Child and Youth Resilience Measure (CYRM) & Adult Resilience Measure (ARM)

User Manual

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Resilience Research Centre

DALHOUSIE UNIVERSITY

www.cyrm.resilienceresearch.org

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1. Introduction

This manual is intended to give prospective users of the Child and Youth Resilience Measure (CYRM) and the Adult Resilience Measure (ARM) more information about the tools.

It contains information about the origins of the measures, the different versions (e.g., CYRM-28, ARM-12), how they can be contextualised, administered, scored, and more.

We recommend users review this information and the FAQs on the website prior to using the measures.

To cite this manual, please use:

Resilience Research Centre. (2022). *CYRM and ARM user manual v2.5.* Halifax, NS: Resilience Research Centre, Dalhousie University. Retrieved from http://www.resilienceresearch.org/

2. Overview of the CYRM/ARM

The Child and Youth Resilience Measure and Adult Resilience Measure are measures of social-ecological resilience that have taken various forms since their initial development. After reviewing studies that have used the measures and further investigation of their psychometric properties, we now recommend the CYRM-R and ARM-R which you can access on our website.

These are revised versions of the measures and are typically suitable for children aged 5-9, youth aged 10-23, and adults aged 18 or older (depending on the focus of a study, young adults aged 18-23 can receive either the CYRM or the ARM).

The revised versions of the measures consist of 17-items by default and can be scored on 3- or 5-point scales. The items in the measures are all positively worded and therefore scoring involves just a simple summing of responses.

An explanation of each item of the measure is given in Appendix C.

When you use one of the measures, we ask you to cite the following sources:

CYRM:

Jefferies, P., McGarrigle, L., & Ungar, M. (2018). The CYRM-R: A Rasch-validated revision of the Child and Youth Resilience Measure. *Journal of Evidence-Informed Social Work*. https://doi.org/10.1080/23761407.2018.1548403.

ARM:

Liebenberg, L., & Moore, J. C. (2018). A social ecological measure of resilience for adults: the RRC-ARM. *Social Indicators Research*, 136(1), 1–19. https://doi.org/10.1007/s11205-016-1523-y.

3. Development of the CYRM/ARM

The Child and Youth Resilience Measure (CYRM) and the Adult Resilience Measure (ARM) are self-report measures of social-ecological resilience and are used by researchers and practitioners worldwide.

Originally, the CYRM was developed as part of the International Resilience Project (IRP) at the Resilience Research Centre (RRC), which involved 14 communities in 11 countries around the world.

Work with communities in each location led to the development of the initial 58-item CYRM. This version was subsequently reduced to a 28-item resilience measure (CYRM-28), a very brief 12-item version (CYRM-12) and later a 17-item version (CYRM-R). It has been adapted for use with adults (the ARM), younger children, and a version that can be completed by a knowledgeable informant (a 'person most knowledgeable' or PMK version).

To date, the measures have been translated into more than 20 languages and used in more than 150 research studies. They have been used in investigations of resilience over the lifespan and to evaluate the efficacy of interventions to build and maintain resilience. Researchers and professionals worldwide continue to use the measures to gain insight into the resilience of the individuals and groups they work with.

Currently, we recommend using the 17-item versions of the CYRM and ARM (also known as the CYRM-R and ARM-R). These measures are brief and can be completed in just a few minutes. You can find older versions of the measures in the archive section of our website.

More about the development of the measures can be found in the following sources:

- Ungar, M., Liebenberg, L., Boothroyd, R., Kwong, W. M., Lee, T. Y., Leblanc, J., … Makhnach, A. (2008). The study of youth resilience across cultures: lessons from a pilot study of measurement development. *Research in Human Development*, 5(3), 166–180. https://doi.org/10.1080/15427600802274019

- Ungar, M., & Liebenberg, L. (2009). Cross-cultural consultation leading to the development of a valid measure of youth resilience: the international resilience project. *Studia Psychologica*, 51(2–3), 259–268.

- Ungar, M., & Liebenberg, L. (2011). Assessing resilience across cultures using mixed methods: construction of the child and youth resilience measure. *Journal of Mixed Methods Research*, 5(2), 126–149. https://doi.org/10.1177/1558689811400607

- Liebenberg, L., & Moore, J. C. (2018). A social ecological measure of resilience for adults: the RRC-ARM. *Social Indicators Research*, 136(1), 1–19. https://doi.org/10.1007/s11205-016-1523-y

- Jefferies, P., McGarrigle, L., & Ungar, M. (2018). The CYRM-R: A Rasch-validated revision of the Child and Youth Resilience Measure. *Journal of Evidence-Informed Social Work*. https://doi.org/10.1080/23761407.2018.1548403

Further information on scoring and other aspects of the measures is given later.

4. Understanding resilience

Most commonly, the term resilience has come to mean an individual's ability to overcome adversity and continue his or her normal development or functioning. However, the RRC uses a more ecological and culturally sensitive definition of resilience. Dr. Michael Ungar, founder and Director of the RRC, has suggested that resilience is better understood as follows:

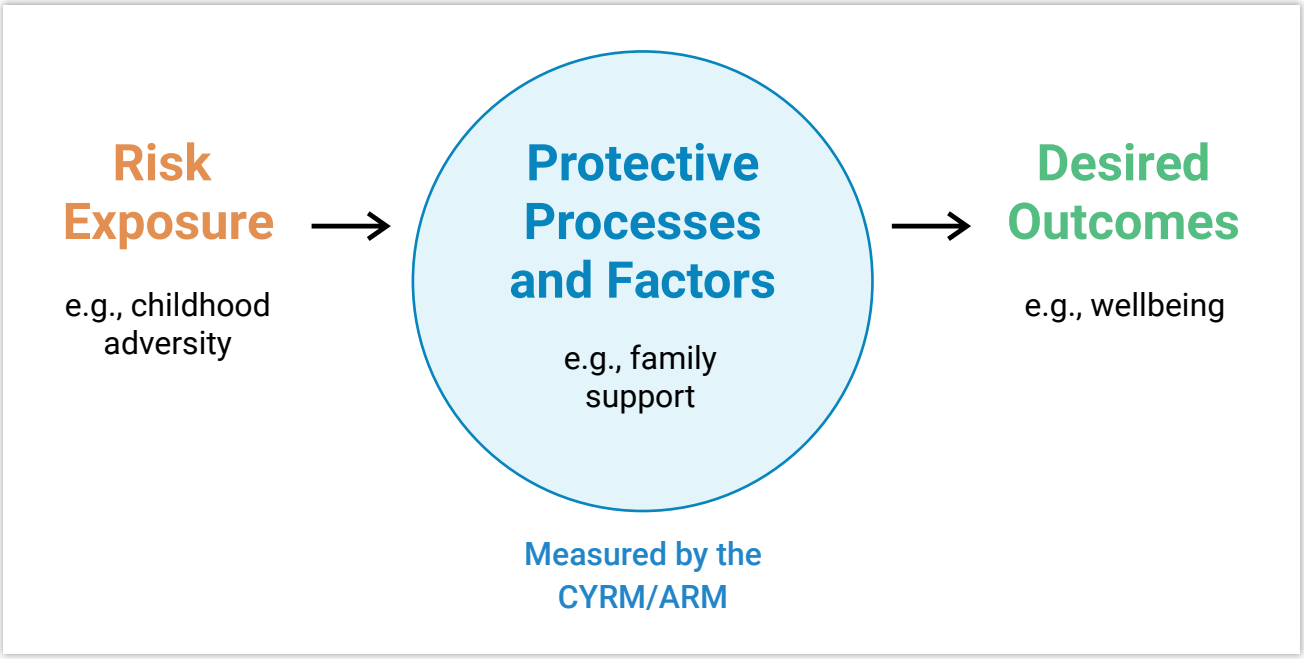
"In the context of exposure to significant adversity, resilience is both the capacity of individuals to navigate their way to the psychological, social, cultural, and physical resources that sustain their well-being, and their capacity individually and collectively to negotiate for these resources to be provided in culturally meaningful ways."

