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## Family Dynamics May Influence an Individual's Substance Use Abstinence Self-Efficacy

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### Abstract

**Background**—Previous work on substance use suggests the influence of family dynamics on emotion regulation.

**Objective**—The present study examined the role of family in substance use recovery. It is of importance to examine whether conflict with various family members influences an individual's abstinence self-efficacy.

**Methods**—We examined individual abstinence self-efficacy scores and lifetime conflict with mother, father, and siblings in a sample of 200 women who had been justice involved.

**Results**—We found that conflict with mother was the best predictor of abstinence self-efficacy compared to conflict with father and conflict with siblings. Individuals who indicated having conflict with mother over their lifetime had lower confidence that they could abstain from use in potentially emotionally triggering situations.

**Conclusions/Importance**—These findings suggest that family dynamics, specifically lifetime conflict with mother, do play a role in an individual's confidence to regulate emotions in high-risk relapse situations without turning to substances. Limitations include using abstinence self-efficacy as a proxy for emotion regulation and not directly measuring emotion regulation. Examining family relationships may be especially important in the treatment of women in recovery from substance use.

### Keywords

Incarcerated Women; Substance Abuse Disorders; Oxford House; Recovery Homes

### Introduction

Emotions are generally believed to be an evolutionarily adaptive way to respond to situations [1,2]. Broadly, emotion regulation is defined as the ability to influence the emotion an individual has at any given time “when they have them and how they experience and express these emotions” [2]. Emotion regulation also refers to an individual's ability to achieve a desired emotional state, whether it is positive or negative emotion.

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The use of substances may also be used to achieve a desired emotional state. Substance use for purposes of emotion regulation is well-established and well-researched. Individuals have been shown to use substances to alleviate distress [3,4] to enhance experiences of positive emotion [5], or to suppress emotion (i.e., avoidant coping [6]). Furthermore, the self-medication hypothesis [7] highlights the notion that not only do individuals use substances to alleviate negative emotions [8], but that the particular choice of drug is dictated by the individual's desired end state [9]. Indeed, individuals who have difficulty regulating their own emotions [10], such as those with anxious or avoidant attachment styles [11], are more likely to use substances [12,13].

Emotion regulation is influenced by family dynamics, through modeling coping strategies and appropriate reactions to distressing events [14,15]. More specifically, parents may influence their child's way of viewing the world, which impacts the type and strength of reactions to stressful situations throughout the lifetime. For example, if parents are unintrusive and supportive when the child is exposed to novel or frustrating situations, the child may view the environment as inviting, persevere under stress, and be open to exploration. Conversely, if parents are overprotective or aggressive, the child may become fearful and weary of his or her surroundings [16–18].

In the study of substance use in adolescents, emotion regulation is studied more broadly through behavioral regulation, a concept known as neurobehavioral disinhibition [19,20]. Neurobehavioral disinhibition is believed to reflect a dysfunctional prefrontal cortex (the part of the brain believed to be responsible for coordinating thoughts and actions to achieve goals [21]), and manifests as difficulty with impulse control, delayed gratification, and inhibiting rewarding but goal-incongruent behavior [22], all characteristics associated with substance use [23,24]. Adolescents in particular have high risk for using substances as their prefrontal cortex is not yet fully developed [19]. Furthermore, individuals who have difficulty suppressing impulses, such as those with certain personality disorders, are at increased risk [23].

Like emotion regulation, neurobehavioral disinhibition is influenced by family dynamics [20,22]. Children with fathers who use substances, for example, have a higher degree of neurobehavioral disinhibition [25], suggesting that they are at higher risk for substance use. Furthermore, neurobehavioral disinhibition has been shown to mediate the association between relationship with parents and substance use disorders [26].

Yet neurobehavioral disinhibition is not the same as emotion regulation. Neurobehavioral inhibition refers to general effortful control [19], and measures of emotion regulation in studies of neurobehavioral disinhibition generally tap into individuals' feelings of control over their own emotion [27], rather than the ability to control emotion. However, family dynamics do affect adolescents' substance use in ways that suggest some influence of emotion regulation. Whereas family closeness and parental monitoring are negatively associated with substance use [28], high family conflict (e.g., fighting) and low parental support is positively associated with substance use [29–31]. The characteristics of these parent-child relationships that affect substance use (i.e., support, conflict) also influence emotion regulation strategies [16,17].

