

Context matters: an empirical analysis of family outcomes in a parenting education intervention under different levels of access to services and economic, and emotional stability.

By
Ignacio A. Navarro

1. Introduction

Parenting education programs have been the focus of many evaluation studies in the past 3 decades. There is a wide consensus on the merits of these programs and recent meta-evaluations confirm the positive outcomes of these programs as interventions to prevent child maltreatment (Cheng & Ling Chang, 2016; Pisani & Martins, 2016). This research project expands on the knowledge base explaining which families are more likely to benefit from these types of programs by exploring the relationship between the contextual aspects of economic stability, emotional wellbeing and access to services surrounding families and the parental knowledge and attitudes that are targeted by parenting education programs. Specifically, this research report explores the relationship between parenting attitudes as measured by the Adult-Adolescent Parenting Inventory (AAPI) survey that accompanies the Nurturing Parenting Program and the indicators of family wellbeing as measured by the Family Development Matrix tool. The data used for this project corresponds to families participating in the Nurturing Parenting programs led by the First5 organization in San Bernardino County CA during the 2015-2017 period.

1.1 The Adult-Adolescent Parenting Inventory (AAPI):

The AAPI was originally developed in 1979 and was designed to assess parenting and child rearing attitudes in adult, adolescent, and pre-parent populations. (Assessing Parenting, 2017). The AAPI has been updated and its current version (2.1) has been tested for validity and reliability (Assessing Parenting, 2017). The AAPI has 40 items that measure five different dimensions (or constructs) of parenting. These five constructs are

- 1) Appropriate expectations of children given their age and developmental stage
- 2) Empathy towards children's needs
- 3) Beliefs in the use of corporal punishment
- 4) Appropriate parent-child family roles
- 5) Respect for children's power and independence

Responses in each of the AAPI's 40 items are translated into Sten scores (1-10 scales) that represent levels of risk in each of the 5 constructs.

The AAPI is designed to be administered twice when used in conjunction with a parent education intervention: the first (Form A) to be administered before the

intervention is implemented, and the second (Form B) to be administered after the intervention has been completed.

1.2 The Family Development Matrix (FDM):

The Family Development Matrix (FDM) is an assessment tool designed to support community programs by standardizing assessment and case management practice and providing a database for family strengths and challenges on different dimensions of family wellbeing (Matrix Outcomes Model, 2017). Agencies adopting the FDM as part of their practice identify outcome categories and indicators on different areas of family wellbeing that suit the organization’s mission and population served. In the case of the San Bernardino First5 collaborative, the design team chose 19 indicators in the areas of economic stability, access to services in times of need, emotional stability and home environment and parental readiness and knowledge. Four status levels reflect the family situation in each indicator: in crisis, at risk, stable, self-sufficient measures.

Table 1: FDM indicators used by San Bernardino collaborative

Economic stability	Access to services	Emotional stability and home environment	Parental readiness and knowledge
Adult Education	Child Wellness	Emotional Wellbeing and Sense Life Value	Attachment Bonding
Basic Household Necessities	Physical Health	Functioning Coping	Ages Stages Screen
Employment	Prenatal Enrichment	Home Environment	
Transportation	Child Care	Male Involvement	
Utilities	Community Resources Knowledge	Presence of substance abuse	
	Social Interactions	Violence	

Agencies implementing the FDM typically use the tool for at least 2 assessments of their client families. The first assessment is a baseline used to create a family empowerment plan that draws on the family’s strengths (indicators at the stable and self-sufficient level) and challenges (indicators at the at risk or in crisis levels). The second assessment is typically administered 90 days after the empowerment plan is completed and the families have been referred to interventions.

2. Methods

The analysis used scores on the AAPI administered to San Bernardino parents participating in First5 programs between July 2015 and June 2017. The data set contained 2,292 unique participants¹ that took the baseline assessment (form A) of the AAPI. Of those that completed the AAPI baseline assessment, 1,168 completed the AAPI post intervention assessment (form B). The median time in days between the first and second AAPI was 114 and the average time was 119 (sd=47).

Clients with an AAPI baseline score were matched to the FDM database using the AAPI id that San Bernardino program workers add to the FDM database when a client is administered the FDM for the first time. The match between the 2 databases gave a total of 1,631 clients that had both a baseline score in the FDM and the AAPI and 1,088 that had both a second FDM assessment and a second AAPI.

With the matched dataset three types of analyses were conducted:

- (1) A descriptive analysis of baseline scores in the FDM and the AAPI for matched clients (n=1631).
- (2) A correlation analysis between baseline Sten scores in each of the AAPI constructs and each of the FDM indicators (n=1631).
- (3) A correlation analysis of changes in FDM indicators and changes in Sten scores in each of the AAPI constructs between first and second assessment (n=1,088).

