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# Enhancing Psychological Assessment in Sub-Saharan Africa through Participant Consultation

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**Amina Abubakar**, *Centre for Geographic Medicine Research – Coast, KEMRI/Wellcome Trust Research Programme, Kilifi, Kenya, and Tilburg University, the Netherlands*, a.abubakarali@uvt.nl

**Fons J. R. van de Vijver**, *Tilburg University, the Netherlands, and North-West University, South Africa*

**Anneloes van Baar**, *Tilburg University, the Netherlands*

**Patricia Kitsao-Wekulo**, *Kilifi, Kenya*

**Penny Holding**, *Kilifi, Kenya, and Case Western Reserve University, USA*

There are few psychological tools developed and standardized for use in sub-Saharan Africa. Consulting with target populations provides a potentially powerful procedure to develop and adapt measures for this population. This review identifies and describes methods used to consult target populations in sub-Saharan Africa. Relevant studies were identified using PsycINFO and PubMed, supplemented by a review of relevant books. We further illustrate the role of participant consultation in psychological assessment with examples of our work in Kilifi (Kenya). Three major approaches are described: focus groups, individual interviews, and participant observation. Participants have been consulted to generate items, identify appropriate assessment procedures, clarify the language used, and define constructs. It is concluded that participant consultation has contributed to the enhancement of construct, content, and criterion validity of studies conducted in sub-Saharan Africa.<sup>1</sup>

In sub-Saharan Africa (SSA), like in many developing regions of the world, the lack of psychological research has significant implications for intervention and research (Mpofu, 2002b). We are particularly interested here in the absence of culturally appropriate, reliable, and valid psychometric measures (Holding, Taylor, Kazungu, Mkala, Gona, Mwamuye, Mbonani, & Stevenson, 2004; Kathuria & Serpell, 1998). Importing standardized tests from Western countries may seem to provide the easiest solution for this shortage. However, the transfer of tests to a non-Western context is frequently accompanied by test bias and limited validity (Greenfield, 1997; Van de Vijver, 2002). This bias may be due to a lack of familiarity with test demands (Mulenga, Ahonen, & Aro, 2001), poor translation of test items (Van de Vijver, 2002), stimulus unfamiliarity (Sigman, Neumann, Carter, Cattle, D'Souza, & Bwibo, 1988; Sonke, Poortinga, & de Kuijer, 1999), and incomplete coverage or poor sampling of behaviors associated with a construct (Sternberg, Grigorenko, Ngorosho, Tantufuye, Mbise, Nokes, Jukes, & Bundy, 2002; Van de Vijver & Tanzer, 2004). Two approaches, adaptation and assembly, seem to provide the most satisfactory solutions to the shortage of assessment measures in SSA (Malda & Van de Vijver, 2005). Adaptation involves retaining some and changing other features of a Western instrument to increase the suitability of the instrument for the new context; assembly involves the construction of a new assessment measure.

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Participant consultation, through techniques such as focus group discussions, in-depth interviews and participant observations, may provide a useful means of gaining the necessary insight to carry out adequate adaptation or assembly. We define participant consultation as any procedure that uses an interactive approach with local populations to gain in-depth information of local knowledge, behaviors and beliefs with the aim of improving the validity of psychological measures, the cultural adequacy of the testing procedures, the involvement of the participants in the testing procedure, and the usefulness of the results for the participants. Participant consultation may have a role to play at different stages of test development. The significance of using participant consultation in instrument development and adaptation has long been recognized and advocated for (Haynes, Richard, & Kubany, 1995), although it has been rarely used (Vogt, King, & King, 2004). The purpose of the current chapter is to identify and describe how participant consultation can and has been used to enhance the validity of psychological assessments in SSA. Specifically, the current review sets out to answer the following questions:

- Is participant consultation carried out in psychological studies in SSA?
- If so, which methods have been used?
- What has the contribution of these consultations to test development been?

### **Review method**

A search in Pubmed and PsycINFO identified articles for inclusion in the current chapter. The search term “Africa” was combined with one or more of the following terms: “Psychological Research”, “Psychological Assessment”, “Participatory Research”, “Test Development”, “Test Adaptation”, “Focus Group Discussions”, “Interviews”, and “Observations”. Approximately 440 studies were found through this search. We supplemented this with a search of relevant textbooks identified by checking references of identified works. From the initial pool of identified studies we selected those using participant consultation, if they: 1. Had been conducted in sub-Saharan Africa; 2. Had collected empirical data; 3. Had reported the development or adaptation of cognitive, neuropsychological, or developmental assessment techniques; 4. Had applied psychological assessment techniques; 5. Had targeted the description of the indigenous definition of a psychological construct.

