First Time's a Charm: Maternal Problem Drinking Around the Birth of a Child in Primiparous and Multiparous Women at Risk for Child Maltreatment

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ABSTRACT. Objective: The birth of a child may represent a turning point in alcohol and other drug (AOD) use trajectories, particularly for families exposed to cumulative early adversity. This prospective longitudinal study aimed to examine differences in the problem drinking trajectories of primiparous and multiparous mothers around the birth of a child. A history of AOD problems was examined as a predictor of change in problem drinking. **Method:** Primiparous ($n = 245$) and multiparous ($n = 243$) women were recruited on the basis of risk for child maltreatment. Past-year maternal problem drinking was assessed with the CAGE screener (cut down, annoyed, guilty, eye opener) at childbirth and child ages 12, 24, and 36 months. Latent growth modeling was used to estimate changes in CAGE scores over the four time points. **Results:** Although maternal CAGE symptoms decreased linearly from the year

before the child's birth to age 36 months at the sample level, substantial differences emerged when trajectories of primiparous and multiparous mothers were examined separately. CAGE trajectories of primiparous mothers decreased sharply from the year before the child's birth to age 12 months, whereas no change was observed among multiparous mothers. Of note, an equal proportion of primiparous and multiparous women consumed any alcohol during pregnancy. In addition, a history of AOD problems predicted a slower decline in CAGE symptoms across the transition to parenthood for primiparous mothers. **Conclusions:** Parity may be an important dimension of maternal identity for AOD-focused health professionals to consider in working with mothers at risk for child maltreatment because of their problem drinking. (*J. Stud. Alcohol Drugs*, 75, 973–981, 2014)

THE BIRTH OF A CHILD HAS THE POTENTIAL to represent both challenges and opportunities to parents and families. In particular, for first-time mothers and mothers who have pre-existing alcohol and other drug (AOD) problems, the birth of a child may serve as a turning point experience (Rutter, 1996) that promotes change in AOD behavior for better or worse (Chaplin and Sinha, 2013; Hser et al., 2007). Research on maternal AOD use among high-risk parents with AOD histories has been relatively scarce, perhaps because of social and legal sanctions against parents who disclose AOD use during pregnancy. Fourteen states and the District of Columbia define prenatal exposure to AODs as child abuse (Child Welfare Information Gateway, 2011), creating grounds for the termination of parental rights (Lester et al., 2004). As few as 14% of children in foster care because of parental AOD problems are reunited with biological parents, and such poor parent–child reunification outcomes for AOD-exposed families illustrate the urgency of advancing empirically based prevention efforts in this area (Budde and Harden, 2003).

Changes in maternal AOD use around the birth of a child may represent an important leverage point for prevention

with pregnant and/or postpartum women (Fleming et al., 2008; Lester and Twomey, 2008; Letourneau et al., 2007). For example, research has found that some mothers may spontaneously cease or reduce the use of alcohol and cigarettes during pregnancy (Colman and Joyce, 2003; Laborde and Mair, 2012; Letourneau et al., 2007). However, it is unclear whether AOD use reduction during pregnancy and the postpartum period is equally common among experienced as compared with first-time mothers. Moreover, the extent to which a history of AOD problems influences expected normative perinatal changes in AOD use is not known. To target prevention efforts to those parents most in need, more research is needed to characterize AOD use patterns among mothers at risk for child maltreatment. In the present prospective longitudinal study with high-risk families, we sought to examine changes in maternal problem drinking around the child's birth, comparing the problem trajectories of first-time versus experienced mothers. We also examined maternal history of AOD problems as a predictor of changes in problem drinking across the child's early life.

Maternal alcohol or other drug use around the birth of a child

Received: June 3, 2014. Revision: August 6, 2014.

This study was supported by the National Institute of Child Health and Human Development (HD045894).

