Measuring Protective Factors and Resilience Traits in Youth: The Healthy Kids Resilience Assessment

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Resilience Assessment Research Panel (1997-1998)

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The *Healthy Kids Resilience Assessment* is an optional module of the *California Healthy Kids Survey*. This module is intended to serve as a tool for local and state educational agencies and researchers to use in assessing and understanding a variety of external and internal resilience factors associated with positive youth development. It will enable the collection of local and statewide youth resilience data for use in needs assessment, program planning, program evaluation, and research. Ultimately this module should help advance the field's understanding of the network of relationships between protective factors, resilience traits, health promoting behaviors, and other positive developmental outcomes.

Background

In the search to understand and ameliorate problems such as adolescent alcohol, tobacco, and other drug abuse, violence, school failure, and depression, researchers traditionally have focused their study on individuals who are already experiencing these problems. Their concern has been with identifying the correlates, commonly referred to as risk factors, that these individuals present. While understanding the risk factors that often lead to problems can provide critical information in prevention and early intervention program planning (especially in getting services to populations in greatest need), risk-focused prevention and early intervention is problematic for several reasons.

First, the application of risk factor focused prevention often leads to the identification, labeling, and stigmatizing of youth, their families, and their communities. Even though risk is a statistical concept applicable to the study of groups, it frequently has been applied to individuals, families, and communities who, consequently, are labeled according to their perceived deficit. This is in spite of the fact that longitudinal research on high-risk populations, now referred to as resilience research, has found that at least 50% and usually closer to 70% of individuals in this category defy the odds and achieve competence, confidence, and caring in adulthood (Werner and Smith, 1992). Second, a focus on young peoples' risks or deficits often obscures teacher's, parent's, and other helper's vision in seeing these assets or strengths that all young people have. This directly contradicts resilience research findings regarding the fundamental protective power of having someone in a young person's life who can see their gifts and use them as a motivational force (Benard, 1991). Third, a focus on risks and deficits leaves parents, teachers, and other helpers feeling helpless and hopeless. These attitudes can lead to burn-out, and when communicated to young people, to a vicious self-fulfilling prophecy. Last, the identification of risk factors for involvement in problem behaviors does not inform adult helpers as to what does work, and what they can do, to prevent these problems. It is to resilience research, to the study of how young people with multiple risk factors have successfully developed despite risk that the prevention and education fields must turn to find answers.

A growing body of research on how youth are negotiating environmental risks and challenges provides evidence of the resilience factors, both external and internal, that influence positive

youth development and protect adolescents from engagement in health risk behaviors (e.g., Benard, 1991, 1995; Glantz & Johnson, 1999; Masten & Coatsworth, 1998; Resnick, et al., 1997; Scales & Leffert, 1999; Tolan, et al., 1995; Werner & Smith, 1992). Some studies have further demonstrated that resilience factors, also referred to as protective factors or developmental assets, can predict change in adolescents' health-related behaviors over time (e.g., Jessor, et al., 1995). Given that longitudinal studies of at-risk populations typically find one-third of the subjects succumbing to the conditions under examination and two-thirds not doing so, several researchers have concluded that resilience factors have far more predictive power than risk factors and should provide the research base for planning preventive interventions (Garmezy, 1982; Werner and Smith, 1992).

While classic resilience research focused on the development of competence, confidence, and caring in the face of risk and adversity (Werner & Smith, 1992), resilience research is growing and expanding in new arenas beyond this traditional psychopathology perspective. Researchers in youth development, family social science, school effectiveness, brain science, community development, social work, medicine, and many other disciplines, are now making significant contributions. Moving beyond the trait theories of resilience, an emergent research direction is the examination of the construct of resilience as a *dynamic developmental process* (Werner & Smith, 1992).

