	0.66(A), 0.69(R), 0.57(C)	CFA	-	7 deleted items
Basic Psychological Needs Scale (BPNS)	Gagne´ (2003)	Schutte et al. (2018)[*]	FT; BT; Committee, PT	Setswana (South Africa)	Students (M_{age} = 21.61)	0.64 (Overall)	CFA	-	One factor with 5 deleted items
Brief Personal Meaning Profile (PMP-B)	Macdonald et al. (2012)	Chukwuorji et al. (2019)	FT; BT; FGD	Hausa (Nigeria)	809 IDPS 12-96 years	0.87	CFA Convergent	MLQ	Unifactorial instead of 7
Community Collective Efficacy Scale (CCES)	Carroll, Rosson & Zhou (2005)	Van Straten et al. (2010)[*]	FT; BT; Committee	Setswana (South Africa)	Community sample ($\geq$ 30 years)	0.72	EFA, CFA, Criterion validity	Affectometer 2, GHQ, GSES, NGSES, SOC, SwLS,	
Compassionate Love for Close Others Scale (CLCOS)	Sprecher & Fehr (2005)	Peppe et al. (2018)[a]		French (Garbon)	Old adults (60 to 98 years)	0.94	Predictive and Criterion validity	NEO-PI-R, SPS, WMMS	
Coping Self-Efficacy Scale (CSES)	Chesney, Neilands, Chambers, Taylor, & Folkman, 2006	Khumalo et al. (2010)	FT; BT; Committee, PT	Setswana (South Africa)	Community sample (30-40 years)	0.91(Overall)	Predictive validity	GPWS, FORQ, GHQ; MHC-SF, PHQ-9, SwLS, SOC	
Fortitude Questionnaire (FORQ)	Pretorius (1998)	Khumalo et al. (2010)	FT; BT; Committee, PT	Setswana (South Africa)	Community sample (30-40 years)	0.87	Predictive validity	GPWS	
Generalized Self-Efficacy Scale	Schwarzer & Jerusalem (1993)	Van Straten et al. (2010)	FT; BT; Committee	Setswana (South Africa)	Community sample ($\geq$ 30 years)	0.74	Convergent validity	CCES, NGSES	
Gratitude Questionnaire (GQ-6)	McCullough, Emmons & Tsang (2002)	Olawa & Idemudia (2019)	FT; BT; FGD	Yoruba (Nigeria)	Old adults ($\geq$ 60 years)	α = 0.71	Convergent and CFA	SACA, one item from DUSOCS, 3-item LS	5 items (deleted item 6)
Meaning in Life Questionnaire (MLQ)	Steger et al. (2006)	Boshoff (2012)[*+]	FT; BT; Committee	Afrikaans (South Africa)	College students (M_{age} = 21.03; SD = 4.09)	0.88 (Presence) 0.88 (Search)	CFA	QEWB, SWB, MHC, SwLS, SOC, PHQ	