3. Results

3.1 FDM and AAPI scores at baseline

Table 2 presents the distribution of sten scores in each of the AAPI constructs for 1,631 families that were referred to the Nurturing Parenting program and administered a baseline FDM assessment. Families with scores of 1–3 are considered to be at a high risk, families with scores between 4–7 are considered at medium risk, and families with scores between 8–10 are considered at low risk.

As table 2 presents, about 91% of participants score at medium or high risk in the “appropriate expectations” AAPI construct; about 95% score at medium or high risk on the construct of “empathy”; 88% score at medium or high risk in the “non-violent discipline” construct and 80% and 83% score at medium or high risk on the “appropriate family roles” and “power and independence” constructs respectively.

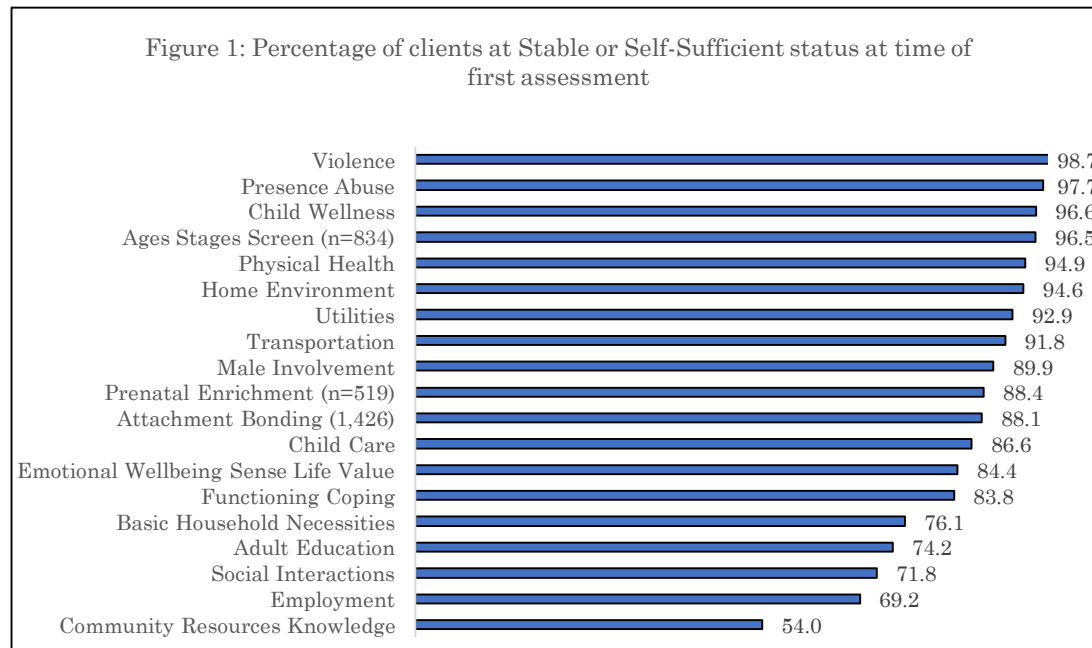
¹ There were 41 participants that took the baseline AAPI (form A) more than once. For these observations, the first AAPI was kept for analysis. Additionally, 79 participants took the post AAPI (form B) in more than one opportunity, for these participants the scores in their first time they took the post assessment were kept for the analysis.

Table 2: Distribution of baseline AAPI Sten scores by construct at baseline

Sten Score	AAPI construct				
	Appropriate Expectations %	Empathy %	Non-violent Discipline %	Appropriate Family Roles %	Power and Independence %
1	3.3	9.9	3.6	5.6	4.3
2	7.2	8.4	4.5	6.1	4.3
3	10.1	17.0	8.8	11.4	13.4
4	19.4	14.1	17.9	12.6	12.1
5	19.9	15.8	18.8	16.3	17.5
6	20.1	17.2	19.7	15.4	16.5
7	11.3	11.6	14.8	12.8	14.8
8	6.0	3.2	8.2	8.9	8.5
9	1.6	1.8	2.0	4.1	5.0
10	1.2	1.0	1.7	6.9	3.6

N = 1,631

Figure 1, presents the percentage of families scoring at a “stable or self-sufficient level” in each of the FDM scores at baseline. As the figure presents, 95% to 99% of participants were classified as stable or self-sufficient on the indicators of home environment, physical health, ages stages screen, child wellness, presence of abuse, and violence; between 87% and 93% are considered as stable or self-sufficient on the indicators of child care, attachment bonding, prenatal enrichment, male involvement, transportation, and utilities; and between 54% and 84% score at stable or self-sufficient level on the indicators of community resources knowledge, employment, social interactions, adult education, basic household necessities, functioning coping, emotional wellbeing and sense of life value.



