The Development and Validation of the Protective Factors Survey: A Self-Report Measure of Protective Factors Against Child Maltreatment

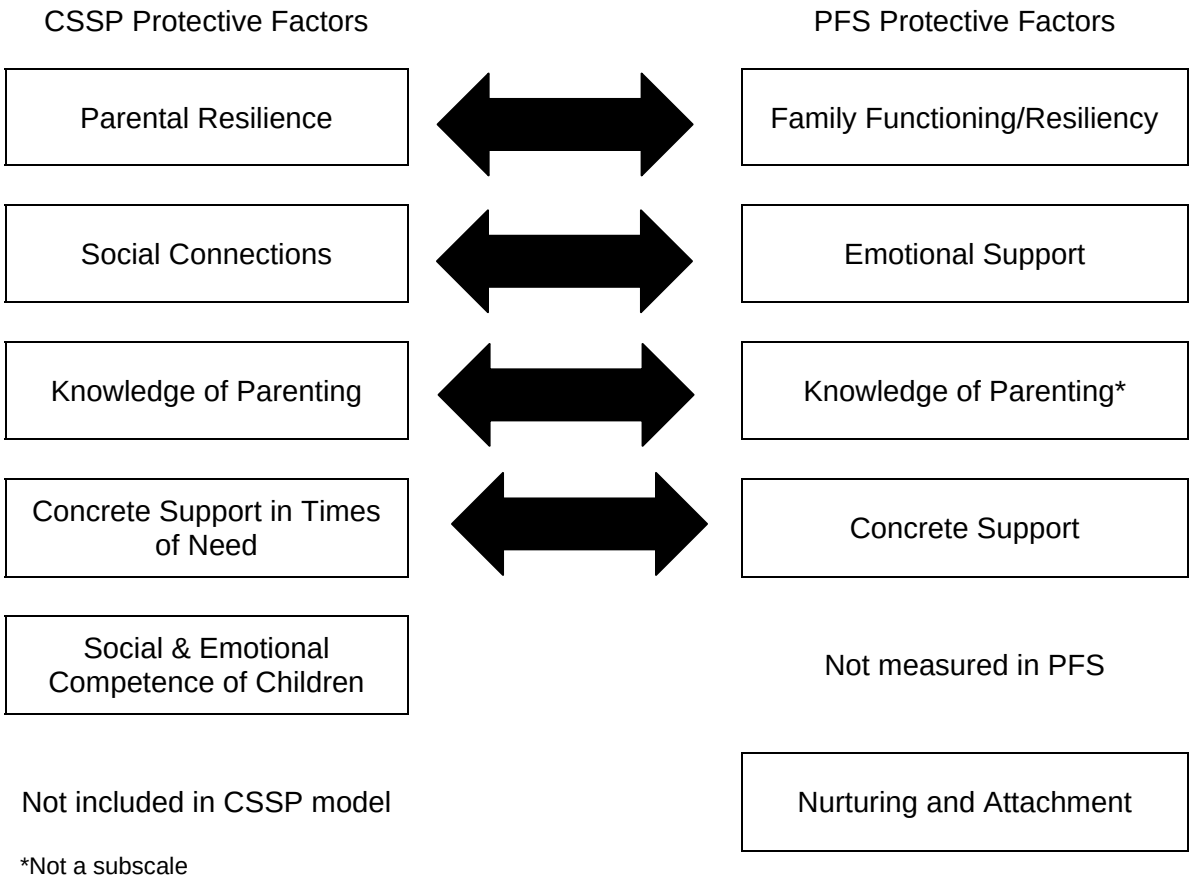
Phase IV Report

Prepared by the Institute for Educational Research & Public Service
University of Kansas

Introduction

Though there are numerous instruments designed to measure individual protective factors, there is not currently a single instrument that assesses *multiple protective factors* against child abuse and neglect. In 2005, the Texas Department of Family and Protective Services, in collaboration with the FRIENDS National Resource Center, began a project to address this need and develop alternative tools for Community-Based Child Abuse and Neglect Prevention. The intent was to develop an easily-administered survey that measures the protective factors as identified in the Center for the Study of Social Policy model, to develop alternative outcome measures that programs could utilize to demonstrate effectiveness, and to generate data for program improvement. Figure 1 shows the alignment of the CSSP protective factors with the PFS protective factors.

