

Relationships between Family Risk and Opportunity Factors and Parent and Child Functioning

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Abstract

The effects of socioenvironmental conditions that impede or undermine development (risk factors) and the conditions that promote or enhance development (opportunity factors) were examined in a study of 192 mothers and their one-year-old children. The outcomes constituting the focus of investigation were maternal psychological well-being (positive and negative affect) and child cognitive development. Results showed that the presence of multiple risk factors in the absence of opportunity factors had negative consequences on both the maternal and child outcomes, and that the presence of multiple opportunity factors in the absence of risk factors had positive consequences on both outcomes. Implications for improving early childhood intervention practices are described.

Keywords: child cognitive development, enhancement, family resources, maternal well-being, opportunity factors, promotion, risk factors

1. Introduction

Sameroff, Seifer, Barocas, and Greenspan's (1987) seminal research on the cumulative negative effects of multiple parent and family risk factors on child developmental outcomes spurred the conduct of many other studies investigating the effects of the presence of multiple risk factors on different child, parent, and family behavioral outcome measures (Appleyard, Egeland, van Dulmen, & Sroufe, 2005; Burchinal, Vernon-Feagans, & Cox, 2008; Rouse & Fantuzzo, 2009). Results from these studies indicated that there are broad-based negative effects of multiple family, neighborhood, and community risk factors on human development and functioning (Mrazek & Haggerty, 1994; Sameroff, Bertko, Baldwin, Baldwin, & Seifer, 1998). The particular areas of human development and functioning that have been found to be negatively influenced by multiple risk factors include, but are not limited to, child cognitive development, child academic performance (e.g., reading and mathematics), child physical and social well-being, parental stress and depression, parental styles of interaction with their children, and child neglect and abuse.

A related area of research on the negative effects of multiple and cumulative risk factors on behavioral and developmental outcomes was interest in the factors that mitigated or lessened the negative effects of risk factors. This included the development of both risk and protective factor models (Masten & Garmezy, 1985; Rae-Grant, Thomas, Offord, & Boyle, 1989; Rauh, 1989) and risk and resilience factor models (Rutter, 1985; Simeonsson, 1994; Werner, 1993) for investigating how the probability of poor outcomes associated with risk factors can be prevented or alleviated. In these different approaches to the study of factors influencing human functioning, risk factors are defined as conditions or influences that increase the likelihood of poor outcomes, protective factors are defined as characteristics or conditions that lower the probability of poor outcomes associated with risk factors, and resilience factors are defined as characteristics or conditions that are associated with positive or successful adaptations to the presence of risk factors (Jenson & Fraser, 2006).

Most risk, protective, and resilience models implicitly assume that the effects of the presence of protective and/or resilience factors in situations where a child, parent, or family is experiencing multiple risk factors is evidence for optimal behavioral or developmental functioning. Numerous alternative models have been proposed for investigating the differential consequences of factors that either impede or optimize human functioning (Cowen, 1994; Danish & D'Augelli, 1980; Seeman, 1989; e.g., Tucker & Johnson, 1989). One such model was

formulated by James Garbarino (1982) in the book *Children and Families in the Social Environment* and updated in a later edition of his book (Garbarino, 1992).

1.1 Risk and Opportunity Factors

According to Garbarino (1982, 1992), socioenvironmental influences that either deter or enhance human behavior and development may be conceptualized, respectively, as risk and opportunity factors. Risk factors are conditions or influences that undermine the development of competence, whereas opportunity factors are conditions or influences that promote competence. Similar models have been proposed by others where opportunity factors are described as promotive (Bond, 1982) or enhancement (Cowen, 1997) factors. Findings from a number of studies include evidence indicating that the presence of opportunity, promotive, and enhancement factors not only mitigate the negative effects of risk factors but also have developmental—and behavioral—enhancing positive effects on human functioning (Kia-Keating, Dowdy, Morgan, & Noam, 2011; e.g., Stoddard et al., 2013; Zimmerman et al., 2013).

Garbarino's (1992) risk and opportunity framework is grounded in human ecology theory which postulates factors that either enhance or deter human development. The foundations for Garbarino's framework are Urie Bronfenbrenner's (1977, 1979, 1980) ecological systems theory whose own formulations influenced our research on the influences of risk and opportunity factors on parent and child functioning.