Notes: n=1,631 except when stated differently

3.2 Relationship between FDM indicators and AAPI Sten scores at baseline

As mentioned in the previous section, the FDM and the AAPI measure different aspects in a family's dynamics. While the AAPI measures knowledge and attitudes in different parental dimensions, the FDM measures the family's wellbeing in the areas of connection to services and emotional and economic stability at a given time. This section explores the relationship between the parental attitudes as measured in the AAPI and the family's status on several indicators of wellbeing measured by the FDM.

The figures in table 3 can be interpreted as the average difference in Sten score between participants that scored at stable or self-sufficient level on the FDM and participants that scored at an in-crisis or at-risk level at baseline.

Table 3 shows a correlation matrix between baseline sten scores on each construct and each FDM indicator status at baseline. For easier interpretation, the correlation coefficients are expressed as bivariate regression coefficients. The figures in table 3 can be interpreted as the average difference in sten score between participants that scored at stable or self-sufficient level on the FDM and participants that scored at an in-crisis or at-risk level in the baseline assessment. Only differences that were statistically significant are presented. For example, participants that were determined to be at stable or self-sufficient level on the

FDM first assessment had on average a .3 higher sten score on the baseline AAPI "Appropriate expectations" construct than participants that scored at risk or in crisis on that FDM indicator.

Table 3: Correlations between baseline Sten Scores and stable/self-sufficient status at FDM baseline

	Appropriate Expectations	Empathy	Non-violent Discipline	Appropriate Family Roles	Power and Independence
Adult Education	0.3	0.5			0.6
Ages Stages Screen (n=834)	1.0			1.1	
Attachment Bonding (1,426)					
Basic Household Necessities	0.4	0.3		0.7	0.5
Child Care					
Child Wellness	0.6			1.0	
Community Resources Knowledge					
Emotional Wellbeing Sense Life Value			0.5		0.3
Employment				0.3	0.3
Functioning Coping			0.3	0.3	0.3
Home Environment			0.4		0.6
Male Involvement	0.3	0.4			0.4
Physical Health					
Prenatal Enrichment (n=519)					
Presence Abuse					1.0
Social Interactions				0.0	0.4
Transportation	0.5	0.5		1.0	0.5
Utilities	0.4		0.4	0.8	0.6
Violence					

Notes: n=1,631 except when stated differently.

Figures are bivariate regression coefficients from the following estimation: $Sten_j = b_0 + b_1(FDM_k)$; where $Sten_j$ represents the sten score in construct J and FDM_k is a binary indicator signifying that family is at stable or self-sufficient status in indicator K.

Only statistically significant coefficients (at the .05) level are presented.

Consistent with other research, table 3 suggests that families with economic stability tend to have higher scores on the AAPI than families facing economic difficulties. This is evidenced by the impact of FDM indicators of basic household necessities, transportation and utilities. Families that scored at a stable or self-sufficient level on those 3 indicators were more likely to score higher in all AAPI scores.

Families with economic stability (as measured by FDM indicators of basic household necessities, transportation and utilities) tend to have higher baseline scores on the AAPI than families facing economic difficulties.

Interestingly, the AAPI sten score on the “non-violent discipline” was correlated with FDM indicators measuring emotional stability (Emotional Wellbeing and Sense of Life Value, Functioning Coping, and Home Environment).

Families with emotional stability (as measured by the FDM indicators of Emotional Wellbeing, Functioning Coping, and Home Environment) tend to have higher baseline scores on the AAPI areas of non-violent discipline and power and independence.

Another interesting finding was that the FDM indicator of male involvement is positively correlated with the AAPI scores in the constructs of appropriate expectations, empathy and power and power and independence, suggesting the mechanisms through which father (or grandfather) involvement enriches family life. The same mechanism (and in a similar magnitude) was observed for the indicator of adult education.

Higher scores on the FDI indicator of male involvement tend to have higher baseline scores on the AAPI areas of appropriate expectations empathy and power and independence. A similar pattern was observed for the FDM indicator of adult education.

3.3 Relationship between changes in status in FDM indicators and changes in AAPI Sten scores from first to second assessment

Each figure in table 4 can be interpreted as the expected change in AAPI score associated with a change from at risk or in crisis level to a stable or self-sufficient level from first to second assessment in the FDM indicator.

While table 3 presents correlations at baseline assessment, table 4 looks how changes in AAPI scores from baseline to final assessment correlate with positive changes in FDM indicators from first to second assessment. Each figure in table 4 can be interpreted as the change in AAPI score associated with a change from at risk or in crisis level to a stable or self-sufficient level from first to second assessment in the FDM indicator.

