California Healthy Kids Survey Resilience Assessment Module Technical Report

Norm Constantine[1] and Bonnie Benard[2]

[1]Center for Research on Adolescent Health and Development, Public Health Institute, Berkeley, CA

[2]Human Development Program, WestEd, Oakland, CA

August 19, 2001

Author Contact Information

Norm Constantine, Ph.D.
Director, Center for Research on Adolescent Health and Development
Public Health Institute
2001 Addison Street, 2nd Floor
Berkeley, CA 94704-1103
nconstantine@phi.org
http://crahd.phi.org

Bonnie Benard, MSW
Senior Program Associate
Human Development Program
WestEd
300 Lakeside Drive, 18th floor
Oakland, CA 94612-3534
bbenard@wested.org
www.wested.org

Suggested Citation

Constantine, N.A. and Benard, B. (2001). California Healthy Kids Survey Resilience Assessment Module: Technical Report. Berkeley, CA: Public Health Institute.

Note: Most of the work described in this report was conducted while the authors were with WestEd's School and Community Health Research Group.

Resilience Assessment Research Panel (1997-1998)

- Bonnie Benard, *Resiliency Associates* and *WestEd, Oakland*
- BethAnn Berliner, *WestEd, Oakland*
- Norm Constantine, *WestEd, Oakland*
- Karin Coyle, *ETR Associates*
- Mark Duerr, *Duerr Evaluation Resources*
- Roy Gabriel, *RMC Corporation*
- Jana Kay Slater, *California Department of Education*

Contributing Project Staff

- Laura Amsden, *WestEd, Oakland*
- Kiku Anon, *WestEd, Los Alamitos*
- Greg Austin, *WestEd, Los Alamitos*
- Jerry Bailey, *WestEd, Los Alamitos*
- Susan Cragle, *Duerr Evaluation Resources*
- Kathleen Curry, *WestEd, Oakland*
- Mieko Davis, *WestEd, Oakland*
- Marycruz Diaz, *WestEd, Oakland*
- Mark Duerr, *Duerr Evaluation Resources*
- Cherri Gardner, *UCSF Center for AIDS Prevention Studies*
- Jeannie Huh-Kim, *WestEd, Los Alamitos*

Funding

Development of the Healthy Kids Resilience Assessment Module was funded by a contract from the California Department of Education to WestEd, with a subcontract to Duerr Evaluation Resources.

List of Tables and Attachments

Tables

Attachments

August 19, 2001

California Healthy Kids Survey
Resilience Assessment Module
Technical Report

Norm Constantine and Bonnie Benard

The *Healthy Kids Resilience Assessment* is an optional module of the *California Healthy Kids Survey* intended for use in California secondary schools. This module is intended to serve as a tool for local and state educational agencies to use in assessing and understanding a variety of external and internal resilience constructs associated with positive youth development. It enables the collection of local and statewide youth support and resilience data for use in needs assessment, program planning, program evaluation, and research.

Working in 1998 with a *Resilience Assessment Research Panel*, we developed the following criteria for our ideal instrument:

1. Contain as few items as possible so that it could be administered concurrently with the CHKS core in one 50-minute class period;
2. Build upon on a strong and explicit research-based theoretical framework;
3. Provide a comprehensive and balanced coverage of external developmental supports and internal resilience traits;
4. Demonstrate cultural and developmental appropriateness appropriate to the intended California student population;
5. Demonstrate high scale level reliability as measured by internal consistency within scales and stability of responses over time; and
6. Demonstrate scale level construct validity as measured by associations among scales and associations between sub-scales and background characteristics and risk behaviors that are congruent with the research literature

Six existing survey instruments intended to measure resilience factors were reviewed. Three were discarded as either insufficiently developed or not relevant to our population. The remaining three all have been professionally developed and are aimed toward middle and high school aged youth: the *Communities That Care Youth Survey* (Pollard et al., 1996), the *Individual Protective Factors Index* (Springer & Philips, 1995), and the *Search Institute Profile of Student Life Attitudes and Behaviors Assessment* (Leffert et al., 1998). These instruments differ in several key aspects – the conceptual view of resilience upon which they were based, the strength and explicitness of their theoretical foundation, their relative focuses on risk factors versus protective factors, and their relative focus on internal factors versus external factors. All are in preliminary stages of assembling evidence of reliability, validity, and cultural and developmental appropriateness. Review summaries of these three instruments are presented in Constantine et al., 1999 (Attachment A). The panel concluded that none of them met our minimal criteria for the ideal instrument. We therefore decided to make the

investment of starting from scratch to systematically develop a new assessment according to our six criteria for an ideal instrument as listed above.

Based on Benard's (1991; 1999) applied integration of the classic resilience research literature (e.g., Rutter, 1990; Werner & Smith, 1992), and consistent with more recent studies and syntheses (e.g., Jessor et al., 1995; Matsen, 2001, Resnick et al., 1999), the HKRA distinguishes between two types of resilience constructs: (1) *protective factors* and (2) *resilience traits*. An initial conceptual framework was developed to guide the construction of the HKRA, comprising 11 protective factors and 11 resilience traits, organized into six clusters (see Constantine et al., 1999, page 12). The framework was developed with practical program application in mind. An extensive item development and review process was employed, involving resilience research and program experts, classroom teachers, and students, to develop a large pool of items mapped to our 22 constructs and six clusters, and to cull these items into a manageable subset for pilot and later field test data collection (full details are provided in Constantine et al., 1999).

This conceptual framework, and the content of the HKRA that was based upon it, were revised several times as we collected and analyzed pilot test, field test, and regular administration data over a two-year extended field test. All modifications were specified to balance the fit between the original framework, the psychometric properties of the items and scales employed, and our growing understanding of resilience and related literature.

Analyses

Data available for the validation study were collected across four separate semesters of district-level survey administration, from Spring, 1999 through Fall, 2000. In total, combined core CHKS and HKRA module data were obtained from 56,398 students across 479 schools in 164 districts, while smaller subsets of students had complete core and HKRA data combined with tobacco, safe schools, or sexual behavior supplemental module data (Table 1). Most districts assessed all 7^{th}, 9^{th}, and 11^{th} grade and alternative school students who received written parental permission. Larger districts sampled schools and/or students as part of an approved sampling plan. Administration was proctored by classroom teachers or other local personnel, with support and monitoring provided by one of three regional CHKS technical support centers. Self-administered survey booklets and scanable forms in English and Spanish were used.

