

Exposure to Environmental Risk Factors and Parenting Attitudes Among Substance-Abusing Women

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ABSTRACT

This study examined the amount of exposure to negative environmental risks and their association with parenting attitudes among a group of inner city substance-abusing women. Mothers ($N = 198$) were recruited at delivery and were part of a randomized longitudinal intervention study for substance-abusing women and their infants. When the infants were 18 months old, a cumulative environmental risk score was calculated for each mother based on nine factors: violence (both domestic and environmental), depression, homelessness, incarceration, number of children, life stress, psychiatric problems, and absence of significant other. Based on their cumulative scores, mothers were placed in a low ($N = 106$) or high environmental risk group ($N = 92$). Mothers in the high-risk group had fewer years of education and were younger when their first child was born. Multivariate analyses indicate that mothers in the high-risk group had significantly worse scores on parenting attitude scales. Given the current state of welfare reform, it is important to determine which factors besides maternal substance abuse place these mothers at risk for poor parenting.

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INTRODUCTION

Maternal substance abuse is associated with multiple environmental risk factors. Research indicates that substance abuse by mothers is associated with maternal depression (1), child abuse (2, 3), and increased parenting stress (2). However, the assumption is often made that maternal substance abuse is a primary cause of poor parenting, not just one of many risk factors. Parenting among substance-abusing women may also be influenced by exposure to environmental risk factors that are associated with a drug-using lifestyle. These risk factors may include, but are not limited to, the following: violence (both domestic and other), homelessness, incarceration, mental illness, and poverty (4–7).

Research indicates that violence (both domestic and random community violence) is central in the lives of maternal substance abusers (6). In one study, 64.9% of the substance-abusing women reported being physically abused or sexually abused or had their life threatened by a spouse or boyfriend, which is two to three times higher than the rate in national epidemiological surveys of a general population of women (7). In addition to suffering the physical consequences of an abusive relationship, these women also suffer from higher rates of depression, physical health problems, and a lack of social support when compared to non-abused drug-using women (7).

Substance abuse also puts women at risk for homelessness because it hinders their ability to compete for limited resources, such as low-cost housing (8). Researchers (9) found that, among a sample of homeless people, 20% reported drug use as the main reason for their homelessness. Maternal substance abuse is also associated with depression and other psychiatric problems (10, 11) and incarceration, which causes disruptions in families. All of these risk factors may place substance-abusing women at risk for poor parenting.

Research on environmental risk factors among non-substance-abusing families indicates that family size may be an important factor to consider, especially in at-risk families, because more children are competing for scarce resources (12). The presence or absence of a significant other may also be an important variable because the significant other may provide support for the mother in families living in poverty (13).

In summary, research indicates that maternal substance abuse can be associated with multiple negative environmental factors. The combination of maternal substance abuse and these factors may lead to poor parenting. Yet, very little research has been done to determine if, within a high-risk group of inner city substance-abusing mothers, there is a continuum of risk such that some substance-

abusing mothers are exposed to high rates and some to low rates of negative environmental factors. Previous research (14) suggests that substance-abusing women with multiple demographic and psychosocial risks were least able to provide ongoing care for their children. Thus, it was not maternal substance abuse alone that was the best predictor of mothering ability, but substance abuse combined with other risks.

The purpose of this study was to determine if the amount of exposure to negative environmental factors varied within a group of inner city substance-abusing mothers. The hypothesis was that substance-abusing mothers exposed to a high number of negative environmental events would have poorer attitudes toward parenting than substance-abusing mothers exposed to a low number of negative environmental events.

METHODS

Subjects

The subjects in the present study were 198 mothers from an ongoing randomized longitudinal intervention study of substance-abusing women and their children who had been followed for at least 18 months. Mother/infant dyads ($N = 296$) were recruited from the nursery of an inner city hospital. Women were eligible for recruitment if they had a history of substance abuse or the mother and/or infant had a positive urine toxicology screen at delivery. Mother-infant dyads were seen at 2 weeks postpartum for a baseline evaluation visit and every 6 months after that for evaluation visits. Only data relevant to the topic of this paper are reported here.

The 2-week appointment was not kept by 31 mothers for the following reasons: 10 no longer had custody of their infant (1 infant died, 9 were placed in foster care), 15 were noncompliant, 2 withdrew, and 4 could not be located. Of the remaining 265 mothers, 24 additional mothers were lost after the 2-week visit for the following reasons: 12 no longer had custody of their infants (3 died, 9 were placed in foster care), 2 moved out of state, 1 entered a residential drug treatment program, 6 could not be located, and 3 were errors in recruitment (had no drug history). Therefore, there were 239 dyads eligible to be seen at 18 months. Of these, 11 mothers were noncompliant at the 18-month visit, and data from 32 dyads were dropped because someone other than the mother brought the child to the 18-month evaluation visit.