1.2 Conceptual Framework

The research described in this paper was guided by a social systems and human ecology framework that aims to understand how interpersonal and extrapersonal resources available to families provide parents the time and energy, and knowledge and skills, necessary to carry out their parenting responsibilities in ways that optimize child outcomes (Bronfenbrenner, 1992, 2005). More specifically, this research was guided by contentions made by Bronfenbrenner (1979) who stated:

Whether parents can perform effectively in their child-rearing roles within the family depends on role demands, stresses, and supports emanating from other settings...Parents' evaluations of their own capacity to function, as well as their view of their child, are related to such external factors as flexibility of job schedules, adequacy of child care arrangements, the presence of friends and neighbors who can help out in large and small emergencies, the quality of health and social services, and neighborhood safety. The availability of supportive settings is, in turn, a function of their existence and frequency in a given culture or subculture. This frequency can be enhanced by the adoption of public policies and practices that create additional settings and societal roles conducive to family life.

A theoretical conception of the environment extending beyond the behavior of individuals to encompass functional systems both within and between settings, systems that can also be modified and expanded, contrasts sharply with prevailing research models. These established models typically employ a scientific lens that restricts, darkens, and even blinds the researcher's vision of environmental *obstacles* and *opportunities* and of the remarkable potential of human beings to respond constructively to an ecologically compatible milieu once it is made available. As a result, *human capacities and strengths tend to be underestimated* (emphasis added). (p. 7)

The research was also guided by the premise that the absence of problems or negative functioning cannot be equated with the presence of positive functioning. Consequently, in studies of human functioning, where elevated scores on a behavioral measure indicate problems or poor functioning, low scores on the same measure may not necessarily indicate the presence of positive functioning. Therefore, efforts to intervene to reduce problems or problem-related functioning do not necessarily mean that positive aspects of functioning would have been enhanced.

The assumption that the absence of problems (negative functioning, stress, family hardships, etc.) may be taken as evidence for the presence of positive functioning to a large degree evolved from Western thought about the nature of psychological and physical health (see Seeman, 1989). According to this viewpoint, health is considered a continuous variable with the absence of disease at one end of the continuum and the presence of healthy functioning at the other end of the continuum (Antonovsky, 1981). Because health is considered a continuous variable, the presence or absence of one aspect of functioning is considered a direct index for the other. This perspective differs considerably from the definition of health proposed by the World Health Organization (Grad, 2002) where health is not considered merely the absence of disease or problems but the presence of complete physical, mental, and social well-being.

Research on the relationships between the positive and negative aspects of functioning indicate that they are largely independent (i.e., uncorrelated). For example, in a review of studies of indicators of the negative and positive psychological health conducted by Dunst et al. (1990), the investigators concluded that:

Available evidence indicates that the absence of negative functioning or problems cannot be considered a sufficient condition for arguing that a person's behavior will reflect positive functioning. Extrapolating from this evidence, a strong case can be made for the argument that the prevention of poor outcomes will not necessarily result in enhancement and strengthening of positive functioning... The evidence argues against the position that strengthening of functioning has necessarily taken place when one prevents negative outcomes. (p. 38)

Garbarino's (1982, 1992) risk and opportunity framework was used to guide the design of our study because it provided a broader-based lens for investigating factors positively influencing both parent and child functioning and not just the prevention of the negative consequences of risk factors as do protective and resilience models.

1.3 Research Aims

The validity of the contentions described above was examined in the study described in this paper with data from a prospective study of pregnant woman and their one-year-old children. The study was guided by the human ecology and social system frameworks described above that considers family risk and family opportunity factors as deterrents and enhancers, respectively, of human development. More specifically, the study was designed to ascertain the effects of risk and opportunity factors on both parent and child functioning. We assessed the extent to which maternal well-being and child cognitive development were negatively influenced by the presence of risk factors and were positively influenced by the presence of opportunity factors. These particular outcomes were the focus of investigation because maternal psychological health and child development are related (Magill-Evans & Harrison, 2001; Slykerman et al., 2005) as hypothesized by Bronfenbrenner (1979).

In addition to the evaluation of the effects of different risk and opportunity factors on the study outcomes, we also assessed (a) the influences of the presence of cumulative risk and cumulative opportunity factors on both parent and child functioning and (b) the effects of the simultaneous presence or absence of multiple risk and multiple opportunity factors for each parent and child. This allowed us to discern whether the absence of risk factors was associated with optimal functioning or whether the presence of multiple opportunity factors beyond those that mitigated the negative effects of risk factors had value added positive consequences.

