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ORIGINAL ARTICLE

African American Caregivers and Substance Abuse in Child Welfare: Identification of Multiple Risk Profiles

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Abstract Despite the strong correlation between caregiver substance abuse and child maltreatment, little information exists to understand the typology of African American caregivers with substance abuse problems in the child welfare system. Research shows African American caregivers contend with multiple problems stemming from substance abuse. Unfortunately, we do not yet know how to best tailor resources to be responsive to varying groups of African American caregivers. Using data from the National Survey of Child and Adolescent Well-being (NSCAW), this investigation tested for distinct multivariate profiles among a subset of African American caregivers with substance abuse problems (n=258). Latent Class Analysis (LCA) was used to classify caregivers, and five classes were identified among this high risk sample—each with distinct risk profiles. Based on these findings, we discuss implications for tailored practices to enhance the safety and stability of children involved with child welfare.

Keywords Substance abuse · Child maltreatment · Child welfare · National survey of child and adolescent well-being

Caregiver substance abuse is a serious problem as well as a major predictor for child maltreatment (Chaffin et al. 1996; Larrieu et al. 2008). Although it often occurs simultaneously with other risk factors, little information exists to establish profiles of risk among African American caregivers. Research shows African American children are identified by child protective services as victimized by serious maltreatment (Bartholet 2009) stemming from substance abuse by caregivers. Unfortunately, less is known about the heterogeneity among African American caregivers with substance abuse problems.

The increased risk of child maltreatment because of substance abuse is well documented (Berger et al. 2010; Kelleher et al. 1994). At least two thirds of all child protective service (CPS) cases involve caregivers who have a substance abuse problem (Dore and Doris 1998; Substance Abuse and Mental Health Services Administration [SAMHSA] 2009). Furthermore, studies have shown African American caregivers are disproportionately involved with substance abuse, and this contributes to inexplicably high percentages of cases in which children are removed to foster care (Vanderploeg et al. 2007). Substance abuse robs the caregiver's capacity to adequately care for children and can impede child development (Larrieu et al. 2008). Therefore, left unattended, African American children will continue to be disproportionately affected further overstretching the child welfare system.

Knowledge about variability in African American substance abusing caregivers is lacking. Yet, to effectively and efficiently use finite resources, we need to recognize the presence of distinct categories. In addition, African American mothers are often contending with multiple problems

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such as poverty, limited social support, personal history of abuse and family violence—conditions that further perpetuate drug use (Bowen 2000; McGuigan and Pratt 2001; Young-Wolff et al. 2011). Recognizing the complexities intertwined between these risks and substance abuse brings a unique outlook to addressing child maltreatment among African American families.

Caregiver substance abuse impedes a child's safety and stability, two important objectives of child welfare services. Substance abuse by caregivers has been linked to high rates of recurrent maltreatment (Barth et al. 2006; Wolock and Magura 1996), child placement into foster care (Besinger et al. 1999) and difficulties in achieving permanency planning (Eiden et al. 2007; Sagatun-Edwards et al. 1995). Children of substance abusing parents are likely to be victims of severe and chronic neglect and to have families with more problems overall (US Department of Health and Human Services 1999). A higher lifetime prevalence of caregiver substance abuse is, therefore, among the many predictors of child maltreatment.

Several risk factors are known to influence child welfare outcomes and research demonstrating this relationship will be reviewed here. The first risk factor considered is childhood abuse. Adult survivors of childhood physical abuse are at a higher risk of engaging in child maltreatment themselves (Lamont 2010; Merrill et al. 1996; Zuravin 1996). Women victimized in childhood have a high propensity for depression, serious mental health issues, and perpetrating violence (Hall, Sachs, and Rayens 1998; Harmelen et al. 2010). When faced with multiple victimization experiences, the cumulative impact on women's mental health and well-being can be substantive (de Paúl and Domenech 2000; Golder and Logan 2010). Thus, the ramifications of childhood exposure to violence can reach well into adulthood and may echo in the mother's current child rearing practices.

Family structure, including the absence or presence of the mother's partner and whether the mother is employed or not (Coohey and Braun 1997; Remes et al. 2011), could add to physical and psychological demands as well as financial pressures, thereby exacerbating substance abuse as well as risk for intimate partner violence (IPV)—a risk highly prevalent among the child welfare system. For example, at least one-third of caregivers in families undergoing child maltreatment investigations are victims of IPV (Kantor and Little 2003; Kohl et al. 2005). Moreover, children who witness IPV are at a heightened likelihood of psychosocial problems and can develop difficult temperaments and aggressive behavior causing elevated risk for maltreatment (Black et al. 2010; Burgess and Conger 1978; Egeland and Brunnquell 1979; O'Keefe 1995). Therefore when examining factors known to influence child outcomes among child welfare populations it is important to consider serious mental health problems, IPV and family structure. Caregivers with lower educational levels (those who did not graduate from high school), are less likely to have resources necessary for coping with problems, less likely to avoid abusive relationships and less likely to develop needed parenting skills and hence are at an increased risk for child maltreatment (Cox et al. 2003). Low income has been established as predictive of maltreatment (Jonson-Reid et al. 2010; Waldfogel 2005), particularly for those families receiving Temporary Assistance for Needy Families (TANF). Having fewer financial resources limits one's ability to seek help and explore potential opportunities which may increase the risk for substance abuse and child maltreatment. Moreover, participation in public assistance programs such as TANF makes the recipients more visible to caseworkers and other agency employees who may file maltreatment reports (Phillips et al. 2004).