The precise nature of the network of relationships between risk and resilience factors, and the conditions under which resilience is best fostered and risk most effectively moderated, are topics of ongoing research investigation. At the same time, the resilience approach is embraced by a growing number of practitioners who find it not just more hopeful, but at the same time validating of their intuitive practitioner knowledge. In fact, many youth development and health risk behavior prevention programs already employ a resilience-based approach. Currently, this positive approach goes by several different names, including *developmental assets, youth development,* and *resilience.* These are all variations on the developmental theme of meeting youth's needs for love and belonging, respect, identity, power, and meaning. These approaches all share the belief that it is adult society's responsibility to provide the developmental supports and opportunities (protective factors, also known as external assets) that meet these needs and in turn promote positive developmental outcomes in youth (resilience traits, also known as internal assets), ultimately resulting in improved health, social, and academic outcomes (see Figure 1.) These resilience-based programs, together with the increasingly prevalent research and evaluation in this area, have created a demand for a comprehensive assessment of resilience factors – one that is theoretically anchored, developmentally and culturally appropriate, psychometrically reliable, and construct valid.

The California Healthy Kids Survey (CHKS), developed and administered by WestEd and Duerr Evaluation Resources under contract to the California Department of Education, Healthy Kids Program Office, is a full service survey support system available to all 1,050 California school districts and county offices of education (CHKS, 1999). The CHKS is available in elementary, middle, and high school versions. It is built around a core assessment module of items covering a variety of health-related behaviors, together with risk factors, attitudes, beliefs, perceived peer norms, and demographics. Optional supplemental modules are available

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(at the middle and high school levels) in the areas of *tobacco use prevention, safe and drug free schools, sexual behavior and pregnancy,* and *physical health and nutrition*.

In early 1998, the CHKS convened a *Resilience Assessment Research Panel* to help develop and validate a new supplemental module on youth resilience. The charge of the research panel was to select, or develop if necessary, a comprehensive research-based assessment of external and internal resilience factors, or assets. The assessment would need to have a sound theoretical foundation, and to demonstrate reliability, validity, and cultural and developmental appropriateness when employed in California school settings. Based on this charge, the research panel developed the following criteria for the ideal instrument:

1. Contain as few items as possible;
2. Build upon on a strong and explicit research-based theoretical framework;
3. Provide a comprehensive and balanced coverage of external and internal assets;
4. Demonstrate cultural and developmental appropriateness;
5. Demonstrate high sub-scale level reliability as measured by internal consistency within sub-scales;
6. Demonstrate high sub-scale level reliability as measured by stability of responses over time; and
7. Demonstrate sub-scale level construct validity as measured by associations among sub-scales and associations between sub-scales and background characteristics and risk behaviors that are congruent with the literature.

Review of Existing Instruments

Six existing survey instruments that attempt 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* (Search Institute, 1996). These instruments differ in several key aspects – conceptual view of resilience, strength and explicitness of theoretical foundation, relative focuses on risk factors versus protective factors, and relative focus on internal assets versus external assets. All are in preliminary stages of assembling evidence of reliability, validity, and cultural and developmental appropriateness. A brief review of each of these three instruments is presented below, followed by an evaluative summary of key technical characteristics in Table 1.

Search Institute Profiles of Student Life Attitudes and Behaviors Assessment

Leffert and colleagues (1999) provide psychometric data on the *Search Institute Profiles of Student Life Attitudes and Behaviors Assessment.* This instrument averages 2.3 items per subscale (asset), and a median coefficient alpha of .52 [1](see Table 1.) The literature review is comprehensive and well structured. There are several problems, however, in the psychometric analyses and interpretation that caused the research panel to conclude that this instrument would not meet our needs.

Reliability. Thirteen of the 40 Search Institute assets (one-third of them) are measured by just one item each, and no reliability estimates are reported for these single-item measures. The one-item asset measures are *caring neighborhood, service to others, neighborhood boundaries, creative activities, religious community, time at home, homework, bonding to school, reading for pleasure, honesty, peaceful conflict resolution, sense of purpose,* and *positive view of the future.* Several of these are behavioral self-reports, e.g., homework and reading for pleasure, which might yield acceptable reliability based on a one-item measure. But most are psychological constructs, and as such are unlikely to have adequate reliability when measured with a single item.. In total, 19 of the 40 assets have reported coefficient alphas of .60 or above. No stability (test-retest) estimates were provided.

