

Research Article

Development of a Resilience Survey for Expectant and Parenting Youth

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Abstract

Background: The Adolescent Family Life Program Positive Youth Development (AFLP PYD) model is a case management-based intervention that supports the development of protective factors that contribute to resilience among Expectant and Parenting Youth (EPY) in California. This study describes the development of the Resilience Survey for EPY.

Methods: A literature review informed the development of a new scale to assess resiliency. Cognitive interviews were conducted to ensure content validity and understanding of the survey items and response options. The survey was administered to 707 AFLP PYD participants at baseline and six months later. Factor and sensitivity analyses were used to reduce the number of items.

Results: The literature review identified 29 resilience surveys. Of these, 23 items from 14 surveys were consistent with the AFLP PYD theoretical framework and evaluation objectives. Three additional items were developed to ensure coverage of each construct, resulting in a 26-item survey. Factor and sensitivity analysis resulted in a final 12-item scale. The average individual-level increase in resilience was 0.15 (standard deviation 0.36), which was statistically different from zero ($p < 0.001$). Cohen's d_z for change over time was 0.41, corresponding to a small to medium effect. The Cronbach's alpha coefficient was 0.85 at baseline and 0.89 at six months, indicating high internal consistency.

Conclusions: The Resilience Survey for EPY may be a useful evaluation tool for other resilience-based interventions.

INTRODUCTION

The Maternal Child and Adolescent Health (MCAH) Division within the California Department of Public Health launched the Adolescent Family Life Program (AFLP) in 1988 to provide case management services to Expectant and Parenting Youth (EPY). Historically, there was limited federal funding dedicated to programs focused on serving EPY. To address that gap, in 2010, the federal Office of Adolescent Health (now called the Office of Population Affairs) established the Pregnancy Assistance Fund (PAF) [1]. From 2010 to 2019, PAF provided funding to states and tribes through a competitive peer-reviewed grant process to implement programs for EPY. Proposals were required to include an evaluation component to inform the evidence base for effective interventions aimed at improving outcomes of EPY and their families. California MCAH received PAF funding to develop the AFLP Positive Youth Development (PYD) model

- a more standardized, evidence-informed program that would build upon the existing case management model and incorporate a strengths-based approach to support the development of protective factors that contribute to resilience. The expectation was that resilience would enable EPY to overcome challenges in their lives and achieve positive social, educational, health, and economic outcomes [2].

While there are several definitions of resilience, the American Psychological Association (APA) defines it as: "the process of adapting well in the face of adversity, trauma, tragedy, threats or even significant sources of stress" [3]. Decades of research, including several longitudinal studies of EPY, identified a wide range of factors that help adolescent parents and their offspring successfully adapt in the face of adversity [4-7]. This body of research informed the AFLP PYD model, which is further grounded in the Resilience in Action theoretical framework [8]. In

brief, three important protective factors are necessary to satisfy basic human needs, buffer risk, and foster resilience: 1) forming caring relationships, 2) maintaining high expectations, and 3) providing opportunities for participation and contribution. The AFLP PYD model engages case managers to foster these protective factors through a series of targeted activities and conversations aimed to meet youth participants’ basic needs and support the development of resilience strengths in four domains, which include:

- a. Problem-solving (e.g., planning, resourcefulness, flexibility, and critical thinking);
- b. Autonomy and a sense of identity (e.g., self-awareness, self-efficacy, positive identity, initiative, adaptive distancing, mindfulness, and humor);
- c. A sense of purpose (e.g., goal direction, motivation, optimism, hope, creativity, spirituality, and sense of meaning); and
- d. Social competence (e.g., communication, empathy, responsiveness, compassion and forgiveness, and emotion regulation).

The premise of this research-based framework is that protective factors help meet youths’ basic needs, promote resilience strengths, and result in improved health, social, and academic outcomes. In addition to developing the program, MCAH built the capacity of local agencies and case managers to implement the model with fidelity [9,10].