Recent parental arrest may also be associated with child maltreatment with about one in eight (12.5 %) children reported for maltreatment to CPS have parents who were recently arrested (NSCAW Research Group 2002). Children of arrested parents are relatively younger, disproportionately African American, have significantly higher levels of emotional or behavioral problems, and likely require out-of-home care (Burns et al. 2004). Furthermore, the prevalence of substance abuse among incarcerated parents could conflict with mandated time limits for establishing a permanent home for children (Wright and Seymour 2000). Studies show that African American children are significantly over-represented in the child welfare system, the disparity affects infants overwhelmingly and at the entry level because of mothers testing positive for substance use (Eiden et al. 2007; Wulczyn and Lery 2007).

Other characteristics of caregivers associated with child maltreatment include low social support (Salazar et al. 2011), marital status (van Ijzendoorn et al. 2009), prior reports to CPS (Mattingly and Walsh 2010) and caregiver's age. Supportive adults such as grandparents may provide a protective effect to children by acting as agents of social control within the family and by spending quality time with them thus alleviating some pressure of the primary caregiver (Cox et al. 2003). Research indicates single mothers face greater risk for child maltreatment (e.g., Gelles 1989; van Ijzendoorn et al. 2009) than non-single mothers who often tend to be better off financially and report less parenting stress (Guterman et al. 2000).

The correlation between substance abuse and child maltreatment is well documented, yet caregivers with substance abuse problems are often also contending with multiple risks in addition to their substance abuse. What remains largely unknown is how these other risks group together into different profiles of caregivers and whether or not child welfare outcomes vary by profile of substance abusing

caregivers of young children. Using a person centered analytic approach, the primary objective of this investigation was to analyze a subsample of the National Survey of Child and Adolescent Well-being (NSCAW) to examine patterns of risks and identify classes of caregivers with similar risk profiles among African American caregivers with a substance abuse problem. Specifically, the following questions were answered:

(1) What are the distinct patterns of risk factors among African American substance abusing caregivers in the child welfare population?
(2) Do child welfare outcomes vary across the distinct patterns?

Method

Data from the NSCAW were analyzed to answer our research questions. The NSCAW is a national probability sample of children and their families who underwent a child maltreatment investigation between October 1999 and December 2000. The sampling design is a stratified two stage design: the primary sampling units (PSUs) were county child welfare agencies and the secondary sampling units were children (and their families) randomly chosen from a list of completed investigations at the sampled agencies (NSCAW Research Group 2002). Data were collected from caregivers and child welfare workers at baseline, approximately 12 months after baseline (Wave 2), approximately 18 months after baseline (Wave 3), and approximately 36 months after baseline (Wave 4). Baseline data were used for this study. Additional details about the NSCAW study can be obtained elsewhere (NSCAW Research Group 2002).

Sample

The entire NSCAW sample includes 5501 children (aged 0 to 16 years) and their families. A subset of the entire sample was used for this study. The primary unit of analysis for this study was the caregiver. Caregivers were included in the study if they were African American, had a substance abuse problem identified by the child welfare case manager at baseline, and if their child was 5 years or younger at baseline. Based on these inclusion criteria, the final sample size was 258 caregivers.

Variables

Substance abuse was measured via child welfare worker report. The worker with the most knowledge of the case responded to two items inquiring about caregiver drug abuse and caregiver alcohol abuse. These two items were then combined into a single substance abuse item. That is, the substance abuse variable was coded as yes if the worker indicated either drug abuse or alcohol abuse, or both drug and alcohol abuse. It was coded as no if neither were indicated. The Pearson correlation coefficient for these two items was 0.392 ($p<.001$). Caregivers were included in the study if the child welfare worker endorsed substance abuse; caregivers without this endorsement were excluded.

