Assessing the 'Multiple Processes' of Adolescent Health: Youth Development Approaches

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I. Introduction

This is the second of three papers in which the authors review and assess a wide range of adolescent health indicators that are collected locally, nationally, and internationally. To achieve the assessment's goals, these three papers review measures and indicators that are currently in use; identify their strengths, limitations and gaps; assess their scientific validity and utility; and recommend guidelines for building a comprehensive, yet concise, set of indicators that effectively presents the complex picture of adolescent health. It is implicit in this approach that adolescent health includes not only physical health, but also the "multiple processes that affect the overall well-being of young people and their capacity to function effectively in everyday life" (Resnick, 2000, p. 158). In other words, adolescent health is the sum of what "the *child does actively* with the support and nourishment of the social world" (Deci, 1995, p. 80).

This paper reviews and assesses surveys and measures that capture the 'multiple processes' that adolescents experience and that influence their individual skills and behaviors. These include measures of social, emotional, cognitive, behavioral, and moral functioning; personal and peer attitudes, beliefs, and skills; family and community resources and risks; and positive and problem behaviors (Catalano, Berglund, Ryan, Lonczak, and Hawkins, 1998). As shown in Figure 1, three types of surveys were reviewed:

(1) Those used for youth assessment and community organization;
(2) Two used to monitor adolescent health; and
(3) Two used for research.

Figure 1. Surveys reviewed in this paper

- *Profiles of Student Life: Attitudes and Behavior Survey* (PSL-AB, Search Institute, 1999).
- *Communities That Care Youth Survey* (CTC, Developmental Research Associates, Inc., 1993).
- *Community Change for Youth Development Survey* (CCYD, Connell, Gambone, and Smith, 1999).
- Youth Risk Behavior Survey (YRBS, Centers for Disease Control, 1991).
- *California Healthy Kids Survey: Resiliency Module* (CHKS/HKRM, California Department of Education, 1998).
- Family and Youth Survey (FAYS, Barber, 1994).
- *The National Longitudinal Study of Adolescent Health (Add Health, Udry, 1997).*

The authors situate the discussion of adolescent health indicators within the context of adolescent socialization theory and youth development practice. They present a three-part model, with structural, process, and outcome components, that links contexts and supports and opportunities with health outcomes. They review domains and measures in the seven surveys with the goal of achieving a synthesis with the capacity to enhance adolescent health, assessment, youth development programs, and program evaluation.

Approaches to Youth Development

From Problem Monitoring to Youth Development

Public health practitioners, planners, and policy makers use contextual details to bring important stories about adolescent health and welfare to life that would otherwise remain hidden in the epidemiological data (Oliva, et al. 2001). These stories can reflect current adolescent health issues as well as long term health outcomes. For example, the report, entitled ***Health and Health Behavior Among Young People:*** *Health Behavior in School-aged Children: a WHO Cross-National Study* (HBSC), provides insights about current complexities of adolescent health, access to care, and life opportunities in 24 participating countries by analyzing adolescent health behaviors within the context of respondents' economic and social realities. In contrast, the Harvard University Freshman Cohort Study of 1953 demonstrates the importance of contextual factors, such as closeness to a parent, on adult health status. Among members of this cohort, a

sense of closeness and connection with at least one parent was linked to a reduced incidence of colon cancer, myocardial infarctions, ulcers, strokes, and other debilitating illnesses 40 years later (Blum, 1999). These two examples illustrate how contextual indicators in adolescent health monitoring systems can offer essential data to help policy makers and health professionals target appropriate health and youth development services for teens. Despite the importance of contextual factors, however, those responsible for developing policies, programs, and research related to adolescent health too often ignore them.

Additionally, despite increased contextual data in recent adolescent health reports (Oliva et al., 2001), many of these reports continue to emphasize negative behaviors, while de-emphasizing or overlooking adolescents' positive behaviors and social contributions. Emphasizing negative behaviors fosters public policies that stress "fixing" youth with either punitive measures or prevention programs. Labeling individuals as 'high-risk' based on population-level data similarly stigmatizes youth and ignores longitudinal research findings that show that from 50 to 70% of youth become productive and caring adults despite difficult home and community circumstances (Werner and Smith, 1992). Problem-oriented programs have not reduced social morbidities, such as alcohol and substance abuse, teenage pregnancy, and violence, in part because they fail to engage the motivations and capacities of young people (Blum, 1999; Connell et al., 1999; Pittman, 2000) or to address complex personal and social antecedents of problem behaviors (Kirby, 2001).

There are several historical reasons for the emphasis on problems. Child development theories focused on pathologies because of practitioners' work with severely troubled youth. Freudian and other psychotherapeutic approaches also had a negative bias that permeated public discourse for a number of years (Steinberg, 2000; Hill and Holmbeck, 1986). In the aftermath of the sixties and the Vietnam War, politically ascendant libertarian and conservative voices called for reduced public investments. At the same time, families and communities began to change dramatically, leaving youth with much less supervision, lower levels of adult support and resources, and diminished expectations for the future. Political strategy also played a part—in the competition for attention and limited funds, the most dramatic and worrisome problems are most likely to get the largest share. An unfortunate result was that the public began to see teenagers as a frightening, marginalized group that was not worthy of investment. More recently, advocates and health care professionals have begun to recognize the negative

repercussions of the "problem" approach not only on policy makers, but also on families, schools, and the youth themselves. As professionals and advocates have worked to turn the tide of opinion, the public is beginning to see that youth are not simply problems to be managed; they are intrinsically valuable and have the potential to contribute to their communities. Furthermore, by virtue of their membership in the community, adolescents deserve adequate support for their social, spiritual, moral, cognitive, behavioral, and emotional development (Pittman, 2000; Connell et al., 1999).

The "problem monitoring" approach also ignores the reality that growth is gradual and cumulative (Catalano et al., 1998), that failures and missteps are to be expected (Moore, 1995), and that families and communities have important responsibilities to establish effective monitoring and regulation systems (Barber, 1997b; Connell et al., 1999). Since adolescent individuation and growth also includes risk seeking, failures and missteps can become occasions for learning when families and schools support youth through the maturation process (Schulenberg, Maggs, and Hurrelmann, 1997). Teens who find ways to test themselves in new situations learn to define their strengths, solidify their values, and identify their limits. Hence, practitioners and advocates who have moved beyond problem monitoring to youth development encourage communities to create situations in which teens encounter risks and challenges that promote age-appropriate, pro-social experiences and values (Pittman, 2000; Connell et al., 1999). Challenging situations foster the development of autonomy when they are neither too risky nor too over-controlling (Deci, 1995), and possess "stage-environment fit" (Eccles, Midgley, Wigfield, Buchanan, Reuman, Flanagan, and MacIver, 1993).

Focusing on adolescents' strengths and potential contributions not only rewards socially productive youth (Hawkins, Catalano and Associates, 1992), it may also increase community support for programs and opportunities that promote pro-social behavior (Pittman, 2000). This approach has come to be known as "positive youth development" or the "youth development model" (Catalano et al., 1998). It encompasses trusting relationships, emotional support from outside of the family, opportunities to develop autonomy and to achieve, and a sense of hope and of being lovable support growth and maturation (Grotberg, 1995). Consistent and reasonable monitoring and regulation in family, school, peer, and community settings helps to reinforce and internalize pro-social behaviors that foster youth development (Barber, 1996). Cumulative support invokes the "power of redundancy" (Benson, Leffert, Scales, and Blyth, 1998; Jessor and

Jessor, 1997) and provides "enhanced effects" (Blum, Beurhing, Shew, Bearing, Sieving, and Resnick, 2000) for individual protective factors. Benson (1990) and Catalano, et al. (1998) have found strong positive relationships between cumulative protective factors and socially desirable behaviors and between cumulative risk factors and anti-social behaviors.

In addition to referring to an almost limitless range of interventions for youth, youth development also refers to the individual qualities it promotes, including resiliency (Werner and Smith, 1992; Grotberg, 1995; Benard, 1996) and protective factors (Catalano et al., 1998). Youth development asserts that whether or not youth are involved in problem behaviors, they will respond to positive, caring support and commitment from adults. Support from caring adults forms the core of youth development (Scales and Leffert, 1999; Zeldin, 1995). Although multiple meanings for youth development create some confusion both inside and outside the field, the majority of professionals and advocates have united in support of youth development. Their approach has evolved from being problem focused to development focused, a convergence that should make it less difficult to translate youth development ideals into policy, programs, and research, so long as advocates can capture the attention of the public.

Adolescent Development, Positive Youth Development, and Resiliency

Families and communities are responsible for fostering the multiple processes of development so that youth can successfully negotiate adolescence (Pittman, 2000; Connell et al., 1999). Through involvement in youth development processes, whether at home, in the community, or both, teens need to experience social, emotional, physical, moral, cognitive and spiritual development opportunities in order to satisfy basic developmental needs. Basic needs include safety, love, belonging, respect, identity, autonomy, challenge, mastery, and meaning/belief (Benard, 1996; Barber, 1999; Barber, 2001). The challenge here is to identify milestones for inclusion in an adolescent health monitoring system. This section reviews connections between child and adolescent development, resiliency, and youth development.

Families may first satisfy these basic needs beginning in infancy (Deci, 1995). While a child's genetics and temperament influence his or her approach to the world (Grotberg, 1995), the quality of the interaction between parent and child can either foster or undermine the child's in-born strengths (Deci, 1995). Nevertheless, parents who support a child's intrinsic need for self-determination begin to build the foundation for autonomy that is so strongly associated with

well-being in older children and adults (Deci, 1995; Grotberg, 1995). These early experiences set the stage for children to continue their development outside the family in peer groups, schools, and community settings. If youth have sufficient opportunities to meet their needs, and if parental monitoring and supervision strategies foster both safety and autonomy, then self-monitoring skills can be expected to follow (Deci, 1995; Barber, 1996). Youth who lack parental support, but who are lucky enough to establish a strong positive relationship with another adult, develop the resiliency that helps them to thrive despite challenging circumstances (Constantine et al. 1999; Grotberg, 1995; Davis 1999; Rubin, 1996).

Resiliency, grounded in genetic and constitutional capacities, is a constellation of strengths that protects individuals against environmental assaults. Bolstered by support from an adult who loves them, sets consistent limits, is a positive role model, and provides guidance, children have the external supports they need to develop resilience. Internal or personal strengths include feeling lovable, respectful of self and others, and a sense of responsibility and optimism. The third dimension of resilience, according to Grotberg (1995), is social and interpersonal. A resilient person can talk with others about frightening and troubling thoughts and events; find ways to solve problems; exert self-control; decide whether to talk or take action, based on the circumstances; and obtain help when it is needed. Hence, external supports from parents, family and community, internal and personal strengths, and social and interpersonal skills build resilience, a "universal capacity which allows a person, group or community to prevent, minimize or overcome the damaging effects of adversity" (Grotberg, 1995, p. 3). Resiliency encompasses the characteristics of a mentally healthy person (Benard, 1996).

Investigators from various research traditions have come to similar conclusions about resiliency—certain individuals possess the ability to thrive despite adverse events, traumatic situations, and/or risk factors (Davis, 1999). Consistently across studies, more than half of individuals thrive despite experiencing conditions of great disadvantage and severe adversity (Davis, 1999; Masten, Best, and Garmezy, 1990). Given an adequately facilitating environment and other protective factors, youth have the capacity for positive change and can develop resiliency (Rockwell, 1998).

> Resilience is a capacity for healthy development innate to *all* people. Resilience is more specifically defined as an inborn developmental wisdom that naturally

> motivates individuals to meet their human needs for love, belonging, respect, identity, power, mastery, challenge, and meaning (Benard, 2000, p. 2).

Supports that foster resiliency include caring relationships, high expectations, opportunities for contribution and participation (Benard, 1996; Davis, 1999; Jessor and Jessor, 1977; Deci, 1995; Barber, 1999), and consistent, fair monitoring of behavior (Barber, 1999; Connell et al., 1999). Youth who felt connected to their parents (feeling close to, cared about, and loved by a parent) were less likely to participate in every risk behavior that was studied (Benson et. al., 1998; Catalano, 1998). Autonomy, mastery, and connection are the building blocks for adult success (Deci, 1995). Studies in the fields of human development and psychology (Steinberg, 2000), prevention (Constantine et al. 1999), family studies (Barber, 1997), community development (Temkin and Rohe, 1997), school effectiveness (Eccles et al., 1993), and public health and medicine (Blum et al., 2000; Turner, Irwin, Tschann, and Millstein, 1993) have confirmed the importance of one or more of these five fundamental youth development domains: connection, autonomy, opportunity, monitoring, and belief. Nevertheless, the exact mechanisms of resiliency, relationships between factors, and conditions which foster resilience continue to be topics of ongoing research (Constantine et al., 1999).

Although causal processes have yet to be established, expert consensus and empirical results indicate that the same specific supports and opportunities foster both resilience and pro-social behaviors. Search Institute was one of the first groups that attempted to translate the rather unwieldy field of resiliency literature into an assessment of risk and protective factors for individuals within communities. The Search Institute grouped 40 Developmental Assets gleaned from the literature review into measurable risk and protective factors within communities, families, and individuals (Scales and Leffert, 1999). These indicators, called positive assets, are characteristics of communities and youth that facilitate positive youth development. In turn, they grouped the assets into four internal (personal) and four external (family and community) assets. Internal assets are competencies, skills, and self-perceptions that develop gradually in young people and include commitment to learning, positive values, social competencies, and positive identity. External assets arise from daily exposure to caring adults and peers that are reinforced by community institutions and include support, empowerment, boundaries and expectations, and constructive use of time. Search Institute reported strong positive relationships in more than

500,000 youth surveys (the PSL-AB) between the number of individual assets (internal and external assets, personal strengths and community supports) and positive outcomes (Benson et al., 1998).

Researchers using The National Longitudinal Study of Adolescent Health (Resnick et al., 1997) validated these findings in their survey of more than 11,000 youth in grades 7-12. Youth who felt "connected" (who experienced caring relationships, high expectation messages, and opportunities to participate and contribute) to either their parents or school were less likely to engage in a range of problem behaviors. In contrast, "problems with school work" consistently predicted anti-social outcomes, such as substance use and gun violence, for both genders and three ethnic groups (white, African-American, and Hispanic) (Blum et al., 2000). The strong relationship between problems at school and anti-social behaviors makes "school failure … a public health issue" (Blum et al., 2000).

Barber and colleagues surveyed groups of between 600 and 7000 14 and 17 year old youth in 10 countries. Across diverse communities, including the United States, Bosnia, Palestine, Bangladesh, and South Africa, the five youth health domains of connection, opportunity, monitoring, psychological autonomy, and belief were positively correlated with academic success and social initiative and negatively associated with depressive affect/suicidal ideation and anti-social behaviors (Barber, 1999; Barber, personal communication). Similarly, Catalano, et al. (1998) found that the greater the number of protective factors and the smaller the number of risk factors, the more promising were the immediate and long term health prospects for participants in 25 rigorously evaluated youth development interventions.

While these results are promising, much remains to be done to understand the complex underlying processes that produce resilience and positive adolescent health outcomes. Therefore, it is important to delineate the *process* of developing resiliency using longitudinal and experimental designs (Davis, 1999). While ethical issues may arise in providing supports to some children and not others to establish causality, experimental designs remain the only strategy for identifying essential elements of the youth development model (Catalano et al., 1998). In a world of limited resources, such research can help to identify strategies for improving outcomes and to establish leverage points for efficiently targeting youth development

interventions. It may be difficult to identify the strongest environmental and individual factors, but it is vital to examine their interactions.

Social Capital and Positive Youth Development

Social capital is associated with family composition (two parents, fewer siblings), consistent connections with the same social institutions (fewer school transfers, more regular attendance at religious services), and higher maternal expectations for child's school performance (Coleman, 1990). Social capital originates in networks and associations that are built on trust, respect, responsibility, and frequent face to face contact (Coleman, 1990). Adolescents, particularly those whose families do not speak the language of the public culture where they live, may need advocates to help them access the larger community's resources (Phelan, Yu, and Davidson 1994; Hao Ca Yu, 2000). Coleman (1990) found that parents who were more actively involved in social networks provided more support and opportunities for their children, as a result of their social capital. The supports and opportunities, in turn, accounted for differences in health outcomes among some populations.

Comer's School Development Program has successfully enhanced social capital in schools located in neighborhoods with high levels of community disorganization and housing instability (Comer, Haynes, Joyner, and Ben-Avie, 1996). Comer and his team worked with local residents to build on existing social capital to help youth increase attachment to school, and to help families work with school staff to increase opportunities for positive youth involvement. As a result of the community efforts, anti-social behaviors, including academic failure, alienation, rebelliousness, and youths' association with drug using peers, diminished. Community members began to recognize and reward positive behaviors, activities and accomplishments, and all stakeholders gained opportunities to learn new skills and develop positive relationships (Hawkins et al., 1992). Comer's program suggests that health promoting behaviors increase and dangerous risk behaviors decline when communities enhance their social capital.

Three well-evaluated youth development programs, based on social capital theory, successfully reduced a range of problems for teenage and young adult participants. Each of the programs engaged youth in more than one setting (e.g., at school and in the home) and included several kinds of individual and group activities to increase linkages with a wide range of

community resources. Two programs involved young children and their parents, and the third, middle and high school youth, in community-based settings. These multi-faceted programs substantially improved participants' health in both the short and long term. Similar results are rare for programs that address just one dimension or operate in only one setting (Catalano, 1998; Kirby, 2001).

In 1962, the High/Scope Perry Preschool Project implemented a longitudinal study with random assignment to evaluate an enriched two-year preschool program for three year old children with below average intelligence from extremely resource poor neighborhoods (Schweinhart, Barnes, and Weikert, 1995). While the educational intervention was the primary focus of the evaluation, trained teachers visited each participant's home each week to work with mothers on communication skills, discipline strategies, and educational support. The mothers also attended bi-weekly, professionally facilitated group meetings. These activities enhanced the mothers' social capital, their knowledge of child development, and their understanding of how to help their children succeed in school. The 25 year follow-up of the 123 participants and controls located 95% of the original cohort in 1987 (the 40 year follow-up is now underway). Participants were less likely than controls to have been assigned to special education programs (15% vs. 34%) and more likely to have graduated from high school (71% vs. 54%). Participants were also more likely to have avoided non-marital pregnancy (57% vs. 83%), encounters with police (7% vs. 35% having 5 or more arrests). They were also more likely to have higher earnings at age 27 (29% vs. 7% earning $2,000 or more per month). Although the Perry Preschool program engaged youth and families earlier and more intensively than many youth development advocates envision, it is one of several rigorously evaluated preschool and early elementary programs that have been shown to contribute to improved health and life outcomes for youth from economically and socially stressed neighborhoods (Parks, 2000). It is intriguing to wonder how much more participants would have gained if they had participated in positive youth development programs in elementary and secondary school to offset the well-documented fading effects of intensive preschool programs.