Analyses were conducted in several stages. First, initial internal-consistency reliability analyses were conducted on each scale using the Spring, 1999 pilot test data set (HKRA Version 1, n = 1,078), and items were selected and modified based on these analyses (see Constantine et al., 1999). Second, exploratory factor analyses (Tables 2, 3, and 4) and reliability analyses (Table 5) were conducted using the early Fall, 1999 field test data set (HKRA Version 2.3, n = 26,074), and as a result scales and items were modified for use in Version 3.0 (see Attachment B for mapping from Version 2.3 to Versions 3.0, Attachment C for the scoring key, and Table 6 for coefficient alphas.) Third, further exploratory and confirmatory factor analyses were conducted using the

Spring, 2000 data set (HKRA Version 2.3, n=18,920; see Attachments D, E, and F for complete SPSS output.) A special feature of this set of analyses involved conducting separate factor analyses for each gender, each grade and school type, and each of six race/ethnicity groups, striving for congruence across factor structures within all groups. These analyses were the basis of the recommendation sin this report for the next version, Version 4.0. Finally, confirmatory factor analyses and logistic regression analyses were planned for the Fall, 2000 data set (HKRA Version 3.0, n = 10,326). However, availability of this dataset was delayed and the first preliminary version was not provided until June 20, 2001, leaving insufficient time to complete these analyses for this report. Further, it turned out that the number of cases in this dataset was substantially below the number of cases in the previous year's Fall (1999) dataset and that non-Hispanic white students were heavily over represented, therefore it is recommended to wait until the complete Fall 2000 – Spring, 2001 dataset is available to do these final confirmatory analyses.

Factors and Scales

Analyses to date provide evidence across gender, grades, school-types, and racial-ethnic groups for six distinct protective factors, and six distinct resilience traits. In addition, several new or revised constructs are proposed.

The following 12 scales derived from 36 existing items represent our current recommendations for use of existing items on Version 4.0. These are based on the full series of analyses we conducted through the Spring, 2000 data (Attachments D, E, and F), and offer the best possible fit across all subgroups. The two sets of numbers in parentheses indicate first the Version 2.3 item numbers, then the Version 3.0 item numbers. (Recall that the mapping between these two versions is found in Attachment B.) These are followed by a +E if the factor was validated with the elementary level data.

Protective Factors (22 items)

1. family connection (6, 7, 10, 11) / (6, 7, 10, 11) +E
2. school connection (35, 36, 40, 41) / (32, 33, 37, 38) +E
3. community connection (29, 30, 32, 34) / (26, 27, 29, 31)
4. autonomy experience (23, 25, 26, 28) / (21, 23, 24, 25)
5. pro-social peers (20, 22, 24) / (18, 20, 22) +E
6. pro-social group participation (56, 57, 58) / (50, 51, 52) +E

Resilience Traits (14 items)

7. cooperation and communication (47, 48) / (43, 44)
8. general self-efficacy (43, 44, 46) / (39, 40, 42)
9. empathy (13, 15) / (12, 14) +E
10. effective help-seeking (17, 18, 19) / (15, 16, 17)
11. self-awareness (54, 55) / (48, 49)
12. goals and aspirations (63, 65) / (54, 56) +E

The most notable recommended scale changes from Version 3.0 are (a) collapsing *caring relationships* and *high expectations* within home, school, and community environments into a set of *connection* scales; (b) restructuring *meaningful participation* across the three environments into two new environment-independent scales: *autonomy experience* and *pro-social group participation*; (c) deleting the factorially and predictively troublesome *caring relationships with peers* scale, and (d) renaming the *problem solving* scale as *effective help seeking*. In addition, several items have been deleted within collapsed scales, as well as a few additional items with the most serious cross-cultural structural incongruencies and/or factorial impurities.

It is important to recognize that although typically viewed as external, protective factors are influenced to some extent by the adolescent to whom they apply, both in terms of elicitation, and in terms of perception (especially when these factors are measured based on youth self-report.) This partly explains why our *autonomy experience* factor consists of both home and school items, which vary together. At the same time, resilience traits, usually viewed as internal constructs, obviously are influenced to a large extent by the external environment, in fact, the model we employ postulates that protective factors are among the primary determinants of resilience traits.

Our recommended changes are intended to maximize construct validity and to reduce redundancy across factors. However, we note that while very highly correlated, home versus school prevalences are substantially different for the a*utonomy experience* scale. Therefore, we support the possibility of reporting home and school autonomy components separately in the district reports.

Three additional scales are recommended for consideration:

1. Family behavioral monitoring [external; proposed by Norm Constantine]. This would be adapted from a five-item monitoring scale frequently used in adolescent and family research (e.g., Brown et al., 1993; Barber & Olsen, 1997). Something like: *How much does a parent or other family adult really know about: (a) where you are most afternoons after school; (b) who your friends are; (c) what you do with your free time [doesn't know, knows a little; knows a lot*]. Wording and response options might need to be adapted somewhat.

This scale is in place of the *high expectations* at *home* scale, part of which we merged into the *caring relationship* scale, with a more focused definition of a specific aspect of high expectations, one that correlates well with other aspects of family regulation and positive behavioral control (Barber, 1996). It is important to have a third regulation-related component to complete a triad with the *connection* and *autonomy experience* scales. These widely used and validated items, we believe, will turn out to be more factorially independent, as well as theoretically and practically useful, than the previous high expectation items.

2. Appreciation of diversity [internal, proposed by Karen Pittman]. We strongly agree with Karen's recommendations. A previous attempt to measure this as the *respect for*

diversity scale failed, partly because virtually everyone endorsed the item "all people should get respect. " We are optimistic that we can do better with a new set of items.