Measures

Assessment of risk. The amount of negative environmental factors was quantified by examining nine factors: depression, domestic abuse, violence (excluding husband or boyfriend), family size, homelessness, incarceration, absence of significant other in home, a negative life events score, and presence of psychiatric symptomatology.

Depression: Depression was measured at the 2-week baseline visit using the Center for Epidemiologic Scale for Depression (CES-D) (15). A score of 16 or greater is indicative of depressive symptomatology; therefore, mothers were given a score of one (1) if their depression score was greater than 15 or zero (0) if their depression score was less than 16.

Life events: Positive and negative life events were measured at the 2-week baseline visit using the Life Experiences Survey (16). Mothers whose index of negative life events was greater than their index of positive life events were given a score of one (1), and mothers whose index of negative life events was less than their index of positive life events were given a score of zero (0).

Psychiatric symptomatology: Psychiatric symptomatology was assessed using the Brief Symptom Inventory (17) at the 2-week baseline visit. Mothers with a positive diagnosis for current psychiatric symptomatology were given a score of one (1); mothers with a negative diagnosis were given a score of zero (0).

Domestic abuse: Domestic abuse was defined as physical abuse of the mother by the mother's husband/boyfriend. A mother was given a score of one (1) if she reported being abused by her husband/boyfriend since entrance into the study or zero (0) if she reported no abuse.

Victim of violence: Mothers who reported being the victim of violence by a perpetrator other than their husband/boyfriend since entrance into the study were given a score of one (1). Mothers who reported no violence were given a score of zero (0).

Family size: The criterion of Sameroff et al. (12) of four or more children in the family was used to define family size. A mother was given a score of one (1) if she had four or more children and zero (0) if she had less than four children.

Homelessness: Mothers who reported being homeless since entrance into the study were given a score of one (1), and mothers reporting no homelessness were given a score of zero (0).

Incarceration: Mothers who reported being incarcerated at some point since entrance into the study were given a score of one (1), and mothers reporting no incarcerations were given a score of zero (0).

Absence of boyfriend/husband: Using the definition of family support used previously (12, 13), mothers who reported the absence of a father/male partner in the household were given a score of one (1). Mothers who reported the presence of the father/male partner were given a score of zero (0).

Parenting attitudes. The attitudes of the mothers toward parenting were assessed using two measures: Child Abuse Potential Inventory (CAPI) (18) and the Parenting Stress Index (PSI) (19). The CAPI assesses the respondents propensity toward abuse and neglect. Higher scores indicate a higher likelihood of abuse. The PSI assesses maternal stress regarding their roles as parents. Higher scores indicate higher levels of stress.

Procedure

Mothers were approached in the hospital immediately after giving birth. After agreeing to participate, each mother signed a consent form approved by the university's Institutional Review Board, completed a demographic form, and were given an appointment for a 2-week baseline evaluation visit. As part of the 2-week clinic visit, the mothers completed the CES-D, the Life Events measure, and a measure assessing drug use.

At the end of the 2-week clinic visit, mother/infant pairs were assigned randomly to either a control or an intervention group. The intervention was based on an enabling empowerment model used by the Infant Health and Development Program (20). Those mother/infant pairs assigned to the intervention group received weekly home visits by a trained, supervised parent advocate, who worked with the mothers on various issues, including entrance into drug treatment, proper parenting skills, personal health and social issues, and the utilization of community services and other resources available to them. Home visits were made weekly during the first 6 months postpartum, biweekly from 6 to 12 months postpartum, and monthly from 12 to 24 months postpartum. Mother/infant pairs in the intervention group were scheduled to attend a center-based family support program during the second year; however, compliance with this phase of the intervention was poor. Those participants assigned to the control group had brief monthly home visits by an outreach worker for tracking purposes only.

At the 18-month clinic visit, mothers completed the CAPI and the PSI. In addition, data on maternal homelessness, exposure to violence (domestic and environmental), incarceration, family size, and the absence of a significant other was assessed using data collected from the mothers over the previous 18 months.

RESULTS

Cumulative Risk Score

The scores on the nine environmental risk factors were summed to produce a cumulative risk index for each individual. The scores ranged from 0 to 7, with 8 participants scoring the minimum 0 points. Using a median split, the sample was divided into low-risk and high-risk groups. Those mothers whose cumulative risk index score was 3 or lower were assigned to the low-risk group ($n = 106$). The high-risk group ($n = 92$) included those mothers whose cumulative risk scores were greater than 3 (4 to 7).