(see Ungar, 2008, 2011).

This definition shifts our understanding of resilience from a purely individual and psychological concept (e.g., 'hardiness'), popular with western-trained researchers and human services providers, to a more relational understanding of wellbeing which is embedded in a social-ecological framework.

Understood this way, resilience requires individuals to have the capacity to access supportive resources that bolster well-being, while also emphasizing that it is up to families, communities, and governments to provide these resources in ways individuals value. In this sense, resilience is the result of both successful navigation to resources and negotiation for resources to be provided in meaningful ways.

The CYRM and ARM are strongly social-ecological measures that reflect access to and use of such supportive resources, which enable individuals to manage or overcome many of the adversities they encounter.



You can read more about resilience from this perspective in the following:

- Ungar, M. (2008). Resilience across cultures. *British Journal of Social Work*, 38(2), 218-235. https://doi.org/10.1093/bjsw/bcl343.
- Ungar, M. (2011). The social ecology of resilience: Addressing contextual and cultural ambiguity of a nascent construct. *American Journal of Orthopsychiatry*, 81(1), 1-17. https://doi.org/10.1111/j.1939-0025.2010.01067.x.
- Ungar, M. (2015). Varied patterns of family resilience in challenging contexts. *Journal of Marital and Family Therapy*, 42(1), 19-31. https://doi.org/10.1111/jmft.12124.
- Ungar, M. (2017). Which counts more? The differential impact of the environment or the differential susceptibility of the individual? *British Journal of Social Work*, 47(5), 1279–1289. https://doi.org/10.1093/bjsw/bcw109.
- Ungar, M. (2018). Systemic resilience: Principles and processes for a science of change in contexts of adversity. *Ecology & Society*, 23(4), 34. https://doi.org/10.5751/ES-10385-230434.
- Ungar, M. & Theron, L. (2020). Resilience and mental health: How multisystemic processes contribute to positive outcomes. *Lancet Psychiatry*, 7(5), 441-448. https://doi.org/10.1016/S2215-0366(19)30434-1.
- Ungar M. (Ed.)(2021). *Multisystemic resilience: Adaptation and transformation in contexts of change.* New York: Oxford University Press. Available open access: https://oxford.universitypressscholarship.com/view/10.1093/oso/9780190095888.001.0001/oso-9780190095888

5. Permissions and access

There are no costs or special permissions required to use the CYRM or ARM, provided that:

(a) Any reproduction of the measures is accompanied by the appropriate copyright information, found below;

(b) Any report or publication involving the measure is accompanied by the appropriate citation/reference, found below;

(c) The measures are not sold.

The measures are also free to use for not-for-profit purposes but not for commercial purposes (i.e., they are free to use for activities like research or teaching). If you wish to use the measures for commercial purposes, please get in touch with us as licenses are available. Contact the Resilience Research Centre through email at RRC@dal.ca or phone at +1 (902) 494-8482.

To obtain the measures, you must complete the form on the Resilience Research Centre website (https://cyrm.resilienceresearch.org/download/). Once the form is submitted, you will receive instant access to the measures. The information we collect helps us to understand the kind of projects the measures are being used in. It is retained for our records only.

Reference for the CYRM-R/ARM-R:

Jefferies, P., McGarrigle, L., & Ungar, M. (2018). The CYRM-R: a Rasch-validated revision of the Child and Youth Resilience Measure. Journal of Evidence-Informed Social Work, 1-24. https://doi.org/10.1080/23761407.2018.1548403

Reference for the CYRM-28/ARM-28/CYRM-12/ARM-12:

Ungar, M., & Liebenberg, L. (2011). Assessing resilience across cultures using mixed methods: construction of the child and youth resilience measure. Journal of Mixed Methods Research, 5(2), 126–149. https://doi.org/10.1177/1558689811400607

6. Selecting the right version

There are various versions of the CYRM and ARM and your choice of version will depend on the individuals you plan to use the measure with.
In terms of age, three versions are available:

- CYRM-R for children ages 5-9;
- CYRM-R for youth ages 10-23;
- ARM-R for adults 18 or older.

There are also versions of each measure above that may be completed by someone familiar with the target individual instead (a person most knowledgeable; PMK).

A PMK is someone who knows the individual participating in the study well. PMKs can be primary caregivers, involved older siblings, teachers, youth care workers, and others who play a significant role in the individual's life and are familiar with their challenges, opportunities, and resources. PMKs can be selected by the research team. For example, the team may decide they want to include only mothers or only parents or teachers as PMKs. Alternatively, researchers can ask the individual participating in the study to identify a person who knows a lot about them and would be able to comment on their lives.

Each of the measures is offered in a 3- or 5-point response scale. The 3-point version is scored using options of 'No', 'Sometimes', and 'Yes', while the 5-point version goes includes 'Not at all', 'A little', 'Somewhat', 'Quite a bit', and 'A lot'. The 5-point scale can provide a richer account of variability in responses to the items, but the 3-point scale may be preferable for individuals with comprehension difficulties or in settings where the administration of quantitative measures is not common.Finally, the CYRM-R, the ARM-R, and their PMK equivalents are offered with simplified wording.