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Existing research on maternal AOD use tends to compare parenting adults with nonparenting adults. In general, these studies indicate that mothers of young children report less AOD use and fewer use problems than adults who are neither pregnant nor parenting. For instance, rates of heavy drinking

(defined by the authors as seven drinks or more per week) are lower among women with a child less than 2 years of age (prevalence range: 1.5%–8.4%) than among women neither pregnant nor postpartum (range: 7.2%–25.8%) (Chapman and Wu, 2013a). Other research has identified relatively higher rates of alcohol problems among parenting women, finding that approximately one fifth of “unmarried early mothers” (exact age of children unknown) report heavy episodic drinking (19.7%) or alcohol abuse/dependence (20.6%) at age 21 (Oesterle et al., 2011). In general, lower levels of maternal AOD use during early parenthood, compared with pre-parenthood levels, have been found across studies that examine frequency of use (Christie-Mizell and Peralta, 2009; Staff et al., 2010) as well as AOD use disorders (Fergusson et al., 2012).

Although absolute rates of AOD use and use problems appear consistently lower among parenting as compared with nonparenting adults, several studies have found that maternal AOD use increases in the first 2 years after the birth of a child. For example, in a study of women from 25 U.S. states, 40% of smokers quit during pregnancy, but almost 60% of those women returned to smoking within 6 months postpartum (Colman and Joyce, 2003). Extending this finding to adolescent mothers, a recent review showed that most adolescent mothers who stopped using AODs during pregnancy began using again within 6 months postpartum (Chapman and Wu, 2013b). Similarly, a recent national survey found that past-month heavy alcohol use (defined as five or more drinks per occasion) rates among U.S. women ages 18–44 years increased from 1% in the third trimester of pregnancy, to 10% at child age 3 months, to 19.7% at child age 18 months (Substance Abuse and Mental Health Services Administration [SAMHSA], 2009). By child age 18 months, maternal rates of any alcohol use (52.1%) and heavy alcohol use (19.7%) were comparable to use by non-pregnant adult women with no children (63.0% and 32.6%, respectively) (SAMHSA, 2009). Taken together, these studies suggest that parenting a young child is less protective of women’s AOD problems than is pregnancy. To understand why some mothers resume AOD use following the child’s birth, it is crucial to more systematically examine changes in maternal AOD use around the birth of a child.

Parity and parental alcohol and other drug problem trajectories

An important and unexplored question is whether maternal AOD use trajectories differ according to parity; that is, whether the birth of a child and early parenting are more or less “protective factors” for first-time mothers as compared with experienced mothers. The transition to parenthood that primiparous mothers experience requires a qualitative shift in identity that may foster more dramatic or persistent changes in maternal AOD use behavior than the birth of a child for

an already experienced mother. Rutter (1996) has defined a “turning point” in life span development as an experience that promotes marked, persistent discontinuity and change in an individual’s developmental trajectory. By contrast, “major life experiences,” such as “stress or challenge events,” promote continuity and stability in pre-existing behaviors or traits (Rutter, 1996, p. 612).

To the extent that the birth of a child promotes marked, persistent discontinuity in maternal AOD use behavior for primiparous women, the birth of a child may be construed as a turning point, leading to decreases in AOD use. In contrast, if the birth of a child accentuates already-existing psychological or behavioral conditions (Elder and Caspi, 1988), that birth may be construed as a challenging life experience but not a turning point in maternal functioning, thus having less influence on AOD use after the birth.

Present study

The primary aim of this study was to examine changes in maternal AOD problems from the year before the child’s birth to child age 36 months. Drawing from Rutter’s concept of the turning point (1996), we expected that the birth of a child for primiparous mothers would predict more marked and persistent decreases in problem drinking than the birth of a child for multiparous mothers. We also anticipated that a lifetime history of AOD problems would attenuate normative decreases in AOD use around the birth of a child for both primiparous and multiparous women. Given that first-time mothers tend to be younger than experienced mothers, we controlled for maternal age to avoid confounding the effect of parity with that of age. The present study includes a number of innovative aspects. First, to our knowledge, this study is one of the first studies to compare AOD problem trajectories of primiparous versus multiparous mothers across the first few years of the child’s life. Second, we used prospective longitudinal data that include infants and mothers who were identified, at the child’s birth, as at risk for child maltreatment. Last, we focused on changes in maternal problem drinking, defined as an “at-risk” alcohol use pattern, using the well-validated CAGE screener (Midanik et al., 1998). (CAGE is an acronym for the four items in the questionnaire: cut down, annoyed, guilty, and eye opener.)

Method

Participants

The data for this study came from the Healthy Families America—San Diego study. Participants were 488 women recruited at the index child’s birth, between February 1996 and March 1997, at a single hospital. At the index child’s birth, 45.3% of mothers were 21 years of age or younger, with a range from 14 to 42 years ($M = 23.44$, $SD = 6.09$).