3. Spiritual/religious connection [internal, proposed by Bonnie Benard]. Bonnie commendably continues to push for this important resilience trait. We have reviewed numerous articles and other instruments that attempt to measure some aspect or interpretation of this construct, and have yet to find anything that we feel confident enough to try. The challenge is that the straightforward questions all either: (1) refer to organized religion (e.g., how often do you go to church) without the more general and important spiritual aspect, (2) are written in language that is too complex for our population (e.g., I believe there is a sacred force in all human beings, and that this force connects us to each other); or (3) use the *S* word directly, which we believe would be hard for many adolescents to interpret (e.g., How *spiritual* would you say that you are?). Of course we were warned a few years back: "The Tao that can be described in words in not the true Tao," (Lao Tzu, First Teaching). Nevertheless, we continue to search for the elusive items.

Elementary Level CHKS

The Elementary level CHKS is intended for use in grades five and six, and unlike the middle and high school version consists of a single module only. It contains health-related behavior, attitude, and perceived-norms items, together with a subset of resilience items adapted from the full secondary school version. Resilience items for the elementary level CHKS were selected from the secondary level HKRA based on applicability of constructs to younger populations, as well as ease of comprehension. Initially the elementary level survey consisted of the same constructs as the secondary level HKRA, but with two items per construct rather than three.

Our Fall, 1999 field test (n = 10,331) provided a basis for reducing the number of scales, and improving some of the items based on reliability and factor structure issues. Of special note was the fact that 15% of all respondents marked that they understood only *some* or *none* of the items on the elementary survey, while only 58% reported that they understood *all* of the items. In addition, the percent not-responding increased noticeably as the students moved further into the items. Based on these findings, we decided that the instrument needed to be both simplified and shortened. To inform this revision, we developed a cognitive processing interview protocol to explore (1) the perceived meaning and cognitive processes students used in selecting responses, and (2) the level of item understanding. This involved working one-to-one with 60 low reading performance 5th grade students in Oakland and Chico over a three-week period in June, 2000. Findings from these interviews (Attachment G) informed changes to the CHKS Elementary Survey Version 3.5 made in August 2000 and Version 4.0 of the survey was distributed for administration for Fall 2000 (see Attachment H for mapping from Version 3.5 to Versions 4.0, and Attachment I for the scoring key). These changes included the following:

1. Item Reduction. The number of items was reduced from 80 to 59 (some of the item reduction involved carrying over item deletions from the Resilience Assessment Module.
2. Rephrasing. Statements were changed to questions.
3. Response Options Changed. The response options "(A) All of the time (B) Some of the time (C) Never" were changed to "(A) No, never (B) Yes, some of the time (C) Yes, most of the time (D) Yes, all of the time." Similarly, the options "(A) Not at all true (B) A little true (C) Pretty much true (D) Very much true" were changed to "(A) No, never (B) Yes, some of the time (C) Yes, most of the time (D) Yes, all of the time."
4. Word Simplification. Certain words that were difficult - "success," "decisions," "make a difference," and "harmful" - were changed or made into a phrase that described the word.
5. Timeframe Changes. Time qualifiers in the risk questions were changed – "a lot, about every day" was deleted entirely; "30 days (one month)" was changed to "past month (4 weeks)";
6. Emphasis Added. Some of the key phrases were underlined to emphasize who is doing what, e.g., "During the last year, how many times have other kids hit or pushed …."

Analyses of Fall, 2000 CHKS Elementary Survey (Version 4.0) data showed a substantial increase in self-reported comprehension of the survey items:

- 7% of the students marked that they understood only *some* or *none* of the items (versus 15% previously);
- 67% reported that they understood *all* of the items (versus 58% previously);
- percents missing were similar to Fall 1999, up to the reduced number of items retained; but because fewer items were retained, the overall percent missing was lower.

A second round of cognitive interviews was conducted during April and May, 2001 for validation and fine tuning of the changes derived from the results of the interviews conducted in Spring, 2000 as described above. Cognitive interviews also were conducted with the Spanish version of the survey for the first time. As of June, 2001, preliminary analyses of the English interviews has been completed, with analysis of the Spanish interviews planned for later this summer. This round of interviews suggested additional changes to be made. Attachment J includes a detailed summary of overall and item by item recommendations for the next version (5.0) of the elementary level questionnaire. However, these changes have yet to be consolidated with changes resulting form the factor analyses, described next.

Factor analyses were performed using the Fall, 2000 data (n = 13,315). These analyses were done prior to completion of the full HKRA analyses described above and results are preliminary as they are now to be redone as informed by the full HKRA analyses. Table 7 shows the optimal factor structure and item numbers based on these preliminary analyses, and Tables 8 and 9 provide the coefficient alphas for the original and reduced sets of scales. Six unique and meaningful factors were obtained:

Protective Factors

1. family connection
2. school connection
3. pro-social peers
4. pro-social group participation

Resilience Traits

5. empathy
6. goals and aspirations

Secondary-level HKRA factors that were not obtained either because they had been previously deleted in earlier analyses and their items did not appear on this version of the instrument, or because they did not fit within a meaningful factor structure using these elementary level data, are:

1. community connection
2. autonomy experience
3. cooperation and communication
4. general self-efficacy
5. effective help-seeking
6. self-awareness

Some of these omitted factors are appropriately omitted due to developmental level and/or comprehension issues. Other, however, might still be retained or added based on further analyses. The next step is to redo some of the elementary analyses in light of the final solutions for the secondary-level work.

Summary of Recommendations

Recommendation 1. Version 4.0 should contain the 36 existing items listed above, the five existing response set breaker items, plus nine new items for the three proposed new scales described above. This yields a total of 49 items, which is seven items fewer than Version 3.0, yet provides a richer and more valid network of scale scores. Further, we recommend that the three existing reliability check items be added back to the end of this module, given our findings of more frequent honesty, comprehension, and careless response problems experienced within this module (presumably a result of both its placement as the last module and the more difficult and personal nature of many of the items.) This would then yield a module total of 52 items, still a reduction from the previous version.

Recommendation 2. To deal with the continuing response set problems, the module should be redesigned to replace the tabular format with an individual item format, and the items should be mixed more thoroughly.

Recommendation 3. Reject cutoffs should be lowered to reduce the percentage of suspicious data. As they now stand, we still have respondents who marked that they

didn't understand any of the items in the dataset, along with other suspect cases. This could be done to the HKRA separately from the rest of the CHKS if desired, the issue is more important for the HKRA because of the nature and delicacy of the scales.