Deciding on the version of the measure to use will depend on your knowledge of the target group. If you suspect respondents may have comprehension difficulties, you may wish to use versions with simplified language or 3-point scoring.

Similarly, if you are unable to speak to the individual directly, or wish to gain insight into perceptions of others, you may want to use one of the PMK versions. You might also consider involving both PMK and self-report versions to compare responses (for an example of this see Sanders et al., 2013).

We also provide a decision aid for measure selection in Appendix A.

7. Contextualising the CYRM/ARM

The CYRM and ARM are measures of resilience that are ready for immediate use. However, to further enhance the precision of the measures, we recommend an additional process of contextualisation prior to beginning your study. This helps fit the measures to your particular setting, potentially improving the validity of the measures and improving the accuracy of the data.

Background to contextualising the measures

The CYRM and ARM were developed using data from 14 communities across 11 countries. This led to the identification of resilience resources that were important across all locations and a common language to identify them. The final measures therefore work well in assessing the resilience of individuals and communities in various locations around the world.

However, a more precisely fitting measure is one that is specifically tuned to a single context. For instance, a sense of belonging in one's community is generally important for adults, as noted by many studies of resilience in diverse contexts around the world. It is included as an item in the ARM to reflect this. However, there may be some contexts where what constitutes a community may be less typical, such as when assessing the resilience of prisoners/incarcerated individuals, or when a community is experiencing conflict and one's group may be better defined a different way, etc. This means it may be important to adapt or rephrase a particular item.

For another example, there were items in the original CYRM about spirituality and religion. Subsequent investigations found that these were not critical to the resilience of individuals in all contexts, hence they were not included in the 17-item revisions of the measures. However, there are contexts where spirituality and or religion are strong aspects of everyday life and also important to an individual's resilience. In such settings, a measure of resilience would benefit from including these items.

In sum, there may be additional supportive resources you believe are important to the resilience of your participants in your setting which are not covered by the measure, or that there are ways of phrasing or re-wording the items that are more appropriate to your participants. If so, this means contextualising is an important step prior to administering the measures.

Adapting a measure may seem a little unusual. Many scientific tools clearly state that they should not be modified or altered in any way, as this can risk altering their psychometric properties. For those used to using survey tools, adjusting a measure

may therefore seem like something to avoid. However, the CYRM and ARM are social-ecological measures, and we know that social-ecological resources can vary between contexts (such as the examples above). Therefore, adjusting the CYRM and ARM can actually lead to a more appropriate measure.

We provide guidance below to support this process to ensure the measures retain their robustness.

We also understand that not everyone has the time to contextualise a measure and remind users that the measures have been validated in many settings. There is therefore nothing wrong with using the measures as originally prescribed.

We recommend you review the steps of contextualising the measures below even if you do not adopt them.

How to contextualise the measure

Contextualising the CYRM or ARM involves reflecting on the content of the measure so that the items appropriately measure what they are intended to measure, and any important additional resources are also included.

This involves understanding what is important for the resilience of individuals in your setting, comparing this understanding to the measure and making appropriate changes, and finally assessing these changes. We have broken this process down into a series of general steps, which are discussed in detail below.

However, it is important to perform this process in conjunction with others, especially those who know your target context well, such as those who may ultimately complete the measure. Therefore, where possible, we recommend convening a local advisory committee (LAC) to support this process. A local advisory committee (LAC) can provide valuable input on the research implementation, such as suggesting contextually relevant ways of conducting the study. They can also comment on findings and help ensure that interpretations of the data are locally relevant. However, they can also help improve the measure itself by helping to identify additional important resilience resources or alternative ways to phrase items.

We have found that it works well to consult with a group of about five people who have something important to say about their community and the local context. Depending on whether measure is to be used, the group could include youth, parents, professionals, caregivers, or elders who themselves may have overcome challenges while growing up. This group can also help decide whether it would be useful to collect data from PMKs about the participants' lives and can suggest feasible ways to do so.

Step 1: Explore resilience in the local context.

We recommend that focus group-style discussions are held with members of the LAC and others in the context where the measure is to be used. This will help you gain a deeper understanding of how resilience is understood in a specific setting. The following prompts may help generate discussion:

- "What do I need to know to grow up or be well here?"
- "How do you describe people who grow up well here despite the many problems they face?"
- "What does it mean to you, your family and your community when bad things happen?"
- "What kinds of things are most challenging for you growing up here?"
- "What do you do when you face difficulties in your life?"
- "What does being healthy mean to you and others in your family and community?"
- "What do you and others you know do to keep healthy? (Mentally, physically, emotionally, or spiritually)"

The outcome of these focus groups will provide insights into local conceptualisations of resilience. It can also provide insightful qualitative data for mixed methods investigations.

Step 2: Consider additional factors.

Determine whether unique protective factors can be conceptualised from content from your discussions or answers to the questions above. For instance, if it transpires that social media may have a strong influence in your sample, and that misinformation or propaganda may be important to address, then confidence in one's critical thinking or ability to appraise information may form a protective factor that could be added to the measure.

Step 3: Check the items in the measure.

Look at the current items in the measure. You may also wish to consult Appendix B, which describes the factors of the measure. Reflect on the intention of the factor and the specific items that target each.

Do members of the LAC believe there are better ways of phrasing some of the items to make them clearer or to avoid misunderstanding or other issues? Are there additional items that might address the factor in a different way?

Step 4: Review the adapted measure.

Review the measure with your local advisory group, including any new factors and items, to ensure it is appropriate to the local context and that each item would make sense to the target group. For example, it may be important to simplify some terms for individuals with comprehension difficulties or it may be important to provide specific examples to accompany each item.

You should also consider piloting your measure with individuals who are similar to the population that will be included in the full study to ensure that participants understand the items as you intend them to be understood. For further guidance on this process of 'cognitive interviewing', see the guides by Willis and Artino (2013) and Latcheva (2011).

Step 5: Evaluate the adapted measure.

After you have collected your data, it is important to explore your data prior to any proper analyses. First, even the best of suggestions from a suitable LAC may sometimes not work out. Perhaps some of your participants misunderstood one or more items or perhaps they were not as appropriate or important as you had assumed. Initial exploratory analyses can help to check issues like these.

For instance, basic checks of internal consistency/reliability such as Cronbach's alpha or McDonald's omega can help indicate whether the items in the measure work well together, or whether one or more items in particular do not. If you discover that one or more items do not work well with others in a subscale or overall scale, and that consistency/reliability values would be significantly improved by their removal, you should consider excluding these items prior to proper analyses. Most statistical software packages offer these tests. We do not recommend a specific cut-off for sufficient consistency/reliability, nor thresholds for improvement, since these will vary depending on the number and nature of items in your measure. There are also many good guides available online for conducting these tests in your chosen software package. We would recommend this kind of analysis as the minimum for checking the impact of alterations to the measure.