Thirteen variables were included in the latent class analysis to determine the distinct patterns of risk factors; all were measured as binary variables. Table 1 delineates how each of these variables were measured and included in our analysis. The latent indicator variables were: (1) caregiver recent arrest or detention (yes/no), (2) caregiver had a serious mental health problem (yes/no), (3) caregiver had a history of childhood abuse or neglect (yes/no), (4) caregiver had low social support (yes/no), (5) caregiver experienced recent domestic violence (yes/no), (6) caregiver education (no high school education/high school or higher), (7) married (yes/no), (8) partner living in the home (yes/no), (9) employed (yes/no), (10) TANF receipt (yes/no), (11) community (urban/rural), (12) caregiver age (30 or younger/31 or older), and (13) prior history of reports to child protective services due to allegations of maltreatment toward their child (yes/no).

To assess whether or not child welfare outcomes varied across the distinct risk profiles we analyzed two child welfare outcomes. First, case disposition was considered. For purposes of this paper, that was defined as substantiated or unsubstantiated following the investigation. Second, we considered the child's placement following the initial maltreatment report. This was dichotomized into two categories: (1) in home, or (2) out of home, which included placement into foster care, kin care, group home or other out of home placement,

Data Analysis Strategy

Our latent class analyses was conducted using M*plus* version 5.2 using the TYPE=MIXTURE command (Muthén and Muthén 1998–2010). The stratification, clustering and weighting inherent in the complex sampling design of NSCAW were accounted for in model, which was estimated by maximum-likelihood using an EM algorithm. Starting with all cases in one-class, models were run in successive iterations and compared to determine the number of classes which best fit the data, each estimated model was compared to the previous model (i.e., the two class model was compared to the one class model, the three class model was compared to the two class model). Akaike Information Criterion (AIC) and Bayesian Information Criteria (BIC) was used to compare models with differing number of classes—with a lower AIC and BIC indicating a better fit. Second, the likelihood-ratio χ^2 was considered. A

Table 1 Variables included in analysis

Variable name	Variable type	Respondent	Item on risk assessment instrument	Coding
Substance abuse	Inclusion and exclusion criteria	Child welfare worker	Yes	Yes=alcohol abuse, drug abuse or both, No=neither
Caregiver recent arrest or detention	Latent indicator	Child welfare worker	Yes	Yes=recent arrest or detention, No=no recent arrest or detention
Caregiver serious mental health problem	Latent indicator	Child welfare worker	Yes	Yes=caregiver has a serious mental health problem, No=absence of problem
Caregiver history of childhood abuse or neglect	Latent indicator	Child welfare worker	Yes	Yes=caregiver experienced abuse or neglect during childhood, No=no known childhood history of abuse or neglect
Low social support	Latent indicator	Child welfare worker	Yes	Yes=worker assessed caregiver to have low social support, No=had social support
Recent domestic violence	Latent indicator	Child welfare worker	Yes	Yes=caregiver experienced domestic violence, No=no recent domestic violence
Caregiver education	Latent indicator	Caregiver	No	Caregivers selected from 10 categories: 1=none, 2=high school equivalency (e.g., GED), 3=high school diploma, 4=vocational tech certificate or diploma, 5=associate degree, 6=RN diploma, 7=Bachelor's degree, 8=Masters degree, 9=MD, PhD, JD or dental, 10=other. These categories were dichotomized to no high school (1) or high school or higher (2–10).
Married	Latent indicator	Caregiver	No	Caregivers selected from 5 categories: 1=married, 2=separated, 3=divorced, 4=widowed, or 5=never married. These categories were dichotomized to married (1) or not married (2-5).
Partner living in home	Latent indicator	Caregiver	No	This variable was created from 2 items: Does your spouse currently live with you? (asked if indicated that they were married) and Do you have a [girlfriend/boyfriend] or partner who currently lives with you? Yes=if endorsed either item, No=neither item endorsed.
Employed	Latent indicator	Caregiver	No	Yes=works full time, part time or whenever work is available, No=unemployed.
TANF receipt	Latent indicator	Caregiver	No	Yes=reports current receipt of TANF, No=not receiving TANF.
Community (urban/rural)	Latent indicator	Child welfare worker	No	Urban was defined as greater than 50 % of the population living in the urban area and non-urban was defined as all other areas that did not meet this description.
Caregiver age	Latent indicator	Caregiver	No	Measured as continuous variable, and then dichotomized to 30 or younger and 31 or older.
Prior history of reports to CPS	Latent indicator	Child welfare worker	Yes	Yes=1 or more prior reports to CPS due to allegations of child abuse or neglect, No=no known prior reports.
Case disposition	Outcome	Child welfare worker	No	Workers selected from the following categories: 1=substantiated, 2=indicated, 3=neither substantiated nor indicated, 4=high risk, 5=medium risk, 6=low risk*. This was dichotomized as substantiated=substantiated or high risk, unsubstantiated=all other categories.
Child placement	Outcomes	Child welfare worker	No	In home=child remained in home following the maltreatment investigation, Out of home=child was placed in foster care, kin care, group home or other out of home placement.