Recommendation 4. A new round of cognitive processing interviews be conducted with low reading performance (approximately 20th percentile and below) students from each of the three target grades 7, 9, and 11. These would be done in a similar manner to the elementary cognitive processing interviews, but with the larger pool of HKRA items.

Recommendation 5. The most important missing piece of the psychometric analyses is a test-retest study. Our internal consistency reliability analyses based on coefficient alphas provide only a weak test of the scales' reliabilities. Temporal stability analyses based on two to three week test-retest intervals would provide a much stronger test of the scales' reliabilities. A sample size of about 400 to 500 diverse students per grade across several districts would be ideal, but just about anything would be better than nothing.

Recommendation 6. Validity evidence would be strengthened by inclusion of several other self-report assessments of developmental constructs to be correlated in a sample of students with the HKRA scales. It would be useful to show that our short scales correlate well with longer assessments of individual constructs that typically employ 5 to 20 items per construct, but measure fewer constructs (and that our constructs don't correlate as highly with other measures that they should be as strongly related to.

Recommendation 7. At the same time, some of our constructs could be assessed by teacher and parent ratings, as well as other non-self-report methods, and compared to our measures. With these two strategies (Recommendations 6 and 7) applied together, a powerful set of multi-method, multi-trait analyses could be conducted.

Recommendation 8. In preliminary analyses, correlations of the resilience scales with risk behaviors are negative but very small, with much stronger relationships found among the resilience scales themselves, and among the risk behaviors themselves. One possible explanation for this non-ideal situation is the large proportion of students scoring high on most or all of the resilience scales, thereby reducing the variance available for analysis. In a future version of the module, items that are less likely to be positively endorsed by so many students should be tried out to assess whether this increases the statistical association between resilience scales and risk behaviors.

Recommendation 9. Karen Pitman's recommendation of moving the HKRA to the first position in the package should be implemented if logistically possible, although the logistic difficulties in doing so are recognized. Unfortunately, the combined number of items for those districts that administer the core, tobacco, and resilience modules is beyond the capacity of some (many?) students to respond to attentively, and we see signs that this is reducing the validity of the data from what it could be. Because the resilience items require considerable attention and thought, starting the combined assessment with these items could improve the validity of the resilience scales.

Recommendation 10. For the elementary level CHKS, explore the reinstatement or addition of several additional resilience constructs based on the new full HKRA framework as described above, which didn't exist when the elementary analyses were done in May and June. Consolidate the cognitive interview recommendations with the factor analysis results.

Next Steps

Based on these recommendation, several conference calls and other discussions among the CHKS group were held. Attachment K contains a detailed summary of the last conference call held on July 20, 2001 between Benard, Austin, and Constantine. This provides further refinement and expansion of the recommended changes described above.

References

Barber, B. K. (1996). Parental psychological control: Revisiting a neglected construct. *Child Development, 67*, 3296-3319.

Barber, B. K. & Olsen, J. A. (1997). Socialization in context: Connection, regulation, and autonomy in the family, school, and neighborhood, and with peers*. Journal of Adolescent Research, 12,* 287-315.

Bernard, B. (1991). Fostering Resiliency in Kids: Protective Factors in the Family, School, and Community. San Francisco: Far West Laboratory for Educational Research and Development (now WestEd).

Benard, B. (1999). Applications of resilience: possibilities and promise. In Glantz, M.D. and Johnson, J. (eds.), *Resiliency and Development: Positive Life Adaptations.* New York: Plenum Press.

Brown, B. B., Mounts, N., Lamborn, S. D., & Steinberg, L. (1993). Parenting practices and peer group affiliation in adolescence. *Child Development, 63,* 391-400.

Constantine, N. A., Benard, B., and Austin, G. (2001). The California Healthy Kids Resilience Assessment: Results from a statewide field test [abstract]. *Journal of Adolescent Health, 28*(2),122.

Constantine, N. A., Benard, B., and Diaz M.D. (1999, June). *A new survey instrument for measuring protective factors and resilience traits in youth: The Healthy Kids Resilience Assessment.* Paper presented at the 1999 Society for Prevention Research National Conference, New Orleans.

Jessor, R., VanDenBos, J., Vanderryn, J., Costa, F. M., & Turbin, M. S. (1995). Protective factors in adolescent problem behavior: Moderator effects and developmental changes. *Developmental Psychology 31(6)*, 923-933.

Leffert, N., Benson, P. L., Scales, P. C., Sharma, A. R., Drake, D. R., and Blyth, D.A. (1998). Developmental assets: Measurement and prediction of Risk behaviors among adolescents*. Applied Developmental Science, 2,* 209-230.

Masten, A. S. (2001). Ordinary magic: Resilience processes in development. *American Psychologist, 56:* 1-12.

Pollard, J. A., Catalano, R. F., Hawkins, J.D., & Arthur, M. W. (1996). *Development of a School-Based Survey Measuring Risk and Protective Factors of Substance Abuse, Delinquency, and Other Problem Behaviors In Adolescent Populations*. Unpublished manuscript. Seattle: Developmental Research and Programs, Inc.

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M., Bearinger, L. H.. & Udry, J. R. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association, 278*, 823-832.

Rutter, M. (1990). Psychological resilience and protective mechanisms. In J. Rolf, A. S. Masten, D. Cicchetti, K. H. Nuechterlein, & S. Weintraub (Eds.), Risk and protective factors in the development of psychopathology (pp. 181-214). New York: Cambridge University Press.

Springer, J. F. and Philips, J. L. (1995). *Individual Protective Factors Index: A Measure of Adolescent Resiliency.* Unpublished manuscript. Folsom, CA: EMT Associates.

Werner, E. and Smith, R. (1992). *Overcoming the Odds: High-Risk Children from Birth to Adulthood.* New York: Cornell University Press.