Family socioeconomic risk was high, with 46.5% of the sample reporting a total household income of less than U.S. \$10,000 per year. Approximately half of the mothers had completed at least high school or a General Educational Development (GED) credential (45.7%) and had worked in the past year (47.5%). The majority of women (72%) were in a relationship at baseline, and 14.5% of mothers were married. Mothers self-reported their race/ethnicity and language preference as Hispanic/English-speaking ($n = 131$; 26.8%), Anglo ($n = 118$; 24.2%), Hispanic/Spanish-speaking ($n = 94$; 19.3%), African American ($n = 95$; 19.5%), and Asian or other ethnicity ($n = 50$; 10.2%).

Procedure

All procedures were approved by the Institutional Review Boards at Child and Adolescent Services Research Center in San Diego and Children's Hospital of San Diego. As in other evaluations of the Healthy Families program (e.g., Duggan et al., 2000), mothers who met the eligibility criteria (able to speak English or Spanish, not active to Child Protective Services, location of residence within San Diego County) were assessed with the Hawaii Risk Indicators checklist (Hawaii Family Stress Center, 1994) in the first stage of screening and the Kempe Family Stress Inventory (Kempe and Kempe, 1976) in the second stage. Families with a score of 25 or higher on the Kempe Family Stress Inventory were deemed "overburdened" and were invited to participate.

Research personnel conducted annual assessments of mothers in their homes at four time points: baseline (within 1–2 weeks of the target child's birth) and at child ages 12, 24, and 36 months. Mothers received \$25 following the completion of each annual interview. About 20% of families requested Spanish-speaking interviewers for the four assessments. Further information on study recruitment and procedures can be found in the technical report (Landsverk et al., 2002).

Materials

Maternal alcohol use. Maternal alcohol use was measured at four annual time points (the child's birth and ages 12, 24, and 36 months) with the Personal Health History Assessment, a structured clinical interview (Fagot and Capaldi, 1996). At each wave, mothers were asked how often in the past year they had consumed alcohol, on an 8-point scale ranging from *never* to *every day*; how many drinks per occasion; and the last time a drink was taken, on a 6-point scale from *within the past 7 days* to *more than 1 year ago*.

Maternal problem drinking. Past-year maternal problem drinking was measured at four annual time points with the four-item CAGE questionnaire (Ewing, 1984; Mayfield et al., 1974). The CAGE questionnaire offers a binary yes/no response option to four items, yielding a symptom total score

ranging from 0 to 4. The items are: (1) "Have you ever felt you should cut down on your drinking?" (2) "Have people annoyed you by criticizing your drinking?" (3) "Have you ever felt bad or guilty about your drinking?" (4) "Have you ever had a drink first thing in the morning to steady your nerves or get rid of a hangover (eye-opener)?" The CAGE has been administered in low-income pregnant subjects to examine periconceptual alcohol problem use; in that sample, the CAGE was most sensitive in identifying problem alcohol users if a cut point of 1 was used (Midanik et al., 1998). In keeping with the threshold used by Midanik and colleagues (1998), in the analyses described below CAGE scores of 1–4 are considered indicative of problem drinking.

Alcohol and other drug problem history. AOD problem history was measured at study baseline with a single item from the Hawaii Risk Indicators checklist (Hawaii Family Stress Center, 1994) asking if the woman had a lifetime history of AOD problems (yes was coded 1 and no was coded 0).

Primiparity. At study baseline, when the index child was born, women were asked if this was their first childbirth (primiparity was coded 1 and multiparity was coded 0). Approximately half of the mothers were primiparous ($n = 245$) and half multiparous ($n = 243$).

Maternal age. Maternal age was measured at study baseline. Primiparous mothers ($M = 20.73$, $SD = 5.36$) were significantly younger than multiparous mothers ($M = 26.16$, $SD = 5.55$), $t(486) = -10.99$, $p < .001$.