* A few agencies in NSCAW opted for a coding system which used high, medium, or low risk

nonsignificant χ^2 is an indicator that the determined model fits the data well. Third, entropy, which is an indicator of accurate class differentiation, was considered. Posterior probabilities of group membership were computed. The posterior probabilities are average estimates of the probability that a particular subject will appear in a latent class and are another indicator of correct classification (McCutcheon 1987). These probabilities range from 0 to 1.0, with a probability closer to one being better. To assess the relationship between latent class membership and child welfare outcomes, ANOVA and chi-square tests were conducted, using SPSS version 17.0 (SPSS, Inc., Chicago, IL).

Results

The characteristics of the complete sample used for the study are shown in Table 2. The vast majority of caregivers live in an urban environment (92.7 %). A third of the caregivers experienced childhood abuse and neglect (33.9 %). Overall, this is a high risk sample as evidenced by a high cluster of risk factors including prior history of CPS reports (59.1 %) and low social support (56.6 %).

The fit statistics of our latent class analysis are presented in Table 3. The lowest BIC value, indicating a better model fit, was found for the five class solution. Although the AIC value was lower for the six class solution than the five class solution, all other fit statistics were better for the five versus six class solution. Furthermore, the BIC is a better indicator of the number of classes than the AIC (Nylund et al. 2007). Hence, the five class solution was determined to be the best fit. The non-significant likelihood ratio chi-square indicated that the model explained the pattern within the data well. The quality of the classification was excellent based on the entropy of 0.948. The posterior probabilities, or average latent class probabilities, were also excellent—1.00, 0.99, 0.99, 0.92, and 0.96, respectively for each of the five classes. To further elucidate the meaning of these probabilities, the probability for Class 1 was 1.00, indicating that all caregivers were correctly classified into this group, the posterior probability for Class 2 was .99 indicating that, on average; caregivers were correctly classified into this group 99 % of the time. The largest proportion of the caregivers were classified into Class 5 (47.2 %, unweighted n=122), while 27.3 % were classified into Class 1 (unweighted n=70), 4.0 % were classified into Class 2 (unweighted n=10), 10.0 % were classified into Class 3 (unweighted n=26) and 11.4 % were classified into Class 4 (unweighted n=30).

In the five class solution, each class was discernable from the others based on the prevalence or absence of the 13 risk factors (variables) entered into the analysis (see Fig. 1). The classes were, however, similar on living in an urban environment, as all or nearly all caregivers lived in an urban environment.

Class 1, referred to as the *substance abuse only class (with partner)*, had a probability of a prior maltreatment report most similar to that of the sample as a whole (0.64 compared to 0.59). Caregivers classified in this group were likely to have a live-in partner, but only about half of this group was married. Overall, substance abuse appeared to be the primary risk as there were low probabilities of additional risks such as serious mental health problems, recent arrest or detention, childhood history of child abuse or neglect and IPV. Caregivers in this class were likely to work and be younger than age 30.

Class 2 can be defined as the *multi-problem (no IPV) class.* This group was comprised of caregivers older than age 30, married and living with their partner. All the caregivers in this class had a prior report of child maltreatment, serious mental health problems, a recent arrest or detention, their own history of child abuse or neglect, and low social support. This class was also characterized by low educational attainment. Additionally, caregivers in this class were not receiving TANF nor were they employed. No caregivers in this class had experienced IPV.

Like Class 2, Class 3 can be categorized as a multi-problem class. The most distinguishing feature of this

Table 2 Characteristics of sample

Variable name	
Prior history of reports to CPS	59.1 %
Caregiver had a serious mental health issue	37.8 %
Caregiver had a recent arrest or detention	47.0 %
Caregiver had a history of childhood abuse or neglect	33.9 %
Caregiver had low social support	56.6 %
Caregiver experienced recent domestic violence	20.2 %
Caregiver had less than a high school education	26.7 %
Married	19.1 %
Partner living in the home	34.6 %
Lived in urban community	92.7 %
Worked	57.2 %
TANF receipt	33.7 %
30 years of age or younger	37.1 %

Table 3 Fit statistics

Number of classes	AIC	BIC	Entropy
One	4058.50	4104.69	N/A
Two	3902.72	3998.65	0.798
Three	3749.02	3894.69	0.901
Four	3658.31	3853.73	0.908
Five	3584.82	3829.97	0.948
Six	3562.15	3857.04	0.935

