

THE LIFE SKILLS ASSESSMENT SCALE: MEASURING LIFE SKILLS OF DISADVANTAGED CHILDREN IN THE DEVELOPING WORLD

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Adversity, including malnutrition, has had irrefutable effects on child development and mental health. India, for example, has approximately 160 million children in poverty: The growth of up to 59% of rural and 48% of all children is stunted. Hundreds of thousands of nongovernmental organizations (NGOs) work with these disadvantaged children to increase their life skills and ameliorate effects of adversity. Yet a simple effective measure of program impact has remained elusive. We used observational data from 1,136 disadvantaged children aged 8 to 16 years to construct a simple 5-item impact assessment scale. Although the scale was developed in India, we envisage that it could be used with disadvantaged children worldwide.

Keywords: life skills, Life Skills Assessment Scale, disadvantaged children, developing world, failure to thrive, nongovernmental organization program.

The United Nations Children's Fund (UNICEF; 2009) reported that 42% of India's population was surviving on less than US\$1.25 per day, and around 160 million of the 460 million young people in India under 18 years old were living below this international poverty line. It was estimated in the *Hunger and*

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The authors acknowledge Bobbymon George for his tireless efforts in data gathering and Glenn Waller for his advice and patience.

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Malnutrition (HUNGaMA) Survey Report 2011 (Naandi Foundation, 2012) that 42% of children aged under five years in India were underweight, and the growth of up to 59% was stunted. According to the *Children in India 2012 Report* (Ministry of Statistics and Programme Implementation, MOSPI, Government of India, 2012), in 2006, the growth of 48% of children under five years was stunted (below average height-for-age), 20% were wasted (low weight-for-height), and 42% were underweight (low weight-for-age). MOSPI predicted an improvement in these figures of 3 percentage points per year. These problems were reported to be mainly due to malnourishment. This poor growth pattern indicates developmental delay, a phenomenon that has been observed for over a century, and is known as *failure to thrive*, which is associated with a range of mental health and developmental issues (Schwartz, 2000). Interventions to address malnutrition include supplementary feeding, health education, and social improvement programs. Interventions to address the psychosocial problems accompanying failure to thrive include promoting the acquisition of life skills (World Health Organization [WHO], 1997), via programs involving direct teaching of life skills as well as using sport, creative arts, adventure camps, computer skills, language skills, interactional play, mentor schemes, and befriending. The aim is to ameliorate the effects of adversity by providing social and self-regulation skills to enhance development and enable young people to become healthy adults who can participate fully in the life of the community. India has 3.2 million registered nongovernmental organizations (NGOs), many of which provide programs and care for disadvantaged children. Nevertheless, a simple easy-to-use measure of the effectiveness of these programs has remained elusive. Instead, NGOs often use nonstandardized commonsense measures that lack generalizability, or just assume that their programs work. Our aim in this study was to develop a simple, reliable, and valid life skills measure, one use of which would be to assess the outcome of life skills interventions. As the measure we developed is culture-free and child-centered, we suggest it is generalizable to life skills programs for disadvantaged children and young people throughout the developing world.

Failure to Thrive

In 1897, L. Emmett Holt coined the term “ceased to thrive”. Later, in the 1960s, failure to thrive was referred to as *reactive attachment disorder* in the *Diagnostic and Statistical Manual* classification system, reflecting its connection with developmental delay and mental health problems (Schwartz, 2000). Stunted growth has been shown to predict developmental delay (Abubakar, Holding, Van de Vijver, Newton, & Van Baar, 2010). *Failure to thrive* can be defined as a child not growing at a predetermined rate as measured by a growth chart.

Normally, children grow in a set pattern, as shown by their measurements (e.g., height, weight, head circumference) plotted on growth charts. Stunted growth is often used as a key indicator of failure to thrive as it is very apparent and easy to measure. Many disadvantaged children's growth patterns are abnormal in that they show changes in, or deviations from, the expected patterns of growth shown on the chart (e.g., below the 3rd centile on a growth chart or crossing major centiles), and these changes and/or deviations generally indicate failure to thrive. *Nonorganic failure to thrive* is defined as a failure of growth with no organic reason, for example, abandonment, trauma, abuse, or adversity. *Organic failure to thrive* is due to an illness or malnutrition, and has effects on development similar to nonorganic failure to thrive. Failure to thrive brings with it a package of problems including attachment disorder problems, for example, cognitive impairment, emotion and behavior regulation difficulties, and neuropsychological abnormalities (MOSPI, Government of India, 2012; Pearson, 2013; Read & Bentall, 2012). These cognitive deficits impact on areas such as attention, memory and information processing, relationship difficulties associated with insecure attachment (e.g., being unable to tolerate closeness, attaching quickly to possibly inappropriate others, being unable to assert oneself, and poor parenting skills in adulthood), emotion regulation difficulties (e.g., being highly sensitive/insensitive to stress, lack of self-soothing and calming abilities, and experiencing extreme and inappropriate emotion and perceiving this as uncontrollable), and behavioral problems (e.g., self-harm, aggression, social withdrawal, avoidance of challenging opportunities, and absconding). In addition, because of impoverished environments, different social norms, and the deficits already described, young people can develop attitudes and beliefs that prevent them from participating in an achievement-oriented world.