The review of relevant studies was further supplemented with examples from our fieldwork in predominantly rural communities in Kilifi District, Kenya. The majority of families in Kilifi depend upon subsistence farming; more than half (66.8%) of the population in the District lives below the poverty line (Government of Kenya, 2001). Most families are polygamous and live in homesteads containing several buildings. Members of the extended families share in child rearing responsibilities. After they have been weaned, most children are left under the care of older siblings and spend little time in a dyadic interaction with an adult. The interactions between people of different generations are regulated by cultural norms that guide all aspects of children’s relations with adults including greetings, style of communication, and patterning of spatial positions (Wenger, 1989). Systematic observations have shown that there are almost no shop-bought play materials and most children use homemade play items, often produced by older siblings (Taylor & Katana, 2004).

#### *Is Participant Consultation carried out in psychological studies in SSA?*

The review identified published works in SSA that have consulted with target populations. A total of 15 studies that met our inclusion criteria were identified. Table 1 presents an overview of the identified studies.

#### *What are the methods used to consult with participants in Africa?*

Focus group discussions, individual in-depth interviews and participant observations were identified as the approaches applied by investigators to consult with target populations. In some studies the investigators used a multi-method approach to collect their data. The following section

presents a description of how each of the methods was applied, illustrated with examples taken directly from listed studies.

Focus group discussions. Patel, Simunyu, Gwanzura, Lewis, and Mann, (1997) used focus group discussions to identify and generate items for the development of an indigenous measure of mental illness, namely the Shona Symptom Questionnaire (SSQ). The discussions with primary caregivers of psychiatric patients (nurses, relatives, traditional healers and community-based workers) were held to elicit idioms of mental distress. Generated items were used to develop a preliminary questionnaire which was then compared to the World Health Organization (WHO) Self-Report Questionnaire. This comparison revealed that only 9 out the 20 WHO items were similar to the locally developed items both in terms of conceptualization and wording. All the WHO items and the local items were taken through a series of piloting and item selection. The final selection of items was based on psychometric analysis and the final questionnaire (the Shona Symptom Questionnaire) included items both from the WHO questionnaire and locally derived items. The internal consistency of the measure was excellent (Cronbach's  $\alpha = .85$ , Guttmann's split half coefficient = .84). The measure also had a high sensitivity (67%) and specificity (83%). Additionally, a good agreement level with the patients on perception of emotional well-being was found. Furthermore, participants identified as having a mental disorder both by caregivers and by the Revised Clinical Interview Schedule (Lewis, Pelosi, Araya, & Dunn, 1992) had significantly lower mean scores in the SSQ compared to controls. These results indicate that the measure has acceptable validity and sensitivity.

**Table 1.** Studies in Sub-Saharan Africa (SSA) that Employed Participant Consultation

First author and publication year	Country	Aims	Methods of consultation
Adejuwon (2005)	Nigeria	To generate items for a measure of adolescent behavior	Focus group discussion
Bolton (2001)	Rwanda	To develop a procedure for criterion validation of a mental health questionnaire	In-depth interviews
Bolton (2002)	Uganda/Rwanda	Identify items for a measure of functional impairment	In-depth interview (free listing)
Grigorenko (2001)	Kenya	To define the construct of intelligence	Semi-structured interviews and focus group
Ice (2005)	Kenya	Item and vocabulary generation for a measure of perceived stress.	In-depth interviews and focus group
Kambalametore (2000)	Malawi	To define the construct of adaptive behavior	In-depth interviews, focus group, and participant observation
Mpofu (2002a)	Zimbabwe	To define the construct of intelligence	Written interviews
Mullin (2000)	South Africa	To define that concept of quality of life	Interview
Mung'ala-Odera (2004)	Kenya	To clarify the way the respondents understood the items in a measure that screens for neuro-impairments.	Focus group
Ngara (2004)	Zimbabwe	To define the construct of giftedness	Written interviews
Ogunnaike <sup>a</sup> (2002)	Nigeria	To identify and generate items for a measure of infant mental development	Focus groups
Patel (1997)	Zimbabwe	To identify and generate items for a measure of mental illness	Focus group Open-ended interviews.
Serpell (1993)	Zambia	To define the construct of intelligence	In-depth interviews
Sigman (1988)	Kenya	To generate items for a measure of mother-infant interaction	Participant observation
Sternberg (2001)	Kenya	To identify and generate items for a measure of practical intelligence	In-depth interviews with healers

<sup>a</sup> items used were identified in focus group discussion by Aina, Agiobu-Kemmer, Etta, Zeitlin, & Setiolane (1993).

