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BRIEF REPORTS

Mothers With Serious Mental Illness: When Symptoms Decline Does Parenting Improve?

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Serious mental illnesses (SMI) and problems with parenting are associated, but the link between change in psychiatric symptoms and change in parenting over time has not been examined. Three hypotheses were tested. *Hypothesis 1*: As symptoms decline, parenting stress will decline and parenting nurturance will improve. *Hypothesis 2*: High prior levels of symptoms have a continuing impact on parenting over time, persisting even when symptoms remit. *Hypothesis 3*: Both symptoms and parenting are influenced by contextual factors; taking these into account diminishes the association between them. With the use of latent growth curve modeling and an economically and racially diverse sample of mothers with SMI ($N = 294$), evidence supporting Hypothesis 1 was found, but there was no support for Hypothesis 2. For Hypothesis 3, contextual factors predicted both symptoms and parenting; accounting for context diminished the association between symptoms and parenting stress, but context did not completely explain the association between symptoms and parenting.

Keywords: maternal mental illness, parenting, psychiatric symptoms, latent growth curve modeling

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Serious mental health problems are relatively common in adulthood; across the lifespan about 40% of Americans will experience an episode of a diagnosable mental illness, including serious mental illnesses (SMI) such as major de-

pression, bipolar disorder, or schizophrenia (Surgeon General's Report on Mental Health; U.S. Department of Health and Human Services, 1999). Children are not unlikely to have a parent with a mental health problem; childbirth increases risk of depression (Downey & Coyne, 1990), and 65% of women in the U.S. National Comorbidity Survey who had a psychiatric disorder in the past year were mothers (Nicholson, Biebel, Hinden, Henry, & Stier, 2001). Although average fertility rates of women with schizophrenia and related psychotic disorders are somewhat lower, overall women with mental illnesses are as likely to have children as women in general (Buckley, Buchanan, Schulz, & Tamminga, 1996).

A review of the literature suggests that SMI is associated with problematic parenting, including elevated parenting stress and dampened nurturance (Oyserman, Mowbray, Allen-Meares, & Firminger, 2000). However, risk of psychopathology is not randomly distributed across the population. Risk is higher for low-income, racial-ethnic minority, and low-educated individuals (Belle, 1990; Kazdin, Kraemer, Kessler, Kupfer, & Offord, 1997); the unemployed and those experiencing financial strain (Hammarstrom & Janlert, 2002); and those with substance use disorders (Swendsen et al., 1998). Lack of social support

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Carol Mowbray is deceased but participated in early discussions of this article. Contributions of Sang Kyoung Kahng and Daphna Oyserman were equal.

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(Oyserman et al., 2000) and life stress (Kazdin et al., 1997) are associated with increased risk of SMI generally and depression specifically (Kessler, 1997). These factors also increase risk of parenting stress and dampened parenting nurturance (Belle, 1990; Elder, Eccles, Ardel, & Lord, 1995).

Given the association between SMI, parenting problems, and a common set of contextual risk factors, a number of possible causal pathways can be postulated. First, SMI and parenting problems may be associated at any given point in time as well as over time, such that improvement in psychiatric symptoms will make parenting less difficult, reducing parenting stress and perhaps increasing parenting nurturance. Second, parenting problems, once initiated by SMI, may not be alleviated substantially by reduction in symptoms; that is, high initial levels of symptoms would predict low subsequent change in parenting stress and nurturance. Third, it is possible that the correlation between SMI and parenting problems found in the literature is due to shared contextual risks; that is, the correlation between SMI and parenting stress and nurturance may be reduced once these common risk factors are taken into account.

These hypotheses have very different implications. If changes in symptoms result in changes in parenting, then as symptoms abate, parenting stress should decline and nurturance should increase. If initial levels of SMI symptoms are a continuing risk for parenting problems, then high initial levels of symptoms should predict minimal improvement in parenting problems over time. Finally, if both parenting and symptoms are influenced by common risk factors, then once these factors have been fully taken into account, the association between symptoms and parenting should be reduced to levels lower than are typically presented in cross-sectional literature, and change in risk factors should influence both symptoms and parenting over time.