A key component of AFLP PYD was that it incorporated a comprehensive program evaluation. A primary goal of the evaluation was to assess the impact of the AFLP PYD model in building the resilience of EPY consistent with the concepts outlined in the Resilience in Action framework. The evaluation team sought to use an existing, previously validated resilience measure; however, identifying an appropriate instrument proved challenging. How resilience is operationalized and measured varies considerably and has resulted in the specification of a wide range of risk and protective factors. This variability creates challenges in evaluating interventions aimed at fostering resilience, as there is no “gold standard” on what measure or conceptualization to use [11]. Selecting the most appropriate survey for the population and context is critical. The survey items must directly reflect the core components of the intervention aimed to promote resilience, and they must be responsive to change in relation to an intervention. Many existing measures of resilience include items that assess constructs inherent to the individual (e.g., genetic predispositions, temperament, and cognitive ability) and are, therefore, not amenable to influence by interventions. Assessing measures’ sensitivity to change is further complicated because reporting change scores is not common or routine [11]. After conducting an extensive literature review, we concluded that no existing resilience assessment aligned with the AFLP PYD model and evaluation goals. Thus, the purpose of this study is to describe the process that MCAH used

to develop and test a parsimonious survey that would accurately reflect the AFLP PYD model and would be appropriate for youth from Hispanic/Latinx backgrounds, which comprise over 80% of the AFLP PYD population.

METHODS

There were three steps to developing the resilience survey for expectant and parenting youth: a literature review and initial measurement development, cognitive interviewing, and scale reduction. (Figure 1) provides an overview of the steps to develop and test this survey. In consultation with UCSF Institutional Review Board analysts, evaluators determined that as a quality improvement activity with the intent of improving existing programs, the project did not require institutional approval.

Literature Review and Initial Measure Development

First, we conducted a literature review of youth resilience surveys using varying combinations of the following search

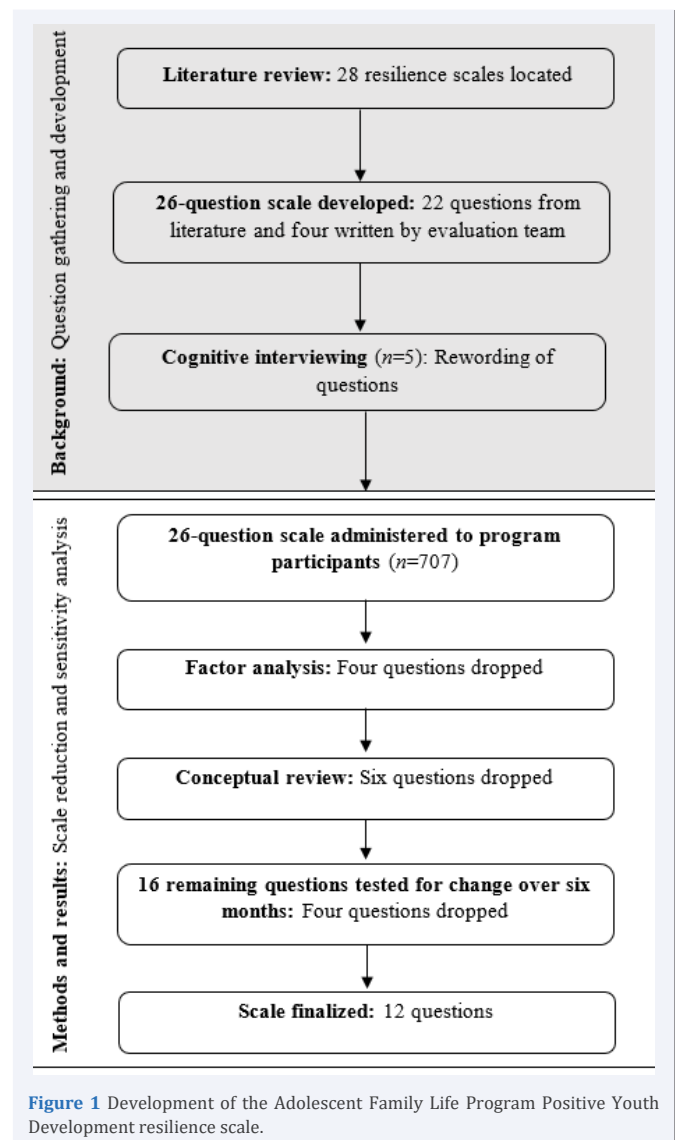


Figure 1 Development of the Adolescent Family Life Program Positive Youth Development resilience scale.

terms: youth, child, adolescent, resilience, goals, autonomy, engagement, decision-making, problem-solving, emotion regulation, high expectations, caring relationships, scales, measures, assessments, and questionnaire. Our initial search was broad and intended to capture surveys reflective of conceptual domains that AFLP PYD was designed to influence. We consulted the following databases: Education Resources Information Center, PsychInfo, and the internet (e.g., Google and Google Scholar). A total of 29 surveys were identified. Each survey was reviewed for constructs, scale measures, validating published literature, and a review of cited references to further identify additional sources (Table 1). Although no single survey fully reflected our needs, we

identified 24 items from 14 surveys that were consistent with our theoretical framework, evaluation objectives, and intervention goals. The evaluation team developed three additional items to ensure coverage of each of the constructs of interest (Table 2). The initial survey tested included 26 items.