Mung'ala-Odera, Meehan, Njuguna, Mturi, Alcock, Carter, and Newton, (2004) initially used the translation and back translation method to produce a Kiswahili version of the Ten Questions Questionnaire (TQQ), a screening tool to identify children with neurological impairments in Kilifi. Pilot results using the translated version of the TQQ indicated that an unexpectedly large group of children were identified as impaired. A series of focus group discussions were then held with randomly selected groups of mothers from the community to identify the sources of error. Mothers' interpretations and understanding of each question in the questionnaire were also discussed. The authors discovered that the mothers misunderstood some questions because the translation of some of the items to the local dialect was ambiguous. For instance, the question asking whether or not the child had a hearing impairment could also have been translated to mean that the child was inattentive. The focus groups made it clear that modifications had to be made to item wording and provided new wording for the final items in the scale. The results from the adapted instrument showed prevalence rates similar to those from other developing countries. The measure had an excellent test retest and inter-rater agreement.

Holding and Kitsao-Wekulo (in press), working in Kilifi, identified activities for inclusion in a quality of life measure through semi-structured discussion groups with children aged 11 to 15 years. Children were requested to list enjoyable activities and those they did not enjoy. Additionally, they were asked to mention any taboos or restrictions on participation in the listed activities. The generated items were used to provide substitute items and relevant probes in the adaptation of the Childhood Asthma Questionnaire (French & Christie, 1995). In another application of focus group discussions to generate test items for a measure of infant mental development, Ogunnaike and Houser (2002) used material drawn from a series of focus groups by Aina, Agiobu-Kemmer, Etta, Zeithin, and Setiolane (1993). The focus groups indicated that Yoruba caregivers encouraged children to identify and name items in their immediate environment. The items identified as commonly used were included in relevant sections of the Yoruba Mental Assessment Scale, a measure of mental development for infants. This measure was found to have adequate internal consistency.

Individual interviews. Serpell (1993) made use of individual in-depth interviews with village elders to examine the conceptualization of intelligence among the Chewa of Zambia. Elders were requested to choose a child who could perform a task at a level that required more than the average skill at his/her age. They were then asked to justify their choices by describing the special characteristics the child possessed. The terms used to describe the child were content analyzed to identify characteristics which the respondents associated with intelligence. This information has been used to describe the Chewa conceptualization of intelligence. Similarly, Mpofu (2002a) and Ngara and Porath (2004) used written individual interviews with university students and lecturers to find the local definition of intelligence and giftedness among the Shona in Zimbabwe. According to Ngara and Porath (2004), the Shona viewed giftedness as an extraordinary gift persons receive from their ancestors; this gift enables them to perform way above the others in challenging tasks. According to the Shona speakers, giftedness is characterized by, among others, problem solving abilities, creativity, interpersonal relationships, and spirituality. Furthermore the Shona believed that gifts are entrusted to an individual for the society, hence the saying 'chipo chako chipo chedu' meaning your gift is given to you for us.

Bolton (2001) describes a method where the target population can be involved in evaluating the criterion validity of a measure in the absence of a gold standard. In-depth interviews were administered to key informants in a Rwandese community to identify people suffering from agahinda gakabii (a locally described grief syndrome). Criterion validity was evaluated by the level of agreement between the key informants' assessment of the presence of agahinda gakabii and the presence of depressive symptoms as described through the Hopkins Symptoms Checklist (Derogatis, Lipman, Rickels, Uhlenhuth, & Covi, 1974). Results indicated a relationship between grief and depression similar to that reported in Western countries. This study suggests that, in the absence of a gold standard key, informants from the community can provide a means of assessing criterion validity. Bolton, Wilk, and Ndogoni (2004) have applied the same methodology to assess

depression in a region that is severely affected by HIV/AIDS in Uganda; the authors confirmed the suitability of the approach provided for assessing criterion validity.