In the current study, we take advantage of recent advances in statistical techniques to examine these hypothesized pathways by analyzing within-person change in both psychiatric symptoms and parenting in the context of risk factors, something that prior research has not been able to do. Using latent growth curve modeling, we estimate within-person change in psychiatric symptoms, parenting nurturance and parenting stress, modeling simultaneously the relationships between the changes in symptoms, nurturance, and parenting stress, and taking into account risk factors. Although psychiatric symptoms are clearly episodic, we know of no other research that has examined change over time in symptoms and parenting among mothers with SMI.

Method

Recruited for the study were mothers ($N = 294$) ages 18–55 years, who were diagnosed as having an SMI of greater than a year's duration and who, if recruited as inpatients, had returned to the community less than 30 days prior. Criteria for inclusion in the study included care responsibilities for at least one target child between the ages

of 4 and 16 years of age. Recruitment of participants took place at 12 community mental health (CMH) agencies and 3 inpatient units in southeast Michigan. They participated in three structured in-home interviews with about 2 years between Interviews 1 and 2 ($M = 1.73$, $SD = 0.11$) and 3 and a half years between Interviews 1 and 3 ($M = 3.52$ years, $SD = 0.21$). Current analyses focused on mothers living with the target child (Oyserman, Bybee, Mowbray, & Hart-Johnson, 2005, for details on the sample and measures).

Psychiatric Symptomatology

We used the 14-item Colorado Symptom Index (CSI; Shern et al., 1994; $\alpha = .90$; Wave 1 $M = 2.81$, $SD = 0.83$; Wave 2 $M = 2.59$, $SD = 0.74$; Wave 3 $M = 2.51$, $SD = 0.75$). Higher scores indicate more frequent experiences of psychiatric symptoms.

Parenting Nurturance and Parenting Stress

Measures of parenting nurturance (Block Child Rearing Practices, Nurturance subscale; Rickel & Biasatti, 1982) and parenting stress (Parental Stress Index [PSI]; Abidin, 1990) focused on the target child. Higher scores indicate more nurturance and more stress. To ensure measure stability across target child age, we tested for equal factor structure and item loadings using multigroup confirmatory factor analyses (Byrne, 2004) across three target child age groups (<5 years, 5–12 years, >12 years of age). Age invariance was confirmed for a 10-item Nurturance scale ($\alpha = .80$; Wave 1 $M = 3.69$, $SD = 0.34$; Wave 2 $M = 3.68$, $SD = 0.30$; Wave 3 $M = 3.64$, $SD = 0.35$) and a 14-item PSI scale ($\alpha = .86$; Wave 1 $M = 2.51$, $SD = 0.79$; Wave 2 $M = 2.35$, $SD = 0.79$; Wave 3 $M = 2.43$, $SD = 0.80$).

Risk Factors¹

Demographic risk was assessed by examining the variables education (in years), race–ethnicity (with Black as the omitted reference group and White and Hispanic as dummy variables), and poverty status (below vs. poverty line and above). *Psychiatric history risk* was assessed by patient diagnosis according to the *DSM-III-R [Diagnostic and Statistical Manual of Mental Disorders, 3rd ed., rev.] Diagnostic Interview Schedule* (Robins, Helzer, Croughan, & Ratcliff, 1981), where the diagnosis of major depression without psychotic features was the omitted reference group, and dummy variables for schizophrenia included schizoaffective disorder, major depression with psychotic features, bipolar disorder without psychotic features, and bipolar disorder with psychotic features. Other risk variables assessed included *substance abuse* (Drug Abuse Screening Test; Skinner, 1982; $\alpha = .94$; with positive history, indicated by scores ≥ 5 , coded as 1); *social contextual risk* (Lazarus & Folkman, 1984, Hassles and Uplifts Scale; $\alpha =$

¹ Coding is shown in parentheses.

.85); *available social support* (Barrera, 1988; Arizona Social Support Interview Schedule count variable); *financial stress* (Oyserman et al., 2005; $\alpha = .86$); and *target child age* (measured in years).