Life Skills

In 1997, WHO produced a publication to provide guidance on life skills education for children and adolescents in schools, in which life skills are described as promoting *psychosocial competence*. "Psychosocial competence is a person's ability to deal effectively with the demands and challenges of everyday life. It is a person's ability to maintain a state of mental well-being and to demonstrate this in adaptive and positive behavior while interacting with others, his/her culture and environment" (World Health Organization, 1997, p. 1). The authors of the current study also consider that, as well as providing opportunities for appropriate attachment, life skills acquisition is an important part of recovery from severe adversity, which includes failure to thrive. On the basis of an analysis of the life skills research field, WHO suggested 10 core skills: decision making, problem solving, creative thinking, critical thinking, effective communication,

interpersonal relationship skills, self-awareness, empathy, coping with emotions, and coping with stress (World Health Organization, 1997). *Life skills* may, therefore, be defined as the competencies that an individual needs for sustaining and enriching his or her life.

In the United States of America and the United Kingdom, there is evidence for the effectiveness of a range of approaches to enhancing life skills, many of which have had better outcomes than traditional teaching approaches (e.g., Errecart et al., 1991; Perry & Kelder, 1992). Significant positive effects have been demonstrated on health behaviors such as smoking and substance abuse (Botvin & Griffin, 2005), home and school adjustment (Alpert-Gillis, Pedro-Carroll, & Cowan, 1989), increased social competence, and decreased psychopathology (Elias, Bruene-Butler, Blum, & Schuyler, 2000). In existing research there is currently a lack of instruments for measuring life skills that have been tested and found to be valid and reliable (Mangrulkar, Whitman, & Posner, 2001). It is questionable how applicable findings in research conducted in developed countries are to developing countries, where the term *disadvantaged* generally includes malnourishment, stunted growth, failure to thrive, and long-term trauma within a context of survival behaviors. We have used the term *child adversity* in this study to encompass these issues. In India, the importance of life skills has been recognized (Vranda, & Rao, 2011). Although WHO (1997) has advised that data collection and analysis for life skills programs should be assessed in terms of process (qualitative) and impact (quantitative), specific measures have not been suggested. We have been unable to find any published life skills instruments standardized for measurement of disadvantaged children in the developing world.

Method

Scale Construction

We carried out a literature review comprising the above information to set the context for the project and to investigate the most up-to-date research in terms of life skills. We chose the WHO (1997) definition of life skills as a globally influential framework.

We presented a summary of the literature review and WHO definitions to focus groups in India, which were made up of six teachers from local schools for disadvantaged children, four NGO workers, three volunteers working with disadvantaged children, and two young people with disadvantaged backgrounds.

We asked the focus groups to consider the potential of each of the WHO life skills for translation into a description of behavior that could be observed and rated, or, in other words, to consider the operationalizability of the WHO life skills. The focus groups also considered practical skills needed for success that the young people hoped to achieve in work environments such as retail work, service industries, small entrepreneurial businesses, and NGO work. The

focus groups then produced some possible questions that could be answered by observers rating the behavior of children and young people involved in life skills programs. We trialed these questions as follows: Members of the focus groups observed young people of different ages (between 6 and 18 years) during periods of activity (NGO program participation) and rated the age-appropriate life skill level. We assessed the resulting ratings for practical feasibility and also considered whether or not the questions could be applied to children and young people across a range of ages and settings. At the end of this process, five observable behavioral skills appeared appropriate and feasible, namely: interacting with others, overcoming problems and finding solutions, taking initiative, managing conflict, and understanding and following instructions. Disadvantaged children and adolescents in India often speak only the local language and, therefore, it was recognized that there could be problems resulting from the use of a language other than that used in the locality in which the children/adolescents lived (i.e., the child's/adolescent's first language). Specifically that use of a language other than the one with which the participants were most familiar could contribute to their obtaining lower scores. For this reason, all communication with the children and young people had to be in an appropriate and familiar language.