Table 2 continued

Instrument	Developer(s)	Translators(s)	Method(s) of translation	Language (Country)	Study population	Reliability (α)	Validity	Other measures included	Remark
Meaning in Life Questionnaire (MLQ)	Steger et al. (2006)	Boshoff (2012)[*+]	FT; BT; Committee	Setswana (South Africa)	(M_{age} = 21.85; SD = 5.04)	0.72 (Presence) 0.72 (Search)	CFA	QEWB; SWB, MHC, SwLS, SOC, PHQ	
Meaning in Life Questionnaire (MLQ)	Steger et al., (2006)	Chukwuorji et al. (2019)[*]	FT; BT; Committee; FGD	Hausa (Nigeria)	809 IDPS 12-96 years	Presence = 0.82 Search = 0.86	CFA, Convergent, Discriminant	PMP	Response format = 4-point
New General Self-Efficacy Scale	Chen et al. (2001)	Van Straten et al. (2010)	FT; BT; Committee	Setswana (South Africa)	Community sample (≥ 30years)	0.66	Convergent validity	CCES, GSES	
Resilience Scale (RS-14)	Wagnild & Young (1993)	Chukwuorji & Ajaero (2014)	FT; BT	Igbo (Nigeria)	Youths (12-24 years)	0.85	CFA, Criterion validity	-	
Rosenberg Self-esteem Scale (RSES) – French version	Rosenberg (1965)	Fromont et al. (2017)[*]	FT, BT, PT	Kirundi (Burundi)	Health workers (M_{age} = 38.5 years; SD = 10.27)	0.38 to 0.72	CFA	-	4 items were acceptable
Rosenberg Self-esteem Scale (RSES)	Rosenberg (1965)	Ifeagwazi & Chukwuorji (2014)	FT; BT; FGD	Igbo (Nigeria)	Biafran War veterans	0.87	Predictive validity	GHQ	
Satisfaction with adult children's achievements	Olawa & Idemudia (2019)	Olawa & Idemudia (2019)	FT; BT; FGD	Yoruba (Nigeria)	Old adults (≥ 60years)	α = 0.75	CFA	GQ-6, one item from DUSOCS, 3-item LS	NA
Posttraumatic Growth Inventory (PTGI)	Tedeschi & Calhoun 1996	Eze et al. (2019)	FT; BT; Committee, FGD	Tiv (Nigeria)	IDPs (12-90 years)	Five subscales (0.71 to 0.83)	Criterion validity	RumS, CBI	
Satisfaction with Life Scale (SwLS)	Diener et al., 1985	Wissing et al. (2010)[*]		Setswana (South Africa)	Community sample ((≥ 15 years)	0.67	CFA Convergent and Discriminant	Affectometer-2, SOC	
Sense of Coherence Scale (SOC) (the 29-item version)	Antonovsky (1987; 1993)	Wissing et al. (2010)[*]	FT; BT; Committee	Setswana (South Africa)	Community sample ((≥ 15 years)	0.70	CFA Convergent and Discriminant	Affectometer-2, SwLS	Low IICs; low loadings -items 5 and 20.
Sense of Coherence Scale (SOC) (the 29-item version)	Antonovsky (1987)	Bolshoff (2012)[*+]	FT; BT;	Afrikaans (South Africa)	College students (M_{age} = 21.03; SD = 4.09)	0.82	CFA		

Table 2 continued

Instrument	Developer(s)	Translators(s)	Method(s) of translation	Language (Country)	Study population	Reliability (α)	Validity	Other measures included	Remark
Social Support Questionnaire (SSQ)	Sarason, et al. (1983)	Ifeagwazi & Chukwuorji (2015)	FT; BT;	Igbo (Nigeria)	War veterans	0.83 (Family) 0.74 (Friends) 0.79 (Government)	Predictive	PTSD Checklist-Military Version (PCL-M)	Nigerian adaptation by Asogwa (2010)
Successful Ageing Inventory	Flood (2008)	Chukwuorji et al. (2016)*	FT; BT; FGD	Igbo (Nigeria)	Community-dwelling adults (≥ 45 years)	0.88	PCA, Criterion validity	LEI, FS	

Note: *primary validation of translation; #Translated version included in publication; +Thesis project; aAdaptation only; FT = Forward translation; BT = Backward translation; PT = Pilot testing; CFA = Confirmatory Factor Analysis; EFA = Exploratory factor analyses; IIC = Inter-item correlations; PAF = Principal Axis Factoring; A = Autonomy; R = Relatedness; C = Competence; CBI = Core Beliefs Inventory; CCES = Community Collective Efficacy Scale; Duke Social Support and Stress Scale = DUSOCS; FS = Family support; GHQ = General Health Questionnaire; GSES = Generalized Self-Efficacy Scale; LEI = Life Events Inventory; LS = Loneliness Scale; NEO-PI-R = NEO Personality Inventory-Revised; NGSES = New General Self-Efficacy Scale (NGSES); PHQ-9 = Patient Health Questionnaire; PSC = Problem-solving Coping; RumS = Rumination Scale; SACA = Satisfaction with adult children's achievements; SwLs = Satisfaction with Life Scale; SOC = Sense of Coherence Scale; SWB = Social Well-Being; SUE: Stop unpleasant emotions; QEWB = Questionnaire for Eudaimonic Well-Being.

Table 3. Translated measures of Quality of Life (QoL) in African languages.