Communities That Care (CTC) intervened with teachers, parents, and children in primary school and at home (Hawkins et al., 1999). Researchers examined the long-term effects of an intervention that combined teacher training, parent education, and social competence training for elementary school students living in high-crime areas on adolescent health risk behaviors at age

18. The evaluators used a nonrandomized control trial with a six-year follow-up. Students who received the full intervention that began in kindergarten reported fewer numbers of negative behaviors including violent delinquent acts, heavy drinking, sexual intercourse, multiple sex partners, and pregnancy or causing pregnancy by age 18. Students in the full intervention group also reported greater commitment and attachment to school, better academic achievement, and less school misbehavior than controls. CTC was more effective when begun in elementary school (the full program) than in middle school.

Under the auspices of the Children's Aid Society, Michael Carrera implemented a multi-faceted intervention for teenagers living in low-income communities in five New York City neighborhoods and in five other communities across the country. The program draws on both social capital and youth development principles. Its 'wrap-around program' supports school efforts by building connections between youth and families, providing access to health care, offering tutoring, helping youth learn about scholarships and college requirements, and helping them find and keep jobs. Youth who stayed with the program received help in gaining admission to college and obtaining scholarships. A strong evaluation using random assignment found conclusive results in favor of the program. Participants were more likely to use health care facilities annually, to remain pregnancy free, and to demonstrate a commitment to a more healthful life style than their peers who participated in traditional neighborhood programs (Philliber, submitted). They were more likely to obtain and held jobs, and to develop the habit of saving regularly for the future. Teenagers who had the support of the wrap-around program were more likely to develop the resilience, protective factors, contacts and networks they needed to emerge from their very challenging environments as productive and caring adults.

Parent-child relationships and positive youth development

Research confirms the commonsense truism: the *quality* of parent child relationships makes a difference. Emotionally warm, consistent, firm, and involved parents with an authoritative parenting style are more likely to raise teens who are emotionally healthy, socially adept, and academically successful (Steinberg, 2000). In contrast, authoritarian, permissive, and neglectful styles are associated with depressive feelings and anti-social behaviors. Authoritative (as opposed to authoritarian) parents are more likely to avoid psychologically harmful and passive-aggressive discipline styles (Steinberg, 2000). Communities with many teens from

homes where authoritative parenting is the norm are more likely to have a pro-social peer culture in which teens thrive. Dornbusch, Ritter, Leiderman, Roberts, and Fraleigh, 1987) found that African-American and Asian-American families were less likely to use authoritative parenting styles, and that their children's academic success appeared to be less closely linked to parenting style. They suggested that peer influences are particularly strong among African-American youth, and that those influences which denigrate the value of academic success outweigh the influence of parents (Steinberg, 2000). Alternatively, others suggest that early attachment to peers may have more to do with disaffection and discomfort at home than to attachment to specific peer group values. The drive to build connections and support is strong, and youth who do not obtain it at home, for whatever reason, are likely to look elsewhere for support. These diverse findings caution us to avoid simple generalizations about parenting style.

Steinberg and Dornbusch's authoritative parenting index appears to mask differences in the mechanisms by which parents influence their children's behavior (Barber, 1996). When Barber entered the two components of the authoritative parenting index separately into his child socialization model, he found that the two components were related to important differences in children's outcomes. The differences appeared to depend on whether parents set limits for their children by monitoring *thoughts and feelings* (psychological monitoring) or by monitoring their *behavior*. Barber demonstrated that children whose parents use psychological monitoring have low autonomy and are much more likely to engage in risk behaviors, experience depression, and earn poor grades. In contrast, when parents monitor their children's behavior, youth report greater autonomy, earn better grades, and are more likely to initiate positive social relationships. Barber has replicated this study in 10 cultures around the world among students in secondary and post secondary schools, and the results appear consistent (1999). Steinberg's colleagues have found similar results in many countries and cultures (2000).

In a recent paper, the Dornbusch group provided further evidence for the protective effects of monitoring *behaviors* (Herman, Dornbusch, Herron, and Hertig, 1997). They disaggregated their authoritative parenting index and tested the two indices using their longitudinal data sets using multivariate analysis. In contrast to earlier work with this data set, they found no significant differences related to gender or ethnic group. Connection, regulation, and psychological autonomy strongly predicted positive outcomes—school grades and educational expectations. However, relationships were more complex for the two sets of

negative outcomes—psychological/somatic symptoms and delinquent acts/substance abuse. Psychological autonomy strongly protected against psychological and somatic symptoms, with lesser, but still significant, support from regulation, while regulation protected against delinquent acts and substance use, with some support from psychological autonomy. Connection was not a significant protector against either set of negative outcomes, when included in the regression with regulation and psychological autonomy. This result was counter to what would be expected, based on correlational analysis. Comparable results for both genders and four ethnicities also ran counter to earlier work with this data set, which showed ethnic-related differences in outcomes for parenting style. The differential results for the three socialization dimensions suggest that aggregating the dimensions into one index masks the influence of the components. Connection, monitoring/regulation, and psychological autonomy clearly contribute to healthful adolescence, but the relationships depend on the selected outcomes. While some of these dimensions may be linked to ethnicity or socio-economic status, the dimensions themselves, not ethnicity or socio-economic status, influence healthful adolescence (Blum, 2000).

Barber's full model includes the domains of connection, monitoring, opportunity, psychological autonomy/control, and belief, measured in four settings: family, peers, community, and school. Hence, there is much overlap with youth development approaches. Members of the WHO Working Group on Adolescent Health Indicators have used similar measures and models in more than 20 countries with consistent results. A meta-analysis is being conducted to examine these findings more rigorously (Barber, 2001, personal communication). The importance of this finding to adolescent health in many communities suggests that adolescent health indicator systems and youth development surveys should incorporate the dimension of psychological autonomy.

The role of community organizations in supporting youth development

While families are the primary source of support for younger adolescents, other adults with whom youth interact in schools and communities play an essential part in helping adolescents maximize their potential (Pittman, 2000). "It is society's job to make it possible for youth to do what they need to do when adults are no longer there to prompt them" (Deci, 1995, p. 92). Adults provide opportunities for youth to experience challenges, through which they

develop competence and autonomy, thereby experiencing vitality, motivation, and well-being (Deci, 1995). Organizations promote youth development most effectively when strategies are synchronous with the outcomes they seek to promote (Connell et al., 1999). Youth can do more and learn more than they thought possible when they have age-appropriate opportunities to make choices, take responsibility, connect with caring adults, and experience challenges. While it is not easy for adults to involve youth fully in intrinsically interesting tasks, they can learn how to engage youth in these ways rather than simply relying on external rewards to motivate behavior (Deci, 1995).

Organizations that work exclusively with teens, as well as churches, schools, and community-based groups, enhance adolescents' positive development and social capital by following practices that support autonomy. Organizations also mobilize communities on behalf of adolescents. In essence, organizations provide support where it has been weak or missing and augment families' social capital networks (Connell et al., 1999). Organizations provide opportunities for youth to stretch themselves with age-appropriate risks, challenges, and leadership opportunities.

Interactive, enjoyable, practical learning (including structured introductions to the world of work) and service learning help to expand youths' skills, engagement and horizons (Grotberg, 1995; Deci, 1995; Schulenberg et al., 1997; Connell et al., 1999; Philliber et al., submitted). As they participate in community organizations, young people engage in pro-social activities, experience higher levels of monitoring, and potentially, make stronger personal connections with positive adults. All of these experiences help them learn to value themselves, to regulate themselves, and to believe in their own capacities for success. This not only indirectly reduces problem behaviors but also increases the capacity to be loving and competent adolescents and adults. By engaging in community development activities such as neighborhood clean-up campaigns and home renovation for the elderly, youth develop not only their own skills and capacities, but also enhance their communities. Through experiences such as these, youth learn to recognize connections between themselves and adults and gain public recognition for positive contributions and pro-social behaviors (Hawkins et al., 1992; Connell et al., 1999). "The strategy is to fix through development…not fix first, then develop" (Pittman and Irby, 1996).

All youths have potential and can be expected to achieve five developmental milestones, or outputs, by participating in youth development activities (Pittman, Irby, and Ferber, 2000). These include *confidence*, *competence* (academic, vocational, physical, emotional, civic, social, and cultural), *connectedness*, *character*, and *contribution* (Pittman et al., ibid.). The authors list seven inputs that adolescents need from their communities: safe and stable places; basic care and services; healthy relationships with peers and adults; high expectations and standards; role models; resources and networks; challenging experiences and opportunities to participate; and high quality instruction and training. If adolescents receive these supports and opportunities, they are more likely to achieve their potential. If youth engage in community development activities while building character, connection, and contribution, youth and communities are linked through community youth development. Commitment to development motivates growth and change across three dimensions: problem prevention (problem free); preparation (fully prepared); and participation (fully engaged). Based on the central theme that "problem free is not fully prepared," Pittman and Irby (1996) address additional opportunities for growth that youth experience through relationships, challenges, and opportunities to contribute. Here, too, the approach matters. Pittman and her colleagues emphasize the importance of engaging youth in social settings and meaningful opportunities. Persuasive research on the relationships between autonomy and intrinsic motivation suggests that developmental experiences themselves are not enough. The experiences are far more beneficial when adults incorporate strategies to support and develop autonomy, intrinsic motivation, and resiliency (Deci, 1995; Grotberg, 1995; Barber, 1996; Herman et al., 1997; Deci, Koestner, and Ryan, 1999; Benard, 2000).

Connell and Gambone (1999) extend the focus on assets to the larger community, as the venue for youth development. Community Change for Youth Development (CCYD) seeks to maximize community potential to support adolescent growth and development through policy, business involvement, family support, and school/institutional reform (Sipe, Ma, and Gambone, 1998). Leverage points offer opportunities for effective action. These include "gap times" when youth are neither in school nor at home, transitions from middle to high school and from high school to work, and opportunities for individual involvement and leadership in community affairs. Work is a central CCYD activity that provides opportunities to learn on the job, to help others, to experience feelings of competence, and to experience support from parents, co-workers, teachers, and supervisors. Given the centrality of work to the lives of urban teens,

communities need to ensure that youth have access to good jobs and opportunities to discuss their work experiences with caring adults. Communities are responsible for ensuring that youth have these experiences, as well as safe and stable housing and environments. CCYD stresses the importance of caring adult and peer relationships, supports, opportunities, high expectations, meaningful participation, and monitoring. CCYD's approach, with its emphasis on work, is more attuned to the needs of older adolescents. An equivalent emphasis on maximizing the learning potential from community service could make the approach useful for younger teens.

In summary, advocates agree that communities need to broaden goals and strategies beyond the provision of services to fostering supports and opportunities for youth development. Social and community organizations can provide multiple opportunities to support youth development. Teens need to experience risks and challenges in order to achieve a firm sense of their own capacities and boundaries. Connected, supported, challenged, and monitored, youth can develop resilience, autonomy, and competence as they mature. Their experiences, whether positive or negative, create ripple effects in the larger community, as well. Healthy youth development translates into more healthy adolescents and fewer resources needed for remediation and punishment (Hogan and Murphy, 2000). The goals of community development and youth development are intertwined in community youth development.

The Search Institute and Forum for Youth Investment (FYI) have long advocated on behalf of community mobilization for youth development. Search Institute's lengthy list of 40 assets may distract communities from identifying specific leverage points from which to begin supporting youth development. FYI's goal is to present both the "forest and the trees" of youth development, in order to motivate and to inspire (Pittman, 2001). The more complex conceptualization that links youth and community development is intellectually appealing and potentially addresses multiple social needs simultaneously. However, it may appear somewhat daunting to policy makers who are more accustomed to thinking categorically, incrementally, and cautiously. Messages that are more closely focused on a few key domains that are linked to a limited set of measurable indicators might better serve the common goal of expanding community and public support for positive youth development.

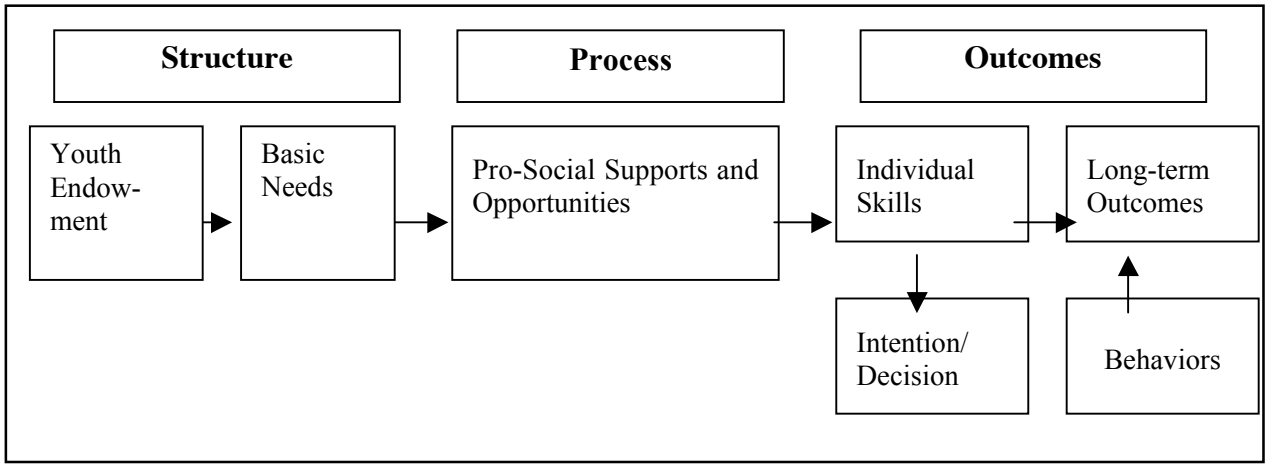
II. Youth Development: Domains and Constructs

Leading youth development advocates agree on one overriding goal: the importance of convincing local communities and national leaders to provide the opportunities and supports that all adolescents need to develop broad skills and competencies. Support for youth development is accelerating in the United States, but small differences in semantics and emphasis continue to confuse those in and outside the field. The semantic distinctions make it more difficult for health professionals and program managers to select a survey or intervention (Whitlock and Hamilton, 2001). These differences may also undermine political support because youth development appears to be a cornucopia of interventions with no clear focus. Enough empirical evidence now exists, however, to begin to create a foundation for consensus on a common set of scientifically valid youth development indicators (Catalano et al., 1998).

Synthesis: A Youth Development Framework

An effective adolescent health monitoring system needs to include three levels of indicators—structural, process, and outcome—in order to document the health continuum (Halfon, Newacheck, Hughes, and Brindis, 1998). The proposed youth development framework, shown in Figure 2.1, includes seven components that fit within the three levels. The structural level of the youth health framework includes two sets of indicators, Youth Endowment and Basic Needs. The process level measures Pro-social Supports/Opportunities. The outcome level includes four sets of outcome indicators that represent increasingly complex levels of attainment: Individual Skills, Intention/Decision, Behaviors, and Long-term Outcomes.

Figure 2.1. Youth Development Framework



Every adolescent is influenced by a constellation of family and community strengths, challenges, and resources, including personal temperament and genetics; together these constitute what economists term, the individual's *endowment*. As human beings, all also have *basic needs*. Every youth experiences varying degrees of *support and opportunities* or external assets, from which, s/he develops *individual skills* or internal assets. Based on endowments, supports and opportunities, and skills, youths develop intentions and make *decisions*. Their decisions unfold in *behaviors*, either risky or protective in nature, that influence *outcomes*, the extent to which youth are productive, connected, functional and transition successfully into young adults. The proposed youth development framework helps to focus the discussion of surveys and potential indicators.

The Structural Level: Youth Endowment and Basic Needs

The structural level in the proposed framework encompasses community/family characteristics and basic needs. Community context is composed of social, economic, and health resources, as well as community supports for families and youth. Indicators for many contextual factors (community employment rates, access to health facilities, transportation, population composition, etc.) appear in regional and national reports (Oliva et al., 2001). Some contextual factors, such as neighborhood recreation resources and transportation, are not yet systematically assessed across regions in ways that make them available for large-scale analysis. Family context includes genetics, ethnicity/culture, income, legal status, family composition, the child's personality, and gender. Measures of family context are more difficult to collect, and in many cases can only be collected through individual interviews and surveys of adults in the children's lives, or through reviews of medical records.

The youth development approaches (summarized in Figure 2.2) treat basic needs in somewhat different ways. Some include components of support and opportunities that communities provide, such as stable housing, safe streets, love, belonging, or mastery. While it is true that communities and families can meet these basic needs, the Youth Development Framework includes them at the structural level, in recognition of the fact that they are pre-existing, or structural, elements of the human condition.