Validity. The authors begin the validity section by stating that their validity evidence is primarily of the face validity type. But face validity, which deals with appearances only, is of little help in establishing the psychometric merit or construct utility of an assessment. The reported exploratory factor analysis results fail to offer any validity support –instead contradicting the specific asset categories employed by revealing a tendency toward content area factors (i.e., school, home, etc.) The construct validity evidence reported applies exclusively to the *total score* representing the entire set of 40 asset items as a whole. The well documented relationship between the total *number of assets* and protection from a multitude of risk behaviors does not address the validity of any of the *individual assets* or *asset categories* employed. Finally, a series of stepwise regressions of all individual assets against various specific risk behaviors yielded some scattered positive relationships. But given this exploratory and atheoretical approach, and the additional qualification that ordinally-scored versions of the assets were employed rather then the dichotomously-scored versions used in the Search Institute community reports, these regression analyses carry little weight in supporting the construct validity of the individual assets.

Communities That Care Youth Survey

The eight protective factors subscales of the *Communities That Care Youth Survey* (CTCYS) average 3.3 items per subscale with a median alpha of .75 (n=10,607; Pollard, et al., 1996, see Table 1.) No test-retest reliability analyses have been reported. These protective factors scales have demonstrated respectable internal consistency (coefficient alphas) on a large national

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[1] In calculating the median coefficient alpha, the 13 single-item asset measures for which alphas were not obtainable were ranked at the bottom of the distribution.

sample. Nevertheless, the research panel deemed the CTCYS unacceptable because it is primarily a risk behavior assessment with insufficient coverage of resilience factors. For example, of the 114 items in the final survey instrument, 87 measure risk factors and only 27 measure protective factors. This gap is particularly wide in the Community Domain (23 risk, 3 protective) and Peer-Individual Domain (35 risk, 9 protective). Furthermore, the research panel found the CTCYS' conceptualization of protective factors (*rewards and opportunities in the family, community, and school domains; and attachment only in the family domain*) more limited than their understanding of the resilience literature. Especially lacking, also, are the more difficult to measure internal resilience traits (only two of the eight protective factors measured are internal resilience traits).

Individual Protective Factors Index

The ten protective factors subscales on EMT Associate's *Individual Protective Factors Index* (IPFI) average 6.1 items per subscale, with a median coefficient alpha of .58 (n=2,416; Springer & Philips,1995, see Table 1.)[2] No test-retest reliability analyses have been reported. The IPFI's *social bonding: family* subscale contains both internal (e.g., *I like to do things with my family*) and external (e.g., *My family expects too much of me)* items. The *social bonding: school* and *social bonding: pro-social norms* subscales contain all internal items (e.g., *I try hard to do well in school*, and *I like to see other people happy*). All ten IPFI subscales were classified by the research panel as internal. The IPFI was not selected by the research panel due to its exclusive focus on internal assets to the exclusion of any external assets, and also due to its low coefficient alphas in a large national sample.

After carefully reviewing these three nationally available instruments, the research panel reluctantly concluded that none of them met our criteria for the ideal instrument. We therefore agreed to make the investment of starting from scratch to systematically develop a new assessment according to our seven criteria for an ideal instrument as listed above.

Theoretical Framework for the Healthy Kids Resilience Assessment

Building on Benard's (1991, 1995) integration of the research literature on resilience and healthy human systems, together with the work of Jessor and colleagues (1995), Coie and colleagues (1993), and the National Longitudinal Study of Adolescent Health (Resnick, et al., 1997), the research panel developed a theoretical framework that articulates a comprehensive, multi-dimensional representation of resilience factors and their interrelationships (see Figure 1). The framework consists of six clusters of assets, three external and three internal. Within these clusters are 19 of the assets most consistently referenced in the research literature as being associated with positive outcomes and health risk protection for adolescents.