Cognitive Interviewing

Once the initial set of items was compiled, we conducted in-person cognitive interviews to assess adolescents' understanding of each item with a convenience sample of 5 youth program participants between the ages of 14 and 17. Four self-identified as female, one as male, and two were Spanish speakers. We employed three cognitive interviewing techniques:

Table 1: Resilience surveys identified by the literature review.

S.No	Survey	Constructs	Scale measure
1	4H - Reliability for Everyday Living Survey [14]	Decision-making, problem-solving, goal-setting, communication, critical thinking	Not available
2	7 C's Resilience Tool [15]	Competence, confidence, character, connection, contribution, coping and control	3 option scale: Different options per question rated 0-2 scale. 0 = most resilient, 2 = least resilient
3	ACEs Resilience Questionnaire [16]	No construct format	5-point Likert: Definitely true, probably true, not sure, probably not true, definitely not true
4	Adolescent Resilience Questionnaire (ARQ) [17]	Self, family, peers, community, school	5-point Likert: Never, not often, sometimes, most of the time, all of the time
5	Bounce Back and Thrive (BBT) [18]	No construct format	5-point Likert: Don't agree at all to totally agree; 4-point Likert: Did not apply to me at all to applied to me very much
6	California Healthy Kids Survey - Resilience and Youth Development Model (RYDM) (California Department of Education, 2003)	Caring relationships, high expectations, meaningful participation, safety, love, belonging, respect, mastery, challenge, power, meaning, cooperation, empathy, problem-solving, self-efficacy, self-awareness, goals and aspirations	4-point Likert: Not at all true, a little true, pretty much true, very much true
7	Child and Youth Resilience Measure (CYRM) [19]	Individual, family, spiritual/community, social/culture	5-point Likert: Not at all, a little, somewhat, quite a bit, a lot
8	Cognitive Emotional Regulation Questionnaire (CERQ-short) [20]	Self-blame, other-blame, rumination, catastrophizing, positive refocusing, planning, positive reappraisal, putting into perspective, acceptance	5-point Likert: Almost never to almost always
9	Connor Davidson Resilience Scale - (CD RISC Versions 25 and 10 questions) [21]	Factor/domains - 1) notion of personal competence, high standards and tenacity, 2) trust in one's instincts, tolerance of negative affect, and strengthening effects of stress, 3) positive acceptance of change, and secure relationships, 4) control, 5) spiritual influences	5-point Likert: Not true at all, rarely true, sometimes true, often true, true nearly all the time
10	Ego Resiliency Scale (ER - 89) [22]	No construct format	4-point Likert: Does not apply at all, applies slightly, applies somewhat, applies very strongly
11	Hope Scale (from HPTN068 study in South Africa) [23]	Personal motivation, anticipation for a positive future, influence of others on hope	Not available
12	Multidimensional Scale of Perceived Social Support [24]	Family, friends, and significant other	7-point Likert: Very strongly disagree, strongly disagree, disagree, neutral, agree, strongly agree, very strongly agree
13	Resilience Attitudes and Skills Profile (RASP) [25]	Insight, independence, creativity, humor, initiative, relationships, values orientation	6-point Likert: Strongly disagree to strongly agree
14	Resilience Scale for Adolescents (READ) [26]	Family cohesion, social resources, structured style, social competence, personal competence	5-point Likert: Totally agree to totally disagree
15	Resilience Support Scale for Youth [27]	Taking care of yourself, engaging fully in life, connecting with others, achieving balance and harmony in your life	7-point Likert: Disagree to agree
16	Resilience Skills and Abilities Scale (RSAS) [28]	Not available	5-point Likert: Strongly disagree to strongly agree
17	Resiliency Protective Factors Checklist [29]	Individual protective factors, family protective factors, community protective factors	Mark X next to protective factors you have, and a P next to protective factors you possibly could have had
18	Resiliency Scale for Children and Adolescents [30]	Sense of mastery, sense of relatedness, and emotional reactivity	5-point Likert: Never, rarely, sometime, often, almost always
19	Scale of Protective Factors (SPF-24) [31]	Social support, social skills, planning behavior, goal efficiency	7-point Likert: Disagree to completely agree
20	Student Resilience Survey (SRS) [32]	Communication and cooperation, self-esteem, empathy, problem solving, goals and aspirations, family connection, school connection, community connection, autonomy experience, pro-social peers, meaningful participation in community activity and peer support	5-point Likert: Never to always