Figure 2.2 Youth Development Constructs: Supports and Opportunities

Positive Youth Development in the United States (Catalano et al. 1998)	**Community Youth Development** (FYI) **Pittman, et al. 2000** The Forum for Youth Investment	**Profiles of Student Life: Attitudes & Behaviors** (PSL-AB) Search Institute	**Communities That Care (CTC) Hawkins & Catalano** **Developmental Research Assoc.,** U WA	**Community Change for Youth Development** (CCYD) **Connell, Gambone, and Smith** Public/Private Ventures	**California Healthy Kids Survey: Resiliency Module** (HKRM) CA Dept of Education	**Family and Youth Survey (FAYS)** **Barber** University of Tennessee	**National Longitudinal Study of Adolescent Health** (Add Health) **Udry, et al.** UNC-Chapel Hill	**Youth Development Framework** UCSF Indicators Project
Structural Components								
	Safe places, health, quality schools			Physical safety				
Positive Youth Development Constructs	Societal Inputs	External Assets	Protective factors	Minimum acceptable supports & opportu-nities for all children	External assets: home, school, peers, community			Supports/ Opportunities
Bonding	Healthy relation-ships with adults and peers; Supportive community	Support	Caring adult relationships	Connections with adults/peers	Caring adults in home, school, community	Connections	Support	Caring Adult Relationships
	High expectations and standards		High expectations home, school, community, peers	High, clear, fair expectations		Expectations & monitoring	Expectations	High expectations
Prosocial involvement	Challenging experiences; participates, contributes	Empowerment	Opportunities for involvement	Meaningful involvmnt, membership, Challenge, engaged activities, learning experiences	Meaningful participation in a pro-social group	Opportunities		Meaningful participation
Autonomy					Autonomy	Autonomy		Autonomy
Recognizes positive behavior		Boundaries & expectations	Monitor, recognize positive behaviors	Sense of boundaries		Regulation	Boundaries and expectations	Monitoring
	Role models, resources, networks	Constructive use of time		Attention to gap activities: time			Constructive use of time	
Spirituality			Belief in moral order, religiosity	Connection-- something larger than self	Belief system	Belief system	Religious believ	Belief system
Individual Skills								
PYD Constructs	5 C's	Internal Assets		Developmental outcomes	Internal Assets			Individual skills
Social competence		Social competence	Communic, social skill	Social relationships	Cooperate, communic.	Social competence	Social relations	Cooperate, communic
Emotional competence	Connectedness				Empathy	Emotional competence		Empathy
Moral competence	Character							
Cognitive competence	Competence		Discipline thru problem-solving	Copes positively with vicissitudes	Problem solving			Problem solving
Behavioral competence								
Self-determination	Confidence			Effective	Self-efficacy			Self-efficacy
Self-efficacy	Contribution			Cares for selves/others				
Clear, positive identity		Positive identity			Self-awareness		Identity	Self-awareness
Belief in the future					Goals & aspirations		Schooling	Goals & aspirations
Monitoring			Self-control	Avoids harm		Self-monitoring		Self-control
Prosocial norms		Positive values; Commit to learning	School success					

The Process Level: Supports and Opportunities

A limited number of theoretically sound process level domains, assessed with a concise set of scientifically valid indicators, could suffice for monitoring adolescent health and evaluating programs. Furthermore, a common set of indicators would help to clarify and highlight youth development messages and would make it easier for policy makers to support effective programs and for practitioners to identify and implement them. Practitioners, whose time with youth is limited, would welcome manageable, well-validated measures of positive behaviors and strengths (Constantine, 1998). The Youth Development Framework provides a conceptual structure to meet these requirements of science, policy, and practice. The process domain (Pro-social Supports /Opportunities) includes five constructs in four settings: evidence of caring relationships that provide connection; opportunities for meaningful participation; monitoring (regulation); characteristics of parental monitoring behaviors; and system of belief (religiosity). All of the approaches recognize the primary importance of close connections between supportive adults and positive youth outcomes. Although terminology differs slightly, (e.g., bonding, caring adult relationships, and healthy relationships with adults), close relationships in each of the four settings is included in each approach.

Similarly, each includes monitoring and regulation. At the least, parental monitoring may keep youth from participating in potentially harmful activities. Given the demonstrated importance of parenting to youth behaviors and outcomes, adolescent health indicators should also include measures of youths' perceptions of parents' approach to monitoring.

Supports and Opportunities include measures of productive involvement at home and in school, such as time spent in extra-curricular volunteer activities or work. Pittman explicitly includes role models, resources, and networks as sources of support. Search, CCYD, and Add Health measure use of time. Connell and Gambone collect detailed time-use diaries from program participants, in order to assess how youth in targeted neighborhoods use "gap times," when youth are neither in school, nor at home under their parents' supervision.

The fifth component of Opportunities and Supports is belief/spirituality, a domain which may be politically sensitive, as well as more difficult to define and to measure. Only four of the approaches include spirituality or religiosity. This domain is often conceptualized as attendance at religious services, and often with a single question about weekly attendance at religious

services. This question may better represent community connection or parental monitoring than spirituality for adolescents whose parents may insist they attend services. Attendance at weekly services also fails to capture pervasive differences in religious and spiritual systems and practices; for example, the Native American adaptation of Search's 40 assets includes three statements that reflect a pervasive, community-focused spirituality. (I integrate spiritual and religious traditions into my life. I use internalized family values and beliefs to choose my activities. I believe my life has a purpose. Guajardo-Lucero, 1999, p. 49.) Barber's survey includes four questions about individual religious practices, including reading texts, discussing religious subjects with friends, praying, and performing religious service (e.g., missionary work). These questions may more effectively measure individual commitment to a personal system of belief.

Outcome Level: Individual Skills

While Halfon, et al. (1998) envisioned a single level for health outcomes, the complexity of adolescent development suggests that outcomes will inevitably need to be more fully delineated. In the Youth Development Framework, four sets of indicators reflect the sequential, developmental, and nested nature of behavioral outcomes: Individual Skills (internal assets, Constantine, Benard, and Diaz, 1999); Intention/Decision; Behaviors; and Outcomes. Individual Skills include the range of traits that result from adequate levels of Pro-social Supports and Opportunities at home, in school in the community, and with peers. Sometimes called internal assets, these attributes also characterize resiliency.

Of the youth development approaches discussed here, competency is a common theme, but the definitions and types of competencies vary. Six include social competency, four include emotional competency (empathy), and one references character (Pittman, 2000). Four include a construct that represents cognitive competency, problem solving skills, and the capacity to cope positively with change. Self-determination and self-efficacy include confidence and effectiveness in multiple settings, including family, neighborhood, work, church, and school. Belief in the future is a central construct in two of the approaches, represented as schooling and goals/aspirations. Self-regulation appears in three approaches, as self-control, avoiding harmful activities, and self-monitoring. Pro-social norms include commitment to learning, positive values and school success. Resiliency is represented by the composite of internal assets on the

HKRM, but otherwise, is not listed as one of the principle individual skills in the remaining eight approaches, despite the fact that youth development and resiliency are often treated as synonymous.

As has been shown, participation in programs designed to promote pro-social supports and opportunities enhances the entire range of individual skills that characterize youth development. For example, of interventions in Catalano's review of 25 well evaluated programs, at least 20 addressed self-efficacy, pro-social norms, and social, emotional, moral, cognitive, and behavioral competencies. Eleven emphasized clear positive identity and resiliency (Catalano et al., 1998) (Figure 2.3). There was much less agreement, however, on how to measure these constructs. With the exception of substance abuse (measured by 12 of the 25 programs), no outcome was measured by more than eight programs, and no program measured more than 11 outcomes (Figure 2.4). Perhaps the range and selectivity of outcomes reflects the categorical nature of many funding sources, but it does make it difficult to understand and empirically test a holistic picture of youth development.

Figure 2.3

Positive Youth Development Constructs
(Catalano, et al.,1998)

	Promotes Bonding	Fosters Resilience	Promotes Social Competence	Promotes Emotional Competence	Promotes Cognitive Competence	Promotes Behavioral Competence	Promotes Moral Competence	Fosters Self-Determination	Fosters Spirituality	Fosters Self-Efficacy	Fosters Clear and Positive Identity	Fosters Belief in the Future	Provides Recognition for Positive Behavior	Provides Opportunities for Prosocial Involvement	Fosters Prosocial Norms	**TOTALS**
Schinke, Botvin, Trimble, Orlandi, Gilchrist & Locklear (1998)	X		X	X	X	X	X			X	X		X	X	X	**11**
Tierney, Grossman & Resch (1995)	X	X	X	X	X	X				X	X				X	**9**
Walter, Vaughan & Wynder (1989)			X	X	X	X				X	X		X		X	**8**
Connell & Turner (1985) / Connell, Turner & Mason (1985) / Smith, Redican & Olson (1992)			X	X	X	X				X	X		X	X	X	**9**
Pedro-Carroll & Cowen (1985)	X	X	X	X	X	X				X			X	X	X	**10**
Botvin, Baker, Dusenbury, Tortu & Botvin (1990)	X		X	X	X	X									X	**6**
Greenberg (1996) / Greenberg & Kusche (1997)	X	X	X	X	X	X	X			X			X			**9**
Ellickson, Bell & Harrison (1993) / Ellickson, Bell & McGuigan (1990) / Ellickson & Bell (1990)			X		X	X				X					X	**5**
Battistich, Schaps, Watson & Solomon (1996)	X	X	X	X	X	X	X	X		X	X		X	X	X	**13**
Greenberg (1998) / Conduct Problems Prevention Research Group (CPPRG) (1997)	X	X	X	X	X	X							X	X	X	**9**
Eron, Guerra, Henry, Huesmann, Tolan & Van Acker (1997)	X	X	X	X	X	X	X			X				X	X	**10**
Kirby, Barth, Leland & Fetro (1991)			X	X	X	X		X		X				X	X	**8**
Hawkins, Catalano, Kosterman, Abbott & Hill (1998 - under review)	X		X	X	X	X							X	X	X	**8**
Weissberg & Caplan (1998)	X	X	X	X	X	X				X			X		X	**9**
Slavin, Madden, Dolan & Wasik (1996)	X		X		X	X							X	X		**6**
Allan, Philliber, Herrling & Kuperminc (1996)	X		X	X	X	X	X	X		X	X	X		X	X	**12**
LoSciuto, Rajala, Townsend & Taylor (1996)	X	X	X	X	X	X				X	X		X	X	X	**11**
Andrews, Soberman & Dishion (1995)	X		X		X	X				X			X	X	X	**8**
Pentz, Dwyer et al. (1989) / Pentz, Dwyer, Johnson, Flay, Hansen, MacKinnon, Chow, Rohrbach & Montgomery (1994)			X	X		X				X			X		X	**6**
Perry, Williams, Veblen-Mortenson, Toomey, Komro, Anstine, McGovern, Finnegan, Forster, Wagenaar & Wolfson (1996)	X		X	X	X	X				X				X	X	**8**
Farrel & Meyer (1998, 1997)	X		X	X	X	X	X			X			X	X	X	**10**
Cardenas, Montecel, Supik & Harris (1992)	X		X	X	X	X					X		X	X	X	**9**
LoSciuto, Freeman, Altman & Lanphear (1997)	X	X	X	X	X	X				X	X		X	X	X	**11**
Johnson, Strader, Berbaum, Bryant, Bucholtz, Collins & Noe (1996)	X	X	X	X	X	X	X	X	X	X	X		X	X		**13**
Hahn, Leavitt & Aaron (1994)	X	X	X	X	X	X		X		X	X	X	X	X	X	**13**
TOTALS	**20**	**11**	**25**	**22**	**24**	**25**	**7**	**5**	**1**	**20**	**11**	**2**	**18**	**18**	**22**	

Figure 2.4

Measured Outcomes of Youth Development Interventions (Catalano, et. al., 1998)

	Self-Control	Assertiveness	Achievement	Healthy Coping	Self-Efficacy	Self-Esteem	Personal	Parental Trust/Communication	Support/Acceptance: Peer	Support/Acceptance: Social	Competence: Cognitive [Problem-	Competence: Conflict Resolution	Competence: Social [Social	Competence: Emotional	Competence: Classroom/School	Knowledge/Attitude: School	Knowledge:	Knowledge/Attitude/Behavior:	Knowledge/Attitude: Substance	Knowledge/Attitude: The Future	Knowledge/Attitude: Older People	Knowledge/Attitude: Community	Use of Community Services /	Changes in Normative Beliefs	Delayed Onset of Substance Abuse	Substance Abuse	Perception of Substance Abuse as	Depressive Symptoms	Anxiety	In School/Classroom Problems	Being Absent From School	Rate of Initiation of Intercourse	Unprotected Intercourse	Sexual Intercourse	Multiple Sex Partners	Teen Pregnancy	Theft	Carrying Weapons	Conflict	Violence	Conduct Problems	Aggressiveness	Passiveness	Negative Family Interactions	Validity of Findings After 12th	TOTALS
Schinke, Botvin, Trimble, Orlandi, Gilchrist & Locklear (1998)	+	+		+															+							-																				5
Tierney, Grossman & Resch (1995)								+	+	+	+				+											-				-								-					-			9
Walter, Vaughan & Wynder (1989)																		+								-																				2
Connell & Turner (1985) / Connell, Turner & Mason (1985) / Smith, Redican & Olson (1992)							+											+								-																				3
Pedro-Carroll & Cowen (1985)	+	+									+		+																-	-																6
Botvin, Baker, Dusenbury, Tortu & Botvin (1990)													+						+							-	-																				4
Greenberg (1996) / Greenberg & Kusche (1997)	+				+						+		+	+	+													-												-	-	-		-		11
Ellickson, Bell & Harrison (1993) / Ellickson, Bell & McGuigan (1990) / Ellickson & Bell (1990)					+														+							-																				3
Battistich, Schaps, Watson & Solomon (1996)									+																	-		-	-						-	-										6
Greenberg (1998) / Conduct Problems Prevention Research Group (CPPRG) (1997)							+				+			+	+														-											-	-					7
Eron, Guerra, Henry, Huesmann, Tolan & Van Acker (1997)													+																													-					2
Kirby, Barth, Leland & Fetro (1991)																	+							+							-	-														4
Hawkins, Catalano, Kosterman, Abbott & Hill (1998 - under review)			+												+											-				-						-	-				-					7
Weissberg & Caplan (1998)									+	+	+	+																															-	-				6
Slavin, Madden, Dolan & Wasik (1996)														+															-																		2
Allan, Philliber, Herrling & Kuperminc (1996)																													-						-											2
LoSciuto, Rajala, Townsend & Taylor (1996)															+				+	+	+								-	-																	6
Andrews, Soberman & Dishion (1995)													+																										-				-		-			4
Pentz, Dwyer et al. (1989) / Pentz, Dwyer, Johnson, Flay, Hansen, MacKinnon, Chow, Rohrbach & Montgomery (1994)																										-																				1
Perry, Williams, Veblen-Mortenson, Toomey, Komro, Anstine, McGovern, Finnegan, Forster, Wagenaar & Wolfson (1996)					+		+	+																		-																				4
Farrel & Meyer (1998, 1997)	+										+	+														-				-	-							-								8
Cardenas, Montecel, Supik & Harris (1992)						+								+	+														-																	4
LoSciuto, Freeman, Altman & Lanphear (1997)													+													-																				2
Johnson, Strader, Berbaum, Bryant, Bucholtz, Collins & Noe (1996)					+																		+		+																						3
Hahn, Leavitt & Aaron (1994)															+																																		1
TOTALS	4	2	1	1	4	1	3	2	3	2	6	2	6	2	6	3	1	2	3	1	1	1	1	1	1	12	1	2	2	8	3	1	1	1	1	1	1	2	1	3	2	5	2	2	1	

Outcome Level: Intention and Decision

Intention and decision are central elements of several health behavior theories (e.g., theory of reasoned action, Azjen and Fishbein, 1997; stages of change model, (Prochaska, and DiClemente, 1984), but these youth development approaches de-emphasize the measurement of decision making. Surely, understanding how youth make decisions, about whether and when to use birth control (e.g., Adler, Kegeles, Irwin, and Wibbelsman, 1990), is of central importance in health promotion. It is included in the framework for completeness, but remains an area that needs to be greatly expanded upon by those interested in youth development.

Outcome Level: Behaviors

Evidence of *protective and pro-social behaviors* include one or more of the following: school attendance; grade point average; participation in arts and community activities; spending supervised time after school; reading regularly for pleasure; and performing community service. Additional positive health goals that are measurable behaviors include exercising regularly, eating healthful foods, maintaining good attendance at a job, and having a long-term friendship. Search Institute's thriving behaviors include school success, leadership, valuing diversity, physical health, helping others, delaying gratification, and overcoming adversity (Scales et al., 2000) Youth who can access challenging and supportive resources both within and outside of their neighborhoods display essential survival strengths (Connell and Gambone, 1999). Participating in productive after-school activities, holding leadership positions at school or in the community, serving as a peer mediator or tutor, and/or having a job in which the youth "learns a lot of new things" are additional examples of positive behaviors measured by the Public/Private Ventures survey.

Risk behaviors become risk factors when family and community support and monitoring fail. The single consistent predictor of anti-social behaviors for both genders and for three ethnic groups among Add Health respondents was "having trouble with school." This indicator consistently predicted behaviors including smoking, drinking, and violence (Blum et al., 2000). Structural risk factors, such as higher residential turnover and unemployment rates, and individual risk behaviors, such as smoking, drinking, and having a steady partner, are antecedents of too-early sexual initiation, pregnancy and parenting (Kirby, 2001). Appendix 2 contains a summary of the antecedents related to specific sexual risk behaviors.

These approaches include positive and negative behaviors and risk factors in their discussions. Pittman, Search Institute, and HKRM emphasize assets, CTC emphasizes negative behaviors and risk factors, and the others include both positive and negative behaviors.

Outcome Level: Long-term Outcomes

Youth who reach young adulthood "productive, connected, and able to navigate" (Connell and Gambone, 1999) have successfully negotiated the rigorous process of adolescent development. Underlying the global constructs are a range of desirable and measurable behavioral and status outcomes that include physical and mental health, economic self-sufficiency, social/civic engagement, cognitive skills, resiliency, and well-being. Outcomes may include having a living wage job, enough education to advance, being a good caregiver for one's children, having positive and dependable family and friendship networks, and being an engaged taxpayer who abides by the law and contributes to the community. Additional outcome measures, such as those used by HighScope for its long term follow-up of the Perry Preschool Project, include measures of income, home ownership, and marital status (Schweinhart, et al., 1995).

Summary

Two recent comprehensive reviews of rigorous program evaluations have advanced the field's understanding of relationships between antecedent behaviors, interventions, risk and protective factors and youth development (Catalano et al., 1998; Kirby, 2001). Pittman (2000) also deserves support for advocating for further research to create a comprehensive index of current youth development indicators, to refine and operationalize these indicators, and to test the effects of youth development using controlled longitudinal study designs. Achieving consensus on a model is a first step.

III. Surveys and Measures

Seven of the youth development approaches reviewed in this paper have developed and implemented surveys. This section reviews quality criteria, describes each survey, and assesses each against the quality criteria.

Quality Criteria

Individual surveys provide a cost-effective way of collecting information about adolescent health and behavior. Data from well-constructed surveys can be used to enhance and focus policy, planning, health services, and community resources. Information derived from individual surveys is more useful and more credible when the surveys themselves meet rigorous quality criteria (Moore, 1995). These include construction, rigorous development methods, selection of appropriate samples for testing and standardizing the survey, and policy relevance. Additional quality criteria, as listed in Figure 3.1, include cultural competence and balance. Each of the seven surveys observed a large number of these criteria, but none appears to have met all of them.