The three **protective factors** (external assets) clusters of *caring relationships*, *high expectations*, and *meaningful participation* each include a set of home-, school-, and community-based assets. Additional assets involving peers are included in the caring

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[2] Another IPFI reliability analysis (Springer, et al.,1995) was not considered due to its small sample size of 59.

relationships and high expectations clusters. The research literature has consistently identified the power of these three clusters of external protective factors to promote positive outcomes across all settings and environments. Resilience theory posits that the explanatory and predictive power of these three clusters resides in their ability to meet basic human developmental needs for safety, connection, belonging, identity, respect, mastery, power, and, ultimately, meaning (Benard, 1991; Werner & Smith, 1992).

The three **resilience traits** (internal assets) clusters are *social competence, autonomy and sense of self,* and *sense of meaning and purpose*. The internal clusters are each composed of two or three specific traits as detailed in Figures 1 and 2. Each of the external protective factors clusters are hypothesized to influence the process of adolescent psychosocial development as manifested by internal resilience traits. In other words, the internal resilience traits are viewed as outcomes – not causes – of the developmental process of meeting basic human needs as outlined above. Resilience theory provides that resilience is an inner force, "a self-righting tendency" (Werner and Smith, 1992, p. 202) driving this developmental process. Primary hypothesized relationships between external and internal assets are indicated in Figure 1 by bold lines, while other important hypothesized relationships are indicated by broken lines.

Methods

The research panel met six times between April and September, 1998. The group conducted a comprehensive review of the literature on protective, resilience, and risk factors in youth development and prevention programming, developed the theoretical framework described above, and critically examined several available instruments that employ a protective factors or developmental assets focus. Items were written to operationalize each component of the theoretical framework, with careful attention to developmental and cultural appropriateness. An expanded workgroup, including school-based practitioners, contributed to item development by participating in an intensive item-writing workshop.

An item pool of 128 potential items was selected by the group from approximately 250 items generated. A series of pilot tests were then conducted with middle and high school students in Oakland and Chico, California. Concurrent with the pilot tests, content reviews by researchers, classroom teachers, and other school practitioners were undertaken. The pilot tests and content reviews assessed content validity, practicality, understandability, developmental appropriateness, and cultural appropriateness of the items, instructions, and instrument format. These reviews informed a process of selecting and modifying items from the pool and revising the format and instructions. The Phase 1 field-test version of the instrument contained 92 unique resilience items and was intended for classroom group administration (several additional items were included to provide for inter-item consistency and other types of reliability checks.)

During winter 1998-99, three school districts completed participation in the Phase 1 field test and provided useable high-school level data. These included two high SES and one low SES districts. Item selection was based primarily on the frequency distributions and scale coefficient alphas from the first sample (n=235), with the second (n=549) and third (n=294)

samples, as well as the total combined sample (n=1078) providing cross validation[3].
Systematic reliability enhancement procedures to identify and remove the most likely suspect
responses (in terms of carelessness, dishonesty, and/or exaggeration) were applied to the data
prior to commencement of substantive analyses (for description see Wrona, et al., 1992;
Constantine, et al. 1999).

Results

Based on these Phase I field test results, the number of resilience items was reduced from
92 to 60, with most subscales retaining 3 items. All items of one subscale (meaningful
participation in the community) were eliminated due to poor reliability and new items were
written to be assessed in the next phase of the field test. Coefficient alphas for the remaining
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Table 1. Comparison of HKRA to Three Nationally Available Instruments

	Search Institute Profiles of Student Life	Communities That Care Youth Survey	Individual Protective Factors Index	Healthy Kids Resilience Assessment
Total number of asset items	92	26	61	60
Number of asset subscales (external/internal)	40 (20/20)	8 (6/2)	10 (0/10)	19 (11/8)
Average number of items per subscale	2.3	3.3	6.1	3.2
Number of one-item subscales	13	0	0	0
Median subscale coefficient alpha	.52 (n=99,462)	.75 (n=10,607)	.58 (n=2,416) .71 (n= 59)	.74 (n=235; hi SES) .69 (n=549; lo SES) .77 (n=294; hi SES) .72 (n=1078; total)
Median subscale test-retest	none provided	none provided	none provided	planned for next phase of field test

subscales ranged from .55 to .88, with a median of .72. These encouraging results are
considered preliminary, to be recalculated during the second phase of the field test with a
larger and more diverse sample and with item and response option modifications based on this
first phase of the field test incorporated.