Instrument	Developer(s)	Translators(s)	Method(s) of translation	Language (Country)	Study population	Reliability (α)	Validity	Other measures included	Remark
Global Person Generated Index (GPGI)	Camfiled & Ruta (2007)	Camfiled & Ruta (2007)*	FT; BT; FGVC	Amharic, Oromiffa (Ethiopia)	Community sample (M_{age} = 61.48 years)	NA	Construct, Criterion	Health, Family, SwLS	
Paediatric Quality of Life Inventory™ Version 4.0 Generic Core Scales (PedsQL™)	Varni et al. (1999)	Atilola & Stevanović (2014)*	FT; BT; PT; Committee	Yoruba (Nigeria)	Adolescents (M_{age} = 14.98 years, SD = 1.26)	EF = 0.71 SF = 0.79 SCF = 0.73 PhyH = 0.87 PsyH = 0.91	Convergent validity, SEM	SDQ	
WHOQoL-BREF	The WHOQOL Group (1998)	Redko et al. (2015)*	FT; BT; Committee	Somali (Somali refugees -USA)	Refugees (15-93 years)	Four subscales (0.65 to 0.82)	PCA, Predictive validity	Health satisfaction	
WHOQoL-BREF	The WHOQOL Group (1998)	Akinpelu et al. (2006)*	FT; BT;	Yoruba (Nigeria)	Stroke survivors (M_{age} = 55.0 years, SD = 10.7)	-	-	-	Wilcoxon test and Spearman Rho reported

Note: *Primary validation of translation; #Translated version included in publication; +Thesis project; aAdaptation only; FT = Forward translation; BT = Backward translation; EF = Emotional Functioning; PhyH = Physical Health; PsyH = Psychosocial Health; PT = Pilot testing; SCF = School Functioning; SF = Social Functioning; SwLS = Satisfaction with Life Scale; SDQ = Strengths and Difficulties Questionnaire; WHOQoL = World Health Organisation Quality of Life.

It is possible that authors who translated some measures from English to French or some languages in French-speaking African countries may publish their papers in French language journals. Those papers were not accessed.

Setswana language dominated the translated measures (38.63%), followed Afrikaans (15.91%), French (9.09%), Igbo (9.09%), Yoruba (9.09%), Hausa (4.56%), and IsiXhosa (4.55%), with 2.27% for and Amharic/Oromiffa, Somali, Kirundi, and Tiv. (10.53%). The Mental Health Continuum-Short Form (MHC-SF) has three publications but its translations were in two languages (Afrikaans and Setswana). National Well-being Index (NWI), Questionnaire for Eudaimonic Well-being (QEWB) and Spiritual well-being Scale (SWBS) also had two translations (Afrikaans and Setswana). Languages spoken in South Africa were the majority in translations of the well-being instruments. The other countries that had translations of core well-being measures were Algeria (Arabic/French), Burundi, Ethiopia, Gabon (French), and Nigeria. The Meaning in Life Questionnaire (MLQ) also had a reasonable number of translations while each of the Sense of Coherence Scale (SOC), Rosenberg Self-Esteem Scale (RSES), and Basic Psychological Needs Scale (BPNS) were also translated. The samples for the validation studies were relatively large. For instance, some studies had over one thousand participants [15,48,49].

Although the published translations were found to be increasingly widespread, the distribution of available studies was uneven, with a very low published translation activity in East and North Africa and a preponderance of publications on translated instruments in South Africa. There are diversities in political, economic, social and religious influences on psychological testing practices across Africa. This reality has been noted in the case of South Africa where their political, economic, and social history, has led to pressure on test developers and test users to develop and use culturally appropriate assessment instruments and practices [50]. The availability of resources for research is also comparatively more accessible in South Africa than in some other countries. Even as other African countries do not have the South African experience, it does not de-emphasize the relevance of culturally appropriate tools for psychological assessments.

One study [51] did not report any reliability or validity. All the other studies that provided internal consistency reliability information reported Cronbach's alpha (α) as evidence of reliability, except a study that reported McDonald's omega (Ω) values for the translations of MHC-SF [19]. The Ω is promoted as a practical alternative to α in estimating measurement reliability computation with good performance in real life research conditions [51]. Recently, the OMEGA macro which produces Ω estimates that are nearly identical to when using CFA-based estimates of item loadings and error variances was developed [52]. This development makes it easier for researchers to obtain Ω coefficients without running Structural Equation Modelling. Authors are encouraged to use the Ω instead of the popular but not more valuable α coefficients [53].

The amount and types of valid evidence presented concerning the African translations of the instruments varied considerably. The authors reported factorial, convergent, discriminant, predictive, and content validity. Although most of the translated measures replicated the original factor structures reported by the developers, there are a few notable exceptions that did not get the same factors exactly. For instance, the fit of the intended three-factor model for the MHC-SF was good for the Afrikaans version but poor for the Setswana version and the subscales had low reliability coefficients. As a result, the reliability of the total scale was preferred [19]. The reliability indices for some of the measures were also below the conventionally acceptable standards of 0.70 [54].