### *Participant observations*

In Kilifi we applied participant observation to identify appropriate test stimuli, test administration methods and scoring procedures for developing an adaptation of the Symbolic Play Test by Lowe and Costello (1976). We observed children aged less than 3 years in both natural and staged environments. Members of the family, especially older siblings were requested to collect and provide the play materials used by the children. Play materials were photographed and catalogued (Taylor & Katana, 2004). This process was continued until there were no new materials forthcoming and this was observed after approximately 10 households. Items were selected for inclusion in the play tests and for assessing the materials available in the home in the measure of the home environment based on this catalogue. Children's play behavior (who, how, and what they played with) was also directly observed and recorded. Overall, approximately 21 households were visited. We began by recording children's play activities in their natural setting. Notes taken focused on the patterns of interactions between the child and the strange visitor as well as between the child and other members of the household. Observations indicated that children were reluctant to engage in play activities in the presence of a strange adult. Subsequent play sessions were structured sessions to help familiarize the child with the stranger. Three stages of child-stranger/assessor interaction were introduced, "modeling", "instructions", and "free play". By incorporating interaction at these three levels of intensity of interaction, we were able to observe reduced reluctance of children to participate in play activities with the stranger/assessor.

In Embu (Kenya), Sigman et al. (1988) carried out observations in the home to identify the type of behaviors that could be objectively assessed in a structured observational measure of mother-child interaction. Field workers spent a total of 18 months observing activities in the child's home. This study developed a relatively simple and reliable approach for assessing mother-child interaction, which had high inter-observer agreement. The coefficients of concordance between observers ranged from .80 to .98 in the six home rearing behaviors observed. This measure has been adopted and successfully applied by other research teams in East Africa (Drotar et al., 1997).

Multimethod Approach. Several of the identified studies have combined more than one consultation method to meet their stated aims. Some studies used triangulation to verify information obtained through different methods. Other studies sequence their methods so that initial information collected using a single technique was supplemented and fine-tuned by application of other techniques. Ice and Yogo (2005) used a combination of individual interviews and focus group discussions to generate items for a measure of stress among grandparent caregivers of orphans in the Luo community of Kenya. Idioms and items for their questionnaire were generated through individual written interviews with anthropologists from the Luo community. The investigators then held focus group discussions with grandparent caregivers of HIV orphans. The grandparents were asked to evaluate the questionnaire by explaining what each idiom meant to them. The measure had good psychometric properties. The internal consistency of the measure (KR-20) was .75. Concurrent validity was supported by observing correlations in the expected direction with measures such as social support, care-giving intensity, socioeconomic status and depression.

Grigorenko, Geissler, Prince, Okatcha, Nokes, Kenny, Bundy, & Sternbergn (2001) collected data in a series of ethnographic studies that involved open-discussions, semi-structured interviews, and group discussions with children and adults. Respondents were asked to identify the most salient qualities of a "good child" and provide vignettes exemplifying these good qualities. This information was used to identify and describe the Luo conceptualization of intelligence. Kambalametore, Hartley, and Lansdown (2000) used a multimethod approach involving in-depth interviews, focus group discussions, and participant observation. They examined local concepts of adaptive behavior and identified everyday skills fostered in a Malawian community for inclusion

in a measure of psychosocial development. Participants included psychologists, social workers, parents, grandparents, and children in the target age group (aged 4-5 years). As a final example, Alcock, Holding, Mungala-Odera, & Newton (2008) used a combination of focus group discussions and individual interviews to generate items and examples to be included in a measure of verbal knowledge. During the first step a list of items was generated through a combination of literature review and individual interviews. Focus group discussions were then held with randomly selected groups of people from the community (teachers, parents, adults randomly selected from the community, and secondary-school pupils) to select item from the generated items. The groups used card-sorting procedure to select items from the list. The inter-form reliability of this measure was slightly below the acceptable level (.52). However, the test-retest reliabilities were adequate, reaching an average of .63.

#### *What has been the contribution of these consultations to test development?*

The answer is, construct definition. Participant consultation can suggest salient information about both universal and culture-specific aspects of psychological constructs in a non-Western context. Examples of these constructs include intelligence, mental health, and adaptive behavior. The value of the works described in this chapter lies in their potential to: "a) reveal limitations in Western psychological constructs; b) add to understanding of psychological theories and constructs; and c) inform culturally sensitive psychological practices in African settings" (Mpofu, 2002b, p. 183). Obviously, empirical cross-cultural studies are needed to examine to what extent participant consultation lives up to this potential by testing the adequacy of insights gained in participant consultation.