Figure 1: Alignment of the CSSP and the PFS Protective Factors



This instrument has undergone several phases of field testing. The primary focus of the Phase I field test was to assess the face validity and internal structure of the instrument and to create a revised scale for further investigation. Two types of questions were included in the survey—attitudinal and behavioral. The PFS subcommittee, comprised of CBCAP grantees from several states, was charged with making recommendations regarding the most appropriate data collection process for gathering information on how prevention programs increase protective factors. The sub-committee generated a pool of items for the first field test and considered cultural appropriateness, reading levels, and survey length. In preparation for the first PFS field survey, program staff in Texas and the FRIENDS National Resource Center reviewed several validated and reliable instruments, discussed each item with the PFS Sub-committee, and created a pilot instrument. The instrument was presented to CBCAP state leads and the

National Advisory Committee of the FRIENDS National Resource Center at the CBCAP Grantees conference in March 2006. The Texas Department of Family and Protective Services staff then conducted two focus groups with parent consumers to gather information about the interpretation of the items, cultural appropriateness/ offensiveness of the items, and necessary revisions. Revisions were made and between April and August 2006, the first draft of the Protective Factors Survey (PFS) was field tested with 349 participants in Texas and Kansas. Based on the results of the Kansas and Texas pilot, the focus groups, and the advisory committee, the survey items were revised for the next administration phase.

Phase II of the study evaluated the internal structure of the revised scale and examined the relationships among the protective factors and other measures of risk for child abuse and neglect. Eleven agencies from four states (*N* = 249 participants) administered the Protective Factors Survey (PFS), the Brief Child Abuse Potential Inventory (Ondersma, Chaffin, Simpson, & LeBreton, 2005), and one other measure that assessed constructs hypothesized to correlate negatively with protective factors: depression, stress, and maladaptive coping. These measures were administered to help establish construct validity. Exploratory and confirmatory factor analyses yielded a four-factor solution, consisting of family functioning/resiliency, social emotional support, concrete support, and nurturing and attachment. Overall, the PFS subscales were significantly related to the measures of risk factors (i.e., child abuse potential, stress, depression, and maladaptive coping) in the direction predicted.

Phase III of the study evaluated the stability of the instrument over time and examined relationships between the protective factors and health and other measures of risk for child abuse and neglect. Fifteen agencies from nine states (N=291) administered the Protective Factors Survey and depression, stress, and caregiver physical health and functioning measures at two points in time with an average lag time of 34 days. The additional measures were used to establish criterion and predictive validity. Exploratory and confirmatory factor analyses yielded a 4-factor solution, including family functioning/resiliency, social emotional support,

concrete support, and nurturing and attachment. All four subscales demonstrated adequate levels of internal consistency. Cronbach's alphas for each subscale were, for Time One and Time Two respectively, Family Functioning/Resiliency (.87, .90), Emotional Social Support (.89, .88), Concrete Support (.76, .79), and Nurturing and Attachment (.81, .82). The Phase III instrument demonstrated stability over time and adequate levels of internal consistency at both time points. The PFS negatively predicts risk factors for child abuse and neglect (stress and depression) and positively predicts caregiver health.

The purpose of Phase IV was to assess the validity of the PFS as a measure of change over time and to compare results from a pre-post design with a retrospective pre-post design. The field has expressed an interest in the retrospective because it can be administered at one point in time and overcomes the possibility of a response shift from pre and post-test. A retrospective pre-test (also called the ntest) is administered at the same time as the post-test. Validity concerns with the retrospective pre-test include recall bias, emotion-related bias, socially desirable responses, implicit theories of change, cognitive dissonance, and effort justification. Response-shift bias is a concern for the true pre-test. Researchers suggest that if the goal of program evaluation is to measure participants' perceptions of change, than the retrospective test is appropriate. However, if program effectiveness is the intent of the evaluation, then a true pre-post-test may be the best approach (Hill & Betz, 2005).

Concurrent and discriminant validity were also examined in Phase IV by exploring the relationship between the PFS and measures of optimism and pessimism and positive and negative affect, (concurrent validity) and social desirability, (discriminant validity). It was hypothesized that participants would show a significant increase in protective factors from pre-test to post-test as a consequence of program participation. Protective factor scores were anticipated to be positively related to optimism and positive affect, negatively related to pessimism and negative affect, and unrelated to social desirability.

Method

Participants

Participant Agencies. Agencies were recruited through a recruitment flyer posted on national electronic-mail based listservs and distributed at the national Community-Based Child Abuse Prevention (CBCAP) conference in Baltimore, Maryland and the national 2007 CBCAP grantees' conference. Interested agencies completed a web-based registration survey by following a link to the internet address on the recruitment flyer. Nineteen agencies from 13 states completed the registration survey.

Participant Individuals. Participants were recruited by agencies that registered to participate in the Phase IV Protective Factors Survey. Eligible participants included any individual receiving parenting-related services from a participating agency who would be available for survey administration at two different time points during the six month field-testing period. It was also a requirement that all individuals participating in the study take the pre-program survey at the inception of services to provide a "true" pre-test score. The time lag between pre-program and post-program surveys was required to be a minimum of one month and a maximum of five months, and varied depending on the services provided. A total of 218 surveys were collected from nine agencies at pre-program survey administration. Follow-up data were collected from approximately 43% of the original sample. A total of 94 surveys from seven agencies were collected at post-program survey administration. States participating in both survey administration time points were California, Connecticut, Tennessee, Utah, and Vermont.