21	The Devereux Early Childhood Assessment (DECA) [33]	Initiative, self-control, attachment	Not available
22	The Positive Youth Development Inventory Short Version (PYDI) [14]	Competence, connection, caring, confidence, character, contribution	4-point Likert: Strongly disagree, disagree, agree, strongly agree
23	The Resilience Scale (RS-14) - Chinese [34]	Personal competence, acceptance of self and life	7-point Likert: Strongly disagree to strongly agree
24	The Resilience Scale (RS) [27]	Sense of purpose and meaning, authenticity, equanimity, self-reliance, perseverance	7-point Likert: Disagree to agree
25	The Youth Survey: Measuring the Quality of Mentor-Youth Relationships [35]	The extent to which the relationship is centered on the youth; The youth's emotional engagement; The extent to which the youth is dissatisfied with the relationship	4-point Likert: Not true at all, not very true, sort of true, very true
26	Youth Ecological-Resilience Scale (YERS) [36]	Family relationships, friend relationships, teacher relationships, community relationships, role model relationships, love relationships, community safety, family financial security, social activities, interdependent problem-solving, self-efficacy, resourcefulness, team work, empathy, positive learning experience, high self-expectations, bouncebackability, optimism, self-esteem, distress tolerance, spirituality	5-point Likert: Strongly disagree, disagree, uncertain, agree, strongly agree
27	Youth Resiliency: Assessing Developmental Strengths Questionnaire (ADS) [37]	Family support/expectation, peer relationship/influence, commitment to learning, work culture, community cohesiveness, self-control, empowerment, self-concept, social sensitivity, cultural sensitivity	5-point Likert: Strongly agree, agree, neutral, disagree, strongly disagree
28	Youth THRIVE Survey [38]	Youth resilience, social connections, knowledge of adolescent development, concrete support in times of need, cognitive and social-emotional competence	5-point Likert: Not at all like me, a little like me, sort of like me, a lot like me, very much like me
29	Generalized Self-Efficacy Scale [39]	Goal setting, effort investment, persistence in face of barriers, recovery from setbacks	4-point Likert: Not true at all, hardly true, moderately true, exactly true

Table 2: Factor analysis of 25 resilience questions (n = 687).

Rotated loadings ^a		
	Factor 1	Factor 2
Questions that loaded on factor 1^b		
I use my strengths to solve my problems ^c .	0.61	0.21
I am aware of my personal strengths [19].	0.6	0.29
When faced with a problem, I can usually find a solution [39].	0.59	0.2
I set goals and think about what I need to do to reach them ^d [40].	0.57	0.32
(When you experience negative events...) I think about how to change the situation ^d [20].	0.54	0.15
I have a positive attitude about myself [41].	0.55	0.34
(When you experience negative events...) I think I can learn something from the situation ^d [20].	0.5	0.36
I have opportunities that are challenging and interesting. (Youth and Young Adult leaders for Program Excellence, 2004)	0.51	0.24
I often feel in control of what happens to me [42,43].	0.51	0.22
When I have a serious disagreement with someone I can talk calmly about it without losing control [44].	0.48	0.29
Things usually go the way I planned ^d [39].	0.47	0.19
(When you experience negative events...) I think that I can become a stronger person as a result of what has happened [20].	0.47	0.33
(When you experience negative events...) I use healthy strategies like deep breathing, listening to music, talking with friends or other ways to help me feel better [20].	0.46	0.37
I have a plan for achieving my future educational or career goals [45].	0.45	0.24
My life has meaning ^c .	0.45	0.39
I can resist doing something when I know that I shouldn't do it ^d [44].	0.44	0.16
I do things that are meaningful for my family, school, and/or community ^c .	0.44	0.31
There is an adult who encourages me to do my best [37].	0.17	0.76
There is an adult who cares about me [43].	0.14	0.74
There is an adult who helps me make good decisions ^d [24].	0.2	0.71
I have someone I can turn to for comfort [46].	0.34	0.59
I have someone I can turn to for practical help, like getting a ride somewhere, or help with shopping or cooking a meal [46].	0.19	0.55
Question that loaded on both factors (loading > 0.40)		
I express my ideas, concerns, and opinions with important people in my life (such as family, partner, or friend). (Youth and Young Adult Leaders for Program Excellence, 2004)	—	—
Questions that did not load on either factor		
(When you experience negative events...) I tell myself that there are worse things in life [20].	—	—
I usually make quick decisions based on what feels right in the moment [47].	—	—
(When you experience negative events...) I continually think how horrible the situation has been [20].	—	—
<i>Eigenvalue</i>	7.22	1.11
<i>Proportion of variance explained</i>	57.65%	43.93%