Reliability and validity for combinations of French and Arabic versions of National Well-being Index (NWI) and PWI Personal Well-being Index (PWI) exist [55]. Both languages are spoken in the same country, but all persons cannot be equally fluent in the two languages. There should be separate reliability and validity for every language version of

an instrument. None of the studies reported test-retest reliability for the African language versions of the instruments. There are also recent indications of differences in obtained scores when the same sample of participants complete both the English language and native language versions of a questionnaire, especially when emotional responses and cultural orientations are triggered [56]. The present researchers did not identify any sample in the translated measures where both English language and African language versions were tested in the same study. A modification of the 7-point response format of MLQ to a 4-point response format (1 = not at all true to 4 = completely true) has been reported [57]. This change was informed by the earlier observation that the relatively low levels of education in the developing world and differential perceptions of linearity with equidistant intervals of such scales in such contexts may necessitate a reduced set of options with labels attached to each interval [58]. When authors modify either the items or response anchors of a measure, there is a need to report what was done [59].

Some studies included in this paper translated the measures for use in studies, although the focus was not necessarily on scale validation. The measures were translated for use in such studies because the target participants have little or no English language literacy and/or proficiency. Information on challenges in achieving conceptual and linguistic equivalence in translation was often limited, minimal or partially reported. Even if the length of a manuscript would be affected by the inclusion of information on the translation of the measures, enough information to enable other researchers to replicate the study should have been included. We did not identify any study that derived a norm (cut-off) score for epidemiological purposes. Test norms represent the typical characteristics or behaviors in a given population derived from the standard scores or average scores of a sample that has taken the test sometimes, the norming sample may not be representative of the population for whom the test is intended to be used and when they are applied as a benchmark to make decisions about the general population, their use

becomes counterproductive. The dynamic nature of human behavior also means that cultural factors, socio-demographic characteristics and technological advancements may influence the results obtained from measures of well-being. Although the concept of 'norming' is becoming less popular in psychological research, it is still important to derive such norms whenever population data is collected. Normative data are necessary for both within- and between-country comparisons [60].

4. General recommendations/suggestions

4.1 Translations in multi-linguistic groups

Considerations such as the preference of the researchers, the population for the study, accessibility and availability of translators, indigenous groups of the researchers, etc., may have contributed to decisions about the choices made in the language of the translations. With over 100 languages and dialects in Africa [61], there are major and minor languages in the African context, and it may be challenging to accommodate all languages. For instance, South Africa has 11 official languages [62]. Nigeria (with over 250 ethno-linguistic groups) claims to have three major indigenous languages (Igbo, Hausa, and Yoruba), but the other languages are increasingly gaining prominence. In Nigerian schools, students are required to select one of the three 'approved' languages (Igbo, Hausa, and Yoruba) in their choice of subjects to study for the Senior School Certificate Examination, but most parents who speak other native languages resist the imposition. There are no academic repercussions for Nigerian students who decide not to study any of the approved languages. Further translations into other minor languages are necessary because in a country with two (or more) linguistic groups, translating questionnaires into minority languages prevents non-response bias [63]. In a multi-linguistic country, there should be translations commensurate with the need to make the instrument available for use in each specific population.

A step towards addressing disparities in transla-

tion activity across regions of Africa is to identify and acknowledge that these differences exist. There should be intentional engagement with relevant partners and opportunities for freelance translators in those regions to build local capacity for translation. Researchers from these areas need to be engaged from the start and outcomes are disseminated in the local languages as much as possible by leaders who are known in the region. This process should incorporate regular training sessions and continued assistance to guide researchers and relevant stakeholders in those regions. In this way, it is easier to reduce disparities in translation efforts and introduce translation programs that are likely to be sustained because the native people are actively engaged in it.

4.2 Increased funding for well-being research

Translations are costly in terms of money, time and other resources. For instance, translators, experts and members of the Focused Group Discussions (FGD) need to be paid. The fees charged by translators and experts are too high. The need to ensure enough funding in order to hire good translators is emphasized in survey translation guidelines because the cost of inappropriate versions or mistakes in translations of instruments can be enormous for measurement, research and practice [64]. All these costs add more burden to the researcher beyond what it would take the average person to collect data using the original language versions of the instruments. A lack of funding is often a barrier to the translation of measures. Many researchers will be encouraged to venture into translations if there is financial support to do the work. As it applies to all research activities, it is better to spend more money and get the right outcome than to spend less and obtain the wrong information.

