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Individual-level factors associated with mental health in Rwandan youth affected by HIV/AIDS

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Abstract

Purpose—Prevention of mental disorders worldwide requires a greater understanding of protective processes associated with lower levels of mental health problems in children who face pervasive life stressors. This study aimed to identify culturally appropriate indicators of individual-level protective factors in Rwandan adolescents where risk factors, namely poverty and a history of trauma, have dramatically shaped youth mental health.

Methods—The sample included 367 youth aged 10–17 in rural Rwanda. An earlier qualitative study of the same population identified the constructs “*kwihangana*” (patience/perseverance) and “*kwigirira ikizere*” (self-esteem) as capturing local perceptions of individual-level characteristics that helped reduce risks of mental health problems in youth. Nine items from the locally derived constructs were combined with 25 items from an existing scale that aligned well with local constructs—the Connor-Davidson Resilience Scale (CD-RISC). We assessed the factor structure of the CD-RISC expanded scale using exploratory factor analysis and determined the correlation of the expanded CD-RISC with depression and functional impairment.

Results—The CD-RISC expanded scale displayed high internal consistency ($\alpha = 0.93$). Six factors emerged, which we labeled: perseverance, adaptability, strength/sociability, active engagement, self-assuredness, and sense of self-worth. Protective factor scale scores were significantly and inversely correlated with depression and functional impairment ($r = -0.49$ and $r = -0.38$, respectively).

Conclusions—An adapted scale displayed solid psychometric properties for measuring protective factors in Rwandan youth. Identifying culturally appropriate protective factors is a key

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Compliance with ethical standards

Conflict of interest

On behalf of all authors, the corresponding author states that there is no conflict of interest. The authors have no conflicts of interest to report.

component of research associated with the prevention of mental health problems and critical to the development of cross-cultural strength-based interventions for children and families.

Keywords

Protective factors; Youth; Rwanda; Mental health; Resilience

Introduction

In low and middle-income countries, a number of stressors from violence and illness to extreme poverty threaten healthy child development [1–4]. To counterbalance risks, efforts must be made to document individual, family, community, and societal strengths contributing to resilient developmental outcomes in children. Rwanda presents a relevant context for exploring protective factors in youth mental health given its history of genocide as well as current challenges in bringing the AIDS epidemic under control. The 1994 Genocide against the Tutsi involved the loss of nearly one million people in a 100-day span and ruptured the social fabric that normally supported healthy child rearing and, along with the effects of HIV/AIDS transmission, contributed to one of the highest rates of orphanhood in all of Africa [4]. Poverty also compounds the challenges associated with trauma and disease, leading to severe consequences for the health, functioning, and well-being of families [1]. Such stressors and their destabilizing effects on families and societies may jeopardize healthy development in children. In the context of family loss and chronic illness, children are often pressured to take on additional household and care-giving responsibilities, as well as emotional burdens [2], raising the risk for mental health problems and poor social outcomes, such as school dropout [3, 4].

A growing number of researchers are examining protective factors that contribute to resilient outcomes in specific cultural contexts [5]. In the Basotho community in South Africa, for example, investigators observed the importance of “Botho” in young people identified as resilient [6]. Such youth were described as flexible and determined, common attributes reported in youth viewed as resilient in many cultures, but also as well connected to community support systems and respectful of community values important to their culture. However, few such studies in African countries exist outside of South Africa, and there are even fewer quantitative studies of factors contributing to resilience in African youth. Recent review of studies of resilience in youth in South Africa found that positive cognitive appraisal, and internal locus of control, a sense of self-worth, and a preference for socially appropriate behavior were important individual-level protective factors, but the reviews noted that the majority lacked a culturally or contextually sound measurement [7, 8].

Rather than assume that Western measures were appropriately suited to assess protective factors in rural Rwanda, we sought to explore locally described protective factors in our target population of youth aged 10–17 in southern Kayanza, a district in the southeast of the country, and to draw from qualitative data to devise and examine the psychometric properties of a scale for individual level protective factors in this context. We sought to understand individual-level factors associated with lower levels of mental health problems in youth in the context of HIV/AIDS-affected families in rural Rwanda in order to promote

positive development in youth in families affected by HIV/AIDS, prevent the development of mental health problems in children and adolescents, and inform a larger culturally appropriate intervention. This research was fundamental to efforts to develop and evaluate an effective and culturally appropriate family-based preventive intervention. We also sought to contribute to the growing body of knowledge around cultural factors and resilience in youth globally.