Further in-depth assessments of the measure can involve confirming or exploring the overall fit of your adapted measure to your group. This may be dependent on your quantitative skills. For instance, you may perform a Confirmatory Factor Analysis (CFA) to check whether a model using an overall resilience factor (consisting of all the items) or a model comprising subscales (see later) fits your data. There are many good guides for CFA available online. Many consider CFA a good standard for evaluating the validity of a measure.

If your CFA results in a model with poor fit and that minor model modifications do not improve its fit (i.e., freeing parameters per modification indices), then you may consider conducting an Exploratory Factor Analysis (EFA). An EFA will help you determine the number of factors/subscales in your adapted measure (if more than one) and also if any items should be excluded (i.e., if they do not appear to work well with other items – similar to the internal consistency/reliability analyses). If you perform an EFA with a random half of your dataset, you can conduct a new CFA with the second half to confirm the fit of your new model.

Contextualisation and analysis service

We understand that not everyone has the time or skills to conduct all or part of this process of contextualising and analysis. We can therefore offer support through the RRC for researchers requiring assistance with different phases of their research and evaluation work. If you would like to know more about the support that is available, please contact the Resilience Research Centre through email at RRC@dal.ca or phone at +1 (902) 494-8482.

For further information, see the section on Services.

Tips for contextualising

- We recommend that no more than ten site-specific items are added to the CYRM or ARM, as long surveys can lead to fatigue or boredom and may compromise the integrity of your data.
- Try to avoid including statements with multiple conditions as responses may vary depending on interpretation, which may be undesirable – e.g., "I can trust my neighbours and the government".
- Try to avoid including new elements 'just in case', and only include those that you (and ideally your LAC) strongly believe are important.
- Document any steps that you take and report these as appropriate in any publications so that readers may follow and understand your approach.

Our guide to contextualising is just one recommended approach. Another good example of this (minus the production and evaluation of new items) can be found in Panter-Brick's (2018) work with Syrian and Jordanian youth on pages 1809-1810 in the section titled '*Qualitative Work and Pilot Surveys*'.

8. Translating the CYRM/ARM

The CYRM and ARM were developed in English, but some translations of different versions of the base measures are available from our website.
We currently have the following translations available:

- Albanian
- Arabic
- Bengali
- Chinese
- Farsi
- Filipino
- Finnish
- French
- German
- Hindi
- Indonesian
- Italian
- Korean
- Lugandan
- Portuguese (Portugal and Brazil)
- Setswana-Tswana
- Slovenian
- Spanish (Spain and Latin America)
- Turkish
- Urdu

Other languages may be available and are added to our website as we receive them.

These translations have been created by researchers who have worked with the RRC. However, each translation was done independently and, therefore, we cannot guarantee their accuracy.

If you would like to create your own translation, no special authorisation is required. We just ask that you share your translation with us so we can share it with others.

If you are considering a translation, please see Appendix C for further information on the items in the measures to facilitate accurate translation. We also recommend a translation and back translation process to enhance the validity of the translated measure. For information on back translation, see guides by Brislin (1970) and van Ommeren and colleagues (1999).

9. Administering the CYRM/ARM

The CYRM and ARM can be administered to participants in groups or individually. In groups, the measure can be read aloud but participants should respond privately to encourage truthfulness.

If you are working with young children, we recommend you work individually with them to ensure they understand each item in the measure.

The measures take 5-10 minutes to complete, depending on whether it is administered in the participant's native language, the age of the participant, their level of comprehension, and the addition of any new items.

Visual scoring assistance

For younger children or those with literacy or comprehension difficulties, it may be useful to provide a pictorial scale to aid responding. You can print these and share them with participants. We have included some possibilities below that may be useful:

- Panter-Brick and colleagues' (2018) glasses of water:

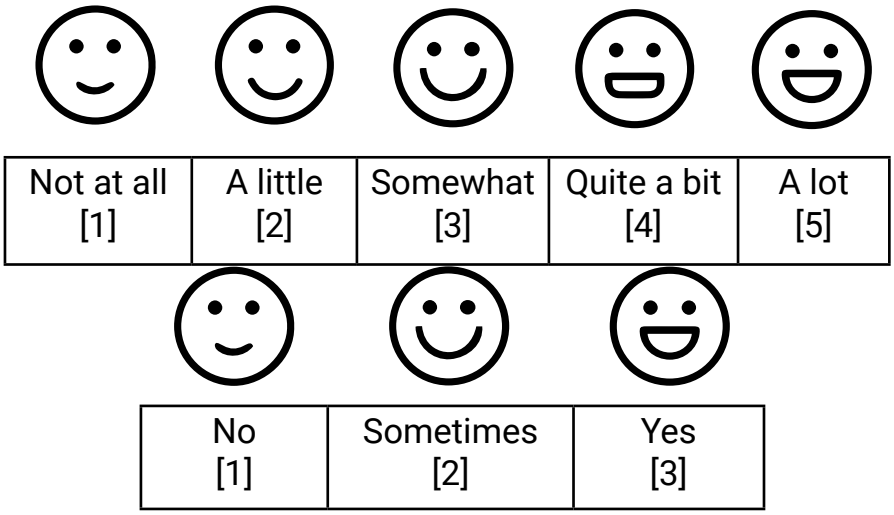
Not at all [1]	A little [2]	Somewhat [3]	Quite a bit [4]	A lot [5]

- For the 3-item scale, the thumbs up/down recommended by Erb and colleagues (2017):

No [1]	Sometimes [2]	Yes [3]

- For very young children, we have previously recommended using smiley faces. A study by Hall and colleagues (2016) suggests that smiley faces should run from happy to very happy (rather than neutral to happy or unhappy to happy) in order for the full range of the scale to be used by children. For example:

  For example:



10. Scoring and interpreting

The items within the measures can be directly summed to gain a total score of an individual's resilience. In the unmodified base measures there are no reverse-coded items and all are weighted equally.

If you are using an unmodified 5-point measure (with response options from 1-5), the minimum score is 17 and the maximum score is 85.

For an unmodified 3-point measure (with response options from 1-3), the minimum score is 17 and the maximum score is 51.

The minimum and maximum scores of modified measures may vary.