Maternal Characteristics and Drug Use

Multivariate analysis of variance was run to determine if the mothers in the low- and high-risk groups differed on any demographic variable at baseline (entrance into the study). As Table 1 shows, mothers in the high-risk group

Table 1. Demographic Characteristics of the Sample Risk Group

| | Low risk ($n = 106$) | | High risk ($n = 92$) | | <i>p</i> |
|--|---------------------------|-------|---------------------------|-------|----------|
| | M | (SD) | M | (SD) | |
| Maternal age at entry (years) | 27.6 | (5.4) | 26.3 | (5.1) | .092 |
| Maternal education (years) | 11.1 | (1.6) | 10.4 | (1.6) | .003 |
| Age at first pregnancy | 19.4 | (4.5) | 17.5 | (3.7) | .002 |
| Number of children | 2.6 | (1.4) | 3.3 | (.16) | .001 |
| African-American (%) | 94.3% | | 96.7% | | .508 |
| Single (%) | 95.3 | | 93.5 | | .758 |
| HIV+ (%) | 8.1 | | 9.1 | | .599 |
| Age (years) at which mother first tried drug | | | | | |
| Cigarettes | 15.2 | (3.7) | 14.8 | (3.3) | .448 |
| Alcohol | 17.3 | (4.1) | 15.2 | (3.3) | .001 |
| Marijuana | 17.0 | (4.7) | 15.8 | (3.0) | .080 |
| Heroin | 21.8 | (5.0) | 20.6 | (4.7) | .140 |
| Cocaine | 23.4 | (5.4) | 21.8 | (4.6) | .070 |
| Methadone | 28.7 | (4.8) | 26.9 | (4.9) | .240 |

had fewer years of education [$F(1,194) = 9.1, p < .01$], were younger when they got pregnant for the first time [$F(1,194) = 9.8, p < .01$], and had significantly more children [$F(1,194) = 10.8, p < .01$]. Since number of children was one of the factors used to define low/high risk groups, this difference was expected.

To determine if the low- and high-risk groups differed in the use of drugs at baseline (entrance into the study), the maternal toxicology screens at birth and maternal report of drug use during the pregnancy were analyzed. There were no significant group differences in the percentage of mothers who were positive for any drug at birth. However, as Table 1 shows, mothers in the high-risk group were significantly younger when they first used alcohol [$F(1,149) = 12.0, p < .01$].

Exposure to Risk and Parenting Attitudes

Since the mothers in the present study were assigned randomly to control and intervention groups, it was important to account for group differences when examining the relationship between cumulative risk factors and parenting attitudes. Three multivariate analyses of covariance (MANCOVAs) were used to examine the relationship between risk status and parenting attitudes. In all three MANCOVAs, group status (control vs. intervention) was used as the covariate, and risk group (low vs. high) was the independent variable.

In the first MANCOVA, the dependent variables were the scores from the CAPI (18). Since the overall multivariate analysis was significant [$F(7,189) = 6.4, p < .001$], the univariate analyses were examined. As Table 2 shows, the mothers in the high-risk group had significantly worse scores on the total abuse

Table 2. Child Abuse Potential Scores^a by Risk Status of Mother

| | Low risk (<i>n</i> = 106) | | High risk (<i>n</i> = 92) | | <i>p</i> |
|----------------------|-------------------------------|--------|-------------------------------|---------|----------|
| | M | (SD) | M | (SD) | |
| Total abuse score | 130.6 | (80.6) | 200.5 | (104.2) | .000 |
| Distress score | 67.2 | (58.6) | 115.2 | (76.9) | .000 |
| Rigidity | 27.9 | (18.0) | 36.0 | (18.5) | .002 |
| Unhappiness | 12.4 | (9.4) | 13.1 | (8.8) | .593 |
| Problems with child | 3.5 | (5.1) | 6.8 | (6.8) | .000 |
| Problem with family | 7.7 | (8.4) | 14.6 | (12.5) | .000 |
| Problems with others | 11.7 | (6.7) | 14.8 | (7.3) | .002 |

^a J. Milner, *The Child Abuse Potential Inventory: Manual*, 2nd ed., Psytec, De Kalb, Illinois, 1986.

Table 3. Parenting Scales from the Parenting Stress Index^a (Abidin, 1990) by Maternal Cumulative Risk Scores

| | Low risk (<i>n</i> = 106) | | High risk (<i>n</i> = 92) | | <i>p</i> |
|--------------------------|-------------------------------|--------|-------------------------------|--------|----------|
| | M | (SD) | M | (SD) | |
| Total parent score | 128.9 | (15.3) | 137.2 | (20.0) | .001 |
| Attachment | 14.7 | (2.7) | 15.7 | (3.2) | .011 |
| Depression | 19.8 | (4.0) | 22.2 | (4.8) | .000 |
| Health | 11.6 | (2.2) | 12.3 | (3.0) | .063 |
| Relationship with spouse | 19.9 | (3.8) | 20.1 | (4.4) | .736 |
| Role restrictions | 19.1 | (4.3) | 20.2 | (4.2) | .078 |
| Sense of competence | 29.9 | (3.8) | 31.9 | (4.4) | .001 |
| Social isolation | 14.1 | (2.7) | 14.9 | (2.8) | .026 |