2. Method

2.1 Participants

The participants were 192 mothers and their infants and toddlers. Pregnant women were recruited during their second trimester and followed until their children were two years of age. Table 1 shows the background characteristics of the participants. The sample was quite heterogeneous with respect to each of the child, parent, and family background variables.

The participants included both married (80%) and unmarried (17%) mothers, teenage mothers (16%), and mothers with less than a high school education (15%) as well as those with advanced graduate degrees (6%). The socioeconomic status (SES) of the mothers' families ranged from low to high with the majority (82%) having low-middle to upper-middle SES backgrounds (Hollingshead, 1975). At the time the women were recruited during their second trimester, 52% were working outside the home either part time or full time.

Table 1. Background characteristics of the study participants

Background Variables	Mean	SD	Range
<i>Mothers' Age (Years)</i>	25.43	5.41	14-43
<i>Mothers' Education (Years)</i>	13.20	2.41	7-19
<i>Fathers' Age (Years)</i>	28.57	5.38	17-43
<i>Fathers' Education (Years)</i>	13.53	2.55	8-21
<i>Monthly Family Income (US Dollars)</i>	2722.57	1410.40	0-6900
<i>Socioeconomic Status^a</i>	37.41	13.11	11-66
<i>Family Size</i>	2.79	1.00	1-7
<i>Number of Children</i>	1.55	0.72	1-5

^a Hollingshead (1975).

2.2 Procedure

Each mother participated in interviews and completed a number of self-report measures during the second and third trimesters of their pregnancies and at 1, 6, 12, 18, and 24 months postpartum. At 6, 12, 18, and 24 months, a parenting interactional styles measure was administered from observations of parent-child play, and the children were administered a child cognitive development scale. Several observational measures were also used to assess a number of aspects of both maternal and child behavior.

2.3 Measures

The self-report measures included the *Personal Assessment of Social Support Scale* (Dunst & Trivette, 1988), *Parental Locus-of-Control Scale* (Campis, Lyman, & Prentice-Dunn, 1986), and the *Personal Assessment of Intimate Relationships Index* (Schaefer & Olson, 1981). The interview scales included the *Personal Assessment of Coping Experiences Scale* (Dunst, Trivette, Jodry, Morrow, & Hamer, 1988) and the *Personal Assessment of Life Events Scale* (Trivette, Dunst, Hamer, & Jodry, 1988). The observational measures included the *Social Skills Rating Scale* (Jodry, Hamer, Trivette, & Dunst, 1988), the *Personal Well Being Rating Scale* (Trivette et al., 1988), and the *Maternal Styles of Interaction Scales* (Mahoney, Finger, & Powell, 1985). The instruments were selected to measure one or more aspects of the personal resources of the mothers (coping strategies, social competence, locus-of-control), intrafamily (e.g., partner) and extrafamily (e.g., social network size, closeness of relationships) social support, and the psychological and physical health of the mothers, which were used to ascertain risk and opportunity status for the variables described next.

2.4 Risk and Opportunity Factors

2.4.1 Family Variables

A set of nine family variables were used as the independent variables in the analysis of maternal well-being. The variables were ones that previously have been found, or are ones that have been postulated, to be determinants of psychological well-being (Cohen & Syme, 1985; Diener, 2012; Phung, 2005). The nine variables are listed in Table 2. For each variable, a mother was assigned high risk status if she scored in the lowest 15% of the group (except for the social skills measure in which high risk was defined as having scored in the lowest 5% of the group because of a skewed distribution.) A mother was assigned high opportunity status if she scored in the highest 15% of the group. A mother whose score fell in neither of the two extreme groups was considered to have neither high risk nor high opportunity resources for purposes of the analyses.