If a person skips or misses an item, their scores should not be automatically computed, as their overall score will be artificially lower than others who complete the measure. If this happens, you can discard the incomplete result or consider methods of managing missing data (e.g., http://www.stat.columbia.edu/~gelman/arm/missing.pdf).

We do not currently provide scoring syntax for software or a scoring tool.

Subscales

In addition to an overall resilience score, in the 17-item versions of the CYRM-R and ARM-R, scores for two subscales can be derived. They are for:

- Personal resilience, and
- Caregiver (CYRM-R) or Relational (ARM-R) resilience.

Caregiver/relational resilience relates to characteristics associated with the important relationships shared with either a primary caregiver or a partner or family. Personal resilience includes intrapersonal and interpersonal items. These are linked, as both dimensions depend on individuals' social ecologies to reinforce their resilience.

To derive personal resilience subscale scores, sum 10 items: 1, 2, 3, 7, 9, 10, 12, 13, 14, 16.In an unmodified measure, the minimum subscale score is 10 and the maximum is 30 (3-point version) or 50 (5-point version).

To derive caregiver/relational resilience scores, sum 7 items: 4, 5, 6, 8, 11, 15, 17.
In an unmodified measure, the minimum subscale score is 7 and the maximum score is 21 (3-point version) or 35 (5-point version).

In modified measures or depending on the depth of your analyses, you may find alternative configurations for the subscales, or even alternatively conceptualised subscales (see the section on Contextualising the measures).

Understanding and interpreting scores

For the overall measure and subscales, higher scores indicate characteristics associated with stronger resilience.

In any given context, there will be individuals with higher and lower levels of resilience. For this reason, we recommend comparing high scorers to low scorers and investigating potential reasons for these differences. You may wish to rank your sample by score and contrast the top half of scorers against the lower half to determine what might account for these differences.

Thresholds and cut-offs

We have received requests for cut-offs or thresholds to help users understand their scores and what score is necessary to have a "good" or "normal" level of resilience. However, as resilience tends to vary between contexts, any threshold would similarly vary. For this reason, our recommendation is to instead to contrast high and low scorers within your sample.

Alternatively, you could consider that individuals scoring greater than one standard deviation above your sample average have 'higher resilience', those between one standard deviation above and below the average have 'moderate resilience', and those below one standard deviation have 'low resilience'. This is based on assumptions that your sample is ordinary in the sense that only a smaller amount of individuals will have lower or higher levels of resilience.

We currently do not have good information on resilience 'norms', as again, these are likely to vary by context. However, you may wish to consult the website, as average scores of groups using the measures from various studies around the world are listed as the information becomes available to us. These may help you to understand how your scores compare to those listed.

Combing with other measures of resilience

The CYRM/ARM are measures of resilience which interaction with external elements in our environment (they are social-ecological measures). However, for a more holistic appraisal of resilience, you may wish to consider also including the Rugged Resilience Measure (RRM), which is a measure of internal or psychological resilience that are our centre also offers.

When used together, the CYRM/ARM provides an appraisal of important external protective factors, while the RRM provides an appraisal of important internal protective factors, thereby giving a richer account of the resilience of your sample.

Data analysis service

Not everyone has the time or skills to clean, explore, and analyse the data they collect. We offer a service for the management of your data. This can involve just particular tasks (e.g., data cleaning, just particular analyses, etc) or a comprehensive data analysis, leading to a finalised report of findings and recommendations.

Please get in touch with us to enquire about this. Contact the Resilience Research Centre through email at RRC@dal.ca or phone at +1 (902) 494-8482.

11. Validity and reliability of the CYRM/ARM

Many studies have investigated the measurement and psychometric properties of the CYRM and ARM since they were first developed. We are continually updating the Properties page of our website to share this information from published studies.

If you wish to read or provide a reference to a study that has validated the revisions, we refer you to:

- Jefferies, P., McGarrigle, L., & Ungar, M. (2018). The CYRM-R: A Rasch-validated revision of the Child and Youth Resilience Measure. Journal of Evidence-Informed Social Work. https://doi.org/10.1080/23761407.2018.1548403.

In the section below, we have provided a summary of popular indicators of reliability and validity for the revised versions of the measures. If you have modified the measure, these indicators may not apply. However, we would encourage you to run your own validity and reliability analyses and share these results with us.

Internal reliability/consistency

Cronbach's alpha = .87 (overall resilience), .82 (personal resilience subscale), .82 (caregiver/relational resilience subscale). The subscale alphas were determined by Jefferies et al. (2018). The overall resilience alpha came from the same study but was not published.

Person-Separation Index = .74 (personal resilience), .71 (caregiver/relational resilience). Derived by Jefferies et al. (2018). No overall PSI is available.

Rasch validation

The subscales have been validated against the Rasch model (an alternative to Classical Test Theory such as using factor analysis). They were found to satisfy requirements of unidimensionality, had good fit statistics and targeting properties, and lacked item bias and problematic local dependency. The subscales were also found to have a good ability to differentiate between individuals with varying levels of resilience (Jefferies et al., 2018).

Content and face validity

The measures were originally developed during the IRP, involving 14 communities across 11 countries chosen for their diversity. These sites generated statements for the measures which were reviewed by local advisory groups and experts in cross-cultural resilience. The teams agreed that the product was a contextually sensitive measure of social-ecological resilience, and this has since been established by multiple experts worldwide (e.g., Daigneault et al., 2013; Ungar et al., 2008).

Construct and criterion validity

The subscales of the CYRM-R and ARM-R were derived from an EFA which produced a model with good fit statistics (RMSEA = .059, RMSR = .55) (Jefferies et al., 2018).

Many studies around the world have used CFA to validate the factor structure of previous iterations of the measures (see van Rensburg et al., 2017).

Concurrent validity has been established for the CYRM-28 through positive correlations with self-esteem and acceptance (Daigneault et al., 2013) and negative correlations with PTSD (Zahradnik et al., 2010) and trauma (Collin-Vézina, Coleman, Milne, Sell, & Daigneault, 2011).

Test-retest reliability

Test-retest statistics are not yet available for the CYRM-R or ARM-R, but Daigneault and colleagues (2013) determined test-retest correlation coefficients ≥ .7 at two-week and three-month intervals for the CYRM-28.

Other statistics and information

Please refer to the Properties page of our website, which contains further information on the validity and reliability of the measures.

12. Sharing your research

We like to know how our measures are being used around the world. If you are able to share details of your study with us, please send us the following information. It will be kept confidential unless otherwise stated.

1. **Site details:** Provide the location of your research site, as well as contact information for your project leader. Please include a contact name, telephone number, and e-mail address.