Methods

Measure development

Based on previous experiences using rapid qualitative assessment methods [9], our research group undertook a study to explore protective factors relevant in the lives of HIV/AIDS-affected youth in southern Kayonza district, Rwanda. A more detailed description of this qualitative research and the constructs that emerged can be found in Betancourt et al. [10]. In brief, the research team began with broad questions such as, “what do HIV/AIDS-affected young people do to help themselves and avoid problems such as hopelessness (*kwiheba*), worry (*guhanyika*), deep sorrow (*agahinda kenshi*), irritability (*umushiha*), and conduct problems (*uburara*)?” and, “what do families/community members do to help HIV/AIDS-affected youth and help them to avoid developing such problems?” We then identified common responses to these questions derived from the free-listing exercise with $N = 74$ participants, 31 of who were adults (42% female) and 43 of who were youth aged 10–17 (47% female). We then examined common responses using further in-depth interviews with key informants who were nominated by Free List participants as being particularly knowledgeable about risk and resilience in children affected by HIV/AIDS in the area.

Our qualitative research revealed two central terms for individual-level protective factors: patience/perseverance (*kwihangana*) and self-esteem (*kwigirira ikizere*). Youth with *kwigirira ikizere* were described as having courage in the face of challenges and as possessing a sense that they can “do many things”. Commonly reported indicators of *kwigirira ikizere* included “thinks of his/her future”, “is always strong at heart”, and “feels he/she must survive”. Participants described *kwihangana* as related to *kwigirira ikizere* in that it included behaviors that required a positive view of one’s self, e.g., the active maintenance of social ties, interacting with peers, and playing with others. In addition, youth with *kwihangana* were also portrayed as “well behaved”, “hard-working”, “good-hearted”, and “calm”.

With the goal of using standard, comparable measures when possible, we applied a process used in prior formative research to review and select items derived from qualitative data to standard measures for related constructs, focusing on tools that had been used in low and middle-income settings wherever possible. This process has been described in several previous papers on assessment of locally relevant mental health problems and functional impairments [11–13]. The present analysis is the first attempt to apply this refined method to the selection and adaptation of a scale for protective factors. Following prior procedures, we searched for existing measures to see if any approximately captured the protective constructs illuminated in our formative qualitative research on the indicators of *kwihangana* and *kwigirira ikizere* [12]. Through a literature review, existing measures of similar constructs

were identified with emphasis on those adapted and used successfully in a range of culturally diverse settings. These scales were then examined item-by-item for conceptual equivalence with qualitative indicators of the two protective constructs of interest. In this matching exercise, the measure with the highest match was selected—the Connor-Davidson Resilience Scale (CD-RISC). This scale was specifically chosen because of its match with locally described items from the qualitative research, rather than an effort to address the more global construct resilience.

The content of the 25-item CD-RISC scale was drawn from a number of sources: items reflecting control, commitment, and viewing change as a challenge were developed from Kobasa's work with the construct of hardiness [14]; Rutter's work on resilience in the face of adversity [15] was used to create items focusing on planning, action orientation, strong self-esteem/confidence, adaptability when coping with change, social problem solving skills, humor in the face of stress, the strengthening effect of stress, taking on responsibilities for dealing with stress, secure/stable affectional bonds, and previous experiences of success and achievement; and finally, items assessing patience and the ability to endure stress or pain were included from the work of Lyons on positive adjustment in the face of trauma [16, 17].

The CD-RISC has been validated and used in a number of different populations and settings including in Korean adults [18], Spanish young adults [19], and South African adolescents [20]. Of the items identified through the qualitative research, eight were captured by items in the CD-RISC scale. Nine additional items were added to the measure from the qualitative data that were not captured in the CD-RISC. Our measure, the "Expanded CD-RISC" then consisted of the 25 original items from the CD-RISC (eight of which matched with indicators from the qualitative data) plus nine additional indicators from the qualitative data, for a total of 34 items. The items from the original CD-RISC, their correspondence with the qualitative construct items, and the additional items added from the qualitative data are shown in Table 1. This adapted scale was then translated into Kinyarwanda through a detailed translation and back-translation process as described in more detail in Betancourt et al. [12]. When items from the CD-RISC were conceptually matched items from the qualitative data on *kwihangana* or *kwigirira ikizere*, the Kinyarwanda words from the qualitative data were used, rather than a simple translation of the CD-RISC item.