Survey Construction: Constructs and questions on theoretically grounded surveys have greater explanatory power because they can be analyzed within a meaningful context. Guided by theory, domains, constructs, and measures are likely to be more coherent, simultaneously comprehensive and parsimonious, and to support predictive and explanatory (in contrast to merely descriptive) analyses. The underlying theory that includes a causal or explanatory model increases the usefulness of the data collection effort, as do surveys that incorporate longitudinal data collection. Surveys for adolescents have to be developmentally appropriate, in both language and content—the same questions about risk and protective behaviors would not necessarily be appropriate for both younger and older adolescents. Given the large number of recent immigrants and today's high pre-literacy rates, designers accommodate a range of reading levels by using strategies such as computer and audio assisted methods, skip patterns (answering only questions that are individually relevant), or matrix sampling (groups of youth answer specific sets of questions, but no group answers all the questions). Provision for collection of external measures from teachers, parents, siblings, or friends, and that enable matching with data sets from the same geographic area enhance the usefulness of the data collection effort.

Figure 3.1. Quality Criteria

Survey Construction
Theory-based
Causal model
Cross-sectional versus longitudinal
Developmentally appropriate, including reading level
External measures, including links to external data sources
Rigorous development methods
Face validity
Definitional clarity
Construct validity
Internal validity
Test-retest assessment
Cognitive assessment
Samples used to test and standardize
Size
Composition
Selection
Geographic diversity
Policy
Practicality (understandable)
Consistency over time
Forward looking
Geographically detailed
Content (measures key developmental domains)
Cultural competence
Language
Culturally sensitive
Reflects social goals
Common interpretation
Includes population sub-groups
Balance
Context versus personal traits
Positive versus negative
Traits versus behaviors
Comprehensive versus parsimonious
Measures of depth, breadth, duration

Rigorous Development Methods: Implementing rigorous standards and procedures that establish face validity, construct validity, and internal validity ensure that the survey captures the intended domains (theoretically important areas) and constructs (measures of the theoretically important areas). Face validity ensures that questions meet the test of common sense—knowledgeable adults agree that the questions reflect the intended domains and constructs. Construct validity and internal validity are established through statistical analysis, to ensure that the intended questions measure the constructs effectively. Cognitive methods, in which a small number of youth complete the survey and individually describe the meanings of the questions and their reasons for choosing specific responses, ensure that the survey questions have the intended meanings for targeted youth. Test-retest procedures (the same youth complete the survey again after a few weeks) establish construct stability.

Samples used to test and standardize the surveys. Testing the survey with a large and diverse sample of respondents helps to ensure that the final survey accurately captures experiences in a range of communities, and creates confidence in the quality of the instrument. Pilot testing with relatively large and representative samples helps to ensure that members of the target populations understand the questions, and that constructs behave as expected in both the group as a whole and in sub-groups (gender, age, ethnicity, residence). Subsequent testing with larger and more diverse samples confirms or disconfirms the findings of the pilot tests. Were samples large and representative of genders, ages, and ethnic groups? Did they reflect geographic and cultural diversity? Were they scientifically selected? Was participation voluntary and confidentiality maintained? Were response rates acceptable? Were response rates high enough to avoid potential biases? Were measures and constructs re-validated in subsequent testing periods?

Policy: Additional quality criteria include those relevant for policy makers (Moore, 1995). Is the survey practical? Can community members and policy makers understand the questions and their relevance to adolescent health issues? Are the measures of consistent interest over time? Are they forward looking—that is, are measures included that anticipate issues expected to be more salient in the future? Can meaningful results from local, regional and national jurisdictions be reported? Do surveys measure structural, process, and outcome levels? Does the survey contain an adequate number of questions to assess the elements of the Youth

Development Framework? Do these include family and community contextual factors, pro-social supports and opportunities, individual skills, and outcomes?

Cultural competence: This dimension is becoming increasingly important as populations in the United States become more diverse. Is the survey available in more than one language? Are questions culturally sensitive, for culturally dominant as well as sub-groups? Are translations literal or culturally appropriate, do questions reflect social values and differing experiences in diverse communities, and are youth asked about experiences with discrimination, including bullying (either as a recipient or a perpetrator) (Guajardo-Lucero, 1999)? Are questions included about familiarity with, and appreciation of, diverse cultures? Do respondents of different ages and cultural backgrounds interpret the questions in the same way? Are sample sizes for population sub-groups large enough to report results?

Balance: Balance among contextual measures and personal data strengthens surveys designed to monitor adolescent health. Are there similar numbers of questions about positive and negative behaviors, of protective and risk factors? Are all elements of the framework included to ensure assessment of opportunities/supports, and skills, as well as current behaviors and risk and protective factors? Does the survey adequately assess behaviors, rather than relying solely on psychological traits that are difficult to measure (Connell et al., 1999)? Has the survey adequately balanced the need for comprehensiveness with the equally strong need to be concise? Are measures of depth, breadth, and duration included, in order to assess individual behavioral changes?

Assessment of Representative Surveys

In their comprehensive review of evaluations of positive youth development programs, Catalano et al. (1998) identified ten objectives that were characteristic of youth development programs. Other researchers suggest that a more limited set of domains, including connection, monitoring, opportunity, psychological autonomy, and belief (Barber, 1997b) is sufficient to document fundamental components of adolescent health and socialization. California Healthy Kids Survey/Resilience Module (HKRM) focuses on external assets (Supports/Opportunities) and internal assets (elements of resilience), while CCYD emphasizes the measurement of observable behaviors, rather than psychological traits or assets. The field's current challenge is to develop consensus on a parsimonious, yet comprehensive, set of well-defined indicators with

related measures to document adolescents' developmental tasks. A necessary step in achieving this goal is to conduct a critical assessment of representative surveys using the quality criteria. The assessment is summarized in Figure 3.2, and presented in more detail in the text.

Figure 3.2. Quality Criteria and Selected Adolescent Surveys

	PSL: AB	CTC	P/PV/CCYD	YRBS	CHKS/HKRM	Add Health	Barber
Survey Construction							
Theory-based	Resiliency	Social capital	Ecological	Risks	Resiliency	Ecological	Socialization
Cross-sectional v. longitudinal	Cross	Longitudinal	Longitudinal	Cross	Cross	Longitudinal	Cross
Causal model	Correlations	Predictive	Predictive	Correlation	Correlations	Yes	Correlations
Developmentally appropriate	Middle, high school	Elementary, High school	14- to 25	Middle,-High School	Grades 5, 7, 11	12 to 18	Middle, High, College age
External measures	No	Yes	Yes	Geographic match	None	Parents, sibs friends, sch'l	Individuals, parents
Link to external data sources	No	Zip code	Community	Yes	Potential	Detailed community	No
Rigorous Development Methods							
Face validity	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Definitional clarity	No	Yes	Yes	Yes	Yes	Yes	Yes
Construct validity	No	Yes	N/A	N/A	Yes	Yes	Yes
Internal validity	1/3 of scales	Yes	N/A	N/A	Yes	Yes	Yes
Test-retest	No	Yes	N/A	Yes	N/A	Yes	Yes
Cognitive methods	N/A	Yes	N/A	N/A	Yes	N/A	N/A
Samples used to test							
Size	Large	10,000	2,400	15,000	Over 50,000	20,000	600-7,000
Composition	Eth. Homog.	Represent.	Census	Represent.	Represent.	Represent.	Eth. Homog.
Selection	Self-select	Scientif.	All	Randm schls	Randm schls	Randm schls	Convenience
Response rates	Acceptable	85%	95%	N/A	N/A		
Geographic diversity	Midwest	Oregon	3 cities	National	California	US	Int'l.
Representative	96% white	Diverse	Universe	Diverse	Diverse	Over smple	Diverse

Figure 3.2 (continued)

	PSL: AB	CTC	CCYD	YRBS	CHKS/HKRM	Add Health	Barber
Policy							
Practicality (understandable)l	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Consistency over time	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Forward looking	Yes		Yes	Yes	Yes	Yes	Yes
Geographically detailed	No	Yes	Yes	Yes	Yes	Yes	Yes
Cultural Competence							
Language	English	English	English	English	Eng/Span	English	Yes
Culturally sensitive	No	Yes	Yes	Yes	Yes	Yes	Yes
Reflects social goals	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Common interpretation	No	Yes	Yes	Yes	Yes	Yes	Yes
Includes sub-groups	No	Yes	Yes	Yes	Yes	Yes	Yes
Balance							
Context v. personal traits	Yes	Yes	Yes	Personal	Yes	Yes	Yes
Positive v. negative	Positive	Negative	Yes	Negative	Yes	Yes	Yes
Traits vs. behaviors	Yes	Yes	Yes	Behaviors	Yes	Yes	Yes
Comprehensive /parsimonious	Long	Comprehen-sive	Yes	Yes	Yes	Comprehen-sive	Comprehen-sive
Depth, breadth, duration	Min	Yes	Min	Min	Min.	Yes	Min

Search Institute: Profile of Student Life—Attitudes and Behaviors (PSL-AB)

Search Institute used its conceptual framework of 40 Assets to develop a 156-item youth assessment instrument for 6th to 12th grade adolescents, *Profiles of Student Life: Attitudes and Behaviors* (PSL-AB). The survey is designed to help communities identify local conditions that support or hinder youth development. Their survey and approach have been widely used—over 600 communities have administered the survey.

Search Institute has pioneered the assets approach, and its survey, PSL-AB has high face validity in white middle class and mid-western communities. PSL-AB is less conceptually robust, however, than newer instruments, particularly with respect to communities of color and urban environments. Neither is it as strong an instrument for research and assessment as others reviewed here. Most importantly, the instrument has not been validated in longitudinal studies. While cross-sectional correlations between assets and risk behaviors are thought provoking, additional developmental work is needed to test whether assets predict future behaviors and whether interventions designed to strengthen assets do in fact improve future behaviors. Despite the fact that PSL-AB is widely used, no studies have been done to date that would qualify it to be included in reviews of rigorous evaluations.

Search Institute tested its instrument using a cross-sectional survey design during the 1996-1997 academic year with 99,462 youth in grades 6 through 12 in public or alternative schools from 213 U.S. cities and towns. The sample population included communities that had surveyed in-school youth from at least one grade from grades 6-9 and one grade from grades 10-12. The sample was about equally male and female, 40% middle school and 60% high school students, average age 15, and mostly white (86%). Four percent of the sample lived in urban areas. The level of self-reported assets decreased by grade level, and girls reported more assets than boys, with the exception of safety, which increased less for girls than it did for boys in high school. There was little variability of assets by community and a steep decline in parent involvement in schooling by grade level. Students with more assets reported fewer high-risk behavior patterns controlling for grade, sex, race-ethnicity, family composition, and community. Students with fewer assets were less likely to report thriving indicators (Benson, 1990, 1997; Benson et al 1998; Benson and Scales, in press).

Search Institute and other researchers outlined the limitations of the PSL-AB and the related study. The sample is not nationally representative and over-represents white youth from smaller cities and towns whose parents have higher than average formal education. Although large, the study did not use a random sample of youth; because these communities requested the PSL-AB, they could be substantially different from most other communities. It is difficult to assess the role that income or social class may play in asset levels because the survey did not include a measure of family income. Causality between assets/risks and thriving behaviors has not been established because of the cross-sectional nature of the survey and its administration (Benson, *et al*., 1998; Leffert, Benson, Scales, Sharma, Drake, and Blyth, 1998; Search Institute, 1999). A discussion of additional measurement issues for the PSL-AB is in Appendix 3.

Search Institute deserves great credit for its contributions to moving the national dialogue away from 'youth as problems' and 'fixing youth' towards youth as assets and community responsibility for youth development. PSL-AB has been an effective tool for uniting small and medium sized communities in Midwestern states to support improving resources and opportunities for youth (Blyth, personal communication, 2000; Whitlock and Hamilton, 2001). Despite the Institute's pioneering work, PSL-AB's reliability and validity, its cultural and developmental appropriateness, and its predictive ability for risk and thriving behaviors appear limited by the survey's design and content. The plethora of individual, stand-alone items also distracts from the focus on the most important youth development concepts. Additional developmental work, including cognitive processing interviews with a range of youth, would help to ensure that the survey adequately represents adolescent strengths in diverse communities. Inclusion of a greater number of more nuanced measures of risk behaviors would make the survey more useful for demonstrating relationships between assets and risk behaviors. Measurement issues that result in different levels of assets, based on whether continuous or binary variables are used, need to be resolved. The survey should be administered with random assignment to more diverse populations using a longitudinal study design in order to determine whether the measures are capable of distinguishing improvements following participation in youth development interventions. Further, delayed posttests could help to establish whether intervention messages and strengths had staying power. The elimination of culturally biased questions and the inclusion of questions that apply to youth from a wider range of genders, cultures, ethnic groups, and life circumstances would make the survey a more applicable and

more credible assessment tool. A more concise instrument would help to reduce the survey burden, as well.

Communities that Care (CTC): The Youth Survey

Hawkins and Catalano developed The Youth Survey: Communities that Care (CTC, 1992) after careful review of the literature on social development theory. Indicators were included if they had been statistically significant predictors of risk behaviors in at least two other published studies (Pollard, Catalano, Hawkins, and Arthur, 1996). The survey is appropriate for health monitoring and prevention planning on local regional, and state levels because it measures "a comprehensive set of empirically derived risk and protective factors and behavior problems" (Pollard et al., 1996, p. 4).

Questions emphasize risk behaviors related to substance use, pregnancy, delinquency, school dropout and violence. Measures assess perceived norms and attitudes, among families, communities, and peers, about violence and substance use. Topics are included that relate to the initiation and use of 15 substances (including the phantom substance "derbisol" to test for honesty) during a series of periods preceding the survey ('ever,' 'the past 30 days,' 'the past 12 months,' 'in your lifetime) and age of initiation. This survey captures duration, depth, and breadth of risk behaviors more completely than any others that were reviewed. It asks respondents to provide their zip codes, enabling small area analysis and the ability to match this data with pre-existing data sets. Measures fit into the five domains of connection, monitoring, opportunities, psychological autonomy, and belief.

The Youth Survey is based on ecological research that demonstrates that youth who are strongly connected to their families, schools, and communities, are more likely to prosper. The developmental process was thorough and extensive. Items were subjected to cognitive pretesting with 25 youth from diverse backgrounds to ensure that the desired constructs were being measured. Initial pilot testing was completed with more than a thousand students in grades 6 to 12. Psychometric analyses (consisting of individual item analysis and inter-item correlations) were conducted with the pilot tests. During the next stage of testing in Oregon, matrix sampling was used to ensure that all questions on the lengthy survey were completed by sufficiently large numbers of youth in the sample of sixth, eighth, and eleventh graders. The scientifically selected sample was representative of all youth in Oregon, as well as in five regions of the state. The

final sample of 11,162 youth represented nearly 83 percent of Oregon's estimated spring enrollment in the selected grades. Exploratory and confirmatory factor analysis were used to refine scales. Following the analyses, instrument length was further reduced to include 29 risk and protective factor scales, and measures of current anti-social behaviors. A shorter version was developed for elementary school youth, measuring their use of five substances, rather than all 14.

Protective factor scales on the survey capture eight dimensions with 27 items, and sub-scales include an average of 3.3 items. The median alpha for the scales is 0.75 (Pollard et al., 1996). The survey's risk component includes 19 factors that have consistently predicted adolescent substance use and other anti-social behaviors. Eighty-seven of the 114 survey items (76%) measure risk factors. The survey is long and detailed, and the reading level would be challenging for younger readers (hence, the importance of the shorter version of the survey) and recent immigrants, who comprise ever larger portions of American communities. Nevertheless, the survey also provides very specific evidence about the prevalence of anti-social behaviors in the community that stakeholders can use as a basis for organizing pro-active responses. Survey questions do not appear to have inherent biases related to ethnicity, gender, or national origin.

Although long, this survey should be relatively easy to complete because the question patterns are repeated. Measures of religious attendance, attitudes about cheating, impulsivity, risk taking, and friends' use and support for use of controlled substances are included. Scenarios (such as "what would you do if your mother said you could not go to a friend's house on a school night?") are included. Youth are asked about their perceptions of how families, schools, and communities protect them as well as support and recognize their positive behaviors (for example, "my teacher notices when I am doing a good job and lets me know about it"). The survey is thorough and the scales are strong, internally consistent, and cover a wide range of pro-social and anti-social behaviors and attitudes. Because of its thorough assessment of norms, behaviors, and attitudes, communities can use the survey to identify the most prevalent risks, and, by repeating it, can use the survey monitor progress on reducing risks and increasing supports. Compared to other surveys reviewed here, CTC is risk heavy and asset light. As a result, it may be less appropriate for documenting progress toward positive outcomes (which are more than the absence of problems), despite its exceptionally strong research foundation. In practice,

additional family and community indicators are collected to support data from the individual survey, adding robustness to the assessment procedures.

Community Change for Youth Development (CCYD)

Connell, Gambone, and Smith (1998) reviewed a wide range of previous research, youth development practices, and surveys in current use before creating their survey and approach to community youth development. Working in concert with Public/Private Ventures, their goal has been to present a conceptually robust, parsimonious youth development framework that is accessible to policy makers and that challenges communities to mobilize themselves to support youth. The youth survey was designed to capture evidence of youths' level of exposure to five core concepts: "adult support and guidance, gap activities, work as a developmental tool, youth involvement, and support through transitions" (Sipe, et al., 1998, p.ps.2-3). Youth would be more likely to be exposed to these opportunities if community leaders were informed and involved, developed resources for implementing opportunities, involved residents and leaders from beyond the neighborhood, organized governance structures, and mobilized resources effectively (Sipe et al., 1998). The CCYD/P/PV survey was designed to capture short-term outcomes, by surveying youth living in three target communities at baseline and three years later. Survey domains included resources in their lives, time use, perception of neighborhood safety, and positive outcomes, such as school performance, self-efficacy, and lack of involvement in risk behaviors. Youth were asked for evidence of the five core concepts in their lives—adult support, gap activities, volunteer and paid work experiences, leadership opportunities, and support from adults in their lives during transition periods.

Evaluation of the CCYD/P/PV Youth Survey

Trained interviewers individually administered the two part (activities and time use) baseline survey to youth in their homes. Approximately 800 youth completed surveyed in each of three CCYD communities, or about 250 per age group (12-14, 15-17, and 18-20). Participation rate in the survey was 95%. Virtually all youth in some communities were interviewed in order to obtain adequate sample sizes, so respondents were clearly representative of the designated populations.