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[3] Some further item selections and adjustments were made based on the data from the second and third samples, therefore
these were not, strictly speaking, sufficient cross-validation. Additional cross validation and recalculation of reliability
statistics will occur during the next phase of the field test.

The response options provided on the instrument for this first phase of the field test were: *true, sort of true, not very true,* and *not true at all*. Because we found a strong tendency towards positive responses across the three samples for most items (the main exception being school-related external assets), we modified these response options in two ways to achieve greater variance in future administrations. First, we reversed the order so that the negative option would come first. In addition, we changed the response wording to accommodate wider distinctions of perceived positive states: *not at all true, a little true, pretty much true,* and *very much true.* These new response items have been incorporated into the current version of the instrument (Version 2.1) and will be tested in the second phase of the field test.

Because of the fundamental importance of a positive focus to resilience theory, resilience items by their nature are phrased in the positive. This creates a potential response-set problem, however, where some respondents might fall into the habit of automatically responding in the same way to all or most items without appropriate thought. A standard technique in survey research to reduce or eliminate response set problems is to rephrase some of the items in the negative, and then to reverse score these items. For example, *"There is an adult in my home who cares about me"* becomes *"There are no adults in my home who care about me,"* and the scoring is reversed accordingly.

We included 14 reversed negative items in the original field test version, but found that these items performed poorly as subscale components relative to the original positively worded items. As a result, all but one of the negative items were removed from scale and subscale scoring in the revised version. We did retain five negatively worded items as response-set breakers (they are now collectively referred to as the experimental *angst scale*). We also retained three reliability check self-report items (*I answered the questions on this survey honestly*, *I answered the questions on this survey carefully, I understood the questions on this survey.)* The total number of items on the field test Version 2.0 of the instrument is therefore 68 (60 resilience items, five response-set breakers, and three self-report reliability check items.)

Conclusions

Development of the *Resilience Assessment* was designed to yield an instrument that would meet the demanding criteria specified by our research panel, while simultaneously avoiding all of the problems of the existing instruments. As shown in Table 1, our results to date suggest that we have succeeded: employing a reasonable number of items (60) based on an explicit research-based theoretical foundation with a comprehensive and balanced coverage of both external (11) and internal (8) assets, developmental and cultural appropriateness assured through extensive focus group pilot testing, good internal consistency within sub-scales demonstrated in a diverse initial field test sample (median coefficient alpha = .72), and plans to collect and analyze test-retest and construct validity data in the next phase of the field test.

The *Healthy Kids Resilience Assessment* will provide a means for collecting needs assessment, program planning, and program evaluation data to local and state education agencies and to youth development researchers. The planned research will provide exploratory and

confirmatory information about scale construction, reliability, validity, and protective factors theory. It will demonstrate how a widely administered statewide in-school survey can have both practical and theoretical applications in understanding and addressing developmental assets and risky behaviors. Ultimately this module should help advance the field's understanding of the network of relationships between external and internal protective factors, health risk behaviors, and other aspects of adolescent development. Equally important, this tool will provide school administrators and other school staff with a much needed, useful, and usable tool for strengths-based assessment and for planning education and prevention interventions that are grounded in the internal and external assets of children and youth.