2. **Context:** Outline the context (geographic, political, economic, etc.) within which your participants live, and describe the risk factors they may face.

3. **Participants:** Describe your research participants: breakdown numbers by sex/gender, the range and mean of age and education level, as well as the way they are perceived as a group by their community (if applicable).

4. **Local resilience:** Describe what resilience means in your particular site. Explain how this is demonstrated and consider including a quote from an individual that expresses what resilience means in your site's particular context.

5. **Scores:** Provide the mean scores and standard deviation of the measure. If you have any important demographic variables, include the mean and standard deviation of scores for these groups too (e.g., refugees, non-refugees).

6. **Adaptations:** Describe any alterations you have made to the measure and why you made the changes.

7. **Quotes:** If possible, provide a quote from a participant that is relevant to, and descriptive of, your research and/or its findings. Alternatively, you could include a summary statement that does the same.

8. **Photo:** If possible, please also include one or two photographs relevant to your site and research. Please make sure you have permission to share any photographs, including release forms for any people that appear in the photographs.

9. **Data:** If you are able to share your entire dataset with us, this will help us to develop our understanding of norms. Make sure any identifying information is removed prior to sending it. From time to time we use datasets in analyses that result in publications, but would contact you first about this to discuss further.

13. Services and products we offer

The CYRM and ARM are free to use for research and education purposes.
However, we also offer the following products and services, which are priced according to offset costs.

- Commercial users: We offer volume and site licenses.
- Measure preparation: We can conduct or advise on the process of modifying the CYRM or ARM to suit your particular setting.
- Data analysis and reporting: Once your data has been collected, we offer services including full data analysis and reporting to help understand the scores of your sample.

To enquire about any of the products or services offered, please contact the Resilience Research Centre through email at rrc@dal.ca or phone at +1 (902) 494-8482.

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Appendix A – Decision aid for measure

For each question below, make a note of the option you select.

1. What are the ages of the target individuals in your project? *

   [A] 5-9
   [B] 10-23
   [C] 18 or older

2. Are your prospective participants able to complete a self-report measure or do you need (or want) to involve an informant?

   [D] Self-report only
   [E] Informant only
   [F] Both

3. Would any individuals completing the measure potentially struggle to differentiate response options on a 5-point scale?

   [G] No
   [H] Yes

4. Do you think any of your respondents may have literacy/comprehension difficulties?

   [I] No
   [J] Yes

Response options:

1A 2D 3G 4I = CYRM-R (child version, 5-point)
1A 2D 3G 4J = CYRM-R (child version, 5-point, simplified)
1A 2D 3H 4I = CYRM-R (child version, 3-point)
1A 2D 3H 4J = CYRM-R (child version, 3-point, simplified)
1A 2E 3G 4I = PMK-CYRM-R (child version, 5-point)
1A 2E 3G 4J = PMK-CYRM-R (child version, 5-point) **
1A 2E 3H 4I = PMK-CYRM-R (child version, 3-point)
1A 2E 3H 4J = PMK-CYRM-R (child version, 3-point) **
1A 2F 3G 4I = CYRM-R and PMK-CYRM-R (child version, 5-point)
1A 2F 3G 4J = CYRM-R and PMK-CYRM-R (child version, 5-point) **
1A 2F 3H 4I = CYRM-R and PMK-CYRM-R (child version, 3-point)
1A 2F 3H 4J = CYRM-R and PMK-CYRM-R (child version, 3-point) **
1B 2D 3G 4I = CYRM-R (youth version, 5-point)
1B 2D 3G 4J = CYRM-R (youth version, 5-point, simplified)
1B 2D 3H 4I = CYRM-R (youth version, 3-point)
1B 2D 3H 4J = CYRM-R (youth version, 3-point, simplified)
1B 2E 3G 4I = PMK-CYRM-R (youth version, 5-point)

Continued...

1B 2E 3G 4J = PMK-CYRM-R (youth version, 5-point, simplified)
1B 2E 3H 4I = PMK-CYRM-R (youth version, 3-point)
1B 2E 3H 4J = PMK-CYRM-R (youth version, 3-point, simplified)
1B 2F 3G 4I = CYRM-R and PMK-CYRM-R (youth version, 5-point)
1B 2F 3G 4J = CYRM-R and PMK-CYRM-R (youth version, 5-point, simplified)
1B 2F 3H 4I = CYRM-R and PMK-CYRM-R (youth version, 3-point)
1B 2F 3H 4J = CYRM-R and PMK-CYRM-R (youth version, 3-point, simplified)

1C 2D 3G 4J = ARM-R (adult version, 5-point, simplified)
1C 2D 3H 4I = ARM-R (adult version, 3-point)
1C 2D 3H 4J = ARM-R (adult version, 3-point, simplified)
1C 2E 3G 4I = PMK-ARM-R (adult version, 5-point)
1C 2E 3G 4J = PMK-ARM-R (adult version, 5-point, simplified)
1C 2E 3H 4I = PMK-ARM-R (adult version, 3-point)
1C 2E 3H 4J = PMK-ARM-R (adult version, 3-point, simplified)
1C 2F 3G 4I = ARM-R and PMK-ARM-R (adult version, 5-point)
1C 2F 3G 4J = ARM-R and PMK-ARM-R (adult version, 5-point, simplified)
1C 2F 3H 4I = ARM-R and PMK-ARM-R (adult version, 3-point)
1C 2F 3H 4J = ARM-R and PMK-ARM-R (adult version, 3-point, simplified)

* If the range of ages of your participants crosses age boundaries recommended by the measures you may wish to select one of the measures for the entire group or involve two or more, depending on how the range crosses the age boundaries. For example, if your sample is aged 8-12, review the items in both child and youth variants and decide whether younger children in your context are likely to be able to complete the older version. If they may not be able to, choose the younger age version. Similarly, if your sample is aged 10-30, you may wish to administer the youth version to individuals up to adulthood, and the adult version for the remainder.

** There is only one level of wording of the CYRM-R for ages 5-9.

Appendix B – Ethical protocol

The following is a brief guide to ethical considerations required when using the measure and strategies to mitigate risk. We strongly recommend that all research and evaluations that use the measure go through a review process by a Research Ethics Board, or equivalent community consultation process with a local advisory committee (where no REB exists).

The measure can be administered to individuals or groups similar to any other survey. However, some participants may experience mild discomfort or distress when answering survey questions. Participants may also recall stressful situations, which may trigger uncomfortable memories. To mitigate these emotional risks, participants should be made aware of these possibilities prior to administering the measure, and that they can pause or terminate their involvement at any time. This should be made clear in an information or introductory letter/statement as part of a process of gaining informed consent.