Results

Analysis Plan

Data were analyzed with latent growth curve methods in AMOS 5 (Arbuckle & Wothke, 1999), a current generation technique that allowed us to examine each of the three longitudinal hypotheses. Fit of the unconditional (i.e., no contextual covariates) models was examined with generally accepted fit indices and thresholds (Hu & Bentler, 1999). To facilitate interpretation, a trimmed structural equation model (SEM) was assessed in which paths that were not significant (i.e., p value of path coefficient $> .05$) were fixed at zero. To examine Hypothesis 1 (symptoms and parenting associated at any point in time and change in symptoms associated with change in parenting) and Hypothesis 2 (initial level of symptoms influencing change in parenting), we examined a combined latent growth model without contextual covariates. To examine Hypothesis 3 (the association of symptoms and parenting is related to the influence of shared contextual factors), we examined the associations between symptoms and parenting after adding contextual variables to the SEM.

The initial model showed significant variability on both initial levels and trajectories of symptoms and parenting over time; on average, symptoms, parenting stress, and nurturance declined over time. The relationships among the trajectories of change in symptoms, parenting stress, and nurturance were assessed first with latent growth models and then replicated with SEM. The SEM without contextual variables showed significant departure from the data matrix but met fit criteria for two of three supplemental indices, $\chi^2(26, N = 294) = 105.88, p < .001$; incremental fit index (IFI) = .94; root mean squared error of approximation (RMSEA) = .10; standardized root mean squared residual (SRMR) = .05; the trimmed final SEM incorporating contextual covariates met criteria for all three supplemental fit indices, $\chi^2(189, N = 294) = 304.01, p < .001$; IFI = .93; RMSEA = .05; SRMR = .06. Detailed description of the analysis plan, summary tables, and figures are available in the supplemental material online.² Standardized parameters from the relevant models are reported below.

Hypothesis 1: Are Levels of Symptoms and Parenting Associated (and Is Change in Symptoms Associated With Change in Parenting)?

Both level and change in symptoms and parenting were associated. Higher levels of symptoms were associated with higher levels of parenting stress ($r = .53, p < .001$) and with lower levels of nurturance ($r = -.20, p < .01$). Change in symptoms was positively associated with change in parenting stress ($r = .81, p < .001$) and negatively associated with change in nurturance ($r = -.37, p < .05$),

that is, mothers experiencing greater symptom decline also reported greater decline in parenting stress and lesser decline in nurturance. Higher parenting stress was associated with lower nurturance ($r = -.56, p < .001$), and greater decline in stress was associated with lesser decline in nurturance ($r = -.87, p < .001$).

Hypothesis 2: Do Initial Symptom Levels Affect the Subsequent Trajectory of Change in Parenting?

Initial level of symptoms did not directly affect the trajectory of change in either parenting stress or nurturance, after accounting for the associations between initial levels of symptoms and parenting and between change in symptoms and change in parenting. We did find a direct association between initial symptom level and change in symptoms over time ($\beta = -.48, p < .001$), between initial nurturance level and change in nurturance ($\beta = -.35, p < .01$), and between initial nurturance level and change in parenting stress ($\beta = .40, p < .001$). Symptoms remained relatively stable over time for mothers whose symptoms were low at Wave 1. Perhaps due to regression to the mean, symptoms declined over time for mothers whose symptoms were higher at Wave 1, and nurturance declined over time for mothers initially scoring high on nurturance (increasing slightly over time for mothers initially scoring less high on nurturance). Parenting stress declined less over time for mothers initially higher in nurturance.

Hypothesis 3: Does Accounting for Contextual Factors Affect the Association Between Symptoms and Parenting?

Accounting for the influence of contextual risk factors reduced the correlations between symptoms and parenting stress from .53 to .42 for initial level and between from .81 to .75 for change. Both reductions were significant at $p < .05$, according to tests appropriate for dependent correlations (Olkin & Finn, 1995). There was no significant effect on the associations between symptoms and nurturance. All associations between symptoms and parenting remained significant even when contextual effects were considered. The final model, adding contextual risk factors, explained 29% of the variance in initial levels of symptoms, 13% of initial parenting stress, and 2% of initial nurturance, and 24% of the variance in change over time in symptoms; 16% of change in parenting stress; and 13% of change in nurturance.