Serpell (1993) presents one of the earliest studies that describe the African concept of intelligence. According to this study, intelligence among the Chewa of Zambia is understood in terms of four indigenous constructs: nzelu (wisdom) and chenjela (aptitude) which represent the cognitive aspects of intelligence; and tumilika (responsibility) and khulupikila (trustworthiness) which represent the social aspects. A common finding from studies in Africa is that intelligence has both social and cognitive aspects. Grigorenko et al. (2001), working among the Luo of Kenya, reported four facets to the Luo conceptualization of intelligence: rieko, luoro, winjo, and paro. Rieko, which refers to smartness, knowledge, ability, skill, competence and power, is the only aspect that correlated positively with scores from Western ability tests. The others luoro (social qualities such as respect and willingness to share), winjo (child's ability to comprehend what is going on and understand what is appropriate or inappropriate in a certain circumstance) and paro (innovativeness, creativity and the ability to follow through with tasks) did not significantly correlate with academic performance or formal tests. These studies indicate that the African conceptions of intelligence are not limited to cognitive abilities only.

Kambalametore et al. (2000), working in Malawi, report that a well-adapted child is described as one who understands social responsibilities, carries out age-appropriate chores, and observes social conventions. This is achieved by attaining the quality of umunthu (being cultured). Children aged between 4 and 5 years display this quality by participating in household chores such as carrying water and going for small errands, by participating in make-believe play, and by showing an understanding of and respect for relatives. They conclude that, as no Western instrument captures this concept adequately, there is a need to develop a culture-specific instrument to provide a contextually valid measure of child development.

Tool development and adaptation. Participant consultation has contributed to different facets of tool development and adaptation, including identification of inappropriate items, generation of substitutes or additional items (Ogunnaika & Houser, 2002; Patel et al., 1997) and the evaluation of the clarity of expression used (Mung'ala-Odera et al., 2004). For instance, only two of the 15 questions in the original format of the Childhood Asthma Questionnaire (French & Christie, 1995) were retained without modification in the adaptation by Holding et al. (in review) described earlier. These two questions, "missed school because of not feeling well" and "which picture de-

scribes how you feel most of the time?" were found to be equally relevant and applicable in the African setting. Other items were found to have unfamiliar prompts (e.g., "watch television" and "go to the swimming pool") and were replaced with activities that were familiar to the children (e.g., "chores in the house and on the farm" and "running errands"). Preliminary analysis indicated that the authors could identify the hypothesized factor structure. Furthermore, an adequate level of internal consistency was found (which indeed compared favourably to the Cronbach's  $\alpha$  value of the original scales) reaching levels ranging from .56 to .91. This measure was also sensitive to disease effects as it showed children suffering from chronic illness had significantly lower scores.

Having developed through participatory consultation what they felt to be a locally valid measure of infant development, the Yoruba Mental Development Scale, Ogunnaike and Houser (2002), compared its performance to that of the Bayley's Mental Infant Development Scales (Bayley, 1993). The Yoruba Mental Development Scale charted age-appropriate maturational changes, with a significant correlation found between age and performance ( $r = .44, p < .001$ ). In contrast, the non-adapted Bayley's Mental Infant Development Scales indicated a regression in skill development, with younger children scoring significantly higher than the older children. Furthermore among the Yoruba, intelligence and mental maturity are assessed and encouraged through errand sending. A child is considered to be mature if he/she can take part in household chores and run errands, such as purchasing items and putting away objects. The Yoruba Mental Development Scale significantly correlated with errand running, while Bayley's Mental Infant Development Scales did not have significant correlations with any of the tasks assessed. These results indicate that the locally developed measure of infant development was assessing children's ability more validly in context. In summary, application of information generated through participant consultation has contributed to the development of measures that are reliable and valid for use in SSA.

## Discussion

Our review describes the ways in which target populations in studies in SSA have been included in test construction and adaptation. The inclusion of the community in the process of test development has led to a broader conceptualization of constructs, clearer language reducing ambiguities and the identification of acceptable administration procedures. Participant consultation has been found to enhance construct, content and criterion validity of the measures used while maintaining good internal consistency and test re-test reliability. Researchers have been able to access vocabulary, idioms and appropriate behaviors for inclusion in assessment measures. Moreover, they have identified locally acceptable and theoretically adequate administration procedures for the assessment tasks.