^a R. Abidin, *Parenting Stress Index: Manual*, 3rd ed., Psychological Assessment Resources, Odessa, Florida, 1995.

score [$F(1,195) = 28.8, p < .001$], distress [$F(1,195) = 25.0, p < .001$], rigidity [$F(1,195) = 10.1, p < .01$], problems with children [$F(1,195) = 15.8, p < .001$], problems with family [$F(1,195) = 21.7, p < .001$], and problems with others [$F(1,195) = 9.4, p < .01$].

In the second MANCOVA, the dependent variables were the scores from the parenting scales of the PSI (19). Since the overall multivariate analysis was significant [$F(8,188) = 2.3, p < .05$], the univariate analyses were examined. As Table 3 shows, mothers in the high-risk group had significantly worse scores on the total Parent score [$F(1,195) = 11.0, p < .01$], attachment [$F(1,195) = p <$

Table 4. Child Scales from the Parenting Stress Index^a by Maternal Cumulative Risk Scores

| | Low risk (<i>n</i> = 106) | | High risk (<i>n</i> = 92) | | <i>p</i> |
|-------------------------------|-------------------------------|--------|-------------------------------|--------|----------|
| | M | (SD) | M | (SD) | |
| Total child score | 112.7 | (13.9) | 118.6 | (17.4) | .008 |
| Acceptability | 14.4 | (3.1) | 15.3 | (3.4) | .047 |
| Adaptability | 28.5 | (4.8) | 30.7 | (5.5) | .003 |
| Demandingness | 19.6 | (4.0) | 20.6 | (4.3) | .105 |
| Hyperactivity/distractability | 27.8 | (3.9) | 27.7 | (3.9) | .967 |
| Mood | 11.2 | (2.5) | 12.1 | (3.2) | .033 |
| Reinforces parent | 11.2 | (2.7) | 12.2 | (3.0) | .011 |

^a R. Abidin, *Parenting Stress Index: Manual*, 3rd ed., Psychological Assessment Resources, Odessa, Florida, 1995.

.05], depression [$F(1,195) = 14.8, p < .01$], sense of competence in parenting role [$F(1,195) = 10.9, p < .01$], and social isolation [$F(1,195) = 5.0, p < .05$].

In the last MANCOVA, the dependent variables were the scores from the child scales of the Parenting Stress Index (19). Since the overall multivariate analysis was significant [$F(6,190) = 2.2, p = .05$], the univariate analyses were examined. As Table 4 shows, mothers in the high-risk group scored significantly worse on the total child score [$F(1,198) = 7.1, p < .01$], acceptability [$F(1,198) = 4.0, p < .05$], adaptability [$F(1,198) = 9.0, p < .01$], mood [$F(1,198) = 4.6, p < .05$], and child reinforces parent [$F(1,198) = .7, p < .05$].

DISCUSSION

Mothers in the high-risk group had higher parenting stress, as measured by the CAPI (18) and the PSI (19), than mothers in the low-risk group. This finding is similar to other research, which indicates that maternal drug use in the presence of stressful environmental conditions may interfere with effective parenting (21). As the amount of exposure to negative environmental risk factors increases from low to high, a substance-abusing mother may become overwhelmed and have little time for parenting.

These inner city substance-abusing women were exposed to a tremendous amount of negative environmental risk factors on a day-to-day basis. Yet, within this group, there were significant differences in parenting attitudes when exposure to negative environmental factors was also examined. Other researchers (22) found that, within a group of substance-abusing women, there were some mothers who were able to provide a supportive, stimulating home environment for their children. Thus, maternal substance abuse may be one of many factors that contribute to poor parenting among a group of substance-abusing women.

In addition, there were significant group differences at the baseline evaluation visit. Mothers in the high-risk group had fewer years of education, were younger when they had their first child, and started drinking alcohol at a younger age. Thus, these factors may predict which substance-abusing women are more likely to be exposed to high numbers of negative environmental risks, which in turn places them at risk for poor parenting attitudes when their children are older.

With the decline in the amount of funds that are being allocated to help poor inner city families, it becomes important to identify families at greatest risk. What the present research indicates is that not all substance-abusing women were at risk for poor parenting attitudes. Substance-abusing women who were exposed to a high number of environmental risks had poorer parenting attitudes than those mothers exposed to a low number of risks. More longitudinal research is needed

to determine which factors, in addition to exposure to negative environmental factors, may influence parenting among substance-abusing women.

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