All of the contextual factors except child age and poverty status were associated with initial symptom level: More education ($\beta = -.19, p < .01$) and social support ($\beta = -.15, p < .01$) were associated with lower initial symptoms; having a history of substance use ($\beta = .17, p < .01$), more daily hassles ($\beta = .32, p < .001$), and more financial stress ($\beta = .12, p < .05$) were associated with higher initial

² Supplemental materials are available at <http://dx.doi.org/10.1037/0893-3200.22.1.162.supp>

symptoms. With regard to psychiatric history, having a diagnosis of bipolar disorder with psychotic features was associated with higher initial levels of symptoms than was having a diagnosis of depression without psychotic features ($\beta = .18, p < .01$). Though not directly associated with change in symptoms, six baseline contextual factors influenced change in symptoms indirectly through their effects on initial symptom levels: Mothers with more education ($\beta = -.19$) and those with more available social support ($\beta = -.15$) were lower in initial symptoms levels and also experienced a lesser reduction in symptoms over time ($\beta = .09$ for education and $\beta = .07$ for social support). History of substance use ($\beta = .17$), diagnosis of bipolar disorder with psychotic features ($\beta = .18$), more daily hassles ($\beta = .32$), and more financial stress ($\beta = .12$) were each associated with higher initial symptoms and also with greater decline in symptoms over time ($\beta = -.08, \beta = -.09, \beta = -.15$, and $\beta = -.06$, respectively).

With regard to parenting, target child's age emerged as a key factor; initial maternal nurturance level was lower when children were older ($\beta = -.14, p < .05$). Similarly, parenting stress was higher when the target child was older ($\beta = .11, p < .05$); higher initial parenting stress was also associated with more daily hassles ($\beta = .30, p < .001$), less available social support ($\beta = -.11, p < .05$), and a diagnosis of bipolar disorder with psychotic features ($\beta = .12, p < .05$). With regard to change in parenting, target child age also mattered. We found an indirect effect of target child age ($\beta = .05$) on change in nurturance through its effect on initial nurturance ($\beta = -.16$). With regard to change in stress, mothers of older children were higher in initial stress ($\beta = .11$) but experienced a greater decline in stress ($\beta = -.06$) than did mothers of younger children.

Discussion

Taken together, our analyses show a relationship between psychiatric symptoms and parenting that fits prior cross-sectional findings. We asked whether this association was stable over time or whether higher initial levels of symptoms continued to affect parenting over time even when symptoms lifted. We found that mothers with initially higher levels of symptoms also reported higher levels of parenting stress and lower levels of nurturance and that decline in symptoms was associated with reduction in parenting stress and increase in nurturance over time, thus lending support for Hypothesis 1. Accounting for these associations, level of symptoms did not exert an additional influence on parenting over time; thus, Hypothesis 2 was not supported: Initial level of symptoms did not show a lasting effect on parenting over time once symptoms abated. Prior cross-sectional research has shown a common association between contextual risk factors, symptoms, and parenting. We asked whether the association between symptoms and parenting was due in part to these common contextual risks. Our multivariate analyses provided some support for Hypothesis 3: Associations between both level and change in symptoms and parenting stress were significantly reduced once the effects of context were taken into account. This

indicates that the link between symptoms and parenting stress is partially explained by common contextual risks. However, all associations remained significant, suggesting that symptoms and parenting are directly related or that they are both influenced by contextual factors not measured in this study.

Initial psychiatric symptoms were higher for mothers with less education, a history of substance abuse (also found by Kazdin et al., 1997), a diagnosis of bipolar disorder with psychotic features, and more stressful social contexts (also reported by Kessler, 1997). Nurturance was not dampened by these contextual risk factors but was related to target child age: Mothers reported less nurturance in parenting older children, replicating other reports of lower nurturance in the teen years (e.g., Holden & Miller, 1999). Parenting stress was higher for mothers with more daily hassles and less support, suggesting that contextual risks add to mental health problems in increasing parenting stress (see also Elder et al., 1995).

Our results have a number of implications. Impaired parenting due to SMI at any point in time can be at least partially recovered. Parenting shows a tendency to "bounce back" as symptoms abate following an initial period of high symptom incidence. Symptoms and parenting assessed during an acute phase may not be accurate predictors of future parenting, as parenting may rebound over time.

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