Next Steps

1. Validity analyses. Preliminary construct validity analyses are now getting underway with the initial three samples. The next step will be a second phase field test and cross-validation of the reduced 60 item instrument with new diverse and larger samples of students across California. These will be conducted in combination with the core module of the California Healthy Kids Survey, allowing for more comprehensive construct validity analyses, and for subgroup analyses with different populations of students.

2. Test-retest reliability analyses. We will be conducting one week interval test-retest administrations to allow us to calculate stability-based reliability estimates.

3. Spanish translation. We will undertake a construct-based translation of the resilience assessment into Spanish, following the guidelines provided by Van der Vijver and Hambleton (1996) and Brislin (1986). Part of this task will involve the assessment of the equivalence of these constructs across cultures.

4. Elementary version. An elementary school level version of the California Healthy Kids Survey is now entering the initial field test phase. This version is intended for use in grades four through six, and unlike the middle and high school version consists of a single module only. It contains 32 health-related behavior, attitude, and perceived-norms items, and 44 resilience items adapted from the full middle/high school version, yielding the same 19 external and internal assets subscale scores, based on an average of 2 rather than 3 items each.

Figure 1. **Healthy Kids Resilience Assessment Theoretical Framework**

External Asset Clusters   **Internal Asset Clusters**

E-1. Caring Relationships

- Adults in home
- Adults in school
- Adults in community
- Peers

I-1. Social Competence

- Cooperation and communication skills
- Empathy and respect
- Problem solving skills

E-2. High Expectations

- Within the home
- Within school
- Within neighborhood and community
- Within peer network

I-2. Autonomy and Sense of Self

- Personal conviction
- Self-efficacy
- Self awareness

E-3. Meaningful Participation

- In the home
- In school
- In the community

I-3. Sense of Meaning and Purpose

- Optimism
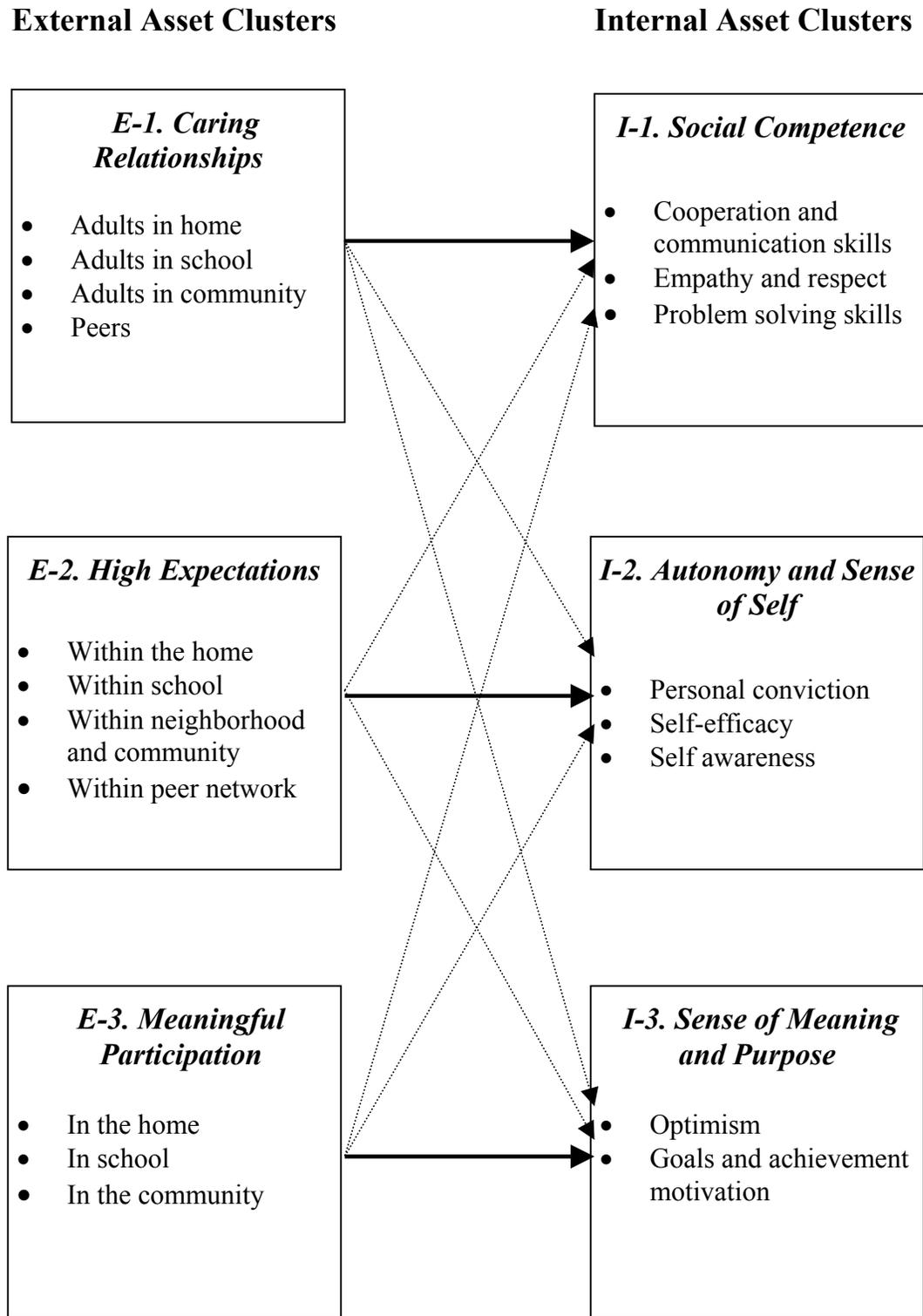- Goals and achievement motivation