The survey was well grounded in theory, was developmentally appropriate with respect to question content, and individually administered to accommodate the range of reading skills anticipated in the target communities. The survey was designed to be longitudinal. Proven questions from established surveys were included on the survey. Survey items were clear, and the intent obvious, so that reports would be intelligible to community residents and leaders. Questions were also forward looking, because they could capture issues of immediate as well as future importance to the community. Questions focused on behaviors, experiences, opportunities, supports, and future goals, with an emphasis on questions central to youth development. Each question carried its weight with respect to the theoretical model, so there were no superfluous or marginal questions.

Surveys included detailed questions about activities during gap times, such as coaching a sports team, participation in after-school activities at school, at a community center, or with a religious group. If youth had ever done one of these activities, then they were asked about frequency of participation during the last four weeks. Time diaries were completed for one weekday and one weekend day in the week before the interview, from awakening in the morning to sleeping at night. Youth answered questions about the beginning and ending times of the activity, locations, and persons present during the activity. Issues about work and volunteer experience included specific activities, the amount of time, intrinsic work satisfaction, responsibility for decisions about the job, and lessons learned as a result of the experience (e.g., to be on time or take responsibility). Questions about transitions included switching schools, school to work transition activities, talking about the future with adults, and learning about future options by discussing them with adults. Additional questions established the level of community surveillance and monitoring by adults, the number of adults who know the youth's name, or would tell parents if they observed the youth engaging in misbehavior. A series of questions about youth involvement and leadership were designed to detect nuances of experience, from experiences with low level of responsibility with in the community, to ones with greater responsibility representing the group outside the immediate community. An interesting set of questions offered alternative levels of satisfaction with friends (e.g., "Which group sounds most like you? Some kids would like to have a lot more friends. Some kids have all the friends they want.") The final set of questions was designed to develop a measure of self-esteem. Risk behaviors were measured by a five point additive scale of behaviors including drinking alcohol,

use of drugs, arrests, use of weapon, in the previous 12 months and sexual activity in the previous three months.

This was a detailed questionnaire that used skip patterns to reduce the survey burden. While the survey contained some questions that Asian-Americans might find offensive (e.g., neighbors reporting to parents about child's activities, Guajardo-Lucero, 2000), in general, the questions appeared to be appropriate for both genders and all ethnicities.

The Public/Private Ventures/ Community Change for Youth Development survey was particularly appropriate for older youth, but also for those from families with fewer resources, since questions included a range of opportunities that youth could expect to have in their communities. It was capable of assessing changes in individual behaviors and in access to and use of community resources, following a targeted community change intervention. It was also designed to capture relationships between levels of supports and opportunities and adolescent health risk behaviors. While the survey emphasized social supports and behaviors, it also included measures of physical and health (exercise and violence avoidance) and of mental health (self-esteem/efficacy).

Youth Risk Behavior Survey (YRBS)

The Centers for Disease Control and Prevention (CDC) launched the Youth Risk Behavior Surveillance System (YRBSS) and its related survey, the Youth Risk Behavior Survey (YRBS) in 1991. CDC works with state departments of health and education to administer the survey to youth in grades 7, 9, and 11 in schools that are selected to provide regionally and nationally representative samples of youth. More than 15,000 youth completed the biennial survey in 1999. CDC uses the results of the survey to provide local, regional, and national trends on adolescent health and risk behaviors.

YRBS is a 92 item, self-administered survey that collects behavioral data on 10 areas of personal health, including physical exercise, personal safety, nutrition, eating disorders, violence, personal safety, and substance use. By virtue of its large and representative population, long-term implementation, and well-validated measures, YRBS results are accepted measures of national, regional, and local trends.

YRBS can be used either to evaluate specific multi-year interventions that are widely implemented within jurisdictions with specific age groups, or to conduct research on specific adolescent health behaviors and/or trends. Researchers can link YRBS data with other data sources, using a geographical indicator. This increases the value of the analyses—by determining, for example, whether increased immigration in a specific state might be associated with changes in health status of the adolescent population. Among its most important functions, the YRBS can be used to document differences in state and regional trends in risk behaviors and to benchmark local evaluation results.

Strengths and Weaknesses of the Youth Risk Behavior Survey

Despite its strengths as a monitoring and surveillance instrument, YRBS has several shortcomings that make it inappropriate for assessing the multiple processes of adolescent health. The YRBS cannot be used to assess short-term trends in risk behaviors (as CTC can) since it asks respondents only about recent behaviors. In addition, it cannot be used to track individual-level behavior changes following participation in a specific program since it does not include an individual identifier or survey the same individuals year after year. Nor can YRBS be used to establish causality, since it lacks measures of antecedent behaviors and attitudes. Its greatest shortcoming for assessing the multiple processes of adolescent health, though, is that it lacks measures of positive behaviors and outcomes. Furthermore, although local jurisdictions are encouraged to add items to fit local needs, YRBS also lacks indicators for the five domains that have been found to foster adolescent development—connection, monitoring, opportunity, autonomy, and belief. Because of its construction, analyses are limited to correlational and trend studies. Nevertheless, the YRBS is useful for monitoring national adolescent health goals because of its representativeness and sample size.

The California Healthy Kids Survey (CHKS) and Resiliency Module (HKRM)

The California Healthy Kids Survey is a modular self-report instrument that collects data related to youth health risks and resilience. As with YRBS, districts can customize the survey by adding questions to meet local interests, needs, and standards. The California Department of Education and its contractor, WestEd, began field-testing the CHKS in 1998 with the hope that all California districts with middle and high school students would administer the survey every two years.

CHKS is composed of a core survey with three optional modules, one of which is the resiliency module (HKRM). The core survey assesses alcohol, tobacco and other drug use (ATOD) (ever, frequency of use and use at school within last 30 days, frequency of binge drinking), and correlates of this use (perceived hard, availability, drinking and driving, drugs at school). Additional questions on the core survey include questions about exposure to school violence, weapons at school, perceived safety at school and in neighborhood, forced sex, and feelings of loneliness. Questions about physical and mental health include a food diary for the previous day, participation in physical education, and physical activities during last week. Three questions assess reliability of responses—answered carefully, understood, and answered truthfully. Additional modules ask in greater detail about tobacco use (TUPE); drug use, violence, and suicide ideation (Safe and Drug Free Schools); physical and mental health; and sexual behavior and pregnancy. The final module is the resilience assessment (California Department of Education, 1999). Since 1999, 164 districts have distributed the survey in secondary schools, and 182 districts have used it in elementary schools. More than 88,000 students completed the optional resiliency module in field-tests during the first two years of its use. An additional 24,000 youth completed the resiliency module in regular administrations of the CHKS. The sexual behavior module is controversial, and, therefore, much less widely used—only 6,000 youth completed both the resiliency and sexual behavior modules in 2000 (Constantine and Benard, 2001).

The HKRM (Resiliency Module) is still undergoing testing and validation. The 1999 version contained 50 questions that measured 11 external and six internal assets related to resilience and positive youth development. External assets (developmental supports/opportunities or protective factors) were composed of measures of caring relationships, high expectations, and opportunities for meaningful participation in four settings—home, school, community, and peer group (32 questions). Internal assets (positive developmental outcomes or resilience traits) included cooperation, communication, empathy, problem solving, self-efficacy, self-awareness, goals, and aspirations (18 questions). HKRM improves upon the YRBS by adding important dimensions related to resiliency and individual strengths. It also improves upon other commonly used cross-sectional resilience assessments, including the PSL-AB, CTC, and IPFI (Constantine, Benard, and Diaz, 1999).

Strengths and weaknesses of HKRM

A national panel of experts in resiliency research developed a stringent set of standards for the HKRM survey. As a result,

> [the HKRM] is the only student assets survey currently available that: (a) is derived from an explicit research-based theoretical foundation; (b) provides a comprehensive and balanced coverage of both external and internal assets; (c) has assured developmental and cultural appropriateness…thorough extensive pre-test focus groups and field testing; and (d) has demonstrated psychometric reliability and construct validity for each of its individual asset measures and asset clusters.
>
> Benard, 2000, p. 3

The module is available in three versions (one each for elementary, middle and high school-aged youth) and in two languages, English and Spanish. Scales are internally consistent, with median Chronbach's alpha of .80 for protective factors and .84 for resilience traits (California Department of Education, 1999, p. A7). The developers vetted all survey questions for reading level and cultural appropriateness using focus groups in urban and rural communities and a cognitive processing protocol to ensure that constructs conveyed the appropriate concepts for youth in both languages and in all age levels. Individual factor analyses were conducted for each gender, grade, school type, and for six race/ethnicity groups. (Constantine and Benard, 2001). It is also short, having only 52 questions in the currently recommended secondary version. The developers recommended further revisions, including reducing the number of questions used to measure external and internal assets, adding an index of parental monitoring (based on Barber and Olsen, 1997), a set of items to measure appreciation of diversity, and a measure of spirituality (Constantine and Benard, 2001). The developers have also encouraged the Department of Education to combine the core and resiliency modules in order to increase the number of youth who complete the assessment.

While the California Health Kids Survey resilience module is the best large-scale survey of its type that we have seen, it is limited by self-report and by its cross-sectional design. Although the survey can be used to document district and school-level trends over time, it cannot be used to predict individual behavior changes or to evaluate interventions targeted to small groups or specific youth. It also lacks measures of family characteristics, such as composition, size, socio-economic status, and acculturation. Geographic indicators for survey sites can be

obtained, but not for respondents. Including positive outcome measures, such as student's sense of well-being, community participation, and academic achievement, would help to provide a more robust picture of the health of California's adolescents, and would help to balance the large number of risk measures on the other modules. Other problems limit the representativeness of the survey: schools can choose among the modules; some modules are required to satisfy funders; the sexual activity module is controversial; and the survey is long. Hence, the data are not fully consistent across the state. Unfortunately, they are also no longer fully comparable with the YRBS, since California has developed its own survey.

The Family and Youth Survey (FAYS)

Child socialization studies simultaneously account for parent, community, peer, and school influences on youth behaviors. As was established in Section 1 of this paper, connection, opportunities, monitoring, psychological autonomy, and system of belief have emerged as essential elements to predict adolescent health outcomes, including depressive and suicidal feelings, anti-social behaviors, and school attachment. Much of Barber's work that supports these socialization domains has drawn on multiple administrations of The Family and Youth Survey (FAYS). Sample sizes have ranged from 600 to over 7000 middle school, high school and college youth, or the equivalent ages in non-U.S. schools. Surveys were administered in diverse U.S. communities as well as in European, Middle Eastern, Asian, and African communities. Surveys were translated wherever English was not the native language. Personal interviews with respondents and their families were conducted in many of the settings (e.g., Barber, 1998)

Strengths and weaknesses of the FAYS

The 140 question self-report survey is composed of well-validated scales with high internal validity and a long history of use in causal, longitudinal studies (e.g., Beck's depression inventory). Factor structures were confirmed with oblimin rotation with minimum entry set at .5 (Barber, 1997). The survey would be challenging to read for youth who are recent immigrants. Questions are developmentally appropriate, and appear to be cross-culturally meaningful. Comparing responses from youth living in China or the Middle East with responses from youth from the same ethnicity living in the U.S. would be useful and interesting. Measures for the five domains emphasized in this review are of manageable length. Individual interviews were

conducted with a sample of survey respondents in every community, but data from external sources, such as parents, siblings, peers, schools, or clinics, have not been systematically collected for all survey respondents.

The survey is long and comprehensively covers measures of socialization. It also includes questions about risk factors, including depth, breadth, and duration. One series of 18 questions asks whether family events, such as moving to a new home or parental divorce, happened in the last six months, in the lifetime, or never. Ten questions ask whether youth have ever used a series of substances or threatened another, and how often that has occurred in the last six months. Other questions ask about frequency of events related to family conflict and activities, as well as the support from friends, percentages of friends who have engaged in anti-social behaviors, activities related to religious/spiritual observances, and parents' awareness of friends. Questions about neighborhood, community, family composition, family income ("Compared to other kids your age, how well-off do you think your family is?"), and anti-social behaviors are also included. FAYS also includes questions about school, including relationships with teachers, individual grades, feelings of safety, opportunities for making decisions about classroom activities, and educational aspirations. In addition to including the Beck depression inventory, FAYS includes questions about relationships with parents, discipline style, autonomy support, parents' awareness of youth's activities, and opportunities for decision-making within the family. Questions about relationships with teachers, school safety, participation in classroom decision-making, and interactions with friends at school are included. FAYS also includes specific questions about how youth usually spend time before and after school (for example, school work, talking with friends, working in family business, working for pay), a useful addition to behavioral questions.

Constructs are understandable, and therefore practical, from a policy perspective. Based on the version of the survey that was reviewed, FAYS does not have a geographic identifier that would make it possible to link individual survey results with other data sets collected in the same geographical areas. The FAYS, as a whole, would not be appropriate for collecting a minimum adolescent health data set. However, questions and constructs from the survey should be included, because they can contribute to improved understanding of sources of support for

adolescents, the value of parental monitoring, the impact of psychological vs. behavioral control on autonomy, and the influence of a system of belief on both positive and negative behaviors.

National Longitudinal Study of Adolescent Health (Add Health)

Add Health is a complex, lengthy, federally funded survey that is intended to measure the effects of family, peers, school, neighborhood, religious institutions, and community on health promoting behaviors among adolescents. Outcomes include both positive behaviors (seat belt use, exercise, nutrition) and risks (tobacco, sexual activity, and drug and alcohol use). Add Health is based on ecological theory—that youth health behaviors are influenced by family, peers, and other social groups to which they belong.

The survey was conducted in two phases. First, approximately 90,000 youth in grades 7 through 12 in 145 schools completed a short survey. Questions asked about their health, friendships, self-esteem, and expectations for the future. During the second phase, about 20,000 youth and a parent from communities across the country completed a computer and audio-assisted survey in their own home. The survey lasted about 90 minutes, and included questions about health, behaviors, family life, relationships with peers, and personal goals. Parents were asked to complete questions about the youth, family life, access to health care, family income, and their own health behaviors. These same youth were surveyed again, a year later, in their own homes.

Independent measures were collected from school administrators; parallel data sets about the specific communities (e.g., housing quality, poverty, employment rates, etc.); peers; and siblings. Specific samples of siblings, twins, and adopted youth were included, and certain groups were over-sampled to ensure adequate sample size (Cuban, Puerto Rican, Chinese, and African American, and disabled).

Evaluation of the Add Health Survey

Add Health is long, complex, and an excellent source of comprehensive health information for a representative sample of U.S. adolescents and their families. Its longitudinal design and representative sampling strategies are especially significant. The ability to link Add Health data with parallel data sets makes it possible to do much more sophisticated analyses of contextual factors than previously possible. The survey would be strengthened additional questions related to the youth development constructs that have been discussed in this paper

along with additional measures of well-being. Its utility would be greatly strengthened if funding could be obtained to collect data from the original participants for several more years, to parallel the longitudinal surveys that are common in the field of education and labor market experience. Nevertheless, Add Health will provide fodder for an army of researchers for many years. Analysis of this survey has already confirmed the importance of connection and of school success to positive health (Blum et al. 2000; Resnick et al., 1997). Additional analyses will surely help to identify specific questions that should be included in every set of adolescent health indicators.

Summary

Each of the seven surveys reviewed here offers guidance in the assessment of the 'multiple processes' of adolescent health.

- The Profile of Student Life—Attitudes and Behavior focuses on assets, resiliency, and community support. It has led the way for the field to incorporate positive youth development concepts into adolescent health assessment.
- Community of Caring focuses on accurate and scientifically valid assessment of risk behaviors, norms, and attitudes, and sets a scientific standard worthy of emulation.
- Public/Private Venture's survey is particularly appropriate for older teens. Connell and Gambone have focused on community involvement, institutional change, and work as sources of positive youth development, and measures of behavior change as the expected outcome. These deserve to be incorporated into future assessments.
- YRBS captures a wider range of health risk behaviors, though in less detail, than does the CTC. It is a key instrument for assessing risk behaviors and trends for representative samples of U.S. youth, but cannot capture assets and supports that contribute to adolescent health or family contextual variables that influence health status. If the national assessment were to incorporate supports, opportunities, and positive outcomes associated with youth development, YRBS would have increased value for adolescent health promotion.
- California Healthy Kids Survey, especially its Resilience module (HKRM), is breaking new ground in the assessment of youth development, including opportunities and supports and internal assets, with large and culturally diverse samples, and a scientifically rigorous

development process. It serves as a national model. HKRM can be further strengthened by including measures of autonomy, appreciation for cultural diversity, and belief, as the developers have proposed, and by incorporating resiliency measures in the survey's core module. Contextual measures of family and neighborhood health influences would also strengthen the assessment, as would the capacity to implement a longitudinal design.

- Barber's re-examination of the health effects of parents' approach to monitoring and regulating children's behavior has had both national and international influence. The additional elements of his model—connection, opportunity, autonomy, and belief—hold much promise for an international system of adolescent health indicators that include youth development measures. While the FAYS was not designed to monitor adolescent health, its value as a research instrument would be enhanced by a larger and more nuanced set of positive measures of adolescent health and well-being.
- Add Health serves as a beacon, because of its scale and scientific quality, collection of data from independent sources, longitudinal design, causal models, and sheer scope of the effort. However, it too would be strengthened by including additional questions to measure youth development and positive health outcomes, and by additional follow-ups of the original participants.

IV. Summary and Next Steps

The detailed examination of youth development approaches and survey instruments has yielded important information that will help to advance the task of developing a scientifically valid set of adolescent health indicators. As has been shown, the diverse approaches to youth development have substantial areas in common. All address issues that constitute the "givens" of youth development, family and community context and basic needs. These are grouped in the structural part of the youth development model.