Although admittedly non-exhaustive, our review provides a detailed overview of current practices in consulting target populations in Africa. The most common forms of consultation identified were focus group discussions, in-depth interviews and participant observation. Previous work in both psychology and anthropology indicates that each of these methods has inherent limitations; therefore, the use of triangulation to collect data might provide the most valuable approach. More work needs to be carried out to improve our understanding of the strengths and weaknesses of various procedures used in consulting target groups, and the applications to which each method can make its strongest contribution.

Sub-Saharan Africa harbors a remarkable diversity of cultures, although diversity may not preclude the observation of important similarities between cultures. Consulting target populations has proven useful in defining constructs of which the most widely studied constructs are intelligence and mental health. In the studies of intelligence in Africa, several commonalities such as the inclusion of both cognitive and social aspects to the definition of intelligence have emerged. Nevertheless, other psychological constructs may show much more cross-cultural variability, even within SSA. There is a need to synthesize the information gathered regarding local definitions of constructs in diverse contexts; such a synthesis will enable us to build a knowledge base for professionals in SSA and it may help to direct future efforts by identifying areas that are still un-

known. Our review indicates the reasons for participant consultation and methods used in SSA are consistent with those observed in other parts of the world where target populations have been involved in item generation, evaluate item wording and stimuli (Haynes et al., 1995; Vogt et al., 2004). This may potentially indicate that the lessons learned from other regions can be used to inform and further build up this practice in SSA.

While participant consultation brings benefits to the process of test development, several challenges accompany it. For instance, it is often a long and expensive process; members of the target populations may not talk with the same voice and the suggestions and input may not be feasible or reliable. Other potential limitations include a reliance on an inadequate number of informants, capitalization on culture-specific features of a construct or instrument (at the cost of identifying universal features), and communication problems because crucial words cannot be translated; for instance, there are no words for numbers or certain mood states in some African languages. Early in the research planning, investigators need to prepare on how to deal with these potential challenges.

The current review has a two-fold limitation. The first involves the relatively few studies that could be identified as having used participant consultation. Two potential explanations exist for this low number. Firstly, it may be an indication of a low prevalence in systematic consultation with target populations in the region. Secondly, the paucity may be an indication of a publication bias, because few studies publish details on tool development and adaptation procedures. It is fairly common for authors to indicate that tools were piloted without presenting the details. Additionally, there is a chance that most articles detailing tool development have been published in local journals that were not captured through our search. However, our aim was not to carry out an exhaustive systematic search rather we aimed at highlighting the main issues and features relating to participant consultation in SSA. The second limitation is related to psychometrics; most of the studies reviewed have presented limited information on the validity of their work and the adequacy of the methodology used to collect data. We have evidence of content, criterion and in certain cases construct validity. However aspects such as the predictive validity have yet to be fully assessed. This is understandable, given that most of what has been reviewed, is pioneer work in the area. Furthermore, most of the findings are based on single samples and populations, which may limit their generalizability. Therefore to be able to fully document the extent of the value of participant consultation, there is a need for further validity research and an evaluation of the adequacy of the methodology employed.

In summary, we are able to make the following recommendations: a) Consulting target populations at all stages of psychological research to enhance the validity of data collected, its interpretation and evaluation, should be considered a key aspect of cross-cultural psychology; b) In the process of consulting the target population, researchers need to pay special attention to sampling procedures as these relate to the validity of the information received and to the value of the informant. In selecting the people to consult, several considerations must be taken into account. One of the most salient of these considerations is the cultural knowledge of the people selected to inform the researchers on behalf of the target population. Therefore, sampling should take into consideration aspects such as participants' age, educational level, knowledge of the local culture and residence (urban/rural) to ensure the adequacy of the information collected for the whole population under study; c) Diverse methods of participatory data collection should be used together during participant consultation. A multimethod approach, in which different consultation methods such as in-depth interviews and focus groups are combined, can increase the validity of measures in communities that are not familiar with these data collection methods.

We hope our overview will stimulate further discussion and research relating to participant consultation. We believe that close cooperation with target populations is beneficial to both researchers and members of the target population, as researchers gain new insights in universal and culture-specific features of their theories and assessment devices, and as the needs of target populations may be taken care of more adequately if their viewpoints are better represented.

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