Figure 2. Assets Measured by the Healthy Kids Resilience Assessment

Protective Factors: Supports and Opportunities (11 external assets)

Asset Clusters (median alpha = .80)	Specific External Assets (median alpha = .76)
1. Caring Relationships (.80) Supportive connections to others in the student's life who model and support healthy development and well-being.	*Caring relationships with …* • *adults in the home (.75)* • *adults in the school (.75)* • *adults in community (.82)* • *peers (.80)*
2. High Expectations (.86) The consistent communication of direct and indirect messages that the student can and will succeed responsibly.	*High expectations from …* • *adults in the home (.69)* • *adults in the school (.79)* • *adults in the community (.88)* • *peers (.77)*
3. Meaningful Participation (.80) The involvement of the student in relevant, engaging, and responsible activities with opportunities for responsibility and contribution.	**Meaningful participation and contribution in …** • *the home (.70)* • *the school (.67)* • *the community (new subscale)*

Resilience Traits: Positive Developmental Outcomes (8 internal assets)

Asset Clusters (median alpha = .84)	Specific Internal Assets (median alpha = .70)
4. Social Competence (.88) Ability to communicate effectively and appropriately, and to demonstrate caring, flexibility, and responsiveness in social situations.	• *Cooperation and communication skills (.65)* : Flexibility in relationships and the ability to work effectively with others, and the ability to effectively exchange information and ideas and express feelings and needs to others. • *Empathy (.73):* Understanding and caring about another's experiences and feelings. • *Problem solving skills (.72):* Ability to plan, to be resourceful, to think critically and reflectively, and to creatively examine multiple perspectives before making a decision or taking action.
5. Autonomy and Sense of Self (.84) Sense of personal identity and power.	• *Personal conviction (.75):* A strong sense of what is right and wrong and standing up for those beliefs. • *Self-efficacy (.70):* Belief in one's own competence. • *Self awareness (.55):* Knowing and understanding one's self.
6. Sense of Meaning and Purpose (.82) Belief and understanding that one's life has coherence and makes a difference.	• *Optimism (.65):* A belief in the positive potential for one's self and the future. • *Goals and aspirations (.71):* Using specific dreams, visions and plans to focus the future. High expectations for one's self.

Note: Coefficient alphas are based on high-school level field test data from three California school districts, two high SES and one low SES, combined n=1,078.

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