Table 2. Variables used for ascertaining high risk and high opportunity factor status for the maternal well-being analyses

Family Variable	High Risk		High Opportunity	
	Measure	Index	Measure	Index
<i>Intrapersonal Resources</i>				
Locus-of-Control	External	15%	Internal	15%
Coping Strategies	Reactive	15%	Proactive	15%
Social Skills	Low	5%	High	15%
Partner Support	Low	15%	High	15%
<i>Extrafamily Resources</i>				
Support Network Size	Low	15%	High	15%
Organizational Participation	Low	15%	High	15%
Frequency of Network Member Contact	Low	15%	High	15%
Amount of Assistance	Low	15%	High	15%
Closeness of Relationships	Low	15%	High	15%

2.4.2 Child Variables

A similar method was used to ascertain the influences of family risk and family opportunity factors on the children's 12-month cognitive development. Table 3 shows the family variables used to ascertain high risk and high opportunity status. The risk constructs and the method used to assign families to a high risk status were the same as those used by Sameroff et al. (Sameroff, Seifer, Zax, & Barocas, 1987). The opportunity factors were ones that have been implicated as variables that either directly or indirectly enhance and promote child competence (Bronfenbrenner, 1992; Cochran & Walker, 2005; Wachs, 2000). For the majority of the continuously scored variables, scores greater than one standard deviation above and below the mean were used to assign the mothers to high risk or high opportunity groups respectively.

Table 3. Variables used for ascertaining high risk and high opportunity factor status for the child cognitive development outcome analyses

Family Variable	High Risk		High Opportunity	
	Measure	Index	Measure	Index
<i>Mental Health</i>	Depression	> 1 SD	Positive Affect	> 1 SD
<i>Well-Being</i>	Anxiety	> 1 SD	Positive Health	> 1 SD
<i>Locus-of-Control</i>	External	> 1 SD	Internal	> 1 SD
<i>Parent Interaction Style</i>	Negative	> 1 SD	Positive	> 1 SD
<i>Mothers' Education</i>	Low	< 11 Years	High	> 15 Years
<i>Occupation</i>	Unskilled	—	Professional	—
<i>Family Support</i>	Partner Absent	—	Network Size	> 1 SD
<i>Life Events</i>	Negative	> 1 SD	Positive	> 1 SD
<i>Family Size</i>	3 or More Children	—	One or Two Children	—

2.5 Dependent Variables

The instrument used to measure maternal well-being was the *Psychological Well-Being Index* (Bradburn, 1969; Bradburn & Caplovitz, 1965). The scale includes two subscales; one measuring positive affect and the other measuring negative affect which were the dependent measures in the analyses of maternal well-being. The

instrument used to measure child cognitive development was the *Bayley Scales of Infant Development*. The scale yields a standardized mental development index (MDI) which was the dependent measure of child cognitive development. Both the parent well-being and child cognitive development scales administered at 12 months were used in the analyses described next. We chose 12 month outcomes because we were interested in determining if the effects of risk and opportunity factors manifested themselves at such an early age.

2.6 Methods of Analysis

A number of analyses were performed on the risk and opportunity factor data. We first compared the high risk and high opportunity factor groups on each of the independent variables used to constitute group membership. Between group *F*-tests and Cohen's *d* effect sizes for the between group differences were computed for each comparison. Second, we computed cumulative risk and cumulative opportunity factor scores for each participant by summing the number of times a mother was in the lowest and highest groups on each of the independent variables used to ascertain high risk and high opportunity status respectively. The scores ranged from zero to 7 for both the risk and opportunity factor scores for both sets of data (Tables 2 & 3). Between risk factor and between opportunity factor ANOVAs and Cohen's *d* effect sizes for linear trends were computed for both the maternal and child outcome measures. Third, we computed a composite risk/opportunity factor score for each mother by assigning risk group membership on each independent variable a minus sign and by assigning opportunity group membership on each independent variable a plus sign and summing the two scores. Sixty six of the families had both risk and opportunity factor scores used to establish group membership on the independent variables and to assess the effects on maternal well-being, and 72 of the families had both risk and opportunity factor scores used to establish group membership on the independent variables and to assess the effects on child cognitive development. The composite scores ranged from -7 to +7 for both sets of risk and opportunity factor variables. Between composite risk/opportunity factor ANOVAs and Cohen's *d* effect sizes for linear trends were computed for each analysis.

3. Results

3.1 Maternal Well-Being

3.1.1 Individual Risk and Opportunity Factors

The first set of analyses compared the positive and negative well-being scores for the high risk and high opportunity groups for each of the nine family variables (Table 2). The results are shown in Table 4. For every variable except frequency of contact with personal social network members, significant differences were found for the between group comparisons for the two maternal well-being measures (positive and negative affect). The Cohen's *d* effect sizes for all nine variables for both positive and negative affect were small to large with all but three effect sizes being medium to large. In all cases, the direction of influences was as expected: The presence of risk factors was related to more negative and less positive affect, and that the presence of opportunity factors were related to more positive and less negative affect.