Table 1 summarizes the demographic characteristics of the final sample at the pre-test. The average age of the participants was 32.4 years and a majority of participants were female (68.1%). Almost 80% of the sample was White (Non-Hispanic). Fifty-three percent of participants were referred by Child Protective Services (N = 50). A majority of the sample (65.9%) reported annual incomes equal to or less than $30,000.

Table 1: Demographic Characteristics of Study Participants at Time One (n = 94*)*

Demographic Characteristic	Time One
Mean *(SD)* age of respondents	32.39 (9.24)
Gender (%)	
Female	68.1
Male	29.8
Race/Ethnicity (%)	
Native American	0
Asian	0
African American	6.4
Black	2.1
Hispanic or Latino/a	7.4
Middle Eastern	0
Native Hawaiian/Pacific Islander	0
White	79.8
Multi-racial	1.1
Income Level (%)	
$0-10,000	31.9
$10,001-20,000	19.1
$20,001-30,000	14.9
$30,001-40,000	7.4
$40,001-50,000	7.4
More than $50,000	13.8
Marital Status (%)	
Married	28.7
Partnered	19.1
Single	30.9
Divorced	16.0
Widowed	0
Separated	2.1
Education (%)	
Elementary or junior high school	0
Some high school	19.6
High school diploma or GED	28.7
Trade/vocation school	10.6
Some college	24.5
2-year college degree	6.4
4-year college degree	8.5
Master's degree	1.1
PhD or professional degree	0

Demographic Characteristic	Time One
Housing (%)	
Own	27.7
Rent	57.4
Shared housing	8.5
Temporary	5.3
Homeless	0
Support services (%)	
Food stamps	37.2
Medicaid	47.9
Earned income tax credit	16.0
TANF	14.9
Head start/Early head start	0
CPS Involvement (%)	
Yes	51.1
No	25.5
Not sure	20.2
Services Received (%)	
Parent education	88.3
Parent/child interaction	41.5
Home visiting	45.7
Resource and referral	29.8
Parent support group	21.3

Study participants demonstrated moderate to high levels of program participation and duration. A majority of participants engaged in services at least two hours per week (73.3%). The most common services received included parent education (88.3%), parent-child interaction (41.5%) home visitation, (45.7%), and resource and referral (29.8%).

Procedure

Participant Agency Technical Assistance. Following the registration period and prior to the beginning of survey administration, technical assistance on data collection was provided to participant agencies. Technical assistance was provided through two webinar presentations provided by staff from the Institute for Educational Research and Public Service at the

University of Kansas (Institute). During the webinar training sessions, the PFS Administration Training PowerPoint presentation and frequently-asked-questions were reviewed.

In addition, all registered agencies were mailed a complete PFS survey packet, containing both electronic and hard copies of the pre-program survey, post-program survey, frequently-asked-questions, Administration Training PowerPoint presentation, and Phase IV Survey Administration Manual. A staff member at the Institute was available for technical assistance questions throughout the data collection process.

Survey Administration. Program staff from participating agencies administered the PFS survey packets. Surveys were completed in face-to-face interviews or by participants with program staff present or not present. Participant agencies were instructed to use their agency-approved informed consent process for survey administration and were provided an example of an Informed Consent document with the Phase IV materials to use, if desired.

Participants completed the PFS survey packet in two timeframes. Pre-program survey administration took place during between February 25 and June 30, 2008. Post-program survey administration took place between March 25 and July 31, 2008. The same consumer participants completed the survey packets during each administration timeframe. The average time lag between pre-program and post-program surveys was 67 days.

Following each administration timeframe, completed surveys were returned to the University of Kansas for data entry.

Measures

Each agency received two survey packets: a pre-program packet and a post-program packet. The pre-program survey packet contained the Protective Factors Survey - Pre-Program Form, the Positive and Negative Affectivity Scale (PANAS), the Marlowe Crowne Social Desirability Scale, and the Life Orientation Test-Revised (LOT-R). The post-program survey packet contained the Protective Factors Survey - Post-Program Form, the Positive and Negative

Affectivity Scale (PANAS), the Marlowe Crowne Social Desirability Scale, and the Life Orientation Test-Revised (LOT-R).

Protective Factors Survey - Pre-Program Form. The PFS-Pre-Program Form begins with a series of demographic items, some of which are completed by staff familiar with the participant. Staff questions include: 1) participant's survey experience, including the administration date, supports provided, and language version used, and 2) program dosage, specifically participant's length of involvement, types of services received, and current program status. The participant demographics section contains questions about family composition, income, and level of involvement with services. Following the demographic items, participants are asked to respond to a series of 23 statements about their family, using a seven-point frequency or agreement scale.

Protective Factors Survey - Post-Program Form. The PFS-Post-Program Form begins with a series of demographic items, some of which are completed by staff familiar with the participant. Staff questions include: 1) participant's survey experience, including the administration date, supports provided, and language version used, and 2) program dosage, specifically participant's length of involvement, types of services received, and current program status. The participant demographics section contains questions about family composition, income, and level of involvement with services. Following the demographic items, participants are asked to respond to a series of 23 statements about their family, using a seven-point frequency or agreement scale. Participants are instructed to respond to the items from the perspective of how they feel today. Participants are then presented with the same 23 statements about their family and asked to respond to the items from the perspective of how they felt when they started the program.