Analysis plan

All analyses were conducted in Mplus 7.11 (Muthén and Muthén, 1998–2012). We estimated a linear growth model of past-year maternal CAGE symptoms that were assessed from the child's birth to child age 36 months. In the present growth model, each annual measure of maternal CAGE symptoms was modeled as an indicator of two latent growth factors: the initial status (intercept) and linear change (slope) factor. The intercept factor, set at study baseline, can be interpreted as the estimated mean level of maternal CAGE symptoms in the year before the child's birth. The slope factor can be interpreted as the rate of change in maternal CAGE symptoms from the year before the child's birth to child age 36 months. The intercept and slope factors were specified to covary (Muthén and Muthén, 1998–2012). This covariance represents the degree to which maternal CAGE symptoms at baseline predict subsequent rates of change in CAGE symptoms over time. The variances of both the intercept and slope factors were fixed at 1.00. In addition, four participants were missing data on the AOD problem history question; these participants were excluded from the analyses that included AOD problem history as a predictor ($n = 484$). Otherwise, the number of cases included in the analyses was 488.

TABLE 1. Intercorrelations among the major study variables

	1.	2.	3.	4.	5.	6.
1. CAGE at child's birth						
2. CAGE at 12 months	.27**					
3. CAGE at 24 months	.31**	.38**				
4. CAGE at 36 months	.21**	.24**	.29**			
5. AOD problem history	.22**	.07	.07	.07		
6. Primiparity	.13**	.01	-.03	-.02	.05	
7. Maternal age	.09*	.05	.14**	.12*	.12**	-.45**

Notes: Alcohol and other drug (AOD) problem history is coded as 1 = AOD problem history, 0 = no AOD problem history. Primiparity is coded as 1 = primiparous, 0 = multiparous.

* $p < .05$; ** $p < .01$.

Attrition analyses

The Healthy Families study experienced attrition, as is inevitable in most longitudinal research, particularly studies that follow high-risk families. Retention rates for the three annual follow-up assessments were 89%, 83%, and 85%. However, there were no significant differences in either of the risk screening measures between mothers retained in the study and mothers who dropped out of the study. In addition, there were no differences in maternal problem drinking at study baseline between mothers retained in the study and mothers who subsequently dropped out. Results of Little's Missing Completely at Random test (Little, 1988) conducted in SPSS Version 18 provide additional evidence that data are missing at random, $\chi^2(16) = 26.03$, *N.S.* Taken together, these attrition analyses suggest that generalization of study findings to the population of mothers sampled in this study is not seriously compromised.

The percentage of the sample missing CAGE data at the follow-up assessments was 10.9% ($n = 53$) at child age 12 months, 17.4% ($n = 85$) at child age 24 months, and 16.8% ($n = 82$) at child age 36 months. In the latent growth modeling analysis, we retained cases with incomplete CAGE data by using full-information maximum likelihood estimation with robust standard errors, which allows for the inclusion of cases with partial data (Muthén and Muthén, 1998–2012).

Results

Descriptive analyses

Maternal alcohol use. Approximately 53% of women ($n = 260$) reported consuming any alcohol in the year before the child's birth. Of these women, 128 (26.23% of the sample) disclosed consumption of alcohol during pregnancy. Primiparous mothers consumed alcohol during pregnancy in no higher a proportion ($n = 58$; 23.67% of primiparous women) than multiparous mothers ($n = 70$; 28.81% of multiparous women), $\chi^2(1) = 1.44$, $p = .230$, in the year before the child's birth. At study baseline, the year before the child's birth, the modal frequency of past-year drinking in the overall sample

was less than once per month ($n = 140$; 28.7%). About 6% of the sample reported drinking from 1–2 to 3–4 days per week ($n = 29$; 5.9%), whereas 3.2% of the sample ($n = 16$) reported drinking every day or nearly every day. Number of drinks per occasion ranged from 1 to 40. At the index child's birth, 10.40% of women ($n = 51$) reported that they had consumed alcohol within the past 7 days. Percentages of women who reported drinking any alcohol in the past year were 42.62%, 42.83%, and 45.29% at child ages 12, 24, and 36 months, respectively.

Maternal problem drinking. In the year before the child's birth, 142 women met criteria for problem drinking, according to the cut point of 1 for periconceptual women (Midanik et al., 1998). Women's score counts on the 4-point CAGE questionnaire ranged from 0 to 4, with a modal score of 0 ($n = 227$), consistent with the relatively low base rate of maternal problem drinking during pregnancy. Intercorrelations among maternal problem drinking and the major study variables are presented in Table 1.