Although each of the independent variables except one were related to differences between the risk and opportunity groups on the two maternal well-being measures, certain variables proved to be better predictors of between group differences. Inspection of Table 4, for example, shows that support from a partner or spouse was associated with the largest effect sizes for between group differences on both dependent measures, and that certain

other family variables were differentially associated with between group differences on the two dependent measures (e.g., locus-of-control).

Table 4. Mean maternal well-being scores and Standard Deviations (SD) for the high risk and high opportunity factor group participants

Family Variables	Group				Between Group <i>F</i> -Test	<i>p</i> -value	Cohen's <i>d</i> Effect Size
	High Risk		High Opportunity				
	Mean	SD	Mean	SD			
<i>Positive Affect</i>							
Locus-of-Control	11.09	3.05	13.58	3.49	8.13	.0048	.76
Coping Strategies	10.94	3.10	13.06	3.02	4.60	.0332	.69
Social Skills	9.88	2.75	12.13	3.00	3.70	.0559	.78
Partner Support	10.40	3.01	14.15	2.37	22.96	.0000	1.39
Support Network Size	11.42	3.00	13.15	3.18	6.03	.0149	.56
Organizational Participation	11.43	3.23	13.11	3.12	4.47	.0359	.53
Frequency of Contact	11.37	3.15	12.25	3.26	1.20	.2740	.28
Amount of Assistance	11.30	2.97	12.82	3.45	3.55	.0610	.47
Closeness of Relationships	10.88	3.03	12.81	3.36	5.47	.0204	.60
<i>Negative Affect</i>							
Locus-of-Control	9.76	2.98	7.00	1.77	12.45	.0005	1.13
Coping Strategies	9.94	3.28	7.67	1.72	6.60	.0110	.87
Social Skills	12.12	1.89	8.43	2.70	12.70	.0005	1.58
Partner Support	10.80	3.04	7.22	1.85	25.94	.0000	1.42
Support Network Size	9.81	3.18	8.15	2.50	6.71	.0103	.58
Organizational Participation	9.79	3.05	8.37	2.72	3.89	.0501	.49
Frequency of Contact	9.37	2.87	8.71	2.65	0.82	.3664	.24
Amount of Assistance	10.00	3.27	8.30	2.51	5.60	.0190	.58
Closeness of Relationships	9.64	3.17	7.77	1.99	6.28	.0130	.71

3.1.2 Cumulative Risk and Opportunity Factors

The second set of analyses compared the influences of multiple risk factors and multiple opportunity factors on the mothers' psychological well-being. The data were analyzed by two 6 Between Factor X 2 Within Factor (Positive vs. Negative Well-Being) ANOVAs, one for the high risk scores and one for the high opportunity scores. The results are shown in Figure 1. There were significant between group by type of well-being measure interactions for both the high risk, $F(5, 186) = 6.92, p = .0000$, and high opportunity, $F(5, 186) = 4.22, p = .0012$, factor score analyses. As can be seen the figure, the presence of a larger number of high opportunity factors had promotive influences on positive affect, whereas negative affect increased as a function of the presence of a large number of risk factors.

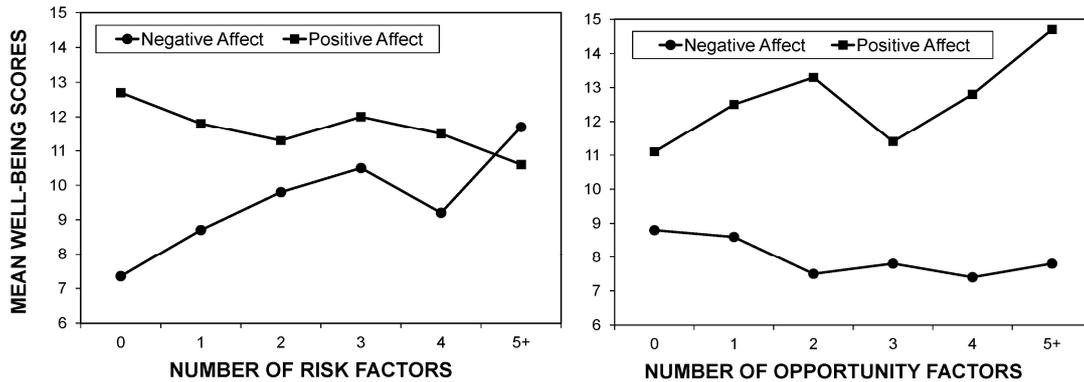


Figure 1. Positive and negative maternal well-being as a function of the number of risk and number of opportunity factors present in the families