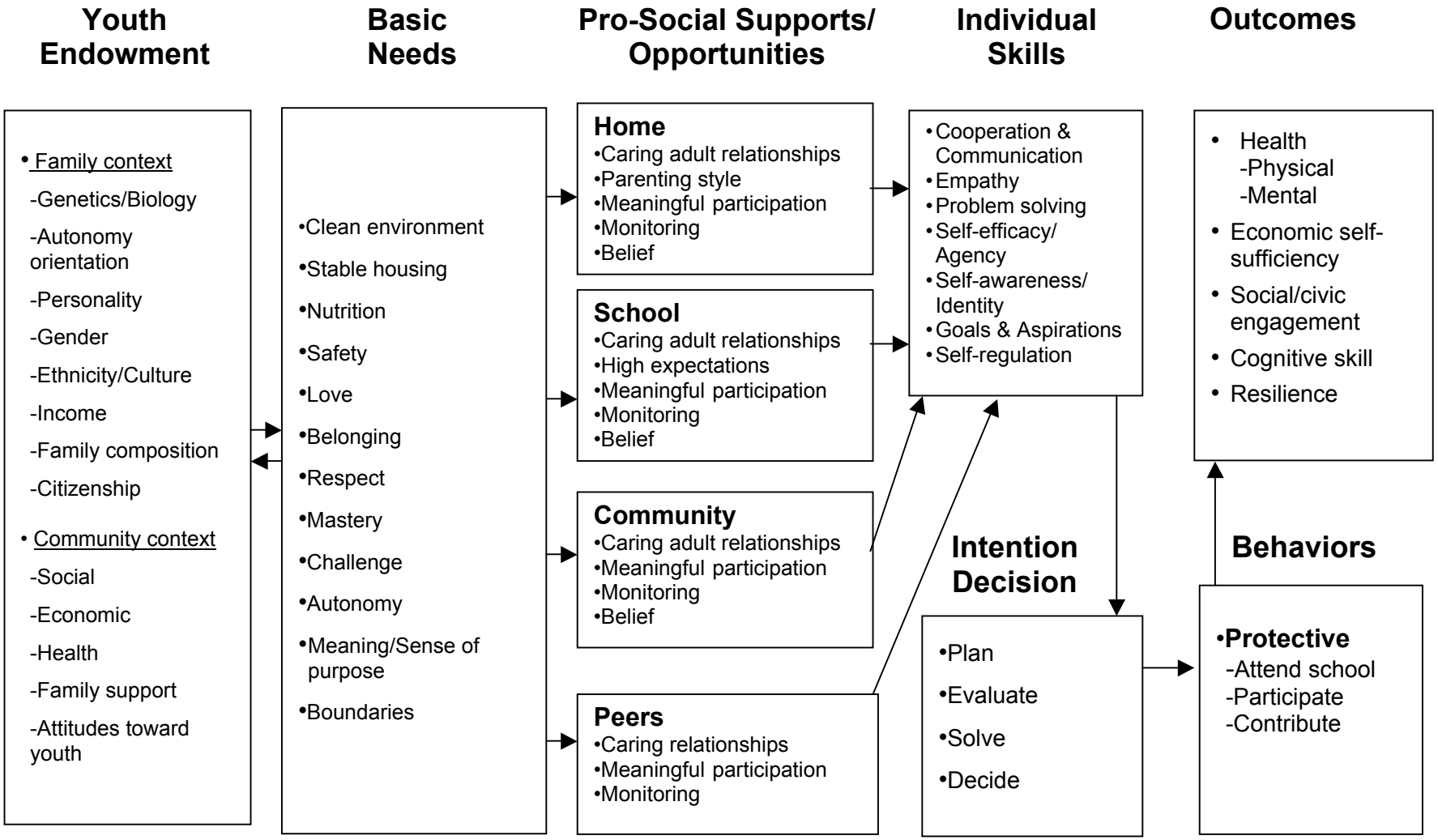
All of the approaches emphasize the processes of youth development, the essential supports and opportunities that parents and communities provide to nourish their children. While much remains to be learned about specific processes and leverage points underlying youth development, measurement is strongest in this part of the model. Considerable consensus exists for inclusion of the five socialization domains that have been stressed in this review: connection, opportunities, regulation/monitoring, autonomy, and belief. There is also a strong argument for the measurement of behaviors, at least in addition to the measurement of traits.

All of the approaches include a range of outcomes, including competencies, traits, and behaviors. The approaches to measuring outcomes remain diverse and focused on problems rather than assets. Hence, it is difficult, as has been shown, to develop a holistic picture of successful youth development. Much remains to be done in this area to establish consensus on positive outcomes. California Healthy Kids Resilience assessment and the Public/Private Venture/Community Change for Youth Development have taken different, but valuable, approaches to measuring outcomes.

The next step in the process is to reach consensus on a youth development framework to serve as a basis for establishing a standardized, scientifically valid core data set for adolescent health that incorporates youth development indicators. The model proposed here, as Figure 4.1, would help to ground the measurement of youth development contributions within a theoretical framework.

Figure 4.1 Youth Development Framework: Indicators

Protective Factors Shown – Risk Factors the Inverse



The Youth Development Framework model draws from on-going work, both domestic and international. It provides a focus for further work to clarify relationships between supports and opportunities (in family, peer group, community, and school settings) and individual skills (internal assets), behaviors, and outcomes. Much challenging work to identify the strongest indicators lies ahead. For example, well-validated measures of positive behaviors and outcomes are rare, in comparison to those for risk behaviors. Measures of decision-making are less well developed than are behavioral measures, yet decision-making is the focus of most prevention programs. It will be challenging to reconcile inherent tensions between globally relevant positive outcome measures (e.g., productive, engaged), and the evolutionary and gradual process of individual development. Constructing age-appropriate surveys that appropriately capture health-promoting traits and behaviors of early adolescents as well as young adults is not easy. Some measure of reconciliation is necessary if the field is to agree upon developmentally appropriate outcome indicators. Productive, engaged, and able to navigate (Connell and Gambone, 1999) are globally appealing for their simplicity and directness, but measures for 14 year olds will certainly differ from those for young adults of 25 years. Youth development indicators included in the surveys that were reviewed are shown, side by side, in Appendix 4, to underscore the challenges inherent in these decisions. While the linear framework lies smoothly on paper, the double helix-like unfolding of the framework over time is much more complex to depict and to model.

The shortcomings of two recent studies illustrate the importance of this point best. The first, an analysis of the 1992 YRBS survey of a national probability sample of 11,000 U.S. youth between the ages of 12 and 21, found that, while most adolescents experiment serially with a range of health risk behaviors, the incidence of multiple risk behaviors increases dramatically with age (Brener and Collins, 1998). Further, among those who do participate in multiple health risk behaviors, smoking is one of the risk behaviors for the majority of youth. While only 1 in 12 youth between the ages of 12 and 13 reported more than one risk behavior, 50 percent of youth between the ages of 18 and 21 did so. This analysis did not account for contextual factors that are known to be related to risk behaviors. As Connell and Gambone have pointed out so clearly, institutional and social supports for older adolescents are not well developed in the United States.

The second study consisted of a representative sample of more than 5,000 public high school students from South Carolina, almost evenly divided between white, black, male, and female, who completed the Multidimensional Students' Life Satisfaction Scale. Youth, regardless of gender or race, who reported dissatisfaction with life were more likely to have carried a weapon on school property within the last 30 days, among other violence related behaviors (Valois, Zullig, Huebner, and Drane, 2001). While the first study provides important demographic analysis about the incidence and patterns of health risk behaviors, the second draws on a quality of life variable, life satisfaction, to contribute additional meaning to risk behavior patterns. Both studies use large, representative cross-sectional data sets with well-validated measures of behaviors, but because they are cross-sectional, causal directions and influences cannot be determined. Contextual factors would provide additional level of meaning to the data, and would provide guidance as to needed action. What kinds of resources were available to the teens that completed the surveys? Another concern is whether the Life Satisfaction Scale had been validated equally for use with males and females of diverse races.

Wanted: A Minimum Set of Indicators

At a minimum, this review suggests that measures of connection, monitoring, participation, autonomy, and belief in home, school, peer, and community settings encompass the processes of youth development. Measures of individual skills (internal assets, competencies) that include cooperation and communication, empathy, problem-solving, agency, identity, goals and aspirations, and self-regulation are likely to capture key personal strengths that adolescents need to manifest well-being. An increased number of scientifically tested, cross-culturally validated positive measures of intention, decision-making, behaviors, and outcomes will greatly enhance our capacity to identify and reach the goal of every youth productive, engaged, and able to navigate. Measuring both risks and strengths will help communities more fully mobilize themselves to support their children by developing supportive structures, especially for older adolescents, that simultaneously reduce risks and increase strengths.

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Measuring the Positives: Review of Positive Indicators and Guidelines for their Use

NAHIC conducted a comprehensive review and analysis of approaches to and measures of positive youth development. In these papers, based on work supported by the W.T. Grant Foundation, NAHIC staff compared the theoretical frameworks of the primary schools of thought in this arena, and examined the domains and constructs of the variables utilized by each. The papers also identify potential pitfalls of inappropriate use of these measures, and offer recommendations for using positive indicators.

This is one of four papers in a series funded by the W.T. Grant Foundation. A brief and two other papers, *Developing a Conceptual Model to Select Indicators for the Assessment of Adolescent Health and Well-Being* and *Bridging the Gap: Next Steps in Developing and Using Indicators to Improve Adolescent Health*, are available online at: http://nahic.ucsf.edu/index.php/data/article/measuring_the_positives_review_of_positive_indicators_and_guidelines/ .

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Appendix 1: Adolescent Health Indicators Project Approaches, Theories, Measures, Assets, Gaps

Name	Profiles of Student Life: Attitudes and Behaviors	Communities That Care	Community Change for Youth Development	California Healthy Kids Survey	National Longitudinal Study of Adolescent Health (Add Health)
Sponsor	**Search Institute**	**Developmental Research and Programs** **Catalano and Hawkins**	**Institute for Research and Reform in Education: Connell, Gambone, Smith**	**California Department of Education**	**University of North Carolina** **University of Minnesota**
Approach	• A comprehensive approach to strengthening core developmental assets • Individual survey for 6th to 12th graders • Survey results used for community planning • Avoids problem-focused approach • Builds on resiliency, youth development approaches • Shows that assets are inversely associated with risk behaviors	• A comprehensive ecological approach to community development • 154 item self-administered survey that documents 19 risk that are reliable predictors of risk behaviors (substance abuse, pregnancy, delinquency, school dropout and violence) • 9 protective factors based on protective value of families, schools, and communities • Survey research used for community planning • Interventions for specific communities based on survey results, range of tested interventions • Strong research base, emphasis on alcohol, drugs, tobacco and anti-social behaviors • Youth ages 10 to 16, elementary schl version	A comprehensive 5-part, sequential model of youth development: • Long term goals for youth • Critical developmental milestones • Minimum acceptable set of resources • Required structural changes • Community organizing approaches	• Cross-sectional survey • Individual level responses • Districts select among optional modules for student assessment • Survey administered annually to at least 25,000 California students in elementary, middle and high school • Beginning in 1999, replaces YRBS in California • Administered biennially to selected youth in grades 5, 7, 9, and 11 • Resilience module administered to at least 25,000 California students in middle and high schools • Documents trends in risk taking, resilience and protective factors	• Stratified sample of US schools from 80 communities spanning grades 7-12 • Nationally representative sample of adolescents, approximately 200 per community • Oversamples specific groups • Sample pairs of youth of varying degrees of genetic relatedness, from identical twins to non-related youth living in the same household • Sixteen schools with all students selected for in-home interviews • 21,000 in-home youth interviews and 17,700 parent questionnaires completed between April and December 1995 • 14,700 adolescents reinterviewed between April and August 1996 • Contextual database aggregated at various levels constructed from extant data sources • Adolescent and school networks constructed from school questionnaire responses
Purpose	• To provide a language for the core elements of human development • To create a unified picture of positive development to build public consensus • To empower communities to mobilize to improve conditions for their children • Survey and reporting process provide a framework for community call to action	• To develop a comprehensive assessment of community risk status in order to motivate community development • Basis for communities to develop specific goals and objectives	To present a unifying framework for youth development that is both accessible and challenging to policy makers	To document trends in risk taking, health promotion behaviors. New (1999), asset-based Resilience Assessment module assesses positive youth development.	• To assess health status of adolescents in US • To explore causes of health-related behaviors • To examine effects of their multiple contexts, environments (social and physical) • Contexts include: families, friendships, romantic relationships, peer groups, schools, neighborhoods, and communities • To examine the impact of individual vulnerabilities and strengths in determining adolescents' resilience or susceptibility to illness or disease • To obtain complete network data on friends and peers in two schools.
Key concepts	• 20 External Assets (health promoting features of the environment) • 20 Internal Assets (e.g., personal commitments, values, competencies) • Positive outcomes • Risk behaviors • Thriving behaviors	• Youth with strong bonds to families, schools, communities are more likely to prosper • Scientifically valid questions and indices provide confidence about community risk status and supports • Address multiple strategies in multiple areas	• **Track developmental outcomes** (measure accomplishments, not traits such as self-esteem): • Non-negotiable basic supports and opportunities that youth need to grow up healthy, productive, and engaged • Community strategies to close the gap between existing and desired levels • Ways to mobilize communities to implement the strategies	For overall assessment: • Documentation of wide range of risk behaviors, depending on module • Track trends over time For resilience assessment: • Resilience is characteristic of healthy functioning adolescents • Documents social, emotional competence, external supports, internal strengths	• Threats to adolescents' health stem primarily from their behaviors • Communities, institutions, families have particular characteristics and factors that influence adolescent health, both positively and negatively

Appendix 1

Name	Profiles of Student Life: Attitudes and Behaviors	Communities That Care	Community Change for Youth Development	California Healthy Kids Survey	National Longitudinal Study of Adolescent Health (Add Health)
Individual Measures	**Internal Assets** (Gradually, over time youth develop competencies, skills, self-perceptions from observation and socialization experiences) • **Commitment to learning** - Achievement motivation - School engagement - Homework - Bonding to school - Reading for pleasure • **Positive values** - Caring - Equality and justice - Integrity - Honesty - Responsibility - Restraint • **Social Competencies** - Planning and decision-making - Interpersonal competence - Cultural competence - Resistance skills - Peaceful conflict resolution • **Positive Identity** - Personal power - Self-esteem - Sense of purpose - Positive view of personal future	• **Protective factors: Peer/Individual Domain** -Religiosity -Belief in the moral order -Social skills • **Risk factors: Community Domain** -Low neighborhood attachment -Community disorganization -Transitions and mobility -Laws and norms favorable to drug use -Perceived availability of drugs, firearms • **Risk factors: School Domain** -Poor academic achievement -Low degree of commitment • **Risk factors: Family Domain** -Poor family supervision -Poor family discipline -Family conflict -Family history of antisocial behavior -Parental attitudes that favor antisocial behavior - Parental attitudes that favor substance use	**Developmental outcomes /accomplishments**: • Productivity - do well in school - develop outside interests - acquire basic life skills • Connections - with adults and peers in positive and supportive ways - to something larger than themselves • **Navigation skills** - effective in multiple worlds - able to care for themselves and others - avoids harmful activities - copes positively with vicissitudes	**Measured Internal Assets:** • **Cooperation, Communication** • Empathy • Problem solving • Self-efficacy • Self-awareness • Goals and aspirations	• Number of activities with male and female friends • School grades and relationships with other students and teachers • Expectations for the future • Mental, physical, and emotional health • Involvement in extracurricular school activities and sports • Activities and relationships with parents and siblings • Religion • Tobacco, alcohol, and drug use • Physical limitations • Sexual behaviors and contraceptive use • Employment and earnings • Daily activities • Academics and experiences in school • Friends and romantic and sexual relationship partners • Delinquent behaviors, fighting, and violence • Physical development and pregnancy history • Self-esteem, self-efficacy, and experiences with suicide • Nutrition, sun exposure, pregnancy, substance use, residential mobility • Student attendance, performance, and educational expectations

Appendix 1

Name	Profiles of Student Life: Attitudes and Behaviors	Communities That Care	Community Change for Youth Development	California Healthy Kids Survey	National Longitudinal Study of Adolescent Health (Add Health)
Measures of Support and Opportu-nity	**External Assets** (Positive developmental experiences, relationships, opportunities provided by adults in families, schools, community) • **Support** - family provides love, support - positive family communication - other adult support - caring neighborhood - caring school climate - parent involvement in schooling • **Empowerment** - community values youth - youth are resources - community service - safety • **Boundaries and expectations** - family, school, neighborhood boundaries - adult role models - positive peer influence - high expectations • **Constructive use of time** - creative activities - youth programs - religious community - time at home	• **Protective Factors: Community Domain** -Rewards for community involvement • **Protective factors: School Domain** -Opportunities for school involvement -Rewards for school involvement • **Protective Factors: Family Domain** -Family attachment -Opportunities for family involvement -Rewards for family involvement	**Minimum acceptable set of supports and opportunities for all youth**: • Adequate nutrition, health, shelter (precondition) • Multiple supportive relationships with adults and peers (within supportive relationships, youth experience high, clear and fair expectations, sense of boundaries) • Challenging and engaging activities and learning experiences (experience increasing sense of competence, opportunities for testing new skills) • Meaningful opportunities for involvement and membership (decision-making, teamwork, sense of belonging, in multiple groups; contributors) • Physical and emotional safety (supports positive growth, lack of it distracts and undermines)	**Measured External Assets**: • School - Caring adult relationships - High expectations - Meaningful participation • Home - Caring adult relationships - High expectations - Meaningful participation • Community - Caring adult relationships - High expectations - Meaningful participation • Peers - Caring relationships - High expectations **Stress Index**	• Education and occupation of parents • Household members and other adolescents in the household • Detailed relationship information about household members • Nonresidential biological parents • School characteristics and specializations • Teacher demographic and educational characteristics • Health service provision and referral • Disciplinary policies • Parents' involvement in organizations and hobbies • Parents' satisfaction with neighborhood • Parents' employment, occupation, govt. support • Health insurance coverage • School security measures and dress codes • Neighborhood characteristics, quality of housing stock, etc. • Network analysis
Outcome Measures	Risk behaviors Thriving Behaviors	• **Risk factors: Peer/Individual Domain** -Rebelliousness -Early initiation – antisocial behavior -Attitudes favorable to antisocial behavior -Attitudes favorable to substance use -Peer antisocial behavior -Peer substance use -Peer rewards for antisocial behavior	**Goals**: • Economic self-sufficiency - decent job - living wage - enough education to advance • Health - physically and mentally healthy • Good family, social relationships - good caregivers for children - positive and dependable family and friendship networks • Engaged in community - taxpayers - law abiders - give something back to their community	• **Risk behaviors**	• Emotional distress • Suicidality • Violence • Substance Use • Sexual behaviors

Appendix 1

Name	Profiles of Student Life: Attitudes and Behaviors	Communities That Care	Community Change for Youth Development	California Healthy Kids Survey	National Longitudinal Study of Adolescent Health (Add Health)
Strengths	• First framework to emphasize developmental assets • Over 500,000 youth have completed survey; • Strong positive relationship between number of assets and measures of thriving • Comprehensive review of literature • Linkage to practice established	• Strong research-based survey: median alpha =0.75 • Psychometric work has been done • Survey use is closely linked to community improvement • DR&P helps community identify, address, and evaluate youth development needs • DR&P provides curricula, other resources that have been "proven effective" • Includes measures of acculturation, family composition, rural/urban residence, home language, SES, school performance, age • Ecological approach—measures of community, family, school, and peer attitudes, norms, behaviors	• Comprehensive framework, with outcomes that are cross-culturally valid • Observable, understandable, defensible thresholds that youth can and should achieve • Administrative data, multiple sources, individual and community level • Focus on benchmarks • Addresses issues of family involvement and institutional reform • Linked to practice	• Resilience Assessment: - Extensive psychometric testing - Median alpha=.80 - Large, diverse populations - Age and language appropriate versions - Strong theoretical base - Multiple measures of assets, demographics and risk behaviors - Parsimonious number of asset questions (60); - Tests for invalid responses - Measures of "voice" and leadership in home, school settings - Comprehension, honesty measures	• Exhaustive—twins, siblings, extensive friendship and romantic networks, substance use, condom use, knowledge and use of protection, household composition and characteristics, interviewer notes on neighborhoods, housing; looking older than age mates • Longitudinal • Sample size and representativeness • Use of computer and taped questions to enhance sense of confidentiality and to accommodate for reading levels
Gaps, Limits	• Self-report data only; • Lacks acceptable alphas for majority of scales (32% have only one indicator; 38% have alpha < .60); • Validity concerns—culture, gender, age, ethnicity, acculturation • Independent measures of health, e.g., lead levels • Longitudinal analysis • Private firm charges fees for use of surveys, training, materials	• Self-report data only • Survey is long, thorough • Advanced reading level • Culturally competent • Emphasizes negative behaviors, attitudes, norms • No independent health measures • Communities can obtain data for additional analyses • Private firm charges fees for use of survey, training, materials	• Need to be individually administered • Lacks measures of acculturation	• Self-report only • Potential to link with other data bases • Cross-sectional • Lacks measures of acculturation • Two culture bound questions on current version • Linkage to practice—indirect (through schools) • Measure of community leadership • Independent health measures • Schools can choose modules, so data not consistent across the state	• Few positive outcomes • Questions about opportunities for leadership and involvement, # years in US, caring relationships with other adults in the community, measure of acculturation, • Linkage to practice? • Independent measures of health, e.g., lead levels?