Optimism. The Life Orientation Test-Revised (LOT-R), developed by Scheier, Carver, and Bridges (1994), is a ten-item measure of individual differences in dispositional optimism-pessimism. The LOT-R consists of six coded items and four filler items. Half of the coded items

are framed in an optimistic manner (e.g., "In uncertain times, I usually expect the best") and half are framed in a pessimistic manner (e.g., "If something can go wrong for me, it will"). Respondents are asked to indicate the extent of their agreement to these items using a 5-point Likert-type scale ranging from 0 (strongly disagree) to 4 (strongly agree). The negatively worded items are reverse scored and totaled to for an overall optimism score. Higher scores represent higher optimism. Some researchers (Kubzansky et al., (2004) are evaluating whether optimism and pessimism are distinct constructs; thus, they suggest also separating the pessimism items and the optimism items to yield separate subscale scores.

Affect. The Positive and Negative Affectivity Scale-Short Form (Thompson, 2007; PANAS-SF) is a 10–item measure derived from the PANAS developed by Watson and colleagues (1988). The original instrument was developed so that positive and negative factors would emerge as orthogonal dimensions rather than a bipolar ends of the same scale. The Negative Affect dimension reflects the extent to which an individual experiences negative emotional states such as fear, anger, and sadness. In contrast, the Positive Affect dimension represents the extent to which a person experiences states such as inspiration, alertness, and determination. The Short Form was developed to reduce participant burden while encompassing the original content domain. Items are totaled and scored on the separate dimensions of positive and negative affect. Low positive affect has been strongly linked to melancholic depression and in prospective studies, low positive affectivity scores have predicted subsequent depression (Clark, Watson, & Mineka, 1994).

Social Desirability. Strahan and Gerbasi (1972) developed a shorter version of the Marlowe Crowne Social Desirability Scale (MCSD; 10-items instead of 33) to reduce participant response burden. Crowne and Marlowe (1960) originally developed the MCSD to be a measure of socially desirable responding, they later refined the concept to be an avoidance of disapproval (Crowne, 1979). High scores represent endorsement of desirable, but uncommon behaviors or approval seeking.

Data Analyses

Four sets of analyses were conducted in Phase IV. First, factor analyses were conducted to examine the factor structure of the pre-test, retrospective, and post-test responses. Second, paired sample *t*-tests were conducted to evaluate the comparability of the traditional pre-test and retrospective pre-test subscales. Third, change over time was examined through a series of *t*-tests comparing pre-test and post-test subscale scores. Finally, convergent and discriminant validity were assessed using correlational analyses.

Results

Study Sample

The study sample included only those participants with both pre-test and post-test survey data. Because of attrition issues at post-test, the possibility of sample bias was a concern. Chi-square tests and *t*-tests on group means were conducted to determine if the study sample (N = 94) differed significantly from the group with only Time One data (N = 124) on potentially relevant demographic variables. The variables analyzed included sex, age, parent education, and family income. There were no detectable group differences in sex (^{2}(1) with Yates' correction = 1.484, p = .223), age (t(207) = –1.43, p = .154), parent education (t(211) = –.631, p = .528), or family income (t(205) = –1.083, p = .280).

Descriptive Statistics and Internal Consistency Reliability

In preparation for the analyses, the data were examined for normality and internal consistency. Table 2 shows the descriptive statistics for the PFS items.