If administering the measure as part of a longer survey, be mindful of how long the total survey will take to complete as some participants may experience fatigue when completing lengthy surveys. This can lead to premature termination, lack of focus when answering questions, and other issues such as participants tending to select the same response option to proceed faster.

If you are providing the measure for participants to complete themselves, ensure literacy skills and comprehension ability are sufficient. If you suspect participants may struggle to complete the measure themselves, read it aloud to them. However, if you need to ask participants whether they feel confident and comfortable completing the measure, be mindful that this may cause embarrassment to some participants who have lower levels of literacy.

You should ensure that participants are able to submit their responses anonymously, even if the measure is being read aloud. No identifying information should accompany responses. Consent forms are typically numbered and that number recorded on the participant's copy of the survey.

Confidentiality should be assured and if responses are stored – electronically or as a hard-copy – this should be done securely (e.g., a locked filing cabinet or using encryption), without identifying information, and only accessible to authorised individuals. You should also dispose of the data within a reasonable amount of time (the time frame may be specified by your country or organisation).

For further in-depth advice on ethical protocol related to survey administration we recommend the Ethical Considerations page from the Cross-Cultural Survey Guidelines group: https://ccsg.isr.umich.edu/chapters/ethical-considerations/.

Appendix C – Item guide

For some individuals and organisations, it is important to know the purpose of each item in the measure. This can be useful for those contextualising or administering the measure, who may want to accompany items with contextually-relevant examples to help participants understand what is being asked. It may also be useful for those translating the measure to ensure the meaning of the item is preserved.

In general, the intention of every item in the CYRM-R and ARM-R is to measure resilience. However, two subscales have been derived for the measures and an earlier part of this manual clarifies which of these subscales of resilience each item is associated with.

For information on how the items in the measures were created, see Ungar and Liebenberg (2011) for a detailed account of the mixed methods procedures that included data from multiple countries.

Detail for each item is given on the following pages...

Item 1

	Measure	*Item text*
	CYRM-R (child)	Do you share with people around you?
	CYRM-R (youth)	I cooperate with people around me
	CYRM-R (youth, simplified)	I get along with people around me
	ARM-R (adult)	I cooperate with people around me
	ARM-R (adult, simplified)	I get along with people around me

This item assesses the sociability of the individual. In the child measure, this is operationalised as examining the extent to which the child shares, whereas in youth and adults, this is about cooperation and harmony with others.

Item 2

	Measure	*Item text*
	CYRM-R (child)	Is doing well in school important to you?
	CYRM-R (youth)	Getting an education is important to me
	CYRM-R (youth, simplified)	Getting an education is important to me
	ARM-R (adult)	Getting and improving qualifications or skills is important to me
	ARM-R (adult, simplified)	Getting and improving qualifications or skills is important to me

This item assesses valuing education. For young children, this is phrased as asking whether performing well in school is valued to them, while the older child and youth version directly enquires whether education is valued by the individual. The adult measure does not assume individuals are still in education and so more broadly asks whether knowledge improvement via qualifications and learning skills is valued.

Item 3

	Measure	*Item text*
	CYRM-R (child)	Do you know how to behave/act in different situations (such as school, home, holy places)?
	CYRM-R (youth)	I know how to behave in different social situations
	CYRM-R (youth, simplified)	I know how to behave/act in different situations (such as school, home and church)
	ARM-R (adult)	I know how to behave in different social situations
	ARM-R (adult, simplified)	I know how to behave in different social situations (such as at work, home, or other public places)

This item asks about whether the individual knows how to behave in particular situations. For example, some may be more able to recognise the importance of being quiet and respectful in holy places or with elders. For adults, different examples are given, and some individuals may be better able to appreciate social norms linked to expected behaviours in different places (e.g., professionalism in the workplace).

Item 4

	Measure	*Item text*
	CYRM-R (child)	Do you feel that your parent(s)/caregiver(s) know where you are and what you are doing all of the time?
	CYRM-R (youth)	My parent(s)/caregiver(s) really look out for me
	CYRM-R (youth, simplified)	My parent(s)/caregiver(s) really look out for me
	ARM-R (adult)	My family have usually supported me through life
	ARM-R (adult, simplified)	My family is supportive towards me

This item addresses the connection between an individual and their parent(s)/caregiver(s) or family. For younger individuals, this relates to parent/caregiver knowledge of what an individual is doing, while for older children and youth, this is about parents looking out for them (as opposed to not caring or over-surveillance). For adults, the item is phrased to reflect the level of support given to the individual by the family.

Item 5

	Measure	*Item text*
	CYRM-R (child)	Do you feel that your parent(s)/caregiver(s) know a lot about you (for example, what makes you happy, what makes you scared)?
	CYRM-R (youth)	My parent(s)/caregiver(s) know a lot about me
	CYRM-R (youth, simplified)	My parent(s)/caregiver(s) know a lot about me (for example, who my friends are, what I like to do)
	ARM-R (adult)	My family knows a lot about me
	ARM-R (adult, simplified)	My family knows a lot about me (for example, who my friends are, what I like to do)

This item also enquires about parent(s)/caregiver(s) or family connections. In this item, participants are asked about how much their parent(s)/caregiver(s) or family knows about them as individuals. As above, the item is not about surveillance but familiarity with personal characteristics of the individual, such as who their friends are, what they like to do, etc.

Item 6

	Measure	*Item text*
	CYRM-R (child)	Is there enough to eat in your home when you are hungry?
	CYRM-R (youth)	If I am hungry, there is enough to eat
	CYRM-R (youth, simplified)	If I am hungry, there is enough to eat
	ARM-R (adult)	If I am hungry, I can get food to eat
	ARM-R (adult, simplified)	If I am hungry, I can usually get enough food to eat

This item examines availability of food. For children and youth, this is about whether there is sufficient food made available to them, which is the responsibility of parents or caregivers. For adults, this is about the general availability of food in their environment.

Item 7

	Measure	*Item text*
	CYRM-R (child)	Do other children like to play with you?
	CYRM-R (youth)	People like to spend time with me
	CYRM-R (youth, simplified)	People like to spend time with me
	ARM-R (adult)	People like to spend time with me
	ARM-R (adult, simplified)	People like to spend time with me

This item enquires about how liked the individual is. For young children, the item is phrased to be about whether other children like to play with them. For older individuals, it is more generally about whether others enjoy their presence, judged by a perception of how much others like to spend time with them.