Data description

Table 1. Data Description

ID	Title	Dates	Form version	Grades	N districts	N schools	N cases with resilience	N cases with resilience and core	N cases with resilience and tobacco	N cases with resilience and SDFS	N cases with resilience and sex
SECONDARY											
S-1	Pilot Test	Spring, 1999	Version 1.0	7,9,11	3	3+	1,078	0	0	0	0
S-2	Field Test Phase 1	Fall, 1999 (rcvd by 3/00)	Version 2.3	7,9,11	48	179	26,074	26,074	0	0	0
S-3	Field Test Phase 2	Spring, 2000	Version 2.3	7,9,11,A	70	186	18,920	18,914	16,333	10,745	4,293
S-4	Regular Administration	Fall, 2000 (preliminary)	Version 3.0	7,9,11,A	43	111	10,326	10,324	7,949	3,663	1,776
Total Secondary					164	479	56,398	55,312	24,282	14,408	6,069
ELEMENTARY											
E-1	Field Test Phase 1	Fall, 1999	Version 3.5	5	38	227	10,331	na	na	na	na
E-2	Field Test Phase 2	Spring, 2000	Version 3.5	5	92	612	32,663	na	na	na	na
E-3	Regular Administration	Fall, 2000	Version 4.0	5	52	172	13,315	na	na	na	na
Total Elementary					182	1011	56,309				

Factor Analysis Tables for Healthy Kids Resilience Assessment
Grade 7: Fall, 1999 Data (n = 9,797)

Table 2. Factor Analysis Summary for Varimax Rotated Twelve-Factor Solution

	Item	Factor loading 1	2	3	-	4	5	6	7	8	9	10	11	12	Communality
Factor E1: Caring Relationships / High Expectations: In the School															
35	At my school, there is a teacher or some other adult who really cares about me.	.73													.71
37	At my school, there is a teacher or some other adult who notices when I'm not there.	.71													.63
40	At my school, there is a teacher or some other adult who listens to me when I have something to say.	.76													.74
36	At my school, there is a teacher or some other adult who tells me when I do a good job.	.78													.76
39	At my school, there is a teacher or some other adult who always wants me to do my best.	.77													.74
41	At my school, there is an adult who believes that I will be a success.	.74													.69
Factor E2: Meaningful Participation: In the School															
26	At school, I help decide things like class activities or rules.		.74												.68
21	I do interesting activities at school.		.50												.54
28	I do things at my school that make a difference.		.68												.69

Factor E3: Caring Relationships / High Expectations: In the Home

6	In my home, there is a parent or some other adult who is interested in my school work.	.73	.64
9	In my home, there is a parent or some other adult who talks with me about my problems.	.53	.65
11	In my home, there is a parent or some other adult who listens to me when I have something to say.	.57	.67
5	In my home, there is a parent or some other adult who expects me to follow the rules.	.67	.60
7	In my home, there is a parent or some other adult who believes that I will be a success.	.71	.65
10	In my home, there is a parent or some other adult who always wants me to do my best.	.76	.69

Factor E-: Meaningful Participation: In the Home

14	I do fun things or go fun places with my parents or other adults.	-	--
25	I help make decisions with my family.	-	--

Factor E4: Caring Relationships / High Expectations: In the Community

29	Outside of my home or school there is an adult who really cares about me.	.78	.74
31	Outside of my home or school there is an adult who notices when I am upset about something.	.71	.69
34	Outside of my home or school there is an adult who I trust.	.75	.72

30	Outside of my home or school there is an adult who tells me when I do a good job.	.78				.77
32	Outside of my home or school there is an adult who believes that I will be a success.	.79				.79
33	Outside of my home or school there is an adult who always wants me to do my best.	.79				.79
Factor E5: Meaningful Participation: In the Community						
56	I am part of clubs, sports teams or other extra activities away from school.		.82			.78
57	Outside of my home and school, I take lessons in music, art, sports or a hobby.		.84			.78
58	Outside of my home and school, I help other people.		(.30)			.56
Factor E6: Caring Relationships: Peers						
1	I have a friend about my own age who really cares about me.			.76		.72
2	I have a friend about my own age who talks with me about my problems.			.81		.77
4	I have a friend about my own age who helps me when I'm having a hard time.			.79		.76
Factor E7: High Expectations: Pro-social Peers						
20	My friends get into a lot of trouble.				(.14)	.85
22	My friends try to do what is right.				.58	.68
24	My friends do well in school.				.67	.69

Factor I1: Cooperation and Communication / Self-efficacy						
45	I can work with someone who has different opinions than mine.	.69				.61
47	I enjoy working together with other students my age.	.63				.59
48	I stand up for myself without putting others down.	.58				.56
43	I can work out my problems.	.61				.61
44	I can do most things if I try.	.61				.66
46	There are many things that I do well.	.57				.65
Factor I2: Empathy						
13	I feel bad when someone gets their feelings hurt.		.73			.68
15	I try to understand what other people go through.		.66			.70
49	I try to understand what other people feel and think.		.53			.67
Factor I3: Problem Solving						
17	When I need help I find someone to talk with.			.67		.70
18	I know where to go for help with a problem.			.67		.64
19	I try to work out problems by talking about them.			.64		.69
Factor I4: Self-awareness						
53	There is a purpose to my life.				.53	.61
54	I understand my moods and feelings.				.74	.71
55	I understand why I do what I do.				.70	.69
Factor I5: Goals and Aspirations						

63	I plan to graduate from high school.													.58	.58
64	I plan to go to college or some other school after high school.													.81	.78
65	I have goals and plans for the future.													.79	.72
Eigenvalues		4.77	4.63	4.21	--	3.50	2.95	2.83	2.44	2.42	2.15	1.82	1.76	1.15	
% of variance		9.36	9.08	8.26	--	6.86	5.78	5.56	4.79	4.76	4.22	3.58	3.45	2.26	

All factor loadings greater than .50 are shown

Factor E1: Caring Relationships / High Expectations: In the School

Factor E2: Meaningful Participation: In the School

Factor E3: Caring Relationships / High Expectations: In the Home

Factor E-: Meaningful Participation: In the Home

Factor E4: Caring Relationships / High Expectations: In the Community

Factor E5: Meaningful Participation: In the Community

Factor E6: Caring Relationships: Peers

Factor E7: High Expectations: Pro-social Peers

Factor I1: Cooperation and Communication / Self-efficacy

Factor I2: Empathy

Factor I3: Problem Solving

Factor I4: Self-awareness

Factor I5: Goals and Aspirations

Factor Analysis Tables for Healthy Kids Resilience Assessment
Grade 9: Fall, 1999 Data (n = 8,665)