Table 2. Descriptive Statistics for the PFS Items

	Item	N	Mean	SD	Skew	Kurtosis
		Pre Retro-Pre Post	Pre Retro-Pre Post	Pre Retro-Pre Post	Pre Retro-Pre Post	Pre Retro-Pre Post
1.	In my family, we talk about problems.	214 93 94	4.89 4.89 5.30	1.48 1.53 1.24	.-.34 -.36 -.35	-.29 -.66 -.37
2.	When we argue my family listens to "both sides of the story."	216 92 93	4.53 4.61 4.84	1.59 1.48 1.33	-.29 -.23 -.32	-.37 -.39 -.38
3.	In my family, we take time to listen to each other.	213 93 94	4.90 4.75 5.16	1.47 1.43 1.23	-.42 -.40 -.28	-.13 -.19 -.35
4.	My family pulls together when things are stressful.	216 92 93	5.15 5.10 5.39	1.61 1.52 1.38	-.67 -.46 -.55	-.08 -.56 -.06
5.	My family is able to solve our problems.	216 93 91	4.91 4.78 5.30	1.47 1.49 1.32	-.32 -.19 -.48	-.30 -.53 .05
6.	I have others who will listen when I need to talk about my problems.	216 93 94	5.63 5.41 5.84	1.63 1.66 1.42	-1.27 -1.12 -1.71	.75 .44 2.78
7.	When I am lonely, there are several people I can talk to.	215 93 94	5.35 5.33 5.66	1.80 1.70 1.55	-.98 -1.08 -1.50	-.13 .27 1.66
8.	I would have no idea where to turn if my family needed food or housing.	213 93 93	2.27 2.28 2.08	1.61 1.64 1.56	1.23 1.34 1.69	.71 .91 2.32
9.	I have family, friends, or neighbors I can count on if I am feeling down.	213 93 94	5.42 5.22 5.60	1.72 1.73 1.61	-1.11 -.87 -1.26	.33 -.11 .93
10	I wouldn't know where to go for help if I had trouble making ends meet.	215 92 94	2.88 2.55 2.65	1.91 1.70 1.95	.66 1.09 1.00	-.77 .27 -.29
11	If there is a crisis, I have others I can talk to.	214 93 94	5.63 5.44 5.77	1.58 1.60 1.53	-1.25 -1.20 -1.62	.79 .78 2.12
12	If I needed help finding a job, I wouldn't know where to go for help	214 93 94	2.62 2.49 2.39	1.87 1.83 1.89	.86 1.09 1.20	-.55 -.02 .09
15	There are many times when I don't know what to do as a parent.	205 91 94	3.76 3.57 3.46	1.92 1.89 1.73	.02 .135 .11	-1.18 -1.26 -1.06
16	I know how to help my child learn.	204 91 94	5.29 5.71 5.84	1.60 1.21 1.23	-.97 -1.22 -1.92	.19 2.08 4.72
17	My child misbehaves just to upset me.	206 92 94	2.89 3.21 2.99	1.87 1.84 1.79	.54 .25 .36	-.97 -1.2 -1.08
18	I praise my child when he/she	206	5.85	1.16	-.89	.63

	Item	N	Mean	SD	Skew	Kurtosis
		Pre Retro-Pre Post	Pre Retro-Pre Post	Pre Retro-Pre Post	Pre Retro-Pre Post	Pre Retro-Pre Post
	behaves well.	92 94	5.59 5.81	1.19 1.15	-.39 -.84	-.57 .78
19	When I discipline my child, I lose control.	203 91 93	2.12 2.26 2.13	1.19 1.20 1.18	.80 .77 1.24	-.30 .43 2.10
20	I am happy being with my child.	207 91 93	6.40 6.25 6.48	1.02 .95 .82	-2.00 -1.09 -1.60	4.61 .14 1.92
21	My child and I are very close to each other.	206 91 94	6.11 6.07 6.17	1.17 1.19 1.08	-1.12 -1.26 -1.38	.32 .90 1.77
22	I am able to soothe my child when he/she is upset.	206 91 93	5.72 5.69 5.97	1.35 1.30 1.27	-1.03 -1.06 -1.78	.44 1.14 4.22
23	I spend time with my child doing what he/she likes to do.	207 91 94	5.62 5.53 5.79	1.34 1.33 1.23	-.87 -.61 -.98	.40 -.08 1.18

An examination of the internal consistency of the validation measures was conducted to assess the reliability of the scales. All of the validation measures, with the exception of the Marlowe Crowne Social Desirability Scale (MCSD), exhibited adequate inter-item consistency with Cronbach's alpha estimates ranging from .71 to .87. Since the MSCD did not exhibit adequate internal consistency reliability for this sample (Cronbach's alpha ranging from .54 to .62), no additional analyses could be conducted with this measure.

Factor Structure

Factor analyses were conducted to attempt to replicate the four-factor structure found in previous studies of the Protective Factors Survey. As in the past, the factor analyses did not include *Child Development / Knowledge of Parenting* items. The nature of these items did not lead to the expectation that they would necessarily be correlated, therefore there is no theoretical reason to expect them to conform to any particular factor structure (Bollen & Lennox, 1991; such items are often termed *formative* to denote their theoretical relationship to a

hypothetical construct. In the aggregate, however, these items were expected to be related to criterion validity scales and will be discussed in the construct validation section. The confirmatory factor analysis (CFA) included the items theoretically serving as indicators of four factors: *Family Functioning/Resiliency*, *Emotional Social Support*, *Concrete Support*, and *Nurturing and Attachment*.

Mplus v. 5 (Muthén & Muthén, 1998-2007) was employed to fit CFA models using maximum likelihood estimation. The resulting loadings conformed closely to the expected 4-factor structure for the pre-test, post-test, and retrospective scale items, as can be seen in Tables 3, 4, and 5, respectively.

Table 3. Pre-test factor loadings.

