

THE IMPACT OF OBSERVED PARENTAL EMOTION SOCIALIZATION
ON ADOLESCENT SELF-MEDICATION

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ABSTRACT

MATTHEW A. HERSH: The Impact of Observed Parental Emotion Socialization
on Adolescent Self-Medication
(Under the direction of Andrea Hussong)

The purpose of this study was to examine the relationship between observed parental emotion socialization (PES) and negative affect-motivated substance use among adolescents (i.e., self-medication). Although research consistently shows that parenting relates to adolescent negative affect and substance use respectively, the current study specifically addressed the under-researched area of parents' impact on self-medication using a new observational measure of PES and experience sampling methodology to assess self-medication as a daily process. Thus, this study had two main aims. The first was to examine the structure and function of the new observational PES measure. The second was to test substantive questions regarding the impact of PES on adolescent self-medication using both a unidimensional and typological approach to PES. Further, adolescent gender differences in the relation between PES and self-medication were examined. Sixty-five 14-year-old adolescents (and parents) who were predominantly female (52% and 94% for adolescents and parents, respectively) and Caucasian (58%) were recruited from a larger school-based survey for substance use risk. Dyads participated in intensive home-based interviews to assess adolescent self-medication through a three-week experience sampling procedure and PES through an observation-based adolescent stress disclosure task. Demographics and other parenting measures were completed by adolescents and parents separately. Reliability and validity analyses were conducted for the measure of observed PES and revealed good inter-rater reliability, promising validity, and a structure generally consistent with the existing PES literature. Multi-level modeling analyses testing the substantive hypotheses revealed limited support for the role of adolescent gender or a unidimensional approach to PES in self-medication. However, interactions between emotion-coaching and emotion-dismissing

PES resulted in two different PES styles (i.e., disengaged and over-involved) that best predicted self-medication. Results are discussed with consideration of the importance of PES styles and their effects on self-medication through compromised emotion regulation and interpersonal processes.

Implications for future research and intervention are also discussed.

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LIST OF ABBREVIATIONS

EC	Parental emotion-coaching reactions
ED	Parental emotion-dismissing reactions
EF	Parental emotion-focused
Non-EF	Reverse scored emotion-focused
OPRAS	Observed parental reactions to adolescents' stress
PES	Parental emotion socialization

CHAPTER 1

INTRODUCTION

Self-medication, in which substances are used to cope with stress or negative affect, remains a vastly understudied phenomenon in adolescents. Although the self-medication model often guides prevention and intervention efforts, in which adolescents learn alternative coping strategies and affect regulation skills (NIDA, 1997), empirical support for this particular model is mixed. Both methodological (e.g., timing of measurement) and contextual factors (e.g., motivations to use, peer context, parental substance use) have recently been proposed to better define who is most at risk for self-medication (Cooper, 1994; Hussong, Feagans Gould, & Hersh, in press; Hussong, Levy, Hicks, & Curran, 2001). However, whereas parenting has been implicated strongly in the development of substance use in general (e.g., Jacob & Johnson, 1997; Stice & Barrera, 1995; Wills & Yaeger, 2003), very little is known about parenting processes that may impact the development and maintenance of self-medication through substance use among adolescents.

The current study thus was aimed at examining the impact of emotion-related parenting behaviors that may be especially relevant to the self-medication process among adolescents transitioning to high school, a developmental period marked by significant challenges in multiple domains (e.g., Brown, 2004; Williams & McGillicuddy-De Lisi, 2000). Termed parental emotion socialization (PES), these emotion-oriented parenting behaviors reflect particular goals parents have regarding their children's emotional competence (Eisenberg, Cumberland, & Spinrad, 1998), namely the experience, expression, and regulation of emotion.