Table 3. Factor Analysis Summary for Varimax Rotated Thirteen-Factor Solution

	Item	Factor loading 1	2	3	4	5	6	7	8	9	10	11	12	13	Communality
Factor E1: Caring Relationships / High Expectations: In the School															
35	At my school, there is a teacher or some other adult who really cares about me.	.76													.76
37	At my school, there is a teacher or some other adult who notices when I'm not there.	.74													.66
40	At my school, there is a teacher or some other adult who listens to me when I have something to say.	.79													.75
36	At my school, there is a teacher or some other adult who tells me when I do a good job.	.80													.76
39	At my school, there is a teacher or some other adult who always wants me to do my best.	.78													.74
41	At my school, there is a teacher or some other adult who believes that I will be a success.	.76													.71
Factor E2: Meaningful Participation: In the School															
21	I do interesting activities at school.		.60												.59
26	At school, I help decide things like class activities or rules.		.72												.68
28	I do things at my school that make a difference.		.70												.69

Factor E3: Caring Relationships / Meaningful Participation: In the Home					
6	In my home, there is a parent or some other adult who is interested in my school work.	(.43)	.61		.65
9	In my home, there is a parent or some other adult who talks with me about my problems.	.73			.68
11	In my home, there is a parent or some other adult who listens to me when I have something to say.	.75			.72
14	I do fun things or go fun places with my parents or other adults.	.55			.52
25	I help make decisions with my family.	.55			.64
Factor E4: High Expectations: In the Home					
5	In my home, there is a parent or some other adult who expects me to follow the rules.		.79		.72
7	In my home, there is a parent or some other adult who believes that I will be a success.	.50	(.47)		.63
10	In my home, there is a parent or some other adult who always wants me to do my best.		.66		.69
Factor E5: Caring Relationships / High Expectations: In the Community					
29	Outside of my home or school there is an adult who really cares about me.			.80	.75
31	Outside of my home or school there is an adult who notices when I am upset about something.			.74	.71
34	Outside of my home or school there is an adult who I trust.			.76	.71

30	Outside of my home or school there is an adult who tells me when I do a good job.	.79				.78
32	Outside of my home or school there is an adult who believes that I will be a success.	.80				.80
33	Outside of my home or school there is an adult who always wants me to do my best.	.79				.77
Factor E6: Meaningful Participation: In the Community						
56	I am part of clubs, sports teams or other extra activities away from school.		.79			.77
57	Outside of my home and school, I take lessons in music, art, sports or a hobby.		.81			.76
58	Outside of my home and school, I help other people.		(.45)			.58
Factor E7: Caring Relationships: Peers						
1	I have a friend about my own age who really cares about me.			.81		.78
2	I have a friend about my own age who talks with me about my problems.			.84		.83
4	I have a friend about my own age who helps me when I'm having a hard time.			.84		.82
Factor E8: High Expectations: Pro-social Peers						
20	My friends get into a lot of trouble.				.83	.76
22	My friends try to do what is right.				.57	.68
24	My friends do well in school.				.55	.66

Factor I1: Cooperation and Communication / Self-efficacy						
45	I can work with someone who has different opinions than mine.	.65				.60
47	I enjoy working together with other students my age.	.55				.56
48	I stand up for myself without putting others down.	.58				.59
43	I can work out my problems.	.63				.62
44	I can do most things if I try.	.68				.66
46	There are many things that I do well.	.64				.64
Factor I2: Empathy						
13	I feel bad when someone gets their feelings hurt.		.69			.63
15	I try to understand what other people go through.		.72			.72
49	I try to understand what other people feel and think.		.67			.71
Factor I3: Problem Solving						
17	When I need help I find someone to talk with.			.70		.77
18	I know where to go for help with a problem.			.68		.72
19	I try to work out problems by talking about them.			.67		.74
Factor I4: Self-awareness						
53	There is a purpose to my life.				(.47)	.61
54	I understand my moods and feelings.				.76	.78
55	I understand why I do what I do.				.76	.77
Factor I5: Goals and Aspirations						
63	I plan to graduate from high school.				.61	.59

64	I plan to go to college or some other school after high school.													.79	.73
65	I have goals and plans for the future.													.79	.72
Eigenvalues		4.79	4.74	3.69	2.97	2.55	2.48	2.41	2.40	2.09	1.99	1.90	1.90	1.48	
% of variance		9.38	9.30	7.23	5.83	5.01	4.86	4.73	4.70	4.10	3.90	3.73	3.72	2.89	

All factor loadings greater than .50 are shown

Factor E1: Caring Relationships / High Expectations: In the School

Factor E2: Meaningful Participation: In the School

Factor E3: Caring Relationships / Meaningful Participation: In the Home

Factor E4: High Expectations: In the Home

Factor E5: Caring Relationships / High Expectations: In the Community

Factor E6: Meaningful Participation: In the Community

Factor E7: Caring Relationships: Peers

Factor E8: High Expectations: Pro-social Peers

Factor I1: Cooperation and Communication / Self-efficacy

Factor I2: Empathy

Factor I3: Problem Solving

Factor I4: Self-awareness

Factor I5: Goals and Aspirations

Factor Analysis Tables for Healthy Kids Resilience Assessment
Grade 11: Fall, 1999 Data (n = 7,631)

Table 4. Factor Analysis Summary for Varimax Rotated Thirteen-Factor Solution

	Item	Factor loading 1	2	3	4	5	6	7	8	9	10	11	12	13	Communality
Factor E1: Caring Relationships / High Expectations: In the School															
35	At my school, there is a teacher or some other adult who really cares about me.	.79													.73
37	At my school, there is a teacher or some other adult who notices when I'm not there.	.77													.67
40	At my school, there is a teacher or some other adult who listens to me when I have something to say.	.81													.76
36	At my school, there is a teacher or some other adult who tells me when I do a good job.	.81													.78
39	At my school, there is a teacher or some other adult who always wants me to do my best.	.81													.76
41	At my school, there is a teacher or some other adult who believes that I will be a success.	.77													.73
Factor E2: Meaningful Participation: In the School															
21	I do interesting activities at school.		.58												.61
26	At school, I help decide things like class activities or rules.		.77												.72
28	I do things at my school that make a difference.		.74												.72