	Estimate	S.E.	Est./S.E.	Two-Tailed P-Value
Family Functioning/Resiliency				
PFS1	**0.734**	0.037	19.597	0.000
PFS2	**0.796**	0.031	25.623	0.000
PFS3	**0.824**	0.028	29.649	0.000
PFS4	**0.824**	0.028	28.926	0.000
PFS5	**0.744**	0.036	20.481	0.000
Emotional Social Support				
PFS6	**0.837**	0.024	34.771	0.000
PFS7	**0.826**	0.026	31.600	0.000
PFS9	**0.764**	0.032	24.207	0.000
PFS11	**0.937**	0.016	59.427	0.000
Concrete Support				
RPFS8	**0.654**	0.065	10.126	0.000
RPFS10	**0.753**	0.065	11.509	0.000
RPFS12	**0.525**	0.066	7.986	0.000
Nurturing and Attachment				
PFS20	**0.574**	0.053	10.915	0.000
PFS21	**0.817**	0.032	25.510	0.000
PFS22	**0.831**	0.031	27.178	0.000
PFS23	**0.791**	0.035	22.796	0.000

Table 4. Post-test factor loadings

	Estimate	S.E.	Est./S.E.	P-Value
Family Functioning/Resiliency				
PFS1A	**0.866**	0.032	27.210	0.000
PFS2A	**0.826**	0.038	21.606	0.000
PFS3A	**0.908**	0.026	34.900	0.000
PFS4A	**0.697**	0.059	11.714	0.000
PFS5A	**0.770**	0.048	16.091	0.000
Emotional Social Support				
PFS6A	**0.914**	0.023	40.207	0.000
PFS7A	**0.929**	0.021	44.488	0.000
PFS9A	**0.701**	0.056	12.530	0.000
PFS11A	**0.879**	0.028	30.960	0.000
Concrete Support				
RPFS8A	**0.887**	0.064	13.904	0.000
RPFS10A	**0.659**	0.074	8.935	0.000
RPFS12A	**0.688**	0.072	9.496	0.000
Nurturing and Attachment				
PFS20A	**0.579**	0.079	7.342	0.000
PFS21A	**0.839**	0.050	16.894	0.000
PFS22A	**0.752**	0.059	12.706	0.000
PFS23A	**0.727**	0.061	11.935	0.000

Table 5. Retrospective factor loadings

	Estimate	S.E	Est./S.E	Two-Tailed P-Value
Family Functioning/Resiliency				
PFS1B	**0.851**	0.032	26.692	0.000
PFS2B	**0.924**	0.020	46.870	0.000
PFS3B	**0.932**	0.018	51.708	0.000
PFS4B	**0.833**	0.035	23.514	0.000
PFS5B	**0.842**	0.034	24.748	0.000
Emotional Social Support				
PFS6B	**0.919**	0.021	43.797	0.000
PFS7B	**0.952**	0.017	57.397	0.000
PFS9B	**0.785**	0.043	18.296	0.000
PFS11B	**0.845**	0.033	25.752	0.000
Concrete Support				
RPFS8B	**0.847**	0.047	18.183	0.000
RPFS10B	**0.815**	0.049	16.632	0.000
RPFS12B	**0.795**	0.052	15.292	0.000
Nurturing and Attachment				
PFS20B	**0.610**	0.078	7.781	0.000
PFS21B	**0.836**	0.050	16.895	0.000
PFS22B	**0.805**	0.052	15.566	0.000
PFS23B	**0.748**	0.061	12.287	0.000

All four subscales with the exception of pretest Concrete Support demonstrated adequate levels of internal consistency. Cronbach's alphas for each subscale were, for pre-test, retrospective pre-test, and post-test respectively, Family Functioning/Resiliency (.886, .944, .910), Emotional Social Support (.904, .928, .913), Concrete Support (.672, .863, .773), and Nurturing and Attachment (.841, .836, .810).

Differences Between Pre-test and Retrospective Ratings

Paired-sample *t*-tests were conducted to address the comparability of the pre-test and retrospective ratings. Table 6 shows the mean pre-test and retrospective pre-test scores for the four PFS subscales.

Table 6. Mean PFS subscale scores at pretest and retrospective pretest (N=94)

Subscale	Pretest		Retrospective Pretest	
	Mean	s.d.	Mean	s.d.
Family Functioning/Resiliency	4.88	1.21	4.83	1.34
Social Emotional Support	5.70	1.40	5.35	1.52
Concrete Support	5.52	1.25	5.55	1.52
Nurturing and Attachment	5.96	0.99	5.89	0.98

No mean difference was detected for the Family Functioning / Resiliency subscale ($t(91) = .546$, $p = .587$), the Concrete Support subscale ($t(91) = .000$, $p = 1.000$), or the Nurturing and Attachment subscale ($t(90) = .756$, $p = .452$). However, the Emotional Support subscale demonstrated a significant difference such that the retrospective ratings were .35 scale points lower ($t(91) = 2.59$, $p = .011$). Of the Child Development /Knowledge of Parenting items, only PFS16 (I know how to help my child learn.) demonstrated a significant difference, such that the retrospective ratings were .52 scale points higher ($t(88) = -2.564$, $p = .012$).