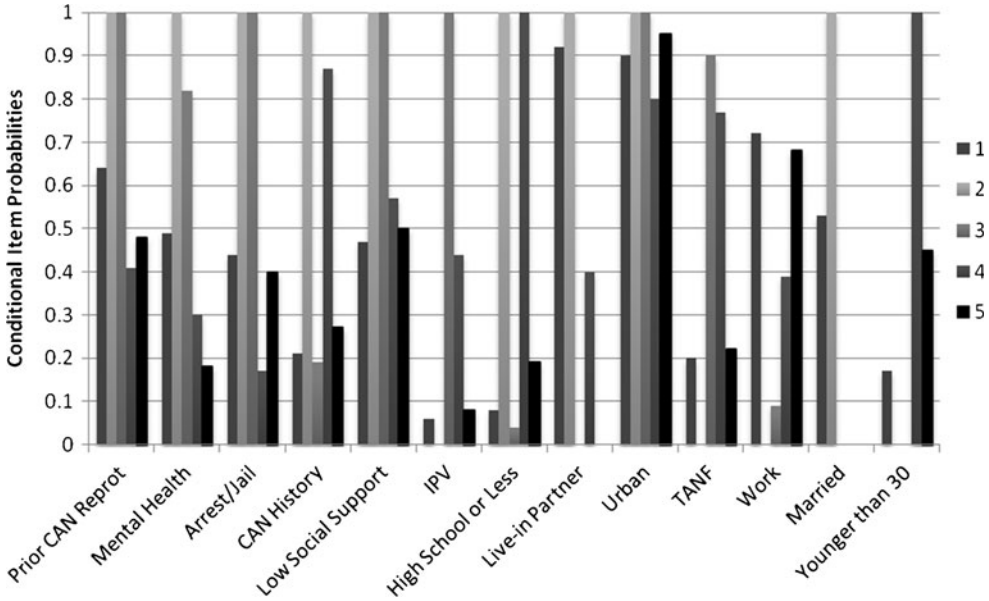

Fig. 1 Conditional item probabilities for class defining variables. *CAN*=child abuse and neglect, *IPV*=intimate partner violence

subgroup was that everyone in this class was victimized by IPV, yet IPV was mostly uncommon in all other classes. The caregivers were also differentiated from Class 2 in that they were unmarried and younger than age 30 without a live-in partner. This is defined as *multi-problem class (IPV)*. All or most caregivers in this class had a prior report of child maltreatment, serious mental health problems, recent arrest or detention, and low social support. However, there was a low probability of experiencing childhood abuse or neglect. Members of this class had a high probability of receiving TANF and a low probability of being employed. Classes 2 and 3 were consistent with research on child abuse that shows that vulnerability of maltreatment is heightened when interrelated risk factors cluster (Pellegrini 1990).

Class 4 was distinguished from the others in that this class had the lowest probability (0.41) of having a prior maltreatment report than any of the other classes (Class 1=0.64, Class 2=1.0, Class 3=1.0, Class 5=0.48). This means that for most of this class the maltreatment investigation leading to study inclusion was their first known experience with CPS. Members of this class had a high probability of childhood history of abuse and neglect. They were likely to receive TANF. They were unmarried and had a low probability of having a live-in partner, had a high school education or less and were younger than age 30. This class was labeled the *childhood history of abuse and neglect only class.*

Finally, Class 5, the largest group, is defined as *substance abuse only (no partner) class*. This class was characterized by few problems in addition to substance abuse. These caregivers had a low probability of receiving TANF and a high probability of working. They were differentiated from the first class in that they were unmarried with a low probability of having a live-in partner. They also had low probabilities of prior maltreatment report, mental health problems, recent arrest or detention, childhood history of abuse or neglect and IPV.

We conducted cross-tabs and Pearsons chi-square tests to examine whether there were differences by class for case disposition and setting following the investigation (Table 4). No statistically significant differences were found by case disposition. Statistically significant differences were found by class for placement setting. Overall, the sample was fairly evenly distributed with 50.8 % of children remaining in home following the investigation and 49.2 % going into foster care. In Class 1, 64.3 % of the children went into foster care

Table 4 Child welfare outcomes by class for categorical outcomes

	Total	Class 1	Class 2	Class 3	Class 4	Class 5	Pearsons Chi-square (df)
Case disposition	…	…	…	…	…	…	2.49 (4)
Substantiated	66.9 %	65.3 %	100.0 %	66.7 %	56.5 %	69.8 %	…
Unsubstantiated	33.1 %	34.7 %	0.0 %	33.3 %	43.5 %	30.2 %	…
Setting	…	…	…	…	…	…	30.41 (4)***
In-home	50.8 %	35.7 %	0.0 %	66.7 %	95.8 %	53.5 %	…
Out-of-home	49.2 %	64.3 %	100.0 %	33.3 %	4.2 %	46.5 %	…

***$p < .001$

compared to 100 % of children in Class 2, and 33.3 % of Class 3. Nearly all children in Class 4 remained home (95.8 %). Class 5 was about divided with 53.5 % of children remaining in home and 46.5 % being placed into foster care.