Factor E3: Caring Relationships / Meaningful Participation: In the Home					
6	In my home, there is a parent or some other adult who is interested in my school work.	(.46)			.67
9	In my home, there is a parent or some other adult who talks with me about my problems.	.75			.69
11	In my home, there is a parent or some other adult who listens to me when I have something to say.	.74			.72
14	I do fun things or go fun places with my parents or other adults.	.57			.53
25	I help make decisions with my family.	.65			.66
Factor E4: High Expectations: In the Home					
5	In my home, there is a parent or some other adult who expects me to follow the rules.		.79		.72
7	In my home, there is a parent or some other adult who believes that I will be a success.	.50	.52		.65
10	In my home, there is a parent or some other adult who always wants me to do my best.		.65		.68
Factor E5: Caring Relationships / High Expectations: In the Community					
29	Outside of my home or school there is an adult who really cares about me.			.81	.77
31	Outside of my home or school there is an adult who notices when I am upset about something.			.76	.71
34	Outside of my home or school there is an adult who I trust.			.77	.73

30	Outside of my home or school there is an adult who tells me when I do a good job.	.80				.79
32	Outside of my home or school there is an adult who believes that I will be a success.	.80				.81
33	Outside of my home or school there is an adult who always wants me to do my best.	.82				.80
Factor E6: Meaningful Participation: In the Community						
56	I am part of clubs, sports teams or other extra activities away from school.		.79			.75
57	Outside of my home and school, I take lessons in music, art, sports or a hobby.		.81			.74
58	Outside of my home and school, I help other people.		(.48)			.56
Factor E7: Caring Relationships / High Expectations: Peers						
1	I have a friend about my own age who really cares about me.			.82		.81
2	I have a friend about my own age who talks with me about my problems.			.85		.85
4	I have a friend about my own age who helps me when I'm having a hard time.			.83		.84
Factor E8: High Expectations: Pro-social Peers						
20	My friends get into a lot of trouble.				.80	.71
22	My friends try to do what is right.				.64	.67
24	My friends do well in school.				.64	.65

Factor I1: Cooperation and Communication / Self-efficacy						
45	I can work with someone who has different opinions than mine.	.68				.61
47	I enjoy working together with other students my age.	(.48)				.47
48	I stand up for myself without putting others down.	.53				.55
43	I can work out my problems.	.66				.61
44	I can do most things if I try.	.75				.70
46	There are many things that I do well.	.68				.66
Factor I2: Empathy						
13	I feel bad when someone gets their feelings hurt.		.72			.62
15	I try to understand what other people go through.		.75			.72
49	I try to understand what other people feel and think.		.70			.71
Factor I3: Problem Solving						
17	When I need help I find someone to talk with.			.75		.80
18	I know where to go for help with a problem.			(.45)		.68
19	I try to work out problems by talking about them.			.63		.78
Factor I4: Self-awareness						
53	There is a purpose to my life.				(.47)	.57
54	I understand my moods and feelings.				.79	.79
55	I understand why I do what I do.				.78	.78
Factor I5: Goals and Aspirations						
63	I plan to graduate from high school.				.61	.58

64	I plan to go to college or some other school after high school.													.77	.71
65	I have goals and plans for the future.													.79	.71
Eigenvalues		4.80	4.73	3.68	3.09	2.56	2.45	2.27	2.24	2.09	2.02	1.96	1.95	1.65	
% of variance		9.42	9.27	7.21	6.06	5.02	4.81	4.45	4.40	4.11	3.95	3.84	3.82	3.23	

All factor loadings greater than .50 are shown

Factor E1: Caring Relationships / High Expectations: In the School

Factor E2: Meaningful Participation: In the School

Factor E3: Caring Relationships / Meaningful Participation: In the Home

Factor E4: High Expectations: In the Home

Factor E5: Caring Relationships / High Expectations: In the Community

Factor E6: Meaningful Participation: In the Community

Factor E7: High Expectations: Peers

Factor E8: High Expectations: Pro-social Peers

Factor I1: Cooperation and Communication / Self-efficacy

Factor I2: Empathy

Factor I3: Problem Solving

Factor I4: Self-awareness

Factor I5: Goals and Aspirations

Reliability Analyses for Healthy Kids Resilience Assessment
Fall, 1999 Data (n = 26,093)

Table 5. Coefficient Alpha Summary

Scale	Gr 7 (n=9,797)	Gr 9 (n=8,665)	Gr 11 (n=7,631)
E1a. Caring Relationships: Adults in School	.83	.84	.85
E1b. High Expectations: Adults in School	.86	.86	.87
E2. Meaningful Participation: In the School	.77	.77	.78
E3a. Caring Relationships: In the Home	.77	.77	.78
E3b. Meaningful Participation: In the Home	.76	.75	.75
E4. High Expectations: In the Home	.77	.73	.74
E5a. Caring Relationships: In the Community	.85	.85	.86
E5b. High Expectations: In the Community	.90	.90	.91
E6. Meaningful Participation: In the Community	.72	.73	.72
E7. Caring Relationships: Peers	.83	.88	.89
E8. High Expectations: Pro-social Peers	.58	.63	.64
I1a. Cooperation and Communication	.77	.74	.73
I1b. Self-efficacy	.81	.79	.80
I2. Empathy	.77	.77	.78
I3. Problem Solving	.82	.82	.83
I4. Self-awareness	.81	.79	.78
I5. Goals and Aspirations	.75	.73	.71

Reliability Analyses for Healthy Kids Resilience Assessment
Spring 2000 Data (n = 18,920)

Table 6. Coefficient Alpha Summary

Scale	Gr 7 (n=6,829)	Gr 9 (n=6,016)	Gr 11 (n=4,842)	Alt Sch (n=1,257)
E1a. Caring Relationships: Adults in School	.84	.86	.86	.83
E1b. High Expectations: Adults in School	.87	.88	.87	.86
E2: Meaningful Participation: In the School	.77	.79	.79	.76
E3a. Caring Relationships: In the Home	.77	.78	.79	.79
E3b. Meaningful Participation: In the Home	.75	.77	.77	.70
E4. High Expectations: In the Home	.75	.79	.73	.75
E5a. Caring Relationships: In the Community	.84	.85	.86	.85
E5b. High Expectations: In the Community	.90	.91	.92	.90
E6. Meaningful Participation: In the Community	.73	.75	.72	.73
E7. Caring Relationships: Peers	.85	.89	.90	.90
E8. High Expectations: Pro-social Peers	.59	.59	.62	.45
I1a. Cooperation and Communication	.76	.76	.74	.70
I1b. Self-efficacy	.81	.83	.80	.81
I2. Empathy	.78	.80	.77	.79
I3. Problem Solving	.80	.84	.84	.78
I4. Self-awareness	.81	.82	.80	.79
I5. Goals and Aspirations	.76	.81	.76	.76