Appendix 2

Environment/Context: Community	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Rural area	+						
Urbanicity			-				
Higher percent black or Hispanic (vs white)	+/-						
Higher percent foreign born	+						
Higher percent with college education	+						
Higher divorce rates	-						
Higher rate of residential turnover	-						
Higher percent of working females working full time	-						
Higher unemployment rate	-	-				-	-
Higher family income	-						
Higher community income							+
Higher percent religious adherents	+						
Higher crime rate	-						
Higher teen non-marital birth rate	-						
Greater neighborhood monitoring by adults in community	+						
Higher ratio unmarried men to women		-					
Higher high school drop out rate		-					
Higher residential turnover		-					
Greater residential mobility						-	
Higher percent of family planning patients under 20		-					
Better neighborhood quality					+		
Higher community socio-economic status						+	
Higher violent crime rate						-	
Higher teenage suicide rate						-	
Higher levels of community stress						-	-
Higher ratio of males to females							-
More economic opportunities							+
More high status workers							+
More community opportunities for a future							+
Greater community social disorganization							-
Environment/Context: School	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Parochial school	+						
Receipt of AIDS education in school		+	+				
Catholic (vs independent)						+	
Higher percent of minority students						-	
Higher percent of students receiving free lunch						-	
Learning focused school setting						+	
Higher school dropout rates						-	-
Higher rates of school vandalism						-	
Higher levels of safety							+

Key: + PF - RF
+/- PF/RF depends on study

Environment/Context: State	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Restrictive laws regarding contraceptive licensing, advertising, or selling						-	
Coordinated programs and policies addressing teen pregnancy						+	
Higher education level							+
Higher levels of female labor force participation							-
Higher crime rate							-
Higher level of state funding for family planning							+
Higher level of state funding for abortion							+
Environment/Context: Partner	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Greater difference in age of first partner			-				
Partner 3 or more years older				-			
Greater partner support for condom use				+			
Greater partner sexual experience				-			
Higher risk status of partner				-			
Much older male					-		
Greater partner support for contraceptive use					+		
Agreement with partner about method					+		
Male partner 3 or more years older						-	
Older age of male partner							-
Environment/Context: Religious Institution	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Catholic or fundamentalist Protestant (vs Protestant and other)	+						
Environment/Context: Peer	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Older age of peer group and close friends	-						
Peers with poor grades and high non-normative behavior	-						
Friends with good grades and little non-normative behavior	+						
Friends with good grades						+	
Friends & peers w/ good grades and little non-normative behavior						+	
Friends who are teen mothers						-	
A best friend who has been pregnant							-
Close friends closeness to parents	+						
Deviant life trajectories	-						
Peers with positive attitudes about preventive health	+						
Peers with permissive attitudes toward premarital sex	-						
Sexually active peers	-	-					
More communication about HIV			-				
Substance use				-	-		
Greater peer norms and support for condom use				+			
Greater peer use of condoms				+			

Key: + PF - RF
+/- PF/RF depends on study

Environment/Context: Family	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Higher parental education	+			+	+	+	
Higher maternal education		+					+
Two (vs one) parents	+	+			+	+	+
Living away from parents							-
Presence of an adequate father figure							+
Presence of a grandparent in the home							+
Changes in marital status	-						
Marital disruptions or remarriages							-
Parental divorce		-	-				
Working mother during ages 5-15	-						
Higher income level	+		-	+	+	+	+
Intergenerational receipt of welfare	-						
Mother's receipt of welfare					-		
Health insurance	+						
Partial coverage with public health insurance						-	
Greater number of siblings	-						
Larger family size						-	
Being a younger sibling	-						
Greater family religiosity	+		+				
Recent family suicide attempts	-						
Older mother's age at first sex	+						
Older mother's age at first birth	+						
Mother was a teen mother							-
Single mothers' dating behaviors	-						
Single mother cohabitation	-						
An older sibling who had sex	-						
An older sister who gave birth as an adolescent	-	-				-	-
Conservative parental attitudes about teen or premarital sex	+	+	+				
Conservative parental attitudes about contraception	+						
More positive parental values about contraception					+		
Greater parental disapproval of teen sex or use of contraception						+	
More negative parental view of early parenthood							+
Greater family emphasis upon responsibility							+
Foreign language spoken at home						+	

Key: + PF - RF
+/- PF/RF depends on study

Environment/Context: Family Planning Clinics	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Greater number of clinics	+						

Individual: Biological	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Gender (being male vs female)	-	-	-	+			
Older age	-	+	-	-	+	-	-
Having specific dopamine receptor genes	-						
Higher testosterone levels in both genders	-						
Older pubertal development and timing	+						
Older age of menarche	+	+					+
Greater physical maturity (appears older than most)	-						
Individual: Ethnicity/Culture	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Ethnicity (black vs white)	-	+/-	-	+/-	+/-	-	-
Ethnicity (Hispanic vs white)	+		-	-	-	-	-
Ethnicity (Asian PI vs white)	+						
Greater Hispanic acculturation			-				
Individual: Relationship with Family	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Being a younger (rather than older) sibling	-						
Higher quality of family interactions, childrearing practices, support of parents, connectedness	+	+					
Greater parental monitoring					+		
More appropriate parental supervision and monitoring	+	+	+	+		+	
More appropriate family strictness and discipline					+		
Greater parent/child communication about sex and birth control	+/-						
Greater parent/child communication about sex, condoms or AIDS			+/-				
Greater parent/child communication about sex, condoms, or birth control				+/-	+/-		
Greater parent/child communication about sex						+/-	
Greater general communication			+				
Greater parental connectedness and support					+		
Greater family social support							+
Greater teen/family connectedness						+	
Greater parent involvement in adolescent's education							+
Living away from home							-
Having run away from home							-
Physical abuse			-			-	
General family maltreatment						-	

Key: + PF - RF
+/- PF/RF depends on study

Individual: Relationship with Community	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
More concerns about the community	+						
Having a mentor			+				
Greater level of social support			+				
Youth participation in a stable community							+
Individual: Relationship with School	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Enrolled in school	+						
Dropped out of school					-	-	-
Greater school attendance	+						
Better educational performance	+	+		+		+	+
More positive attitudes toward school						+	
Either very high or very low intelligence scores	+						
Greater connectedness at school	+						
Greater participation in school clubs	+						
Greater school involvement							
Greater importance of academic achievement	+						
Greater educational investment		+					
Plans to attend college	+			+	+	+	+
Higher parental college expectations for teen							+
Fighting at school	-						
Received AIDS education	+	+					
Received sex education	+/-				+		
Changed schools multiple times							-
Individual: Relationship with Faith Communities / Religiosity	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Greater religiosity	+	+					
Having a religious affiliations	+						+
More frequent attendance	+		+		-		
Roman Catholic (vs Protestant & other)				-			
Mainstream Protestant (vs other)						-	
Protestant, Catholic or Jewish (vs none)						+	
Individual: Relationship with Peers	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Not being part of a peer group	+						
Being popular with peers	-						
More popular in elementary school							+
Perceived by peers as controversial or aggressive in elementary school							-
Being a member of the leading crowd						+	
Membership in a gang							-
More social activities with peers	-						
Engaging in physical fights	-						
More social bonding	+						

Key: + PF - RF
+/- PF/RF depends on study

Individual: Relationship with Romantic Partners	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Dating or dating at an early age						-	
Going steady with a boy/girlfriend, closeness of relationship	-			-			
Going steady					+		
Monogamous relationships					+		
Longer relationship				-			
Greater number of romantic partners	-						
Greater number of sexual partners						-	
Greater female power in the relationship		+			+		
Being married			+	-		-	-
Dating violence			-				
More discussions about sexual risk				+			
Discussed contraception with partner					+		
Individual: Healthful Behaviors	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Greater participation in sports	+		+	+	+	+	
Greater involvement in other healthful behaviors	+		+		+		
Individual: Problem or Risk-Taking Behaviors	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Greater impulsivity	-						
Greater sensation seeking					-		
Tobacco use	-						
Alcohol use		-		-		-	
Substance use	-		-			-	-
Drug use		-		-			
Running away from home	-						
Greater involvement in delinquent behaviors	-					-	-
Greater involvement in general unconventional behavior	-						
Greater involvement in general risk-taking				-	-		
Greater involvement in other problem behaviors		-	-				
Greater involvement in other risk behaviors						-	
Greater involvement in non-sexual risk-taking behaviors							-
More permissive attitudes toward risk-taking							-
More traditional attitudes toward masculinity			-				
Physical fighting			-				
Carrying weapons			-				
Greater general psychosocial conventionality					+		
Individual: Other Behaviors	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Paid work more than 20 hours per week	-						
Spending more hours watching television	-						

Key: + PF - RF
+/- PF/RF depends on study

Individual: General Skills and Personality Traits	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Higher level of cognitive development					+		
Greater problem-solving skills					+		
More future orientation					+		
Greater egocentrism					+		
Greater internal locus of control							+
Individual: Emotional Well-Being and Distress	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Higher self-esteem	+						+
Stronger self-image and self-esteem					+		
Greater positive self-concept						+	
Higher decision-making autonomy	+						
Greater perceived risk of untimely death	-						
Greater level of stress	-						
Higher level of depression	-				-		-
Suicidal ideation	-						
Suicide attempts		-				-	
Receipt of help for emotional problems	-						-
Greater internal locus of control				+			
Greater impulse control				+			
Greater self control				+			
More social support				+			
Individual: Sexual Abuse	**Initiation of Sex**	**Frequency of Intercourse**	**Number of Partners**	**Use of Condoms**	**Use of Contraception**	**Pregnancy or Impregnation**	**Childbearing or Fathering**
Sexual abuse			-		-	-	-
Sexual pressure, coercion and abuse	-						

Key: + PF - RF
+/- PF/RF depends on study

Individual: Sexual Beliefs, Attitudes, Skills, and Behaviors (CONTINUES ON NEXT PAGE)	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Viewing of TV shows with sexual content	-						
More stereotypical gender roles	-						
More permissive attitudes toward premarital sex and abstinence	-						
More permissive attitudes toward premarital sex		-			-		
More permissive attitudes about abortion		-					
More conservative norms toward number of sexual partners			+				
More conservative attitudes toward number of sexual partners			+				
Greater acceptance of own sexual behavior					+		
Greater acceptance of non-traditional gender roles by men/women				+			
Greater acceptance of non-traditional gender roles for women					+		
More egalitarian gender and family roles						+	
More non-traditional attitudes toward family and gender roles							+
Greater sex role competencies						+	
Greater desire to have friends believe youth is virgin	+			-			
Greater feelings of guilt if were sexually active	+						
Greater embarrassment if pregnant	+						
Greater perceived negative consequences of pregnancy						+	
Greater perceived ease of childbearing and parenting						-	
Greater motivation to use contraception						+	
Greater self-efficacy to refrain from sex	+						
Greater perceived self-efficacy in using condoms				+			
Greater self-efficacy in using condoms				+			
Greater motivation to use condoms				+			
Greater perceived risk or concern about STD or AIDS	+						
Greater intent to use condoms				+			
Carry condoms				+			
Greater use of condoms						+	
Greater use of contraception						+	
Previous condom use				+			
Previous contraceptive history and experience					+		
STD history						-	
Greater perceived susceptibility to STDs/AIDS			+				
Greater perceived susceptibility to pregnancy/STDs/HIV				+	+		
Greater worry about AIDS		+					
Greater motivation to avoid AIDS				+			
Greater knowledge about AIDS			+/-	+			
Greater importance of avoiding STD				+			
Greater importance of avoiding pregnancy					+		
Greater desire to have a child or ambivalence about having one							+
Perception of positive side effects of oral contraceptives					+		
Greater knowledge about contraception					+		

Key: + PF - RF
+/- PF/RF depends on study

Individual: Sexual Beliefs, Attitudes, Skills, and Behaviors (CONTINUED)	Initiation of Sex	Frequency of Intercourse	Number of Partners	Use of Condoms	Use of Contraception	Pregnancy or Impregnation	Childbearing or Fathering
Greater knowledge about condoms				+			
Stronger belief that condoms are effective in reducing STD/HIV				+			
More positive attitudes toward condoms and other forms of contraception				+	+		
Greater embarrassment and barriers to getting condoms				-			
Higher perceived barriers or costs of using condoms (e.g., reduce pleasure)				-			
Greater comfort and satisfaction with method					+		
Same-sex attraction or behavior	-					-	
Dating at an early age or frequent dating	-						
Greater intention to have sex	-						
Pledge of virginity	+				-		
Older age of first sex		+	+	+	+	+	+
Greater wantedness of first sex					+		
Greater number of years sexually active		-				-	
Higher frequency of sex				-	+		
Greater number of sexual partners				-		-	
Sex with a prostitute				-			
Sexual communication skills			+	+			
Use of alcohol or drugs before sex				-			
Received STD education				+			
Received sex education					+	+	
Discussed AIDS with their physician				+			
Discussed AIDS with others				+			
Knowing someone who was HIV positive				+			
Greater perceived male responsibility for pregnancy prevention				+			
Stronger belief that causing pregnancy was a sign of manhood				-		-	
Greater number of visits to a family planning clinic					+		
Greater satisfaction with family planning clinic visit					+		

Key: + PF - RF
+/- PF/RF depends on study

Appendix 3. Additional Measurement Issues

Profile of Student Life: Attitudes and Behaviors

Some asset and risk variables, measured with Likert scales, are from well-validated instruments and serve as an enhancement to the survey's validity. Self-esteem, substance abuse, and risk-taking items were adapted from nationally representative surveys. Nevertheless, measurement of the assets relies primarily on face validity. In addition, when assets are calculated as continuous, rather than binary, variables, approximately one quarter fewer youth have developmental assets. Hence, since Search typically reports a community's level of assets in binary form, assets may be systematically over-reported (Search Institute, 1999).

Despite its strengths as a community organizing tool, from a scientific viewpoint PSL-AB faces a number of challenges. Constructs are neither parallel, nor mutually exclusive. For example, two external assets, *empowerment*, a global trait, and *constructive use of time*, a very specific behavior, are not on the same conceptual level but have overlapping measures. Furthermore, one third of its 40 constructs are measured with a single item and another third have internal validity scores below the accepted minimum (Chronbach's alpha GE 0.70) (Constantine et al., 1998), rendering the survey scientifically weak. Conceptually similar constructs appear in more than one asset; for example, *caring neighborhood* and *community values youth* are virtually identical in concept, yet the first measures *support*, and the second measures *empowerment*. Measured assets do not account for a range of challenging, age appropriate behaviors, such as the use of advanced skills in mechanics, leadership, computers, or science, that are associated with the transition to the world of work. Hence, the surveys are less appropriate for older youth that are establishing independence from home and family. It is, therefore, not surprising that older youth report fewer assets.

While every ethnic and cultural community can benefit from focusing on their youths' assets, PSL-AB is culturally limited (Guajardo-Lucero, 1999). Measures, such as "My parents often tell me they love me," or "I have lots of good conversations with my parents", characterize youths' experience of parental support in some cultures but not in others. For example, as Guajardo-Lucero reports, Asian youth expect their parents to tell them what to do and what not to do as an expression of parental love and support. They also do not discuss plans for the future with their parents, because they expect parents to tell them what to do; instead, they discuss their plans with their friends. *Actively engaged in learning* may mean taking the lead in class, raising hands, and speaking up, but it is possible to be quiet in class and to learn, too (Guajardo-Lucero, 1999).

Appendix 3

Native American youth look to their cultural community for social and emotional support, not to the geographical area that is their neighborhood. Thus, they may feel a strong sense of support from their cultural and spiritual communities, but appear without assets in their neighborhood. A modified version of the 40 Assets for Native American communities makes that important distinction (Guajardo-Lucero, 1999). The Native American adaptation reinforces the centrality of youth by presenting the 40 assets as statements of personal commitment: "I serve the community," versus, "The young person serves in the community." Another example shows how linguistic adaptation reinforces the value of youth for the Native American community: "I experience respect and care. . ." versus "Young person receives support . . ."