Cognitive testing and reliability testing of measures

Following the instrument selection and translation processes, the scales underwent cognitive and reliability testing. Starting in 2011, the measures were tested for comprehension in 25 cognitive interviews with girls and boys aged 10–17 in Kirehe district, a municipal region adjacent to the study district, to avoid contamination of the main study sample area. Respondents were asked each question followed by a set of structured questions examining comprehension and answer selection. These questions aimed to explore common problems with questionnaire comprehension including question interpretation, retrieval (searching memory for relevant information), judgment (evaluating/estimating response), and response (providing information in the format requested) [21]. Local research assistants who spoke both Kinyarwanda and English recorded responses and noted whether the respondents had difficulty with the response options or needed any part of the question repeated or clarified.

Results from the cognitive interviews were reviewed as a group with the study team and the Principal Investigator, and clarifications were made to the Kinyarwanda translations where needed. Questions that were altered underwent another round of cognitive testing to ensure comprehension. The questionnaires then underwent reliability testing. For test–retest reliability, $n = 34$ youth were re-interviewed 1–2 days after the initial interview, and for inter-rater reliability, $n = 30$ youth were re-interviewed by a different interviewer 1–2 days after the initial interview.

Data collection

Sample—Our expanded CD-RISC was then administered within a larger assessment battery to a purposive sample of $N = 367$ youth aged 10–17 in southern Kayonza district between March 2011 and December 2011. This district has one of the highest rates of poverty in Rwanda, and it is served by our implementation partner, Partners in Health/*Inshuti Mu Buzima*.

Our aim was to select a sample with a wide variation of the constructs of interest. To that end, we identified $n = 281$ youth with locally defined mental health problems and a group of $n = 108$ youth seen by local leaders as being free of mental health syndromes as described in local Kinyarwanda terms. More details on the sampling procedure can be found in Betancourt et al. [12]. To arrive at the sample, study staff met with community health workers, teachers, and health center employees and asked them to list youth aged 10–17 who exhibited at least one of the following syndromes: *agahinda kenshi* (deep sorrow), *kwiheba* (hopelessness) ($n = 59$), *guhangaika* (worry) ($n = 94$), *umushiha* (irritability) ($n = 50$), and *uburara* (conduct problems) ($n = 60$). Respondents were also asked to identify youth who they believed to be free from any mental health problems ($n = 123$). Youth were not eligible for the study if they had lived in the region for less than 1 month, if they were unable to speak Kinyarwanda fluently, and if they exhibited severe cognitive impairment which would preclude their ability to answer questions on the assessment battery as determined by study psychologists.

Research assistants administered the psychosocial assessment battery, including the Expanded CD-RISC, to youth in their homes. A parent version of the battery was administered to index caregivers separately, with parents providing reports of the child's mental health as well as risk and protective factors. Both batteries lasted approximately 90 min. Prior to interviews, written parent consent and child assent was obtained; for participants who were illiterate a fingerprint was accepted in lieu of a signature. Data were collected electronically using Samsung Galaxy GT 15503 smartphones running on an Android platform and uploaded to DataDyne's episurveyor.org website for data monitoring and downloading. Three-hundred and seventy-eight youth were approached to participate in the study; however, 11 interviews were excluded from analysis due to refusals, withdrawals, and participants deemed ineligible, leaving a sample of 367 (97.1%) for data analysis. Of the final sample, 217 respondents were male (59.1%) and 150 were female (40.9%). Child participants were given incentives of notebooks and pens worth approximately \$1.

A field-based research manager as well as local research coordinators provided supervision and support for data collection, and the Principle Investigator hosted weekly supervision

calls throughout the data collection process. All study staff were trained in research ethics and quantitative research techniques. All study procedures were approved by the IRB of the Harvard T.H. Chan School of Public Health (Protocol #15440) and the Rwandan National Ethics Committee.

Data analysis

The analysis sought to assess: (1) Psychometric properties of the Expanded CD-RISC, including the factor structure, and (2) Correlation of the Expanded CD-RISC scale score with scale scores for depression and functional impairment. Response options on the Expanded CD-RISC were in the form of a 4-point Likert scale from “Never” to “A lot,” and responses were averaged to obtain scores. Depression was measured continuously by scale scores on the Kinyarwanda version of the Center for Epidemiologic Studies Depression Scale for Children (CES-DC), the validity of which was confirmed previously in the study population [12]. Functional impairment was measured by the World Health Organization Disability Assessment Schedule for Children (WHO-DAS Child), which was also found to have strong validity in the study population [13]. The WHO-DAS Child measures functioning in six domains: understanding/communicating, getting around, self-care, getting along with people, life activities, and participation in society.