Item 8

	Measure	*Item text*
	CYRM-R (child)	Do you talk to your family/caregiver(s) about how you feel (for example when you are hurt or feeling scared)?
	CYRM-R (youth)	I talk to my family/caregiver(s) about how I feel
	CYRM-R (youth, simplified)	I talk to my family/caregiver(s) about how I feel (for example when I am hurt or sad)
	ARM-R (adult)	I talk to my family/partner about how I feel
	ARM-R (adult, simplified)	I talk to my family/partner about how I feel (for example, when I am sad or concerned)

This item probes the extent to which individuals feel able to talk with their parent(s)/caregiver(s) or family about their feelings.

Item 9

	Measure	*Item text*
	CYRM-R (child)	Do you have friends that care about you?
	CYRM-R (youth)	I feel supported by my friends
	CYRM-R (youth, simplified)	I feel supported by my friends
	ARM-R (adult)	I feel supported by my friends
	ARM-R (adult, simplified)	I feel supported by my friends

This item examines support from friends. For young children, this is phrased as asking whether individuals have friends that care about them, while older individuals are asked directly whether they feel supported.

Item 10

	Measure	*Item text*
	CYRM-R (child)	Do you feel you fit in with other children?
	CYRM-R (youth)	I feel that I belong/belonged at my school
	CYRM-R (youth, simplified)	I feel that I belong/belonged at my school
	ARM-R (adult)	I feel that I belong in my community
	ARM-R (adult, simplified)	I feel that I belong in my community

This item examines a sense of social fit, such as asking young children whether they feel they fit in with other children. For older children and youth, the example of school is given, where individuals are asked to judge whether they feel (or felt, if they have since left) a sense of belonging to their school. Adult participants are asked whether they feel they belong in their community. Those who score lower on this item may feel unlike those around them, or outsiders in important social environments, such as school or the community.

Item 11

	Measure	*Item text*
	CYRM-R (child)	Do you think your family/caregiver(s) cares about you when times are hard (for example, if you are sick or have done something wrong)?
	CYRM-R (youth)	My family/caregiver(s) stand by me during difficult times
	CYRM-R (youth, simplified)	My family/caregiver(s) care about me when times are hard (for example if I am sick or have done something wrong)
	ARM-R (adult)	My family/partner stands by me during difficult times
	ARM-R (adult, simplified)	My family/partner stands by me when times are hard (for example, when I am ill or in trouble)

This item enquires about support from family members when the individual is experiencing personal difficulties, such as sickness, when in trouble, or financial difficulties.

Item 12

	Measure	*Item text*
	CYRM-R (child)	Do you think your friends care about you when times are hard (for example if you are sick or have done something wrong)?
	CYRM-R (youth)	My friends stand by me during difficult times
	CYRM-R (youth, simplified)	My friends care about me when times are hard (for example if I am sick or have done something wrong)
	ARM-R (adult)	My friends stand by me during difficult times
	ARM-R (adult, simplified)	My friends care about me when times are hard (for example, when I am ill or in trouble)

This item is like the previous item but asks about perceived support during personal challenges from friends.

Item 13

	Measure	*Item text*
	CYRM-R (child)	Are you treated fairly?
	CYRM-R (youth)	I am treated fairly in my community
	CYRM-R (youth, simplified)	I am treated fairly in my community
	ARM-R (adult)	I am treated fairly in my community
	ARM-R (adult, simplified)	I am treated fairly in my community

This item enquires about fair treatment by others. For older children, youth, and adults, this is phrased as fair treatment in their community. Unfair treatment could involve discrimination due to group membership (racism, religion, etc) but is not restricted to this.

Item 14

	Measure	*Item text*
	CYRM-R (child)	Do you have chances to show others that you are growing up and can do things by yourself?
	CYRM-R (youth)	I have opportunities to show others that I am becoming an adult and can act responsibly
	CYRM-R (youth, simplified)	I have chances to show others that I am growing up and can do things by myself
	ARM-R (adult)	I have opportunities to show others that I can act responsibly
	ARM-R (adult, simplified)	I have opportunities to show others that I can act responsibly

This item is about opportunities for demonstrating an individual's capability. For children, this is the ability to show others they are maturing and can now do things without assistance (doing homework, keeping important things safe, etc). For older individuals, this is about being able to demonstrate responsibility (such as looking after others, financial responsibility, etc).

Item 15

	Measure	*Item text*
	CYRM-R (child)	Do you feel safe when you are with your family/caregiver(s)?
	CYRM-R (youth)	I feel safe when I am with my family/caregiver(s)
	CYRM-R (youth, simplified)	I feel safe when I am with my family/caregiver(s)
	ARM-R (adult)	I feel secure when I am with my family/partner
	ARM-R (adult, simplified)	I feel secure when I am with my family/partner

This item asks about a sense of security when with family. This is about how much an individual feels secure and safe when they are with family.

Item 16

	Measure	*Item text*
	CYRM-R (child)	Do you have chances to learn things that will be useful when you are older (like cooking, working, and helping others)?
	CYRM-R (youth)	I have opportunities to develop skills that will be useful later in life (like job skills and skills to care for others)
	CYRM-R (youth, simplified)	I have chances to learn things that will be useful when I am older (like cooking, working, and helping others)
	ARM-R (adult)	I have opportunities to apply my abilities in life (like skills, a job, caring for others)
	ARM-R (adult, simplified)	I have opportunities to apply my abilities in life (like using skills, working at a job, or caring for others)

This item is about feeling that there are opportunities to prepare (child and youth) or apply oneself (adult) in life. For younger individuals, this is phrased as chances to learn or develop skills that would be useful when they get older (such as household activities, job skills, or those involved in helping others). For adults, the item reflects opportunities to apply abilities such as skills at home or in the workplace.

Item 17

	Measure	*Item text*
	CYRM-R (child)	Do you like the way your family/caregiver(s) celebrates things (like holidays or learning about your culture)?
	CYRM-R (youth)	I enjoy my family's/caregiver's cultural and family traditions
	CYRM-R (youth, simplified)	I like the way my family/caregiver(s) celebrates things (like holidays or learning about my culture)
	ARM-R (adult)	I enjoy my family's/partner's cultural and family traditions
	ARM-R (adult, simplified)	I like my family's/partner's culture and the way my family celebrates things (like holidays or learning about my culture)

This item concerns attachment to family heritage, where individuals express the extent to which they enjoy their family's traditions. For example, this may be the unique way in which an individual's family celebrates a holiday like Christmas, a birthday, or the new year.

Additional items

We recommend the measures go through a contextualisation process prior to use. This may result in the creation of additional items that a group believes are important to assess resilience in the target context. If new items are created, consider creating explanatory text like this to aid others who may use the measure.