Participants

Staff and volunteers rated children and young people who were new to NGO programs over a period of 13 months. The data collection for this study was part of their routine practice because the NGO had already been using an (unstandardized) version of the Life Skills Assessment Scale for several months prior to the commencement of the current study. Young people who were already involved in NGO programs were excluded from the data set in case their life skills had already been altered by their participation. If a young person was participating in more than one program, one result only was randomly selected for inclusion in the database. The original data were obtained from 1,234 individuals new to the NGO enrichment programs. The mean age of the participants was 12 years (min = 6.1 years, max = 18.3 years, $SD = 2.7$). The children and young people came from disadvantaged backgrounds including slum communities, orphanages, shelters for rescued street children, government schools where a free education is provided, NGO-run residential schools, and evening centers for (illegally) working children.

Observer Raters

Raters were 11 NGO staff and 10 volunteers who were providing programs for the NGO. The staff was composed of career NGO workers, some of whom came from disadvantaged backgrounds. Most volunteers were employed in the information technology industry in Bengaluru, along with one lawyer and one journalist.

Measure

Life Skills Assessment Scale (LSAS). The LSAS scale (see Appendix) consists of items to assess five life skills: interacting with others, overcoming problems and finding solutions, taking initiative, managing conflict, and understanding and following instructions. For each skill (one item per skill) raters are instructed to use their judgment as to what a child might reasonably be expected to manage at a given (chronological) age, and to note both chronological and apparent ages of the child/young person. The rater can also note any difficulties resulting from the use of a language other than the one that is the child's/young person's first language. Each item is scored on a 5-point Likert-type scale: 1 (*does not yet do*), 2 (*does with a lot of help*), 3 (*does with some help*), 4 (*does with a little help*), 5 (*does independently*). An overall score is calculated as the mean of all five skills. Raters can give examples of the observations on which their ratings are based, and provide clarification if necessary. For example, a low score on "understanding and following instructions" could be judged to be a result of the child working in a language with which he or she is unfamiliar or which is not his or her first language, or having hearing difficulties. The comments can also be a source of qualitative information.

Procedure

The NGO in which we conducted the study provides enrichment activities including sport (football, rugby), creative arts, adventure camps, mentoring, computer literacy, fun days, and preparation for work. We chose the sport and creative arts programs to provide adequate numbers for analysis and because the unstandardized version of the LSAS was already in use in these programs. Up to 25 children or young people attended each program session. Individual observer raters attended program sessions as nonparticipant observers, and during these sessions they completed the LSAS. We collected interrater reliability data using a pair of observer raters who did not communicate with each other when children and young people were rated during the same program session at the same time. We collected discriminant validity data during sessions of a sports program, which included 12 NGO young people and 12 young people of the same age (15 years) from an independent (private) school in Bengaluru.

Statistical Analysis

After an initial review of the data, we excluded the children in the age group from 6 to 7 years ($n = 44$) and the young people in the age group from 17 to 19 years ($n = 27$) as there were insufficient numbers in these groups when we split them by gender. Of the remaining 1,163 participants, 27 had missing data, leaving a final group of 1,136 children and young people aged between 8 and 16 years, mean age 12.2 years (min = 8.0 years, max = 16.9 years, $SD = 2.42$). Boxplots,

stem and leaf diagrams, and tests of normality showed that the distribution of data was not normal. Nonparametric statistics were, therefore, used.

We calculated the mean, *SD*, and Cronbach's α for the overall average scale score and for each item. Cronbach's α with item deleted was used to test whether or not each item made an individual contribution to the overall score. The Kruskal-Wallis test was used to test whether or not there were any differences between the three age groups, from 8 to 10 years, from 11 to 13 years, and from 14 to 16 years. We used Mann-Whitney tests to find any gender differences within age groups. We calculated interrater and test-retest reliability using Spearman's rho correlation coefficient and Wilcoxon's matched pairs test to test differences, and to calculate discriminant validity.

Results

Descriptive Statistics for the Life Skills Assessment Scale

Descriptive statistics (*M* and *SD*) were produced for the overall score and for each LSAS item (see Table 1).

Table 1. *Descriptive Statistics for Each Item*

	<i>M</i>	<i>SD</i>
Overall score (<i>M</i> of the five item scores)	2.57	0.75
Interacting with others	2.65	0.92
Overcoming difficulty/solving problems	2.42	0.94
Taking initiative	2.60	0.94
Managing conflict	2.34	0.95
Understanding instructions	2.87	0.90

Note. *N* = 1,136.