Further analyses of the cumulative number of risk factor data found a significant downward linear trend in positive affect, $F(1,190) = 6.47, p = .0118, d = .37$, and a significant linear increase in negative affect, $F(1,190) = 13.76, p = .0003, d = .54$. In contrast, the analyses of the cumulative number of opportunity factors was associated with a significant linear increase in positive affect, $F(1,190) = 9.84, p = .0020, d = .46$, and a significant linear decrease in negative affect, $F(1,190) = 3.98, p = .0474, d = .29$. The sizes of effects for these four linear trend analyses showed, as noted above, that the presence of multiple opportunity factors had a larger promotive effect on positive compared to negative affect, and that the presence of multiple risk factors had a larger attenuation effect on negative compared to positive affect.

3.1.3 Composite Risk/Opportunity Factors

The third analysis evaluated the influences of the composite risk/opportunity scores on maternal positive and negative affect. The distribution of scores permitted a 5 Between Risk/Opportunity Factor X 2 Within Well-Being Factor ANOVA to be used to analyze the well-being data. A significant risk/opportunity x type of well-being interaction was produced by the analysis, $F(4, 187) = 8.17, p = .0000$. The results are displayed in Figure 2. Further analysis showed that there was a significant linear increase in positive affect, $F(1,190) = 18.27, p = .0000, d = .63$, and a significant linear decrease in negative affect, $F(1,190) = 22.02, p = .0000, d = .67$, as a function of the presence and absence of risk and opportunity factors.

Examination of Figure 2 shows that the presence of multiple risk factors had neutralizing influences on positive and negative affect. The results showed that the absence of either risk or opportunity scores (-1 to +1) had small differential effects on positive and negative affect; and that only the presence of multiple opportunity factors in the absence of risk factors was associated with the greatest impact on positive affect, and essentially eliminated the reporting of negative well-being. These findings suggests that although elimination of risk factors may improve well-being, it will likely require adequate amounts of opportunity factors to optimize the effects of intrafamily and extrafamily resources on maternal well-being.

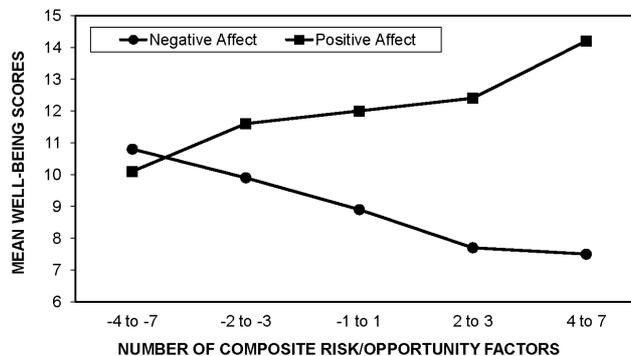


Figure 2. Maternal well-being as a function of the composite family risk/opportunity factor scores

3.2 Child Cognitive Development

3.2.1 Individual Risk and Opportunity Factors

Table 5 shows the children's MDI scores for the comparisons between the high risk and high opportunity groups on each of the family variables. The direction of the differences between groups was as expected for all of the family variables except one (occupation). The between group comparisons, however, yielded statistically significant differences for only three variables, but small to large effect sizes for 8 of the 9 between group comparisons.

As was the case for the maternal well-being analyses, certain family variables proved to be better predictors of between group differences. Parenting interactional styles (more responsive and less directive) was associated with the largest effect size, followed by mothers' psychological functioning (parent well-being and parent mental health status), and parental locus-of-control. Taken together, these constitute the intrapersonal resources of the mothers, and indicate their relative importance as determinants of their infants' cognitive development.