4.3 Contact with original developer(s) of the target instrument

Contact with the developer(s) of the target instrument to be translated is recommended for several reasons. It makes the developer(s) aware of what is being done and they may provide advice and support

for the translation. When developer(s) are informed of the results obtained from translated versions of the measure, such developer(s) may assist by adding the translated version on their websites and blogs. If data collected by the scale in the source language are available, comparative analyses of the scale should be tested. There can be some complexities in representing the same psychometric measures of well-being in different languages. For instance, some English words cannot necessarily be directly translated into some languages, and the same goes for some of the concepts covered in the most frequently used scales [45]. In such situations, it is more convenient to find the word in the target language which more closely represents the English word. Where no such word exists and the meaning of the item may be lost or changed when translated into the target language, it is advisable to contact the developer(s) of the original instrument. When such contacts are made, the ensuing discussions between the translators and the developer(s) may help to resolve the issue. The developer(s) may compile such words as 'frequent issues in translation' of such scales which may be useful in improving the instrument. For instance, questions regarding difficulties encountered in translating the WEMWBS into other languages made the developers prepare some notes addressing frequent issues in translation which researchers may find helpfu. (see https://warwick.ac.uk/fac/sci/med/research/platform/wemwbs/using/translations/).

4.4 Decisions relating to awkward questions

Some questions in a measuring instrument may be awkward to ask in certain cultures. The integrity of the questionnaire may be compromised if the meanings of such items are altered or items are deleted. Author(s) should not be quick to delete such items from original versions of instruments during translations. For instance, translating such items in the WHO Quality of Life-BREF (WHOQOL-BREF) into Somali language [64], retained the meaning of such items focusing on bodily appearance, relationships and sex life. When such items are retained, respondents can skip such items if they are not comfortable with an-

swering them. Surprisingly, all respondents did not skip the items [64]. Even when the goal is to derive a shorter version of the translated measure, there should be established criteria for making decisions about items that should be dropped.

4.5 Uniformity in translation processes

The translation processes of the well-being measures reviewed in this paper are not uniform. The adoption of a uniform process of translation such as the steps outlined in the earlier part of this paper will ensure uniform guidelines in the translation of well-being measures in the African context. A working group on translation and adaptation of the widely used measures of well-being into African languages is important. The group can work together to produce various language versions of their chosen instruments. In addition, African well-being research review committees and clearing houses are important in order to maintain standards in international well-being assessment. For instance, the Medical Outcomes Trust in Boston United States, only approves measures for international use after they have been translated, tested, and normed, following the standard procedures [65]. Such a body may be important for the African continent, or at least for the respective African regions (South, North, East, West Africa-English and West Africa-French). It is already noted that both text and context are important in ensuring the equivalence of translated measures. The context may entail some modifications of the original measures and subsequent refinement using relevant statistical procedures. It is essential to transparently report any modifications that author(s) made to the original measures during the translation process. Apart from helping future researchers determine whether the adaptations are worthwhile, this can help ensure that the translated instruments are psychometrically sound.

4.6 Test-retest reliability of translated measures

Future studies aimed at establishing the psychometric properties of translated measures should include test-retest reliability assessments when comparing English and native language versions of questionnaires. If the same sample completes the same measure twice and gets very different results the second time, this could provide insights into potential response variations. However, if the second administration of the test yields similar results as the first, there is assurance that the outcomes are reflective of more than just random error.

4.7 Inclusion of translated African language versions in publications

Authors who originally translated measures of well-being and used them for publication are encouraged to include such measures in their publication as an appendix. The inclusion of the translated versions will increase their accessibility to other researchers who may consider the translated versions for their own research. Some argue that interested persons contact them if they need the translated versions, but some persons may not wish to go to such lengths to get the translated version. Interested authors may also reach out but communication is affected by aspects such as temporary unavailability of developers, contact information that changed, or death of the developer, etc. When the author(s) who intend to use the measure do not have much time to spare in waiting, the option is to English language versions or do a translation. Perhaps, some journals do not request translated versions of instruments, unless the aim of the manuscript is psychometric evaluation of the translation. The essential step is for authors to include such translations in their original submission and journal editors should request for the inclusion of translated versions if the submitted study is first to embark on the translation into the language. There may be good reasons for keeping translations away from the publication such as awareness of the proposed uses of the translation, approving those uses, advising the prospective user appropriately, and receiving feedback on the performance of the measure in the prospective user's study. This however can limit the use of such measures when the author(s) have passed on.