Internal consistency was measured using Cronbach’s alpha. To ensure that the Expanded CD-RISC was not merely reproducing the absence of the constructs “depression” and “functional impairment”, discriminant validity of the measures was assessed using a Wald test. The test assessed the null hypothesis that the correlation between the CD-RISC and the depression/functional impairment measures was 1.

The dimensionality of the expanded CD-RISC was then assessed using exploratory factor analysis with geomin rotation. Questionnaire item responses are categorical variables; therefore the factor analyses were based on polychoric correlations, and robust-weighted least squares estimators were used. With a sample size of 367 and 34 items, the dataset met minimum sample size guidelines for factor analysis [22]. To also assess the dimensionality of the qualitative items alone, an exploratory factor analysis was carried out with the items described in the qualitative study. The items in the two constructs *kwihangana* and *kwigirira ikizere* were examined together because of the conceptual similarity and overlap in responses.

Correlations between the adapted CD-RISC, depression, and functional impairment were assessed using Pearson’s correlation coefficients. Reliability and correlation analyses were performed using STATA version 11 [23]. Factor analyses were conducted with Mplus version 6.0 [24] with missing values considered missing at random. By default, Mplus uses full information maximum likelihood estimation to handle missing data. This was deemed appropriate given low rates of missing data in this study (5.9%).

Results

Psychometric analyses

Internal consistency was high for our expanded CD-RISC ($\alpha = 0.93$).

Factor analysis

Qualitative items: The exploratory factor analysis yielded a four-factor solution with the factors labeled: perseverance, sense of self-worth, self-efficacy, and social interaction. The factors labeled perseverance and sense of self-worth were composed solely of *kwihangana* (perseverance) items, the factor labeled self-efficacy was comprised of solely *kwigirira ikizere* (self-esteem) items, and the factor labeled social interaction was comprised of items from both constructs, consistent with the way the constructs were described in the qualitative study. Items and factor loadings are shown in Fig. 1.

Expanded CD-RISC: A six-factor solution for the expanded CD-RISC was selected based on model fit and parsimony. Fit indices indicated good model-data fit for this model: CFI = 0.976, TLI = 0.963, RMSEA = 0.040 (0.034–0.046) according to criteria suggested by Hu and Bentler [25]. While the $\chi^2 p$ value was <0.001 , the acceptability of the other fit indices and the fact that only one correlation residual was >0.1 led us to believe that the significance of the $\chi^2 p$ value was due to relatively large sample size rather than model misfit. The six factors in this solution were labeled perseverance, adaptability, strength/sociability, active engagement, self-assurance, and sense of self-worth, because the items that loaded highly on each factor conceptually fit into these category labels. The factors largely preserve those from the factor analysis of the qualitative items alone. Perseverance and Sense of Self-worth contain items from *Kwihangana*; Active Engagement contains self-efficacy items from *Kwigirira Ikizere*, and Strength/Sociability contains items from both local constructs. The two additional factors Adaptability and Self-assurance primarily contain items from the CD-RISC that did not match with the items from the qualitative data on the local constructs. A diagram of the factor solution is shown in Fig. 2.

Correlations with depression and functional impairment

Scale score on the expanded CD-RISC was strongly negatively correlated with depression ($r = -0.49$) and moderately negatively correlated with functional impairment ($r = -0.38$). The Wald test was significant ($p < 0.001$) for the correlations of both the CES-DC and the WHO-DAS Child with the expanded CD-RISC, indicating discriminant validity of the protective factor construct vis-à-vis the constructs of depression and functional impairment.