Given that family dynamics are likely to influence substance use and therefore emotion regulation, and given that the majority of studies thus far have been exploring neurobehavioral disinhibition in adolescent substance use, the aim of the present study is to explore the association between family influences and emotion regulation in a sample of adults in recovery from substance use. Through examining emotion regulation rather than neurobehavioral disinhibition, and examining adults rather than adolescents, we explore the idea that family dynamics may influence an individual's substance use past adolescence. In this study, we examine abstinence self-efficacy (i.e. the confidence in one's ability to regulate emotions in high-risk relapse situations without turning to substances).

## Method

### Participants

The data used in this study was collected from the participants from a study funded by the National Institute of Mental Health Disparities (NIMHD). The sample size for this study was 200 (all women). Participants were recruited from the metropolitan Chicago area and its suburbs between 2008 and 2011. Recruitment sites included various substance abuse treatment centers throughout Chicago and Northern Illinois and, Cook County Sheriff's Women's Justice Programs at Cook County Jail. Participants were also recruited using flyers posted or distributed in relevant community-based organizations and using snowball techniques.

Participants eligible for inclusion were over the age of 18 and recovering from alcohol and drug dependence. Participants were only required to report some form of criminal justice involvement (not necessarily incarceration) within the past 24 months. All participants were enrolled in this study with IRB-approved informed consent procedures.

### Procedure

After providing informed consent, participants completed baseline interviews. During these interviews, participants provided demographic information (e.g., race, education, housing status) and completed a battery of standardized surveys.

Participants were assigned into either the Oxford House or usual aftercare condition. Oxford Houses are democratic, self-governed recovery residences. Residents are required to pay rent, contribute to the maintenance of the home, remain abstinent, and avoid disruptive behavior (Oxford House World Services, 2011). Participants in the usual aftercare condition made their own post-treatment arrangements (e.g. inpatient recovery programs, moving into the house of a friend or family member).

Follow-up interviews were conducted every six months over a two-year period, yielding five assessments in total. Participants were given monetary compensation for each interview. Interviewers used data from tracking sheets provided by participants to facilitate contact for 6, 12, 18, and 24-month follow-up interviews. All procedures were approved by the study institution's IRB. The current study only focuses on the baseline data, prior to participant assignment to either the Oxford House or usual aftercare conditions. For additional details on recruitment procedures, please refer [33].

## Measures

**Addiction Severity Index**—The Addiction Severity Index-Lite (ASI-Lite [34]), a briefer version of the Addiction Severity Index (ASI [35]), was used to assess current problem severity in areas commonly affected by substance dependence: medical and psychiatric problems, drug use, alcohol use, illegal activity, family relations, and family history. The ASI has good internal consistency, excellent predictive and concurrent validity [35], and the ASI-Lite has been demonstrated as being quite comparable to the ASI with good validity and reliability [36].

Our analyses focused particularly on the family relations subscale and the severity of family conflict. This index is calculated using a formula that includes a range of questions regarding the participant's experience of conflict in the context of family relationships. Participants respond “yes” or “no” to whether they have experienced conflict with different members of their family over their lifetime

**Drug Taking Confidence Questionnaire**—The DTCQ (DTCQ [37]) is comprised of 50 situations designed to capture coping self-efficacy across eight subscales: unpleasant emotions; physical discomfort; pleasant emotions; testing personal control; urges and temptations to use; conflict with others; social pressure to use; and pleasant times with others [38,39]. Participants are instructed to rate the likelihood that they would be able to resist the urge to use drugs or alcohol in situations that may potentially trigger use, such as emotion-evoking situations. Thus, the DTCQ will be used as a measure of one's ability to abstain from substance use as an emotion regulation strategy. For each item, participants could choose between a 0 (not at all confident; would definitely use or drink), 20, 40, 60, 80, and 100 (totally confident; would definitely not use or drink) percent chance of remaining abstinent in the given situation. The DTCQ has demonstrated good reliability and validity [40].