Change Over Time

The primary reason for collecting two waves of data was to establish the degree to which the PFS subscales measured change over time. We hypothesized that subscale scores on the Protective Factors Survey would increase as a consequence of program participation.

Using the true pre-test for baseline scores, only the Family Functioning / Resiliency subscale demonstrated a significant increase over time, a difference of .31 scale units ($t(92) = -2.702$, $p = .008$). Using the retrospective instrument for baseline scores, however, significant increases were observed for Family Functioning / Resiliency (.38 units, $t(92) = -4.343$, $p < .001$), Emotional Support (.36 units, $t(92) = -3.618$, $p < .001$), and Nurturing and Attachment (.20 units, $t(91) = -3.199$, $p = .002$).

Convergent and Discriminant Validity

In this study we examined the convergent and discriminant validity of the PFS by correlating PFS subscale scores with measures of positive affect, negative affect, optimism, pessimism, and social desirability. Based on previous research, we expected a positive relationship between the protective factors and positive affect and optimism and a negative relationship between the protective factors and negative affect and pessimism. Due to the low reliability of the Marlowe Crowne Social Desirability Scale in the sample, we could not examine the relationship between protective factors and social desirability.

Correlations are reported in Tables 7, 8, and 9. Results generally conformed to expectations, with a few exceptions. With the exception of Concrete Support, the protective factors were positively associated with positive affect at pre-test, but not at post-test or with the retrospective instrument. Family Functioning / Resiliency and Emotional Support were positively correlated with optimism in all three instruments, Concrete Support was positively associated with optimism in the retrospective instrument, and Nurturing and Attachment was related to optimism in the pre-test. Family Functioning / Resiliency, Emotional Support, and Nurturing and

Attachment were negatively related to negative affect using all three instruments, save that Nurturing and Attachment was unrelated to negative affect using the post-test. Family Functioning / Resiliency and Emotional Support were negatively related to pessimism using all three instruments, save that Emotional Support was unrelated to negative affect using the retrospective instrument.

Table 7. Correlations of pre-test PFS subscales with five validity instruments.

		FFR	ESS	CS	NA
Positive Affect Total Score_pre	Pearson Correlation	.488**	.379**	.044	.317**
	Sig. (2-tailed)	.000	.000	.693	.004
	N	82	82	82	82
Negative Affect Total Score_pre	Pearson Correlation	-.258*	-.266*	-.185	-.312**
	Sig. (2-tailed)	.019	.015	.095	.004
	N	83	83	83	83
Pessimism Subscale Total Score_pre	Pearson Correlation	-.377**	-.280**	-.073	-.199
	Sig. (2-tailed)	.000	.010	.512	.069
	N	84	84	84	84
Optimism Subscale Total Score_pre	Pearson Correlation	.410**	.396**	.207	.335**
	Sig. (2-tailed)	.000	.000	.058	.002
	N	85	85	85	85

Note: FFR = Family Functioning/Resiliency; ESS = Emotional Social Support; CS = Concrete Support; NA = Nurturing and Attachment.

Table 8. Correlations of retrospective PFS subscales with five validity instruments.

		FFR	ESS	CS	NA
Positive Affect Total Score_post	Pearson Correlation	.134	.140	.178	.069
	Sig. (2-tailed)	.222	.202	.104	.528
	N	85	85	85	85
Negative Affect Total Score_post	Pearson Correlation	-.348**	-.324**	-.131	-.286**
	Sig. (2-tailed)	.001	.003	.242	.009
	N	82	82	82	82
Pessimism Subscale Score_post	Pearson Correlation	-.203	-.296**	-.124	-.132
	Sig. (2-tailed)	.064	.006	.263	.231
	N	84	84	84	84
Optimism Subscale Score_post	Pearson Correlation	.341**	.338**	.239*	.168
	Sig. (2-tailed)	.002	.002	.029	.126
	N	84	84	84	84

Note: FFR = Family Functioning/Resiliency; ESS = Emotional Social Support; CS = Concrete Support; NA = Nurturing and Attachment.

Table 9. Correlations of post-test PFS subscales with five validity instruments.

		FFR	ESS	CS	NA
Positive Affect Total Score_post	Pearson Correlation	.203	.141	.004	.036
	Sig. (2-tailed)	.061	.197	.974	.742
	N	86	86	86	86
Negative Affect Total Score_post	Pearson Correlation	-.429**	-.244*	-.118	-.186
	Sig. (2-tailed)	.000	.026	.289	.091
	N	83	83	83	83
Pessimism Subscale Score_post	Pearson Correlation	-.272*	-.332**	-.137	-.093
	Sig. (2-tailed)	.012	.002	.212	.397
	N	85	85	85	85
Optimism Subscale Score_post	Pearson Correlation	.290**	.256*	.026	.140
	Sig. (2-tailed)	.007	.018	.816	.201
	N	85	85	85	85

Note: FFR = Family Functioning/Resiliency; ESS = Emotional Social Support; CS = Concrete Support; NA = Nurturing and Attachment.