Discussion

In this study of protective factors in youth in rural southeastern Rwanda, we used a strategy for measurement that both utilizes qualitative data gathered locally combined with existing scales. This method has the advantage of ensuring that assessment is locally appropriate and that context or culture-specific factors and idioms are used. At the same time, this assessment strategy seeks to recognize commonalities across cultures and use standard measurement instruments to the extent possible, in order to maximize comparability. We see this method as preferable to alternative strategies that are commonly used, specifically (a) translation/back-translation of standardized scales developed elsewhere, and (b) development of an entirely new scale without examination of the fit of standard scales to context. Scales developed elsewhere that are translated for a new context may display sub-optimal psychometric properties at best and could completely fail to capture relevant

constructs at worst. A completely new scale for the context, if developed with care, may capture important concepts well, however, the time and resources required is prohibitive in many studies. Perhaps more importantly, creating new scales in each context precludes comparisons between studies. The method we use in this paper—beginning with qualitative research and then using an existing scale when one matches the qualitative data well—strikes a balance between local relevance and cross-context comparability. Such innovative approaches are seldom applied to the development of scales for protective factors in youth. For protective factors, which may be even more culture and context specific than many mental disorders, we believe this strategy is particularly advantageous.

We see this methodology and the results as important contributions to the growing literature on resilience in youth in Africa. The factors identified as possibly contributing to resilience in this Rwandan context relate to findings in similar settings. Perseverance, adaptability, strength/sociability, active engagement, self-assurance, and sense of self-worth were factors correlated with low levels of depression symptoms and low levels of functional impairment in this study. The factor “strength/sociability” was composed entirely of items from the qualitative data, items that were not in the original CD-RISC, and the majority of the items in the “active engagement” factor were also locally-derived items. These items, including “does not isolate oneself” and “plays with others” may reflect the key role of social cohesion and interdependence that Therone et al. described in their study of resilience in South African youth [26]. These factors overlap with the concept of “social skills”, which is recognized in the resilience literature in Western settings, but is not included in the CD-RISC and may be considered more integral to resilience in cultures that place a higher emphasis on collectivism and group identity. For this reason, we would recommend that other studies in similar cultures that are considering using the CD-RISC use this expanded scale in order to confirm and build upon these findings that social interaction is an important protective factor in these contexts. Using the full expanded CD-RISC instead of the original CD-RISC or only the local items will allow for maximum comparability across sites and promote a greater understanding of protective factors across cultures.

A number of the factors found in this study overlap conceptually with those found in studies of resilience and protective factors in the US and other contexts [27, 28]. Original psychometric analyses of the CD-RISC in a primarily Caucasian sample in the United States found a five-factor solution, which has been replicated in a study of adolescents in China [29] and in a general population sample in Korea [30]. These five factors were described as follows: (1) personal competence, high standards, and tenacity; (2) trust in one’s instincts, tolerance of negative affect, and strengthening effects of change; (3) positive acceptance of change and secure relationships; (4) control; and (5) spiritual influences. The first of these factors—personal competence, high standards, and tenacity—aligns somewhat with the factor labeled perseverance in our study in Rwanda, although the aspect of high standards is not pronounced in our study. Likewise, the second of the original factors—trust in one’s instincts, tolerance of negative affect, and strengthening effects of change—is similar to the self-assurance factor found in Rwandan youth, except for the strengthening effect of change, which is captured more in the adaptability factor in our study. These, however, are the two factors that primarily contain items from the CD-RISC that did not match the items from the qualitative research. Therefore, other factors found to be important in US-based studies,

namely strong achievement motivation and internal locus of control, may not be emphasized as important factors in this context.

Other studies of the CD-RISC in different populations have found distinct factor structures, including a three-factor solution in South African adolescents [20] and a two-factor solution in Chinese adolescent survivors of the 2008 earthquake [31]. In South African adolescents, the three factors were labeled Tenacity, Adaptation, and Spirituality. In the study of Chinese adolescent earthquake survivors, the two factors were labeled: rational or positive thinking and self-awareness. As mentioned earlier in this article, the factor analysis of the items from our qualitative data in Rwanda, before they were matched with and added to the CD-RISC, yielded a 4-factor solution, with the factors labeled Perseverance, Self-efficacy, Self-worth, and Social Interaction. While some differences exist in the factors that have emerged in these distinct settings using the CD-RISC, there also exist commonalities in terms of positive thought processes and persisting despite obstacles. Still, we would recommend that future studies continue to use the full scale rather than use factors found in past studies as “subscales”, given that factor structures may still be different in unstudied populations. New studies of the factor structure of the CD-RISC in new population will continue to add to the understanding of protective factors across cultures.