Factor Analysis Tables for Elementary Level Healthy Kids Resilience Assessment Fall, 2000 Data (n = 13,315)

Table 7. Factor Analysis Summary for Varimax Rotated Six Factor Reduced Item Set Solution

	Factor Loading						
Item	1	2	3	4	5	6	Communality
Factor RE1: School Connections							
A11	.73						.57
A13	.66						.56
A12	.60						.42
A14	.67						.60
Factor RE3: Home Connections							
A15			.65				.48
A16			.72				.59
A17			.65				.46
Factor RE4: Pro-Social Group Participation							
A9				.62			.46
A10				.55			.52
A19				.62			.53
A20				.66			.59
Factor RE6: Pro-Social Peers							
A35						.83	.73
A36		.57				(.42)	.56
Factor RE2: Empathy							
A37		.78					.66
A38		.81					.68
Factor RE5: Goals and Aspirations							
A56					..80		.66
A57					.76		.62
Eigenvalues	2.04	1.77	1.71	1.65	1.31	1.20	
% of variance	12.02	10.38	10.05	9.71	7.73	7.16	

All factor loadings greater than .50 are shown

Reliability Analyses for Elementary Level Healthy Kids Resilience Assessment
Fall, 2000 Data (n = 9,949)

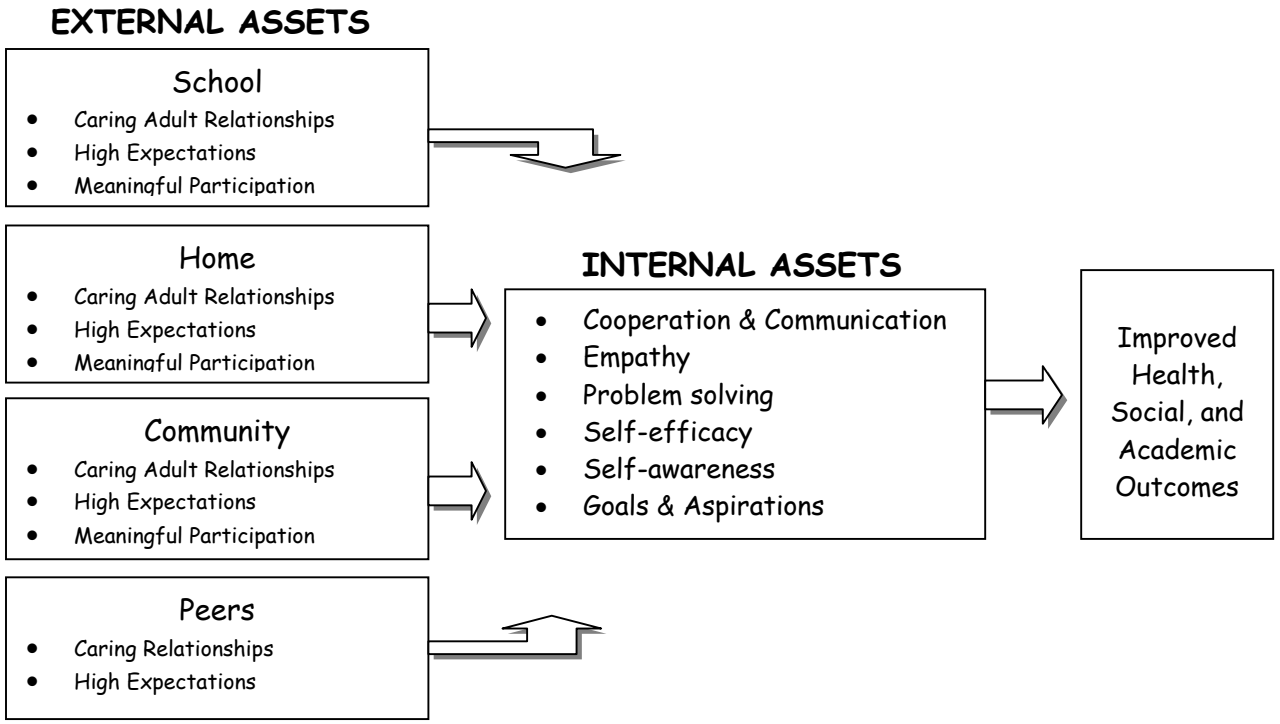
Table 8. Coefficient Alpha Summary for Scales as Administered

scale	items	alpha
ES1. Caring Relationships: Adults in School	11,13	.56
ES2. High Expectations: Adults in School	12,14	.48
ES3. Meaningful Participation: In the School	9,10	.41
ES4. Caring Relationships: In the Home	15,18	.41
ES5. High Expectations: In the Home	16,17	.44
ES6. Meaningful Participation: In the Home	19,20	.51
ES7. High Expectations: Pro-social Peers	35,36	.41
ES8. Empathy	37,38	.65
ES9. Problem Solving	39,40	.47
ES10. Goals and Aspirations	55,56,57	.29

Table 9. Coefficient Alpha Summary for Recommended Reduced Set of Scales

scale	items	alpha
RES1. School Supports	11,12,13,14	.67
RES2. Home Supports	15,16,17	.52
RES3. Meaningful Participation	9,10,19,20	.55
RES4. High Expectations: Pro-social Peers	35,36	.41
RES5. Empathy	37,38	.65
RES6. Goals and Aspirations	56,57	.43

Theoretical Model for the Healthy Kids Resilience Module (v3.0)



from: Constantine, N.A. and Benard, B. (2001). California Healthy Kids Survey Resilience Assessment Module: Technical Report. Berkeley, CA: Public Health Institute.