Summary

The purposes of the Phase IV study were (1) to assess the validity of the PFS as a measure of change over time, (2) to compare results from a pre-post design with a retrospective pre-post design, and (3) to examine concurrent and discriminant validity. Before reviewing the findings related to the overall goals of the study, we want to comment on the equivalency of the factor structure. The results indicate that the factor structure of all three measures: the traditional pre-test, retrospective pre-test, and the post-test conformed to the factor structure found in previous studies. This serves as additional evidence that the measure, whether given in a traditional pre-test-post-test format or in the retrospective format, is tapping multiple and distinct protective factors.

Findings indicate that the mean scores for the retrospective pre-test format were lower, in general, to those of the true pre-test. As a consequence, change scores, as measured by the difference between pre-test and post-test, were larger when the retrospective pre-test was used as the baseline measure. Such findings could be interpreted in two ways: (a) that the retrospective pre-test is a valid measure of change over time, or (2) that the retrospective pre-test scores result from the effort justification bias or from impression management responses. The effort justification bias could be affecting responses because when people put considerable time and effort into a program and then are asked to rate themselves retrospectively on improvement from before and after the program, studies(see Hill & Betz, 2005) have shown that change scores are likely to be inflated. Also, research has demonstrated that people are consistently more critical of their past selves, whether or not true improvement has occurred; therefore people who are asked to report on their personal change retrospectively report greater improvement for themselves whether or not an intervention has occurred. From the data we have in this study, we cannot conclude which measure (the true pre-test or the retrospective pre-test) is better for programs to use as a measure of program impact. We refer readers to the Hill and Betz (2005) article for a detailed overview of the research regarding retrospective pre-

tests versus true pre-tests. Additional research should be conducted on this matter using an objective observation component in order to have objective ratings of change to investigate which measure might prove superior.

Unfortunately, because the Marlowe Crowne Social Desirability Scale did not demonstrate adequate internal consistency reliability in this sample, we are unable to answer the research question of whether the retrospective pre-test is related to socially desirable or impression management responses. The results do indicate, however, that the PFS is positively related to other positive constructs (optimism and positive affect) and is negatively related to negative affect and pessimism, constructs that are construed as risk factors for depression, health problems, and other negative outcomes. These findings contribute significantly to the body of PFS validity evidence and provide further validation that the instrument is a valid and reliable tool for measuring family protective factors against child abuse and neglect.

References

Bollen, K., & Lennox, R. (1991). Conventional wisdom on measurement: A structural equation perspective. *Psychological Bulletin*, *110*, 305-14.

Center for Study of Social Policy. (2004). *Protecting children by strengthening families: A guidebook for early childhood programs*. Washington, D.C: Author.

Clark, L. A., Watson, D., & Mineka, S. (1994). Temperament, personality, and the mood and anxiety disorders. *Journal of Abnormal Psychology, 103*, 103-116.

Crowne, D. P. (1979). *The experimental study of personality.* Hillsdale, NJ: Erlbaum.

Crowne, D. P., & Marlowe, D. (1960). A new scale of social desirability independent of psychopathology. *Journal of Consulting Psychology, 24*, 349-354.

Hill, L.G., & Betz, D.L. (2005). Revisiting the Retrospective Pretest. *American Journal of Evaluation, 26(4),* 501-517.

Kubzansky LD, Sparrow D, Vokonas P, et al. (2004). Optimism and pessimism in the context of health: Bipolar opposites or separate constructs? *Personality and Social Psychology Bulletin, 30,* 943-956.

Muthén, L. K., & Muthén, B. O. (1998-2007). *Mplus user's guide* (5th ed.). Los Angeles, CA: Muthén & Muthén.

Ondersoma, S. J., Chaffin, M., Simpson, S., & LeBreton, J. (2005). The brief child abuse potential inventory: Development and validation. *Journal of Clinical Child and Adolescent Psychology, 34,* 301-311.

Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self mastery, and self-esteem): A reevaluation of the Life Orientation Test. *Journal of Personality and Social Psychology, 67,* 1063-1078.

Spitzer, R. L., Kroenke, K., & Williams, J. B. (1999). Validation and utility of a self-report version of PRIME-MD: The PHQ primary care study. *The Journal of the American Medical Association, 282*(18), 1737-1756.

Strahan, R, & Gerbasi, K.C. (1972). Short, homogeneous versions of the Marlowe- Crowne Social Desirability Scale. *Journal of Clinical Psychology, 28,* 191-193.

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics* (5th ed.). New York: Allyn & Bacon.

Thompson, E. R. (2007). Development and validation of an internationally reliable short-form of the Positive and Negative Affect Schedule (PANAS). *Journal of Cross-Cultural Psychology, 38,* 227-242.

Voight, J. D., Hans, S. L., & Bernstein, V. J. (1996). Support networks of adolescent mothers: Effects on parenting experience and behavior. *Infant Mental Health Journal, 17*, 58-73.

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology, 54,* 1063-1070.