5. Limitations of the study and future directions

Several African language translations of instruments that were designed to measure various aspects of well-being have been identified in this review. However, some notable limitations exist. First, the authors made extensive efforts to include all well-being measures translated into African languages, but it is possible that some instruments were not found in the search and may not be known to the experts who provided some of the published literature. Second, the functionality (conceptual, item, semantic, measurement, and operational equivalence) of the translated measures was not examined in the current study. The equivalence of versions of well-being instruments and their application is an indispensable condition for use in cross-cultural research. CFA has been advanced as one of the methods of establishing measurement equivalence, specifically the configural, metric and scalar invariance of translated measures [66]. As equivalence was not a major goal in this paper, the authors did not evaluate the quality of the CFAs reported in some of the studies. There is also more to equivalence than what CFA can offer. It is valuable to check for Differential Item Functioning (DIF) in the translated measures. As observed by Petersen et al. (2003), DIF is a useful way to further validate the questionnaire translations because it is an additional technique to show whether translations of items in the multi-item scales are accurate and equivalent to the original. For the unidimensional measures, Rasch Analysis is very pertinent due to its advantages in the evaluation of sensitivity across the different levels of the underlying construct, appropriate use of response categories, local independence of the items, and extent of differential item functioning across demographic groups [67,68].

Third, the authors reviewed only self-report questionnaire measures. Other means of communication may be explored to represent the cultural nuances of experiences of well-being (e.g., interviews, pictures, colours, etc.). Some of these later cases may warrant general adaptation. Future reviews should also cover instruments measuring HRQoL and tools developed for narrowly defined populations who share a characteristic or experience.

6. Conclusions

The contribution of this paper is that one needs to know what is available in order to move forward. Therefore, the modest effort in this paper can be assumed to be foundational in identifying published African language translations of well-being measures on a continuum. Due to the diverse nature of most African countries and the continent itself, translation of well-being measures into indigenous languages will provide a deeper understanding of the uniqueness of the African people and their culture. By bridging the gap in the exchange of ideas, information, and experiences, the translations can promote more collaboration and cooperation. As a result, trust can be increased and community bonds can become stronger. The African continent has a colonial past and some people may feel that languages such as English, French, German and Portuguese were imposed on them. The promotion of cultural variety and the preservation of the history of many groups can both benefit greatly from the translation of the measures that we use to assess their well-being. People may express their thoughts, feelings, and worldviews more clearly when they can speak in their own language, which can aid in fostering a greater awareness of their being. HIV/AIDS is one area of health in which the assessment of well-being has been very prominent, and it would be interesting to see greater utility of translated measures in this regard. Almost all of the well-being indicators are derived based on western individualistic culture, therefore it is very beneficial to also include the perspective from African culture. Social indicators of well-being may be more salient in the African context. Researchers may consider developing measures of indigenous constructs such as *ubuntu* (humanity) and *Omoluwabi* (a person of good character) which can be translated into other African languages to see how applicable they are across contexts and situations.

The authors hope that as research accumulates on the use of these African language versions and

more translations are conducted/published, further efforts can be made regarding detailed, fine-grained, domain-specific conceptual equivalence and psychometric analysis of the translated measures. Translations and applications of culturally appropriate measures of well-being should be a priority area in psychological, psychoeducational, health and social policy research in Africa. This direction will boost well-being research in Africa and stimulate discourse on well-being measurement as a veritable tool for assessment, effective monitoring and evaluation of well-being interventions in the continent. There are enormous challenges in translations of well-being instruments in African context, but several unique opportunities abound for researchers who decide to move in this direction. Some of the challenges are limited funding for research and multiple languages within the same country. Opportunities abound in the area of diversities of measures that have not been translated into most of the African languages.

Nearly one decade ago, the idea of exploring psychosocial well-being in national surveys, such as the US General Social Survey and the European Social Survey, was highlighted as a way of measuring sociodemographic contexts and prevalence differentials in Africa [69]. Significant progress has been made nationally in South Africa, and the Algerian Well-being Research Project aims at monitoring the population's satisfaction with a diverse range of life domains at given time periods [70]. If there is going to be increasing application of positive psychology interventions in diverse African contexts, the adaptation of positive psychological resource material and the translation of established psychometric tools into native languages is needed. The overall effect will be a better capacity for researchers in Africa to impact more on global well-being research, policy and practice.

Author Contributions

JCC conceived the idea, designed the study and carried out the search for articles. JC and OMO analysed the findings, prepared the results and wrote the manuscript.

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