Discussion

Child safety and stability programs within the social welfare system have generally yielded disappointing and inconsistent results highlighting the need for new ways to address child maltreatment stemming from substance abuse by caregivers. Consistent with this need, the current investigation ascertained distinct multivariate profiles of substance abusing African American caregivers with known child welfare involvement. Specifically, LCA established the presence of five distinct subgroups of African American caregivers. These findings provide new insights into how to contextualize issues facing caregivers such as prior history of child abuse and neglect, mental health, substance abuse, IPV, low social support and unemployment, and how these combine into differing configurations that can impact service delivery. We turn now to a discussion of findings by subgroup profiles.

African American substance abusing caregivers in this study were classified into five latent classes. They consist of (1) *substance abuse only class (with partner), (2) multi-problem (no IPV) class, (3) multi-problem class (IPV), (4) childhood history of abuse and neglect only class and (5) substance abuse only class (no partner).*

The caregivers in the *substance abuse only (with partner)* class had live in partner, yet many were unmarried. Furthermore, over half had prior maltreatment histories. This pattern of characteristics suggests that biologically unrelated caregivers with a history of substance abuse can present risks to a child. Radhakrishna et al. (2001) found that children who had a father surrogate living in the home were twice as likely to be reported for maltreatment compared to those with either a biological father or no father figure in the home.

The most immediate need of this group appears to be substance abuse treatment and effective treatments of adult substance abuse have been developed. For example, Community Reinforcement Approach for drug abuse (CRA; Budney and Higgins 1998) is a behavioral treatment protocol for adult caregivers. The key components of CRA include a functional analysis of drug use, frequent urine screenings for drug use coupled with vouchers for clean screens, and the development of drug refusal skills (Schaeffer et al. 2008). The model has been effective with adult cocaine abusers (Higgins et al. 1993, 1994) as well as adults in treatment for alcohol and opioid dependence (Bickel et al. 1997; Silverman et al. 1996). Challenges to achieving successful outcomes for caregivers in the child welfare system have been noted in the literature, but establishing the effectiveness of CRA with caregivers who have maltreated their children appears warranted.

Interventions for this group may also need to focus on the increased risk associated with the presence of nonbiological father figures in the home. Having an unmarried live-in partner in the home significantly distinguishes this group from the rest of the groups and thus poses unique challenges relative to its counterparts. A Missouri case control study for example, found that children residing in households with unrelated parents were nearly 50 times more likely to die of inflicted injuries than children residing with two biological parents. Those in households with a single parent and no other adults in residence had no increased risk of inflicted injury or death (Schnitzer and Ewigman 2005). Although our study did not look at variables related to child fatalities or death, severe injuries to a child are major causes of out-of-home care (Sidebothama et al. 2011). Nearly two-thirds (64.3 %) of children in Class 1 are placed into out-of-home care. This represents the second highest of the five categories.

Although there is a propensity for society to stigmatize single parenthood, children may be better protected from abuse and neglect by keeping unrelated partners of their single mothers from their homes. For example, designing sustainable programs that provide both financial and emotional support may result in their self sufficiency and less inclination to invite partners into the home. Furthermore CPS caseworkers should engage fathers and surrogate fathers in child welfare case plans and place more focus on high risk relationships."Welfare-to-work" policies that aim at forcing mothers of young children into the workforce could increase the exposure of young children to male caregivers and threaten their wellbeing if unique factors such as partner presence in the home are ignored.

Multi-problem class (no IPV) (Class 2) had more problems (except for Class 3) than the other three classes and their problems were very diverse, including prior report of maltreatment, a recent arrests or detention, their own history of child abuse or neglect, and low social support. Comparison with other subgroups points to the nexus of mental health problems as the most distinctive feature of this subgroup. Specifically, they had a 1.0 probability of suffering from serious mental health problems. It is not surprising that 100 % of children of these mothers were substantiated for abuse and were removed and placed into foster care. These outcomes of 100 % substantiation and removal are not shared by any other class which underscores the need for having targeted policy and practice interventions. Moreover, adult survivors of child maltreatment report considerably higher rates of co-morbid problems including psychopathological conditions such as depression, anxiety, and substance abuse and generalized distress (Horwitz et al. 2001).

There is a clear need for intervention and prevention efforts to be directed to this multi-problem class. The Task

Force on Community Preventive Services of the Center for Disease Control (CDC) (2006) has identified cognitive behavioral therapy as an effective treatment to reduce psychobiological harm resulting from childhood traumatic events. It appears reasonable, therefore, to suggest interventions that would address cognitive distortions such as perceived self-blame and personal responsibility for childhood physical abuse. Enhancing strategies for social skills that promote desirable problem solving methods, as well as optimizing needed social support might relieve pressure off a distressed caregiver at risk for child maltreatment. Other supportive services may include concrete services such as linkages with addiction treatment programs, parenting education, transportation, emergency funds, food and clothing. Dore and Doris (1998) have however noted that substance abusing mothers with co-morbid conditions can be a difficult population to treat. Moreover, women in general have higher treatment avoidance and lower rates of retention than men (Kane-Cavaiola and Rullo-Cooney 1991) and have higher relapse rates (Mummé 1991). Because of the complex and multiple natures of the problems this group experiences, it may be particularly challenging to modify the behavior of the members of this class. Success will require flexibility in service provisions as well as attempts to utilize holistic approaches.