Table 5. Mean 12-month child mental development indices and Standard Deviations (SD) for the high risk and high opportunity factor group participants

Family Variables	Group				Between Group <i>F</i> -Test	<i>p</i> -value	Cohen's <i>d</i> Effect Size
	High Risk		High Opportunity				
	Mean	SD	Mean	SD			
<i>Parent Mental Health</i>	112.04	13.71	119.11	11.39	3.63	.0582	.56
<i>Parent Well-Being</i>	111.87	12.71	120.19	11.06	4.88	.0284	.70
<i>Locus-of-Control</i>	110.91	14.84	117.50	13.94	2.90	.0904	.46
<i>Parent Interaction</i>	104.55	10.57	119.78	14.78	20.06	.0000	1.19
<i>Mothers' Education</i>	111.52	8.95	114.20	12.06	0.64	.4237	.25
<i>Occupation</i>	112.76	11.22	112.86	13.45	0.00	.9827	.00
<i>Family Support</i>	113.59	11.27	118.00	11.64	1.73	.1896	.39
<i>Life Events</i>	112.88	12.65	116.24	11.46	0.58	.4453	.28
<i>Family Size</i>	110.41	16.61	115.30	10.91	2.18	.1414	.35

3.2.2 Cumulative Risk and Opportunity Factors

The cumulative risk and cumulative opportunity factor scores were used to constitute six risk and six opportunity factor groups. Two Between Group ANOVAs were conducted, one for the cumulative risk factor scores and one for the cumulative opportunity factor scores. The results are displayed in Figure 3. Findings showed that increases in the presence of risk factors had negative influences on child cognitive development, $F(5, 193) = 1.97$, $p = .0841$, whereas increases in the presence of opportunity factors had positive influences on child cognitive development, $F(5, 193) = 2.43$, $p = .0367$. Further analysis showed that there was a significant linear downward trend in the children's MDI scores in the presence of multiple risk factors, $F(1,190) = 3.71$, $p = .0556$, $d = .28$, and a significant linear increase in the children's MDI scores as a function of the presence of multiple opportunity factors, $F(1,190) = 4.07$, $p = .0449$, $d = .29$.

3.2.3 Composite Risk/Opportunity Factors

Figure 4 shows the findings for the relationship between the composite risk/opportunity factor scores and the children's MDI scores. The analysis produced a significant main effect, $F(4, 194) = 2.78$, $p = .0280$, for the between group differences. Further analysis showed that there was a significant linear increase in the children's MDI scores as a function of the combination of the presence and absence of multiple risk and opportunity factor scores, $F(1,190) = 8.37$, $p = .0043$, $d = .42$. As can be seen in Figure 4, there is a noteworthy linear trend for the composite influences of risk and opportunity factors on child cognitive development. Again, the data indicate that the absence of risk factors (i.e., -1 to +1 scores) cannot be considered sufficient evidence for optimization of

development; the presence of facilitation factors (in absence of risk factors) seem necessary for the latter to occur. Additionally, the data indicate that the presence of family risk and opportunity factors during pregnancy and the postpartum period are associated with differences in child functioning as early as one year of age.

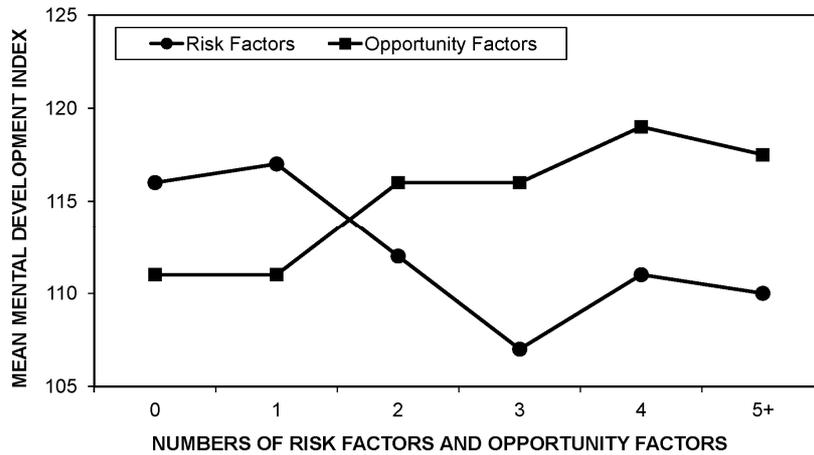


Figure 3. Child mental development index scores as a function of the number of family risk and family opportunity factors