This study has several limitations. Perhaps most important, these data are not longitudinal, so these factors being protective in the sense of resilience, i.e., moderating the impact of stressors, cannot be assessed. The CD-RISC was selected not for its ability to measure “resilience”, but rather because its items most closely matched the items found in the qualitative data on protective factors. However, in the qualitative research, respondents were asked what young people affected by HIV/AIDS in the study area do to help themselves avoid mental health problems, suggesting that these constructs were locally relevant and salient protective factors.

In addition to the qualitative data, our quantitative analysis indicates that the factors described are associated with lower likelihood of having mental health problems. The construct displayed discriminant validity with the depression and functional impairment measures, indicating that the measure was not just detecting the absence of disorder symptoms, but rather was describing a distinct construct that is associated with less depression and lower levels of functional impairment. The question of whether such factors prevent mental illness is one that requires longitudinal assessments, although there is compelling reason to believe that they could.

Additionally, the study was conducted in one rural district in Rwanda, making its generalizability to larger areas in the region uncertain. It is possible that protective factors differ in other parts of the country and in other countries and regions in the world, however, we did identify substantial overlap of the factor structure of stress coping ability as measured in Rwanda and in other settings such as South Africa and among earthquake survivor youth in China. In addition, hypotheses generated from these findings could be tested in other areas. The strategy of eliciting local descriptions of protective factors and then using standard measures where there is indication of shared variation or conceptual equivalence

with local descriptions can be very valuable in cross-cultural mental health research more broadly.

Finally, clinical and intervention implications should be noted. The approach our larger ongoing intervention in Rwanda is that of promotion of positive development and parent–child relationships. The individual-level factors identified in this study—perseverance, adaptability, strength/sociability, active engagement, self-assurance, and sense of self-worth—are similar to constructs included within a 2004 consensus operational definition of positive youth development; for example, self-efficacy, social competence, and clear and positive identity [32]. Additional cross-cultural studies could examine the relative importance of various factors, both at the individual level and across the social ecology, in order to achieve a more universal understanding of factors associated with positive mental health, and to promote positive youth development. With knowledge of such locally relevant factors, interventions can be designed and assessed in terms of their impact on such core mechanisms of change, as is currently being done with our larger study in Rwanda. Overall, the interactions between risk and protective levels across the social ecology of child mental health and development [33] require more in-depth exploration in the conceptualization and measurement of protective factors as intervention outcomes, particularly in diverse cultural contexts.

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Fig. 1. Factor analytic solution, including factor loadings, for qualitative data constructs Kwihangana and Kwigirira Ikizere items, analyzed together. *Darker gray* items correspond to Kwigirira Ikizere, and *lighter gray* correspond to Kwihangana

Fig. 2.

Factor analytic solution, including factor loadings, for expanded CD-RISC items. *Darker gray* items correspond to the qualitative data construct Kwigirira Ikizere, and *lighter gray* items correspond to the qualitative data construct Kwihangana

Table 1

Items on the CD-RISC and items from the qualitative data

Connor-Davidson Resilience Scale, expanded
Able to adapt to change
<u>Close and secure relationships</u> (Gets close to people)
Sometimes fate or God can help (Prays)
<u>Can deal with whatever comes</u> [Is not scared (of things people have reason to fear)]
Past success gives confidence for new challenge
See the humorous side of things
Coping with stress strengthens
Tend to bounce back after illness or hardship
Things happen for a reason
Best effort no matter what
You can achieve your goals
When things look hopeless, I don't give up (Has will to work)
Know where to turn for help (Accepts help and advice)
Under pressure, focus and think clearly (Is calm)
Prefer to take the lead in problem solving
Not easily discouraged by failure (Does not lose hope)
<u>Think of self as strong person</u> (Feels strong, strong at heart)
Make unpopular or difficult decisions
Can handle unpleasant feelings
Have to act on a hunch
<u>Strong sense of purpose</u> (Feels he will survive)
In control of your life
I like challenges
You work to attain your goals
Pride in your achievements
Items added from the qualitative data
<u>I think about my future</u>
<u>I feel able to do many things</u>
<u>I feel like I have no problems</u>
<u>I take care of my health</u>
I interact with peers
I play with others
I am well behaved/characterized by goodness
I don't isolate myself
I am good-hearted

Items underlined correspond to the local construct Kwigirira Ikizere from the qualitative data. Items in bold correspond to the local construct Kwihangana from the qualitative data. Phrases in parentheses are items from the qualitative data matched for conceptual equivalence to the CD-RISC items