The multi-problem (IPV) class shares features with the Class 2 subgroup relative to the multiple problems they both possess. Similarly, these substance abusing caregivers have co-morbid mental health problems, as well as recent incarceration and low social support. This is not their first contact with the child welfare system. Virtually all of the members of this subgroup were unmarried caregivers under the age of 30. That a class comprised of younger caregivers is also characterized by IPV victimization is not surprising. Risk of IPV is higher among younger women than it is among older women (Wisner et al. 1999). Research shows that women with histories of adult victimization and childhood abuse have a higher propensity to mental health problems than women without these victimization histories (McCauley et al. 1997; Riger et al. 2002). The findings of this class suggest the existence of caregivers in the child welfare system who are in need of IPV victimization services. Service needs illustrated through research include help for biopsychosocial problems arising from psychological and physical injury (Golding 1999; Plichta and Falik 2001), substance use treatment (El-Bassel et al. 2000), employment and financial assistance (Lloyd 1997). Macy et al. (2005) have observed that female victims of IPV are likely to be seriously depressed, have impaired physical functioning and often have few social relationships. Practitioners and providers should attempt to connect these caregivers with a range of services that first address violence cessation and safety planning strategies, followed by other co-occurring correlated needs including legal services.

Given the cumulative risks associated with this class, it is striking that two-thirds of the caregiver's children remain in home and were substantiated for abuse following the maltreatment investigation. Research shows that IPV is a serious problem that affects 1.7 million children who are exposed to their mother's abuse by an intimate partner (US Census Bureau 2010). Children living in households in which their mothers are abused are at increased risk of externalizing behavioral problems such as aggression and delinquency (Young-Wolff et al. 2011). Thus appropriate attention to mental health needs of children exposed to IPV would be desirable when implementing intervention strategies for this class feature for this class.

Furthermore, at a time when substance involvement in child welfare families has risen to a record high (Berger et al. 2010; Dore and Doris 1998; SAMHSA 2003; Young et al. 2007), public child welfare policy has shifted its emphasis from protecting children through placement in out-of-home care to placement prevention and family preservation, bolstered by the 1993 Family Preservation and Support Act [P.L. 103–66]. Accordingly, service programs should correspond to this policy change by having better trained child welfare practitioners (Gustavsson 1991; Thompson 1990) in addition to other crucial adjunctive services such as providing day care. Parents who enroll their children in a daycare while completing substance abuse treatment are three times more likely to complete addiction treatment than those who do not (Dore and Doris 1998).

In contrast to the other four subgroups, the *childhood history of abuse and neglect only class* (Class four) is a distinctive class whose membership involve caregivers who have a high probability (.87) of childhood history of abuse and neglect. The relationship between childhood abuse and adulthood substance misuse is widely documented (Brems and Namyniuk 2002; Liebschutz et al. 2002; Widom and Hiller-Sturmhofel 2001). Adult victims of childhood abuse have a proclivity to use drugs and alcohol (Brems et al. 2004), experience heightened psychiatric symptomatology (Bulik et al. 2001; Kendler et al. 2000; Knisely et al. 2000); present with diagnosable psychopathology (Brems and Namyniuk 2002; Brown et al. 1999; Browne and Finkelhor 1986; Polusny and Follette 1995; Scher and Twaite 1999), engage in increased criminal activity, and present behavior problems that require specialized treatment (Easton et al. 2000; Westermeyer et al. 2001). Brems et al. (2004) have recommended identifying caregivers with histories of childhood abuse early as a first step to treatment interventions. This involves screening for physical and sexual abuse at intake; a thorough assessment for substance abuse, assessment of coexisting mental illness and assessment of criminal history that occurred under the influence. If a caregiver has known childhood abuse that has developed into a pattern of substance abuse, prevention efforts should focus on psychological

sequelae and criminal activity. Ultimately, however, prevention of child abuse may well be one of the most powerful means of preventing substance use. This class demonstratively incorporated two major risk factors to child victimization (caregiver history of maltreatment and caregiver substance use problems) that differentiate it from its counterparts. Moreover, 56.5 % of caregivers in this class have a substantiated child abuse disposition and 95.8 % of their children remain in in-home care. We know that there is a high level of risk for offspring victimization among caregivers with histories of both childhood maltreatment and substance use problems (Widom et al. 2007). Caregivers in this class will require close child welfare supervision to ensure that services recommended by CPS are successfully met.