The data were analyzed to produce normative scores (*M* and *SD*) for the three age groups (as shown in Table 2). The Kruskal-Wallis test showed no difference between the age groups ($p > .05$). Mann-Whitney *U* tests showed no differences according to gender within age groups, except in the 11 to 13 years age group ($U = 8994$, $p < .001$), in which the boys scored lower than the girls ($n = 93$; mean score = 2.2, $SD = .54$; $n = 253$; mean score = 2.6, $SD = .92$, respectively).

Table 2. *Scores for Children and Young People by Gender and Age Group*

Age	8-10	11-13	14-16
<i>N</i>	380	346	410
<i>M</i>	2.53	2.51	2.54
<i>SD</i>	0.73	0.85	0.66
Cronbach's α	0.871	0.933	0.916

Reliability and Validity

The instrument showed good internal reliability (Cronbach's α), which was not improved by removing individual items. Thus, we considered that the overall (average of the five subscales) scores could be used for remaining analyses. Internal reliability ($\alpha = .86$) and interrater reliability were good ($r = .88, p < .01; z = 0.78; p > .05$); test-retest reliability was also good ($r = .86, p < .01; z = 0.02, p > .05$). Regarding discriminative validity, a significant difference was found between the LSAS scores of advantaged compared with disadvantaged children/young people ($z = 2.05, p < .05$).

Discussion

Statistical Properties of the Life Skills Assessment Scale

There were no significant differences in the scores for each of the three age groups, indicating that the raters were successful in making age-appropriate judgments when allocating scores. For example, an 8-year-old child may be expected to understand and follow an instruction such as "please bring me the football" and a 14-year-old young person may be expected to understand and follow an instruction such as "please collect all the footballs and put them away." The statistical analysis indicates that the scale can be used with confidence.

Practical Considerations When Using the Life Skills Assessment Scale

As the LSAS is scored by observer rating and has only five items, it is a very simple and practical assessment tool for use with disadvantaged children who are participating in life skills development program activities. If desired, an explanatory session can be held or role-play scenarios acted out with new raters so that any questions about its administration can be raised.

Use of Normative Data from the Life Skills Assessment Scale

The significant gender difference we found in the 11 to 13 years age group may represent an actual developmental difference (boys lagging behind girls in early adolescence), a difference in roles (e.g., when girls care for younger siblings this may develop/enhance their life skills), or be an artefact of the data. Future researchers may be able to resolve this question. In the meantime, using a normative score of 2.5 with an *SD* of 0.75 may be acceptable for most children/young people from disadvantaged communities entering NGO programs for the first time. Caution may be needed, however, when comparing boys aged between 11 and 13 years with these norms. Perhaps using a normative score of 2.2 with an *SD* of 0.54 would be more appropriate for this group.

Generalizability of the Life Skills Assessment Scale

We gathered the data for our study solely from disadvantaged children in Bengaluru and surrounding areas in India. Although this is an urban population, because of economic migration locally and nationally the children came from a mixture of urban and rural backgrounds. We suggest that, as this simple scale is child-centered, it could be used worldwide with disadvantaged children who are taking part in life skills programs. Child adversity, including failure to thrive, has been shown to underlie the majority of the psychosocial problems of disadvantaged children, and this is a worldwide phenomenon (Kessler et al., 2010). All children negotiate the same developmental milestones and need an environment that is good enough to allow them to do so. In all cultures unmet basic needs result in similar developmental problems, which can continue into adulthood. We hope that the LSAS will be used in different cultures as outlined below.

Uses of the Life Skills Assessment Scale

The LSAS can be used in a variety of ways, depending on what is being measured.

Individual child/young person assessment. a) An individual's score can be compared to a normative score to ascertain whether or not she or he is functioning as expected, struggling (one *SD* below the *M*), or doing well (one *SD* above the *M*) compared to other disadvantaged children/young people; b) life skills profiles can be examined to assess strengths and development needs, for example, an 11-year-old boy may be able to take an initiative without help but may need a lot of help managing conflict. The assessment could be used interactively as appropriate with the boy himself and/or with his carers, parents, teachers, and NGO staff. Opportunities could be provided for him to learn to manage conflict without becoming aggressive; and c) individual scores at Time A can be compared with scores at Times B and C, to graph progress on individual life skills and/or on those skills overall. These results can be used to provide hard evidence of progress and to congratulate the individual on that progress, and/or to choose further intervention to build on his/her achievement. Alternatively, reductions in scores at Times B and C can be used as alerts to possible negative changes in environment and/or motivation. An example graph for an individual child/young person is depicted in Figure 1.