Table 4 shows that families that moved from a level of at risk or in crisis to a level of stability or self-sufficiency on the indicator of adult education were more likely to make gains on the AAPI constructs of appropriate expectations, empathy, and appropriate family roles than families that had no change or a negative change in that FDM indicator.

Families going from at risk/in-crisis to a stable/ self sufficient level in the indicator of adult education tend to also experience positive changes in the AAI dimensions of appropriate expectations, empathy, and appropriate family roles.

Interestingly, families with a positive change on the FDM indicator of emotional wellbeing and sense of life value were more likely to achieve positive changes in the AAPI constructs of empathy, non-violent discipline and appropriate family roles than families with no positive change in that indicator.

Table 4: Correlations between change in Sten Scores and change to a stable/self-sufficient FDM status.

	Appropriate Expectations	Empathy	Non-violent Discipline	Appropriate Family Roles	Power and Independence
Adult Education	0.63	0.58		0.49	
Ages Stages Screen					
Attachment Bonding					
Basic Household Necessities					
Child Care					
Child Wellness					
Community Resources Knowledge	0.29				
Emotional Wellbeing Sense Life Value		0.72	0.46	0.45	
Employment					0.39
Functioning Coping				0.45	
Home Environment					
Male Involvement		0.57			
Physical Health					
Prenatal Enrichment	-1.38		-0.90	-0.92	
Presence Abuse					
Social Interactions			-0.47		
Transportation				0.68	
Utilities					0.81
Violence					

Figures are bivariate regression coefficients from the following estimation: $\Delta\text{Sten}_j = b_0 + b_1(\Delta\text{FDM}_k)$; where ΔSten_j represents change in sten score in construct J and ΔFDM_k is a binary indicator signifying that family changed to a at stable or self-sufficient status in indicator K. Only statistically significant coefficients (at the .05) level are presented.

Families going from at risk/in-crisis to a stable/ self-sufficient level in the indicator of emotional wellbeing tend to also experience positive changes in the AAPI dimensions of empathy, non-violent discipline and appropriate family roles.

Also interesting is that families that improved on their economic stability, as measured by positive changes on the FDM indicators of employment and utilities, were more likely to achieve positive gains on the AAPI construct of power and independence than families that did not have positive changes in those FDM indicators.

Surprisingly, positive change on the FDM indicator of prenatal enrichment was negatively correlated with changes in the AAPI constructs of appropriate expectations, nonviolent discipline, and appropriate family roles. This FDM indicator is used for families that are expecting a child and measures family access to prenatal activities. We hypothesize that families that are expecting their first child are more likely to have difficulty accessing services than families that are

expecting a second or third child, so perhaps the negative change observed is a reflection of not necessarily a change in access to prenatal activities, but a difference in families (with the less experienced families being more likely to be at an at-risk or in-crisis in this indicator than more experienced families. This finding however, requires further research for an appropriate interpretation.

4. Conclusion and future directions

The results suggest that the parenting knowledge and attitudes as measured by the AAPI are correlated with family wellbeing status as measured by the FDM. Economic and emotional stability, and access to services as measured by the FDM indicators tend to be correlated with different aspects of parenting attitudes as measured by the AAPI. These correlations are not only present at the baseline but seem to be also present in the changes taking place as a result of the interventions.

These findings support the practice of combining interventions like nurturing parenting that focus on parent education and attitudes with FDM assessments that provide a picture of family wellbeing. Information on these two dimensions of family stability can provide agencies with a more comprehensive view of family needs than each of the tools can provide standing alone.

4.1 Next steps

While establishing a relationship between FDM indicators and AAPI constructs represents an important first step, it also provides additional research questions related to the dynamics of this relationships. We suggest that the next step in this research program involve an exploration of the changes in families lives that tend to produce changes in FDM indicators. For example, this first step has shown that changes in the FDM indicator of emotional wellbeing are correlated with changes in parenting attitudes. It would be important to explore what interventions were used in order to bring the family to a self-sufficient level in that indicator. Involving workers that are familiar with the families, the interventions, and the results could produce important information that would clarify the relationship found in this first step of the research and provide important ideas that could impact future practice.

5. References

Assessing Parenting (AP) (2017). Adult Adolescent Parenting Inventory-version 2. Accessed at <https://www.assessingparenting.com/assessment/aapi>

Chen M., Chan K. L. (2016) Effects of Parenting Programs on Child Maltreatment Prevention- A Meta-Analysis. *Trauma, Violence, and Abuse*. 17(1); 88-104

Matrix Outcomes Model (2017) Family Development Matrix –Overview. Accessed at <http://www.matrixoutcomesmodel.com/famdevmatrix.php>

Pisani E.R., Martins M.B (2016), Universal violence and child maltreatment prevention programs for parents: A systematic review. *Psychosocial Intervention*, 25(1); 27-38,