a. Criterion for factor loading: 0.40 or higher on only one factor, based on principal factors with orthogonal varimax rotation. Factors with Eigenvalue greater than 1 were retained. b. Citations on scale items refer to the source of the question. c. Scale items written by investigative team. d. Question was removed by study team to facilitate parsimonious scale.

1) “think-aloud” interviewing; 2) reactive verbal probes; and 3) retrospective probing [11]. The survey was administered in person. The survey administrator explained the purpose of the survey and instructed participants to ask if they had any questions or difficulties in answering any of the items. In “think-aloud” interviewing, participants are asked to verbalize their thoughts as they read and answer each item. In addition, after the participant completed the survey, the administrator conducted reactive verbal probes in response to the participant’s behavior when answering the survey items, such as a prolonged pause or looking toward the interviewer for clarification. Next, the administrator conducted retrospective probing by asking the participant about each item they answered after they completed the entire survey. The research team reviewed the interview notes and revised wording where necessary to ensure content validity and an adequate understanding of the survey items and response options. This step indicated that youth participants understood what the questions were asking and the response scales. There were no major changes to the wording of any of the items based on the cognitive interviewing.

Scale Reduction

Reducing the data collection burden was a primary goal of this process as EPY are required to complete several assessments throughout their time in AFLP PYD. To this end, we conducted factor and sensitivity analyses to determine whether the survey could be shortened while covering all the key conceptual domains. The 26-item survey was administered to 707 AFLP PYD participants between July 2018 and December 2019. The survey was initially conducted in the first couple of months in AFLP PYD and then again at six-month intervals. Case managers provided EPY with an iPad, explained the purpose of the survey, and assured the youth participants that the survey was voluntary and confidential; this information was also included at the beginning of the survey. Case managers were instructed to be present to support EPY in taking the online survey if needed; however, they could not see their responses to ensure data confidentiality. Participants could choose to take the survey in English or Spanish. After reading each item, they were asked to rate the extent to which they agreed with it using a 4-point Likert agreement scale where 4 = Strongly agree; 3 = Agree; 2 = Disagree; 1=Strongly disagree. To facilitate comprehension, voice assistance and a pictograph of the rating scale were also provided. The order of survey items was randomized.

Factor Analysis of Baseline Data

A principal factor analysis with orthogonal varimax rotation was applied to the baseline data. Factors with Eigenvalues greater than 1.0 were retained. The criterion for factor loading was 0.40 or higher on only one factor.

Sensitivity Analysis

Scale scores at baseline and six months were calculated using the average of the retained survey items. Because responses were skewed to the right, nonparametric statistics were used

to test differences between groups and within individuals over time, although parametric statistics (one-way ANOVA and paired t-tests) produced equivalent results. The Kruskal-Wallis rank-sum test was used to compare mean differences in baseline resilience among three groups of participants: 1) those who completed both the baseline and six-month survey; 2) those who completed the baseline survey but were no longer in the program at six months; and 3) those who were still in the program at six months, but who did not complete a six-month survey. To test the scale’s sensitivity over time, mean differences at the individual level between baseline and six-month scale scores were tested using the Wilcoxon matched-pairs signed-rank test.

RESULTS

Participant Characteristics

Of the 707 participants that took the baseline survey, the majority (88%) were female-identified, and their average age at baseline was 16.6 years (range: 11 to 19 years). Most (85%) identified as Hispanic/Latinx, with smaller numbers identifying as White (9%), African American/Black (8%), Asian (3%), American Indian or Alaska Native (2%), and Native Hawaiian or Pacific Islander (1%). A total of 75 EPY took the baseline survey in Spanish. Participants came from 21 AFLP PYD sites across California.