## Results

Of the 200 participants in the Participatory Action Research study (PAR), 193 (96.5%) were retained for analyses. The remainder ( $n = 7$ ; 3.5%) were excluded due to missing self-efficacy or conflict data.

### Preliminary Analyses

Participants reported having had significant periods of serious conflict with their mothers most often, followed by conflict with siblings, then conflict with fathers. One hundred and twenty-four (64.2%) of the 197 participants reported having significant periods of conflict with their mothers, while 114 (59.1%) reported conflict with siblings, and 91 (47.2%) reported conflict with fathers. Participants had a mean self-efficacy score of 80.3 ( $SD = 18.5$ ) that ranged from 0 to 100. Participants reporting significant conflict with mother had a mean self-efficacy score of 78.05 ( $SD = 19.91$ ) compared to those who reported no significant conflict with mother ( $M = 84.95$ ,  $SD = 14.65$ ). Similarly, those who reported significant conflict with father had lower self-efficacy ( $M = 78.27$ ,  $SD = 19.02$ ) than those who reported no significant conflict with father ( $M = 82.36$ ,  $SD = 18.02$ ). Participants who

reported significant conflict with siblings had similar self-efficacy mean scores ( $M = 80.17$ ,  $SD = 19.26$ ) as those who reported no significant conflict with siblings ( $M = 80.72$ ,  $SD = 17.18$ ). Due to the high mean and non-normal distribution of the dependent variable, models were estimated using bootstrapped sampling of 1000 replicates.

### Generalized Linear Models

Several models were estimated using the Generalized Linear Models function of SPSS version 21. These models were estimated to determine the best relationship between lifetime familial conflict and abstinence self-efficacy. Seven models were estimated, including conflict with mother only; conflict with father only; conflict with siblings only; conflict with mother and father; conflict with mother and siblings; conflict with father and siblings; and conflict with mother, father, and siblings. Akaike Information Criteria (AIC) values were compared for models with omnibus significance levels. Additionally, in models with multiple predictors of familial conflict and omnibus significance, significance levels of each predictor were determined and considered.

Four of the seven models had omnibus significance levels. The model including conflict with mother as the only predictor had the lowest AIC ( $AIC = 1698.93$ ,  $p = .016$ ). The model including mother and father conflict was significant, but had a slightly higher AIC than the model with only mother conflict ( $AIC = 1699.96$ ,  $p = .018$ ). In this model, the only significant predictor of abstinence self-efficacy was conflict with mother ( $p = .020$ ). The model with mother and sibling conflict as predictors was also significant ( $AIC = 1700.37$ ,  $p = .022$ ), and conflict with mother was the only significant predictor ( $p = .002$ ). Finally, the model with mother, father, and sibling conflict as predictors had the highest AIC of significant models ( $AIC = 1701.10$ ,  $p = .031$ ). As with the other models, in the model with all three conflict variables, only conflict with mother was significant ( $p = .009$ ).

### Linear Regression

To determine the variance accounted for by each model, bootstrapped linear regression models were estimated. Models were run using mother only; father only; siblings only; mother and father; mother and siblings; father and siblings; and mother, father, and siblings as predictors. Abstinence self-efficacy scores were used as the dependent variable. For the mother-only model:  $R^2 = .032$ . For the father-only model:  $R^2 = .012$ . For the sibling-only model:  $R^2 = .000$ . For the mother and father model:  $R^2 = .036$ . For the mother and sibling model:  $R^2 = .038$ . For the father and sibling model:  $R^2 = .015$ . For the mother, father, and sibling model:  $R^2 = .044$ . (Table 1)

### Discussion

This was an exploratory study designed to examine the role of family in substance use recovery. We examined whether conflict with various family members would influence an individual's abstinence self-efficacy, with the ultimate goal of contributing to the literature that examines the impact of family dynamics on emotion regulation and substance use. We found that conflict with mother was the best predictor of abstinence self-efficacy compared to conflict with father and conflict with siblings. The negative relationship between conflict

with mother and abstinence self-efficacy suggests that individuals who indicated having conflict with mother over their lifetime had lower confidence that they could abstain from use in potentially emotionally triggering situations. These findings suggest that family dynamics, specifically lifetime conflict with mother, do play a role in an individual's confidence to regulate emotions in high-risk relapse situations without turning to substances.