Maternal alcohol or other drug problem history. Seventy-nine women (16.1% of the sample) reported a history of AOD problems via the corresponding item on the Hawaii Risk Indicators checklist. An equal proportion of primiparous ($n = 44$) and multiparous ($n = 35$) mothers reported an AOD problem history, $\chi^2(1) = 1.05$, $p = .305$.

Unconditional growth model of maternal problem drinking

The results of the unconditional linear growth model of maternal CAGE symptoms for the full sample ($N = 488$)—including both primiparous and multiparous women—are presented in Figure 1. At the sample level, women's problem drinking decreased from the year before the child's birth to child age 36 months. The linear model fit the data adequately, $\chi^2(5) = 13.65$, $p = .018$, comparative fit index (CFI) = .945, Tucker–Lewis Index (TLI) = .934, root mean square error of approximation (RMSEA) = .06 (Figure 1). The significant intercept factor indicates that the model-estimated mean of women's CAGE symptoms ($M = 0.29$) was significantly greater than zero in the year before the child's birth (standardized $\beta = .67$, $p < .001$). The signifi-

FIGURE 1. Maternal CAGE from birth to child age 36 months: Trajectories of maternal problem drinking. Numeric values are latent growth model–estimated means of maternal CAGE for the whole sample ($N = 488$).

cant and negative slope factor indicated that the mean of women's CAGE symptoms decreased significantly from baseline to child age 36 months (standardized $\beta = -.61$, $p = .006$).

Maternal problem drinking among primiparous women

Primiparous women's ($n = 245$) CAGE symptoms decreased from baseline (year before the child's birth) to child age 12 months and then stabilized from child ages 12 months to 36 months. This pattern suggested that changes in primiparous women's CAGE symptoms might not be linear. As such, a linear spline growth model was tested to identify the unconditional (baseline) model of maternal CAGE that best fit the data (Stoolmiller, 1995). The slope factor loading at baseline (the year before the child's birth) was fixed at 0; the slope factor loading at child age 12 months was fixed at 1; and the slope factor loadings at child ages 24 and 36 months were freely estimated. In this spline model, the slope mean represents the rate of change in maternal CAGE symptoms from the year before the child's birth to child age 12 months. The linear spline model had a significantly better fit, $\chi^2(3) = 1.31$, $p = .728$, CFI = 1.00, TLI = 1.02, RMSEA = 0.00 (Figure 2). By freeing two parameters, the chi-square statistic was reduced from 9.69 to 1.31, nested $\chi^2(2) = 8.38$, $p < .05$.

The significant intercept factor of the linear spline model indicates that the model-estimated mean of primiparous women's CAGE symptoms ($M = 0.43$) was significantly greater than zero in the year before the child's birth (standardized $\beta = .63$, $p < .001$). The significant and negative slope factor indicated that the mean of primiparous women's CAGE symptoms decreased significantly from baseline to child age 12 months (standardized $\beta = -.52$, $p < .001$).

FIGURE 2. Maternal CAGE by parity: Trajectories of maternal problem drinking by parity. Numeric values are latent growth model–estimated means of maternal CAGE for primiparous women ($n = 245$) and multiparous women ($n = 243$).

Maternal problem drinking among multiparous women

Multiparous women's ($n = 243$) CAGE symptoms appeared to be relatively stable from the year before the child's birth to child age 36 months. A linear spline model was tested. The slope factor loading at baseline was fixed at 0; the slope factor loading at child age 36 months was fixed at 1; and the slope factor loadings in between, at 12 and 24 months, were freely estimated. In the spline model of CAGE among multiparous mothers, the slope mean represents the rate of change in maternal CAGE symptoms from the year before the child's birth to child age 36 months. The linear spline model had a significantly better fit, $\chi^2(3) = 2.29$, $p = .514$, CFI = 1.00, TLI = 1.04, RMSEA = 0.00 (Figure 2). By freeing two parameters, the chi-square statistic was reduced from 14.90 to 2.29, nested $\chi^2(2) = 12.61$, $p < .01$.

The significant intercept factor of the linear spline model indicates that the model-estimated mean of multiparous women's CAGE symptoms ($M = 0.18$) was significantly greater than zero in the year before the child's birth (standardized $\beta = .66$, $p < .001$). The nonsignificant slope factor indicates that multiparous women's mean CAGE symptoms did not decrease significantly from the year before the child's birth to child age 36 months (standardized $\beta = -.19$, $p = .126$).