The *substance abuse only (No partner) class* is characterized by few problems. There are exceptional strengths associated with this class. Caregivers here seem to be motivated, independent and self driven. They are employed with low probability of receiving TANF and/or are less bogged down by multi-level problems reminiscent of the other four groups. Unfortunately however, almost half are younger than 30 years, nearly all live in urban environments and half experience low social support—factors that predispose this group to risk factors for child maltreatment and removal by CPS (Cox et al. 2003). Intervention for this group should include both concrete and counseling services. For example, these young parents must deal with their substance use through treatment. Additionally, their parenting skills and social support warrant attention particularly because a majority are young and inexperienced. There is a need for in-home services for this group to be an integrated component of intervention in order to make the home safer for children, particularly vulnerable infants and toddlers.

The study reported here reflects an effort to identify the most parsimonious and best fitting patterns of risk among caregivers with substance abuse problems. Furthermore, we provided suggestions on potential interventions that target the specific needs of the distinct classes of caregivers, and an important aim of targeted intervention is the prevention of further child maltreatment and out-of-home placement for African American children. The findings from this investigation can inform our understanding of variations in groups of African American caregivers with substance abuse problems and assist in child welfare case planning.

Despite the important implications of the study, a few limitations must be noted. Substance abusing caregivers were determined using information from child welfare workers. Caseworkers might provide grimmer substance abuse data depending on the intensity of CPS involvement [e.g. reported, substantiated, or child removed] (Gibbons et al. 2005; Young et al. 2007). For example, lower estimates of caregiver substance abuse have been found among CPS-involved families whose children remain in-home than among those whose children are removed (Gibbons et al. 2005; Young et al. 2007). Although the NSCAW collected data from caregivers on self reported drug and alcohol use and dependence, this data was not collected if their child was placed into out of home care. To include caregivers whose children were removed from the home, we had to rely on child welfare worker report of substance abuse. Berger et al. (2010), report that caseworker-perceived caregiver substance abuse is associated with increased caseworker perceptions that children have experienced severe risk and harm which also increases the probability of more service receipt from CPS, a disposition of maltreatment and termination of parental rights.

A noted limitation of reliance on child welfare workers is the potential for inaccuracies stemming from misleading information from caregivers about their substance abuse habits. Additionally, many of the risk factors included in our analysis were based on child welfare worker report of these risk factors (i.e., mental health problems, childhood abuse and neglect, recent arrest/detention, and low social support). Therefore, it is possible that these risks are underestimated or overestimated in our study. It is also plausible that our results reflect only the extent of caseworker's perception of various types and levels of risk and not the actual severity of risk and harm to a child.

The sample consists of a unique group—African American caregivers of young children (aged five and younger) with caseworker identified substance abuse. This resulted in a relatively small sample size, which potentially influenced our power to detect the number of classes represented in the data. Although the BIC performs better with sample sizes larger than 200, this fit indices is a consistent indicator of the correct number of classes—even at a sample size of 200 (Nylund et al. 2007), suggesting that five classes is the correct number of classes in the data.

From a policy perspective, discussions abound about ensuring the safety and wellbeing of children. The Adoption and Safe Families Act (ASFA) and related state legislations have emphasized time limited provision of reunification services, accelerated permanency planning and expedited termination of parental rights. Requiring caregivers with a substance abuse problem to become clean within a limited period is overly optimistic especially when we know that drugs interfere with cognitive functioning (Steele and Lawrie 2004; Volkow 2010) and addiction can alter gene expression and brain circuitry (Kolb et al. 2003). Treatment often requires extensive periods and is mixed with relapse rebounds, yet, substance abuse services are seldom adequate (Brady and Ashley 2005) and the disparity between those in need of treatment and those who actually receive it is particularly large for women (Green et al. 2006). SAMHSA (2002) estimates that 94 % of people with substance abuse use disorders do not receive treatment and for those that

enroll in treatment, dropout and relapses are extremely common (Hser et al. 1997). Thus, these policies facilitate the odds of child removal and termination of parental rights which in turn affects substance abusing families disproportionately (Berger et al. 2010). Because caregiver substance abuse perceptions may increase the likelihood of child removal from the home even when the proportion of child maltreatment is substantially lower (Gibbons et al. 2005), it is important to consider other service alternatives particularly when caregiver substance abuse is not directly linked to child maltreatment. This will help ensure that, when possible, substance abusing parents retain custody of their children as they work through other child maltreatment presenting problems as well as treatment for substance use. Again, our findings underscore the heterogeneity of substance abusing caregivers who need varied approaches to intervention.

Finally, future research is needed in understanding how these risk profiles of co-occurring problems can be used at intake in evaluating the likelihood of completing services within the context of child welfare systems and whether the information can be used to match caregivers with the right resources to facilitate service completion. By understanding the heterogeneity of substance abusing caregivers, future research might accurately determine intake reports that generate outcomes such as a substantiation of child abuse and subsequent placements into out of home care.

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