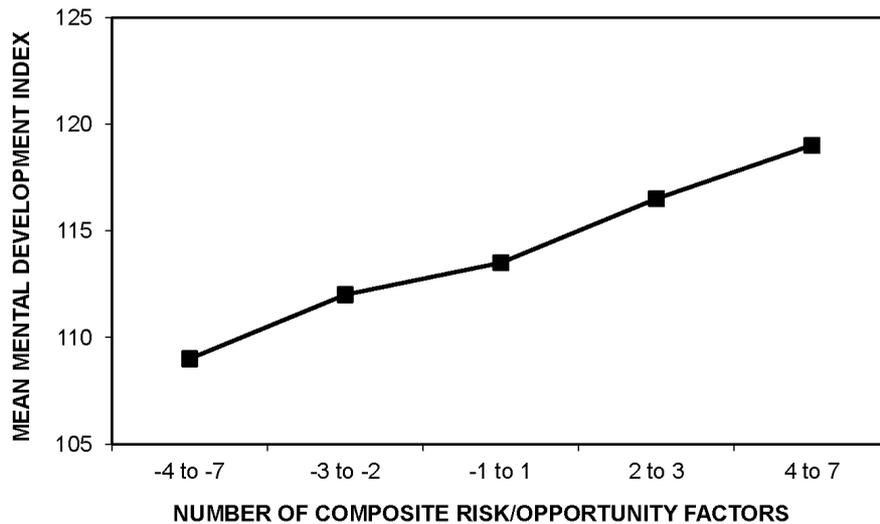


Figure 4. Child mental development index scores as a function of the composite family risk/opportunity factor scores

4. Discussion

The results from the analyses of factors associated with maternal well-being showed that both the personal resources and extrafamily supports either available or unavailable to the mothers were differentially related to the mothers’ psychological well-being. The results also showed that family risk and family opportunity factors were differentially related to variations in the children’s cognitive development as early as one year of age. The different sets of analyses of the cumulative number of multiple risk and multiple opportunity factor data yielded evidence consistent with expectations. The presence of multiple risk factors had negative effects on both maternal well-being and child cognitive development, whereas the presence of multiple opportunity factors had positive effects on the same two outcomes. The findings from the composite risk/opportunity data analysis, however, proved to be the best predictor of differences in both maternal well-being and child cognitive development. This was determined by the comparison of effect sizes for the linear influences of the cumulative

and composite factor scores on both the mother and child outcomes. The average effect size for influence of the cumulative risk and the cumulative opportunity factor scores on maternal well-being was 0.42, whereas the average effect for the composite risk/opportunity scores on maternal well-being was 0.65. The average effect sizes for the same two predictors on child cognitive development were 0.28 and 0.42 respectively.

The findings provide support for Garbarino's (1982, 1992) contentions regarding the differential influences of risk and opportunity factors on human development as well as support for our contention that the absence of problems (risk factors) cannot be considered the same as the presence of positive functioning. This was ascertained by the results displayed in both Figures 2 and 4 where the absence of risk factors is not associated with optimal outcomes but rather was associated with the presence of multiple opportunity factors. In both sets of analyses, the largest positive parent well-being (and the small negative well-being) scores and largest child MDI scores were associated with the presence of four or more opportunity factors.

The findings from our study add to the knowledge base by replicating results found in previous studies in terms of the negative effects of risk factors (e.g., Appleyard et al., 2005; Burchinal et al., 2008; Roche, 2003) and by demonstrating the positive effects of opportunity factors on parent and child functioning (Bond, 1982; Cicchetti, Rappaport, Sandler, & Weissberg, 2000). The latter is especially informative because it sheds light on the importance of personal and socioenvironmental factors that have enhancement benefits. Further research is needed, however, to determine if the influences of the opportunity factors are the same for other parent and child outcomes. It would also add to the knowledge base to know if other kinds of opportunity factors also have positive effects on parent and child behavior and functioning (Dunst, 1993).

The results from our analyses have at least two implications for practice. First, the risk and opportunity framework, and the evidence regarding its validity, suggests the need to employ both buffering and promotive types of interventions as part of practices aimed at influencing child, parent, and family functioning (see e.g., Dunst & Trivette, 1997; Trute, Benzies, Worthington, Reddon, & Moore, 2010). The reader is referred to Dunst (1993) for a discussion of the implications of Garbarino's (1982, 1992) risk and opportunity framework for reconceptualizing the design of parent and child intervention practices (Dunst & Trivette, 2011; Dunst, Trivette, & Thompson, 1994). Such a framework would place equal emphasis on the prevention of poor outcomes and the promotion and enhancement of positive functioning. Second, the findings also indicate that if differential effects of interventions are to be realized, both positive and negative outcome measures ought to be used as dependent variables. In this way, both reductions in poor functioning and increases in positive functioning can be ascertained.

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