Predictors of maternal problem drinking among primiparous women

We tested maternal AOD problem history as a predictor of the intercept and slope growth factors of maternal CAGE among primiparous mothers, controlling for the effect of maternal age (mean-centered) on the intercept

FIGURE 3. Latent growth model of primiparous maternal problem drinking. Coefficients are standardized estimates. Maternal age was measured at the child's birth. AOD = alcohol or other drug. * $p < .05$; ** $p < .01$.

factor (maternal CAGE in the year before the child's birth). The fit of this linear spline model with covariates was excellent, $\chi^2(8) = 9.64$, $p = .291$, CFI = .99, TLI = .98, RMSEA = .03 (Figure 3). Maternal AOD problem history predicted higher mean levels of maternal CAGE in the year before the child's birth (standardized $\beta = .23$, $p = .002$). In addition, maternal AOD problem history predicted a slower decline in mean maternal CAGE symptoms from the year before the child's birth to child age 12 months (standardized $\beta = -.25$, $p = .002$). Furthermore, maternal age significantly predicted baseline maternal CAGE symptoms (standardized $\beta = .10$, $p = .010$).

Predictors of maternal problem drinking among multiparous women

We tested maternal AOD history as a predictor of the intercept and slope growth factors of maternal CAGE among multiparous mothers, controlling for the effect of maternal age (mean-centered) on the intercept factor. The fit of this linear spline model with covariates was excellent, $\chi^2(8) = 6.68$, $p = .572$, CFI = 1.00, TLI = 1.05, RMSEA = 0.00 (Figure 4). Maternal AOD problem history predicted higher mean levels of maternal CAGE in the year before the child's birth (standardized $\beta = .32$, $p = .002$). However, in contrast to the finding reported with primiparous mothers, maternal AOD problem history did not predict change in maternal CAGE among multiparous mothers (standardized $\beta = -.05$, n.s.). In addition, maternal age did not pre-

FIGURE 4. Latent growth model of multiparous maternal problem drinking. Coefficients are standardized estimates. Maternal age was measured at the child's birth. AOD = alcohol or other drug. ** $p < .01$.

dict mean CAGE symptom count in the year before child's birth among multiparous mothers (standardized $\beta = .13$, n.s.).

Discussion

In this longitudinal study with high-risk mothers, we examined changes in maternal problem drinking from the year before the child's birth to child age 36 months, comparing the symptom trajectories of primiparous and multiparous women. We also examined maternal AOD problem history as a predictor of change in problem drinking around the birth of the child. Among the issues that this study sought to clarify was the mixed findings around trends in parental AOD use around the birth of a child. Some studies have found lower AOD use postpartum compared with prepartum (Christie-Mizell and Peralta, 2009; Staff et al., 2010), whereas others have found that AOD use decreases during pregnancy but then increases across the child's early life (Colman and Joyce, 2003). In a novel contribution to research in this area, we examined parity as a dimension of maternal identity with relevance to AOD change patterns around the birth of a child. We anticipated that first-time parenthood (primiparity) would be more protective of problem drinking around the birth of a child than multiparity, whereas a history of AOD problems would attenuate the protective effect of childbirth on problem drinking.

Consistent with some existing research on patterns of use around the birth of a child, among the 488 mothers in

this study, problem drinking decreased significantly from baseline to child age 36 months (Figure 1). However, model fit improved when the sample was divided into two analytic subsamples—primiparous ($n = 245$) and multiparous ($n = 243$) mothers. When problem drinking was analyzed separately by parity status, major differences in symptom trajectories emerged (Figure 2). For primiparous mothers, problem drinking symptoms decreased significantly from the year before the child's birth to child age 12 months. In contrast, for multiparous mothers, problem drinking did not change over time. In addition, an AOD problem history predicted a slower decline in problem drinking from baseline to child age 12 months for primiparous mothers.