This finding supports the literature regarding family influences on emotion regulation [41], and with family dynamics on substance use [29–31]. Specifically, the finding that conflict with mother was the strongest predictor of abstinence self-efficacy is consistent with attachment theory [42], such that relationship with mother is presumed to have the most significant influence on an individual's emotional well-being.

The reason for using abstinence self-efficacy was two-fold: 1) abstinence self-efficacy is a strong predictor of substance use relapse, thus suggesting that abstinence self-efficacy is a good indicator of substance use 2) abstinence self-efficacy is related to emotion regulation—one's belief in ability to handle certain emotions influences his or her coping behaviors [43]. The measure of family dynamics used was a "yes" or "no" question tapping into conflict with a particular person in one's lifetime. The dichotomous nature of the measure does not allow for a multi-faceted examination of family relationships and therefore emotion regulation influences.

There are several limitations to this study. First, though our measure of abstinence self-efficacy was related to emotion regulation, there is a distinction between emotion regulation and self-efficacy. Whereas emotion regulation refers to ability to change emotions to a desired state, self-efficacy refers to one's belief in ability to engage in behaviors leading to a desired state. Though there is evidence that self-efficacy, such as negative mood regulation expectancy [43] is an integral part of the coping process and are thus related to emotion regulation, it is important to differentiate between actual self-efficacy and emotion regulation. Second, given that we do not use a direct measure of emotion regulation strategies, we cannot assume that everyone using substances is necessarily using them to manage emotions. Third, it is possible that conflict with mother is a symptom of parental psychopathology or parenting style. Future studies of conflict and abstinence self-efficacy may account for these correlations. Finally, the fact that our sample was comprised entirely of women from metropolitan Chicago and surrounding suburbs may limit the generalizability of our findings. However, previous work on family relationships and emotion regulation [44,16] suggests that results would be similar across different populations. However, future studies should examine abstinence self-efficacy and conflict in more diverse populations in order to gain a more thorough understanding of this relationship.

Though the main focus of this study was the influence of family relationships on self-efficacy related to emotion regulation, previous work has demonstrated a strong relationship between self-esteem and self-efficacy [45]. Therefore it is possible that family dynamics are influencing abstinence self-efficacy through self-esteem. Future studies should directly address the relationship between family dynamics, self-esteem, and self-efficacy.

Furthermore, though we asked about conflict over an individual's lifetime, we cannot infer causality without implementing a longitudinal analysis.

## Conclusion

Though this study was exploratory in nature, it highlights the importance of considering an individual's socio-contextual factors in gaining a thorough understanding of the link between an individual's substance use as a tool for emotion regulation. An individual's relationship with his or her mother in particular should be at the forefront of future investigations into substance use.

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Model fit statistics for generalized linear models and linear regressions examining relationship between family conflict and abstinence self-efficacy.

**Table 1**

PAR	Value/df	AIC	AICC	BIC	Omnibus Test Sig	Mom Sig	Dad Sig	Sibling Sig	R <sup>2</sup>	Adjusted R <sup>2</sup>
Mom Only	335.4	1698.927	1699.052	1708.761	0.008	0.006			0.032	0.027
Dad Only	340.683	1703.08	1703.205	1712.915	0.088		0.098		0.012	0.007
Sibling Only	345.743	1705.97	1706.095	1715.804	0.866			0.865	0	-0.005
Mom and Dad	333.613	1699.957	1700.167	1713.07	0.018	0.02	0.335		0.036	0.026
Mom and Siblings	334.323	1700.374	1700.583	1713.486	0.022	0.002		0.419	0.038	0.028
Dad and Siblings	342.324	1705.009	1705.219	1718.122	0.224		0.093	0.771	0.015	0.005
Mom, Dad, Siblings	333.884	1701.098	1701.414	1717.489	0.031	0.009	0.289	0.362	0.044	0.029