Similarly, Latino communities in Colorado have used "*dichos*," or sayings, to express the Search assets in more culturally compatible ways. For youth of color, positive identity development means establishing a personal sense of who they are, ethnically and culturally. Furthermore, the expectation is that youth in multi-cultural communities first learn to value their home culture and then learn from one another to understand and value cultures of other families in the community. As Guajardo-Lucero expressed it, reciprocity is "sharing and offering of oneself while embracing the richness of another" (1999, p. 12.). PSL-AB cannot accommodate this level of cultural sensitivity.

Measures of the 40 Assets also display class and gender bias. Measures of positive behavior, such as "During an average week, how many hours do you spend practicing or taking lessons in music, art, drama, or dance, after school or on weekends?," are not balanced with questions about activities in which youth from working class and immigrant families who contribute to support of their families would likely participate. Extended families in immigrant communities support their children in ways that reinforce commitment and service to family, rather than participation in school activities, particularly in communities in which schools lack culturally competent staff. Similarly, the survey asks about volunteer activities and reading for pleasure, but not about informal apprenticeships or paid work that are sources of connection and opportunity, and perhaps financial support, when teens are not in school (Gambone, 2000). Youth from immigrant and working class families may experience considerable support from parents and relatives, despite the fact that parents talk little about school, never help with homework, and do not attend school meetings (Rubin, 1995). Youth from working class families may spend considerable numbers of hours helping their families, either with work at home or at a family business. Neither volunteering nor participating in school activities is a priority for these families, but that does not mean that families do not fiercely support their children. "My parents spend a lot of time helping other people," may reflect a professional's community service, but not the daily activities of working class parents. Taken together, these questions may have the unintended consequence of undermining youths'

appreciation of their families' support when they do not see their parents' activities reflected in the questions

The survey's language of friendship and support may also reflect gender and culture bias. Many males would not likely describe their sense of community with the words, "In my neighborhood, there are lots of people who care about me," or "students at my school care about me." Rather, male youth might be more likely to express comradeship through actions, such a running together, or action words, such as "it's important to have someone to talk things over with," (Pollack, 1998, p. 181). Survey language may account for at least some of males' lower asset scores.

PSL-AB is also unnecessarily long and poorly balanced. For example, as Appendix 4 shows, the survey includes 11 questions about connectedness with parents, and one about connectedness with peers with more than enough in the former case, and too few in the latter. The instrument has only been used cross-sectionally, so it is not clear whether the indicators and measures have predictive, in addition to correlational, validity. While some may argue that it is not possible to measure prevention of untoward events or behaviors, many questions on the Search instrument would lend themselves to the demands of program evaluation. It should be possible to measure increases in adult contacts and time spent productively, for example. If the hypothesized connections between assets and positive outcomes are indeed valid, then there should be a measurable relationship between increases in assets following program participation, and the level of thriving behaviors. An experimental or quasi-experimental design could help to establish the strength of the relationships between assets and outcomes. Furthermore, Catalano et al. (1998) have identified several strong studies of programs that demonstrated statistically significant increases in positive youth development, compared to control groups. Likewise, Kirby's (2001) review of teenage pregnancy prevention programs identified interventions that were able to make a statistically significant difference in behaviors related to teen pregnancy prevention. Search Institute's work would be more persuasive if the Institute took steps to improve the survey's predictive and scientific validity.

Individual Protective Factors Index

The Individual Protective Factors Survey (IPFI, Springer and Phillips, 1995) and the Youth Enhancement Survey (YES, University of Wisconsin, Madison) are two additional surveys that are used to assess youth assets and to serve as a basis for community organizing. YES is a modular survey that can be customized to meet community needs, and includes risk and protective factors /behaviors in family, school, peer and community domains. In its original form, scales are psychometrically robust, but individual adaptations, which are encouraged, may reduce the survey's scientific reliability (Whitlock and Hamilton, 2000).

Appendix 3

IPFI is a 60 item survey (mean number of items per subscale=6.1; median coefficient alpha=.58; sample size=2,416, Springer and Philips, 1995) composed of ten composite scales that measure protective factors. Some scales contain both internal and external items, while others are composed solely of internal items. Measures of supports and opportunities (external protective factors) are not included on the survey. No test-retest validity has been reported. There is no evidence that the survey has been administered using an experimental or quasi-experimental design, and there is no report of longitudinal administration. The number of questions is reasonable, but the survey relies only on self-report data, does not attempt to measure external supports, and is not validated by external measures from teachers or parents.

Appendix 4 – Spiritual

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
Family				
Community				
School				
Peer				
Individual	During an average week, how many hours do you spend going to programs, groups, or services at a church, synagogue, mosque, or other religious or spiritual place? How important is each of the following to you in your life: …helping other people? …helping to make the world a better place in which to live? …giving time or money to make life better for other people How important is each of the following to you in your life: …helping to reduce hunger and poverty in the world? …helping to make sure that all people are treated fairly? …speaking up for equality (everyone should have the same rights and opportunities)? Sometimes I feel like my life has no purpose	I enjoy helping others I try to do what is fair. All people should get respect. There is a purpose to my life. There will always be people in my life who I can count on. I am confused about what I want out of life (-). I have goals and plans for the future. I plan to graduate from high school. I plan to go to college or some other school after high school. When I am an adult, people will respect me.		In the last month, about how often did you do the following things on your own? -read the scripture -prayed privately -thought seriously about -relig./spirituality -talked about religion/ spirituality with your friends

Appendix 4 – Autonomy

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
Family				T/F: Mother or Father is a person who… -changes the subject, whenever I have something to say -blames me for other family members' problems -brings up my past mistakes when he/she criticizes me -often interrupts me -is less friendly with me, if, I do not see things his/her way -is always trying to change how I feel or think about things -if I have hurt his/her feelings, stops talking to me until I please him/her again -will avoid looking at me when I have disappointed him/her
School				How many of your teachers this year treat you more like a grown-up than your last year's teachers? Yes/No: Can you get up and walk around the classroom when you want to? Do you decide where you sit in class? Do you help to decide how much homework you get? Do you and the other kids in class decide together what the classroom rules are? When you have finished your work in class, can you decide what you do next?
Individual	When things don't go well for me, I am good at finding a way to make things better. One the whole, I like myself. At times, I think I am no good at all. All in all, I am glad that I am me.	I try to do my best at whatever I do. I try to work out problems by talking about them. I can work out my problems. I stand up for myself without putting others down.		

Appendix 4 – Autonomy

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
	I feel I do not have much to be proud of I have a little control over the things that will happen in my life. At school I try as hard as I can to do my best work. It bothers me when I don't do something well. I don't care how I do in school. During an average week, how many hours do you spend reading just for fun (not part of your school work)? How important is each of the following to you in your life: …accepting responsibility for my actions when I make a mistake or get into trouble? …doing my best even when I have to do a job I don't like. It is against my values to drink alcohol while I am a teenager. It is against my values to have sex while I am a teenager Think about the people who know you well. How do you think they would rate you on each of these? …thinking through the possible good and bad results of different choices before I make decisions? …being good at planning ahead? …caring about other people's feelings? …feeling sad when one of my friends is unhappy? …being good at making and keeping new friends …respecting the values and beliefs of people who are of a different race or culture than I am? …knowing a lot about	I understand why I do what I do. I understand my moods and feelings I try to understand how other people feel and think. When I am talking with someone, I pay attention to what they are saying. I feel bad when someone gets their feelings hurt. I try to understand what other people are going through. When I need help, I find someone to talk with. I know where to go for help with a problem. I enjoy working together with other students my age. I can work with someone who has different opinions than mine. I do what I believe is right. I can do most things if I try. There are many things that I do well		

Appendix 4 – Autonomy

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
	people of other races? …enjoying being with people who are of a different race than I am? Think about the people who know you well. How do you think they would rate you on each of these? …knowing how to say 'no' when someone wants me to do things I know are wrong or dangerous? …staying away from people who might get me in trouble? Imagine that someone at your school hit you or pushed you for no reason. What would you do? How important is each of the following to you in your life: …telling the truth, even when its not easy? How important is each of the following to you in your life: …doing what I believe is right even if my friends make fun of me? …standing up for what I believe, even when its unpopular to do so? When I am an adult, I'm sure I will have a good life.			

Appendix 4 – Regular Monitoring

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
Family	My parents push me to be the best I can be. If I break one of my parents' rules, I usually get punished. In my family there are clear rules about what I can and cannot do. How much of the time do your parents ask you where you are going or with whom you will be? On average, how many evenings per week do you go out just to be with your friends without anything special to do?	In my home, there is a parent or some other adult… …who expects me to follow the rules.	How wrong do your parents feel it would be for you to : …drink beer, wine, or hard liquor (for example, vodka, whiskey or gin) regularly? …smoke cigarettes? …smoke marijuana? …steal anything worth more than $5? …draw graffiti, or write things or draw pictures on buildings or other property (without the owner's permission)? …pick a fight with someone? Have any of your brothers or sisters ever: …drunk beer, wine or hard liquor? …smoked marijuana? …smoked cigarettes? …taken a handgun to school? …been suspended or expelled from school? **T/F or Y/N**: My parents ask if I've gotten my homework done. When I am not at home, one of my parents knows where I am and who I am with? Would your parents know if you did not come home on time? My parents want me to call if I'm going to be late getting home. If you drink some beer or wine or liquor without your parents' permission, would you be caught by your parents? My family has clear rules about alcohol and drug use. If you carried a handgun without your parents' permission, would you be caught by your parents?	During the past 30 days, how often did one of your parents: -Restrict the amount of time you could watch television? -Check to see whether your homework was done? -Go over your homework with you? -Check over papers you brought home that a teacher had graded? -Set a time you had to be home on school nights? -Set a time you had to be home on the weekend? How much does your mother/father really know.. -who your friends are -where you go at night -how you spend your money -what you do with your free time -where you are most afternoons after school

Appendix 4 – Regular Monitoring

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
			If you skipped school would you be caught by your parents? My parents notice when I am doing a good job and let me know about it. Has anyone in your family ever had a severe alcohol or drug problem? Your parents tell you they're proud of you for something you've done? People in my family hardly ever lose their tempers.	
Community	If one of my neighbors saw me do something wrong, he or she would tell one of my parents.	Outside of my home and school, there is an adult… …who believes I will be a success. …who always wants me to do my best.	…would he or she be caught by the police? If a kid smoked marijuana in your neighborhood… If a kid drank some beer, wine or hard liquor in your neighborhood… If a kid carried a handgun in your neighborhood … My neighbors notice when I am doing a good job and let me know There are people in my neighborhood who encourage me to do my best.	

Appendix 4 – Regular Monitoring

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
School	How often do you feel afraid of: …walking around your neighborhood? …getting hurt by someone at your school? …getting hurt by someone in your home? Teachers at school push me to be the best I can be. In my school there are clear rules about what students can and cannot do. At my school, everyone knows that you'll get in trouble for using alcohol or other drugs. If I break a rule at school, I'm sure I'll get in trouble On an average school day, about how much time do you spend doing homework outside of school?	At my school there is a teacher or some other adult… …who always wants me to do my best. …who believes that I will be a success	T/F: My teacher(s) notices when I am doing a good job and lets me know about it. The school lets my parents know when I have done something well.	How much need is there at your school for more rules to: -stop stealing -stop drug use -stop violence and fighting
Peer			What are the chances you would be seen as cool if you: -smoked cigarettes -began drinking alcohol regularly, that is, at least once or twice a month -smoked marijuana -carried a handgun How wrong do you think it is for someone your age to: -drink beer, wine, or hard liquor (vodka, whiskey, or gin) regularly -Smoke cigarettes -Smoke marijuana -Use LSD, cocaine, amphetamines, or another illegal drug	

Appendix 4 – Opportunities

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
Family		In my home, there is a parent or some other adult… …who believes I will be a success. …who always wants me to do my best.	T/F My parents ask me what I think before most family decisions affecting me are made.	
School			T/F: In my school, students have lots of chances to help decide things like class activities and rules. There are lots of chances for students in my school to talk with a teacher one-on-one	
Community	During an average week. How many hours do you spend helping other people without getting paid (such as helping out at a hospital, daycare center, food shelf, youth program, community service agency, or doing other things) to help make your city a better place for people to live? During an average week, how many hours do you spend: …playing on or helping with sports teams at school or in the community? …in clubs or organizations (other than sports) at school (for example, school newspaper, student government, school plays, language clubs, hobby clubs, drama clubs, debate, etc.)? …in clubs or organizations (other than sports) outside of school (such as 4-H, Scouts, Boys and Girls Clubs, YWCA, YMCA)? I'm given lots of chances to help make my town or city a better place in which to live.	Outside of my home and school, I help other people. Outside of my home and school, I take lessons in music, art, sports, or a hobby. I am part of clubs, sports teams, church groups, or other extra activities away from school	If you wanted to get some beer, wine, or hard liquor, how easy would it be for you to get some? If you wanted to get some cigarettes, how easy would it be for you to get some? If you wanted to get a drug like cocaine, LSD, or amphetamines, how easy would it be for you to get some? If you wanted to get a handgun, how easy would it be for you to get one? If you wanted to get some marijuana, how easy would it be for you to get some?	
Peer			Think of your 4 best friends (feel closest to). In the past year (12 months) how many of your best friends have: … smoked cigarettes? …tried beer, wine, or hard	

Appendix 4 – Opportunities

Setting	Search PSL-AB	CHKS	Communities that Care (CTC)	Family and Youth Survey (FAYS)
			liquor (for example, vodka, whiskey or gin) when their parents didn't know about ir? …used marijuana? …used LSD, cocaine, amphetamines, or other illegal drugs? …been suspended from school? …carried a handgun? …been arrested? …stolen or tried to steal a motor vehicle such as a car or motorcycle? …sold illegal drugs? …dropped out of school?	
Individual	During an average week, how many hours do you spend practicing or taking lessons in music, art, drama, or dance, after school or on weekends			

Appendix 4 – Connections

Setting	Search (PSL-AB)	California Healthy Kids Resiliency Module (HKRM)	Communities that Care (CTC)	Family and Youth Survey (FAYS)
Family	I get along well with my parents. My parents give me help and support when I need it. My parents often tell me they love me. How often do your parents: …help you with your school work …talk to you about what you are doing in school …ask you about homework …go to meetings or events at your school If you had an important concern about drugs, alcohol, sex, or some other serious issue, would you talk to your parents about it? I have lots of good conversations with my parents. In an average week, how many times do all of the people in your family who live with you eat dinner together? In my family, I feel useful and important.	I feel like I am alone in the world.. I do fun things or go fun places with my parents or other adults I do things at home that make a difference. I help make decisions with my family.. In my home, there is a parent or some other adult… …who talks with me about my problems. …who listens to me when I have something to say. …who is too busy to pay much attention to me (-). …who is interested in my school work.	T/F: Do you feel very close to your mother? Do you share your thoughts and feelings with your mother? Do you share your thoughts and feelings with your father? Do you enjoy spending time with your mother? Do you enjoy spending time with your father? We fight a lot in our family. If I had a personal problem, I could ask my mom or dad for help. Do you feel very close to your father? People in my family sometimes hit each when they are mad. My parents give me lots of chances to do fun things with them.	T/F: Mother or Father is a person who… Makes me feel better after talking over my worries with him/her Respects me even if I disagree with her or him Smiles at me very often Listens to me when I have something to say Does nice things for me Is able to make me feel better when I am upset Respects the way I feel and think about things Values who I am as an independent person Enjoys doing things with me Cheers me up when I am sad Encourages me to express my feelings and opinions Gives me a lot of care and attention Makes me feel like the most important person in his/her life Believes in showing his/her love for me Is compassionate Gives of his or her time for me Often praises me Is easy to talk to Hugs me often Kisses me often Loves me even if I don't see things the same as her or him
Community	How many adults have you known for two or more years who: …give you lots of encouragement whenever they see you …you look forward to spending time with …talk with you at least once a month Adults in my town or city …make me feel important. …listen to what I have to say. …don't care about people my age. In my town or city, I feel like I matter to people In my neighborhood, there are a lot of people who care about me.	Outside of my home and school, there is an adult… …who really cares about me. …who tells me when I do a good job.	How often do you attend religious services or activities? T/F: If I had to move, I would miss the neighborhood I now live in. I like my neighborhood. How much of the following describes your neighborhood:… …crime and/or drug selling …fights …lots of empty or abandoned buildings …lots of graffiti. There are people in my neighborhood who are proud of me when I do something well. I feel safe in my neighborhood. I'd like to get out of my neighborhood.	In the last 6months, how often have you seen or spent time with the following people? - neighbors (adults) - parents of friends - church leaders community leaders

Appendix 4 – Connections

Setting	Search (PSL-AB)	California Healthy Kids Resiliency Module (HKRM)	Communities that Care (CTC)	Family and Youth Survey (FAYS)
			Have you changed homes in the past year (12 months)? How wrong would most adults in your neighborhood think it was for kids your age: -to use marijuana -to drink alcohol -to smoke cigarettes About how many adults have you know personally who in the past year have: -used marijuana, crack, cocaine, or other drugs -sold or deal drugs -did other things that could get them in trouble with the police like stealing, selling stolen goods, harassing or assaulting others, etc. -gotten drunk or high How many times have you changed homes since kindergarten?	
School	My teachers really care about me. I get a lot of encouragement at school. Students in my school care about me. Students help decide what goes on in my school How often do you: …feel bored at school? …come to classes without bringing paper or something to write with? …come to classes without your homework finished? …come to classes without your books? I care about the school I go to.	At my school, there is a teacher or some other adult… …who really cares about me. …who tells me when I do a good job. …who notices when I'm not there. …who is mean to me (-). …who listens to me when I have something to say I do interesting activities at school. At school, I help decide things like class activities or rules. I do things at school that make a difference.	How many times have you changed schools since kindergarten? Have you changed schools in the past year?	Compared to last year, how much do you like school this year? How many of your teachers: -don't care if you get bad grades -believe you can do well in school -would be willing to help you if you told them about a problem you had -really listened to what you have to say How much do each of the following people in your school care about you as a person? -the principal and assistant principal -other adults -teachers
Peer	Among the people you consider to be your closest friends, how many would you say: …drink alcohol once a week or more? …have used drugs such as marijuana or cocaine? …do well in school? …get into trouble at school?	I have a friend about my own age… …who really cares about me. …who talks with me about my problems. …who teases me too much (-). …who helps me when I'm having a hard time. My friends get into a lot of trouble (-). My friends do well in school. My friends try to do what is right		