Outcome assessment and program comparison. Interventions to enhance life skills can be evaluated by: a) comparing the progress of groups of children/young people over time to assess whether or not their life skills have improved; b) examining the effects of programs on individual life skills, for example, a computer skills program might encourage the development of the life skill of taking initiative and solving problems, but may not contribute to the development

of conflict management skills; c) comparing one program with another for progress as a group (adjusting for baselines or matching groups) to see which might be most effective program for overall life-skills development and for development of each specific life skill. The information thus acquired can be used in research and for feedback to stakeholders, such as funding bodies, partner organizations, policy-making bodies, parents, teachers, carers, and the children/young people themselves.

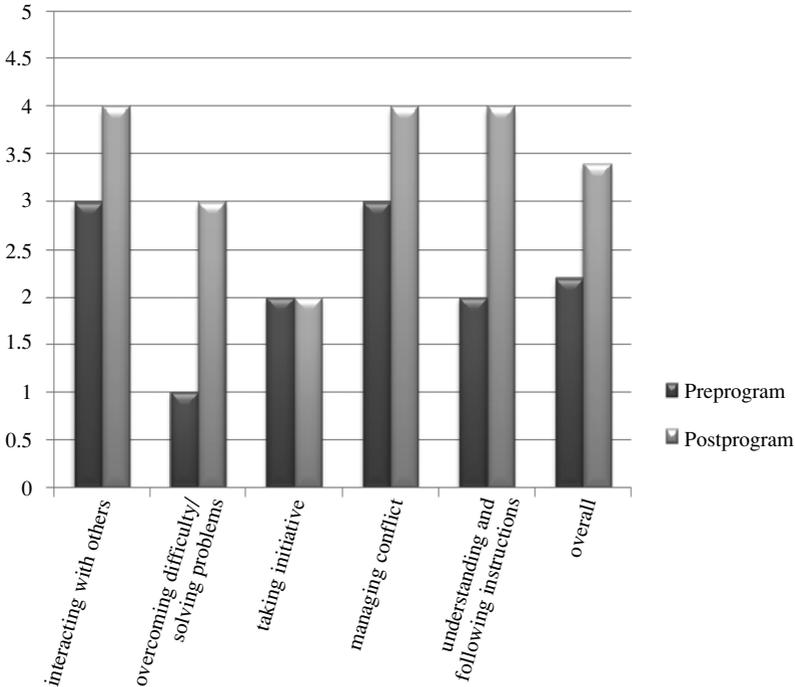


Figure 1. Examples of preprogram and postprogram scores.

Summary

The results we obtained in our study show that the LSAS is a simple, quick, yet reliable and valid, measure of the life skills of disadvantaged and developmentally different children and young people in the developing world. To our knowledge, the LSAS represents a unique standardized life skills measure for this group. It has many potential applications for research, outcome measurement, informing funding decisions, and helping tailor specific interventions for individual children.

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Appendix
The Life Skills Assessment Scale

Please complete this scale while observing, or as soon as possible after observing, the child. You may need to spend some time observing before you decide on your rating. Do not spend too long thinking about each question, just record your impression. For each question, consider age appropriateness (think of actual age, rather than physical appearance).

Mark the most relevant number in the boxes for each question. The comments box can be used to provide example observations that helped you to decide on your rating, or for other comments.

Name of child	Gender	Name of assessor
Actual age	How old does the child look?	Is the child having difficulty working in a language other than his/her native language?

	Does not yet do	Does with lots of help	Does with some help	Does with a little help	Does independently
O. Interacting with others For example, does X interact appropriately with peers, staff, opposite sex? Does X communicate effectively? Does X show sensitivity to others' needs and feelings?					
Comments					
DP. Overcoming difficulties and solving problems For example, does X find a way around obstacles that arise? Does X ask for help appropriately? Does X solve problems successfully?	1	2	3	4	5
Comments					
TI. Taking initiative For example, does X carry out tasks without being told? Does X show age-appropriate leadership?	1	2	3	4	5
Comments					

	Does not yet do	Does with lots of help	Does with some help	Does with a little help	Does independently
<p>MC. Managing conflict For example, does X show appropriate assertiveness? Does X resolve disagreements appropriately? Does X accept appropriate discipline? Does X do this without violence or foul language or running away?</p>	1	2	3	4	5
Comments					
<p>UI. Understanding and following instructions Does X understand appropriate instructions when given? Does X comply with instructions? Does X ask for clarification when needed?</p>	1	2	3	4	5
Comments					
<p>OS. Overall score Sum all items and divide by 5</p>	1	2	3	4	5
Comments					