The marked discontinuity in primiparous women's problem drinking trajectories from before to after childbirth can be contrasted with the continuity in problem drinking symptoms observed among multiparous women. One way to interpret this finding is that the transition to parenthood is a "turning point" (Rutter, 1996) in the life course of first-time mothers at high risk for involvement in the child welfare system. This finding is consistent with recent research that shows decreased odds of AOD use disorders on becoming a custodial parent at age 18–30 years (Fergusson et al., 2012). Moreover, in the present study, primiparous women's problem drinking symptoms appear to remain stable and low across the first child's early life, a lasting decrease in problems consistent with Rutter's criterion that turning point experiences "should be of a kind that carry the potential for persistence of effects over time" (1996, p. 614). By contrast, the continuity in multiparous women's problem drinking around the child's birth may indicate that childbirth for multiparous women is a major, potentially stressful life event that promotes continuity in pre-existing behavior, rather than dramatic change (Elder and Caspi, 1988; Rutter, 1996).

Although primiparous women's problem drinking decreased across the transition to parenthood, they exhibited more problem drinking symptoms in the year before the child's birth than multiparous women. This finding is consistent with research showing that a first-born child is more likely to be exposed to alcohol at birth than are subsequent children (Bobo et al., 2006; Edwards and Werler, 2006), although the mothers in the latter studies were not as young, on average, as the mothers in our study. At the same time, among primiparous mothers in the present study, age (above the sample mean of 23.44 years) was positively associated with problem drinking in the year before the child's birth. This finding suggests that primiparous mothers who are adolescents or young adults may be more "protected" from problem drinking than primiparous mothers who have made the transition to adulthood.

The striking differences in problem drinking trajectories between first-time and experienced mothers suggest that parity is an important dimension of maternal identity for AOD-focused health professionals to consider in working

with mothers at risk for child maltreatment. Our results suggest that multiparous mothers may require particular attention and assistance from their families or health professionals to reduce problem drinking around the birth of a child. Likewise, perinatal intervention is indicated for first-time mothers with a history of AOD problems, who are at risk for sustaining their problem drinking patterns across the transition to parenthood. Maternal AOD use problems are often embedded in a constellation of other concerns including socioeconomic adversity, maternal depression, exposure to intimate partner violence, and AOD-saturated social networks (Marcenko et al., 2011). More research is needed to understand how parity intersects with contextual factors that may promote or attenuate maternal AOD use around the birth of a child.

Study findings must be evaluated in light of several methodological limitations. First, the focal study measures were assessed exclusively by maternal self-report. Self-reports of maternal perinatal use of illicit drugs such as cocaine are known to be subject to underreporting biases (Lester et al., 2001; Ostrea et al., 1992). By extension, maternal problem drinking rates reported in our sample likely underestimate true population rates. Underreporting of maternal AOD use and use problems may occur for a number of reasons, including the social stigma associated with alcohol problems in general (and prenatal exposure in particular), and the well-justified fear that prenatal exposure may jeopardize parental custody of the child (Young et al., 2007). In addition, in our study, history of AOD problems was indexed with a single self-report item from the Hawaii Risk Indicators checklist, rather than a standardized, clinician-administered diagnostic interview. As such, the extent to which our measure of AOD problem history is comparable to a substance use disorder diagnosis is unclear, and relevant findings should be interpreted with caution. Last, although our sample was ethnically diverse, we did not examine the contribution of ethnicity to maternal problem drinking because of the small, unequal cell sizes for certain groups. Further research with a larger sample will be needed to extend our findings and to contribute to the existing literature on ethnicity, nativity, and maternal alcohol consumption (e.g., Dettlaff et al., 2009; Perreira and Cortes, 2006).

This study revealed major divergence in the problem drinking trajectories of first-time and experienced mothers around the birth of a child. If we had analyzed sample-level mean changes in maternal problem drinking from the child's birth to age 36 months, problem drinking symptoms would have appeared to decrease linearly across time, masking group differences based on parity. The findings of this study can be elaborated with further research that investigates contextual, psychological, and biological mechanisms that may explain why primiparity is associated with more substantial problem-drinking changes around the birth of a child than is multiparity. Further research is also needed to understand

when, why, and how some mothers are able to reduce problematic perinatal AOD use outside the bounds of formal treatment, particularly in the context of socioeconomic adversity and other chronic stressors. As maternal AOD change processes are better understood, mothers, their families, and health professionals will be strengthened in their ability to promote maternal health and preserve the mother–child relationship.

Acknowledgment

The authors gratefully acknowledge Sally Guyer for help with the data set and the participation of the women and children who made this study possible.

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