Of those with baseline surveys, 197 (28%) were in AFLP PYD and had completed the same survey six months later. Of those who did not complete the six-month follow-up survey, 311 (61%) were still in the program at six months, and 199 (39%) had exited the program. These three groups did not differ significantly in terms of age, sex, language of screening survey, or average survey scale scores at baseline. Youth participants with six-month surveys were more likely than those who exited the program before six months to identify as Hispanic/Latinx (89% vs. 78%, respectively, add the Coefficients and *p*) and less likely than youth who dropped out of the program before six months to identify as African American/Black (4% vs. 13%, respectively, add the Coefficients and *p*).

Initial Scale Reduction

The factor analysis produced two factors with Eigenvalues greater than 1.0 (Table 2). Items that loaded on the first factor were about the youth participant’s own attitudes, strengths, behaviors, or opportunities. Items loaded on the second factor were about adults or others the youth participant could turn to for support, encouragement or other types of help.

Three items were dropped from the scale because they did not load on either factor, and one was dropped because it loaded on both factors. To adhere to the goal of a parsimonious scale, two groups of investigators independently identified candidate items for removal. Upon conferral and consensus, six additional items that were methodically weaker (two items), conceptually redundant (two items), or less central to the program (two items) were removed. This left 16 items for the sensitivity analysis described in the next section.

Sensitivity Analysis

The sensitivity analysis yielded additional items to eliminate. Table 3 presents means at baseline and six months for the 16 items retained after the initial scale reduction, sorted from largest to smallest change over time. The mean scale score for all 16 items at baseline was 3.30 (Standard Deviation (SD) 0.39), which increased significantly to 3.48 (SD 0.38) at the six-month follow-up. Means at baseline ranged from 3.03 to 3.70, near the maximum of the 1-to-4 response scale. Means at six months ranged from 3.19 to 3.78. When each youth participant's baseline response was subtracted from their six-month response, twelve items exhibited significant increases over time, ranging from 0.08 to 0.25 on average. Four items with means greater than 3.50 at baseline (indicating an average response between "agree" and "strongly agree") did not change significantly. These items were removed.

The means for the 12-question scale were 3.33 at baseline and 3.48 at six months (SD 0.39 at baseline, 0.38 at six months; (Table 3). The average individual-level increase in resilience was 0.15 (SD 0.36), which was statistically different from zero (i.e., from no change) at $p < 0.001$. Cohen's d_z [12] for the change over time in the scale mean was 0.41, corresponding to a small to medium effect [13]. The Cronbach's alpha coefficient for the final 12-item survey was 0.85 at baseline and 0.89 at six months, indicating high internal consistency among the 12 retained items.

DISCUSSION

Building resiliency is an important upstream prevention strategy to foster the long-term ability to adapt in the face of adversity. This study describes the process of developing a

survey to assess resilience over time among EPY in the AFLP PYD. Based on expert review of the survey items as well as a priori criterion for factor and sensitivity analyses, the initial 26-item survey was reduced to a final scale that included 12 items. Most items came from previously validated scales. The final scale had high internal consistency, and despite a high baseline mean scale score of 3.3 (on a four-point scale), the scale was sensitive to change, as indicated by a small but significant increase at the 6-month follow-up survey.

There are several noteworthy limitations. First, while the survey was available in both English and Spanish, the sample of participants who took the survey in Spanish was not large enough to assess the internal consistency and change scores over time for the Spanish language version separately. In addition, this survey was conducted in a real-world setting with participants in the AFLP PYD. Consequently, it was not feasible to conduct test-retest reliability assessments or evaluate construct validity against other related survey instruments, as additional assessments were deemed too burdensome for the population. Future research should address these limitations.

In addition, it is not possible to determine why four of the survey items were not sensitive to change. It is possible that the wording of the items did not adequately capture the concepts of interest or that there was a ceiling effect in the responses. It is also possible that these items did not register change because the program did not affect these aspects of resilience. We attempted to address this limitation by retaining questions from all four conceptual domains of resilience targeted in the program. Thus, the final scale included items in each of the conceptual domains of interest, including the domains linked to the dropped items.

Table 3: Mean baseline, six-month, and change scores for the 12 retained questions and scale ($n = 197$)^a.

Questions included in scale	Baseline mean (SD)	6-month mean (SD)	Change mean (SD)
I am aware of my personal strengths.	3.28 (0.65)	03.52 (0.53)	0.25*** (0.67)
When faced with a problem, I can usually find a solution.	3.13 (0.61)	3.37 (0.55)	0.24*** (0.66)
I use my strengths to solve my problems.	3.26 (0.63)	3.45 (0.56)	0.19*** (0.66)
I often feel in control of what happens to me.	3.13 (0.7)	3.29 (0.6)	0.16** (0.69)
When I have a serious disagreement with someone, I can talk calmly about it without losing control.	3.03 (0.7)	3.19 (0.76)	0.16** (0.8)
I have someone I can turn to for practical help, like getting a ride somewhere, or help with shopping or cooking a meal.	3.46 (0.68)	3.59 (0.56)	0.13* (0.74)
I do things that are meaningful for my family, school, and/or community.	3.33 (0.61)	3.45 (0.57)	0.12** (0.64)
I have a positive attitude about myself.	3.37 (0.64)	3.48 (0.59)	0.11* (0.65)
I have opportunities that are challenging and interesting.	3.27 (0.52)	3.37 (0.56)	0.11* (0.63)
I have someone I can turn to for comfort.	3.55 (0.59)	3.65 (0.5)	0.11* (0.64)
I have a plan for achieving my future educational or career goals.	3.52 (0.59)	3.61 (0.5)	0.09† (0.63)
My life has meaning.	3.69 (0.48)	3.78 (0.43)	0.08* (0.49)
12-question resilience scale	3.33 (0.39)	3.48 (0.38)	0.15*** (0.36)
Questions not included in scale			
There is an adult who encourages me to do my best.	3.59 (0.59)	3.65 (0.52)	0.06 (0.65)
There is an adult who cares about me.	3.7 (0.54)	3.75 (0.44)	0.06 (0.57)
(When you experience negative events...) I think that I can become a stronger person as a result of what has happened.	3.54 (0.54)	3.57 (0.52)	0.03 (0.59)
(When you experience negative events...) I use healthy strategies like deep breathing, listening to music, talking with friends or other ways to help me feel better.	3.52 (0.59)	3.54 (0.59)	0.02 (0.65)

a. Asterisk indicates that change from baseline to six months was significantly different from zero (i.e., no change) based on the Wilcoxon matched pairs signed-rank test († $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$).

This study also found that only 28% of the EPY who took the baseline survey also took the 6-month follow-up survey. Of those who did not complete the six-month survey, over a third (39%) had exited the program, but the majority (61%) were still in the program at six months. Although there were no differences among youth in the program who took the survey and those who did not among the characteristics measured, it is important to understand why youth did not complete the 6-month survey even though they were in the program to see what, if any, efforts could be made to improve the completion rate. Efforts to understand why youth exited the program early can support improvements in participant retention in this program and provide insights into the challenges and barriers to participation in supportive programs among EPY more broadly. Because change scores were limited to a small subset of AFLP PYD program participants, findings must be interpreted cautiously. Further, findings may not be generalizable to youth who remained in the program at six months but did not complete the follow-up survey.

Despite these limitations, the survey that was developed is relevant to the theoretical framework of the AFLP PYD model, is relatively short, and can be a valuable tool to evaluate programs aimed at promoting the four domains of resilience strengths examined here, especially among EPY. Future research is needed to see if this instrument will be acceptable and detect change in other types of programs serving different populations of young people.

STATEMENTS AND DECLARATIONS

The findings and conclusions in this study are those of the authors and do not necessarily represent the views of the California Department of Public Health, California Health and Human Services Agency, Office of Population Affairs, Health Resources and Services Administration, or the U.S. Department of Health and Human Services.

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AUTHOR CONTRIBUTIONS

Study conception and design: Kathleen P. Tebb, PhD, FSAHM, Mary Campa, PhD; analysis and interpretation of results: Kathleen P. Tebb, PhD, FSAHM, Mary Campa, PhD, Raluca Buzdugan, PhD MPH, Melissa Saphir, PhD; drafting manuscript and/or revising critically for important intellectual content: Kathleen P. Tebb, PhD, FSAHM, Mary Campa, PhD, Melissa Saphir, PhD, Raluca Buzdugan, PhD MPH, Marie Salem, MPH, Shira P. Rutman, MPH, Lissa Pressfield, MHS. All authors reviewed the results and approved the final version of the manuscript.

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