Adolescent self-medication

Substance use behaviors are a developmental phenomenon. Rates of use escalate rapidly during early to mid-adolescence (Johnston, O'Malley, Bachman, & Schulenberg, 2005), and the

transition to high school reflects a particular developmental period during which alcohol use increases two- to three-fold, and the use of other drugs, such as marijuana, become significantly more prevalent (Johnston et al., 2005). It can be argued that substance use behaviors do not exist independent of other emotional and behavioral processes of adolescence. As such, researchers have identified multiple models of substance use that implicate these related processes. The most commonly studied model places substance use within a larger constellation of problem behaviors (Jessor, Donovan, & Costa, 1991; Zucker, Fitzgerald, & Moses, 1995). Another related but relatively understudied model involves negative affect as its core feature, wherein substances are used as a means of reducing the experience of negative affect or distress (Conger, 1956), with the hallmark of risk for substance abuse being self-medication. As emotional competence difficulties have been increasingly recognized by developmental psychopathologists as an integral part of most forms of child and adolescent psychopathology (Casey, 1996; Cichetti, Ackerman, & Izard, 1995; Sroufe, 1992), the phenomenon of self-medication becomes a topical and relevant issue for adolescent substance use research.

Self-medication through substance use can be viewed as particularly deleterious in that the coping mechanism of using alcohol to deal with distress can potentially become a more permanent avoidant coping strategy, leaving other more adaptive coping mechanisms under-utilized (Cooper, Russell, Skinner, Frone, & Mudar, 1992). Drinking to regulate negative emotions, relative to drinking for other reasons (e.g., social or mood enhancement), has been linked with more concurrent avoidant coping strategies and greater risk for future alcohol-related problems (Cooper, 1994). Consistent with these findings, Sher, Gotham, Watson, and Meier (1999) found that among numerous reasons for drinking, modification of aversive moods most clearly distinguished users with a recovering course from those with more chronic trajectories, such that chronic users drank more to modify their aversive moods. Although much of this research has been done with adult populations, this work suggests that the development of and factors impacting adolescent self-medication should be given closer scrutiny.

However, despite our knowledge and theoretical assumptions about the psychosocial dangers inherent in this particular model of substance use, the limited empirical research concerning the

relationship between negative affect and substance use among adolescents has been characterized by mixed findings (see Greeley & Oei, 1999 for review). The limited research on the relation between negative affect and substance use during adolescence has demonstrated links between negative affect and alcohol use at both sub-clinical and clinical levels of negative affect. Internalizing symptomatology, including depressed affect and anger, has been found to predict both moderate and heavy alcohol use for 11 to 15 year olds (Colder & Chassin, 1993) and 13 to 18 year olds (Hussong & Chassin, 1994) in a high- risk community sample of early to late adolescents. Wills and Filer (1996) found additional support for the role of anger in substance use and have shown that young adolescents with elevated levels of anger were more likely to increase their substance and alcohol use over time. In addition, Wills, Sandy, Shinar, and Yaeger (1999) showed that, for 7th through 10th graders, negative affect was related both concurrently and prospectively to higher levels of substance use. In a diverse sample of urban middle school students, emotional distress was found to predict substance use one year later, even after controlling for initial levels of substance use (Tschann et al., 1994). However, Windle and Barnes (1988) reviewed studies that provide evidence against the self-medication process, suggesting that this model may not be substantiated for adolescents.

The literature on self-medication within the college-age population is more plentiful. In a sample of young adults, depression was found to predict the frequency of alcohol use for men, whereas lack of purpose in life predicted frequency of use for women (Harlow, Newcomb, & Bentler, 1986). Furthermore, Sher et al. (1999) found that psychological distress among young adults predicted a DSM-III diagnosis of an alcohol use disorder. In addition to predicting heavy alcohol use with sub-clinical levels of negative affect, research has shown that DSM-III diagnosed anxiety disorders and major depression both concurrently and longitudinally predict diagnoses of alcohol use disorders (Sher et al., 1999). Although these recent studies yield promising support for the positive relationship between negative affect and alcohol use, the average magnitude of the effects has been weak to moderate, suggesting that other factors may be working to moderate this relationship.

Although such studies have demonstrated an association between negative affect and substance use, study designs are generally cross-sectional. If prospective in design, assessment time-points typically are months or even years apart. Such designs do not necessarily allow for an examination of the self-medication phenomenon in which a close temporal relation between negative affect and substance use is purported (Conger, 1956). Appropriate tests of the self-medication hypothesis should be sensitive to issues of timing and to the distinction between negative affect as state-like rather than trait-like (Hussong et al., 2001). As such, studies that incorporate real-time or online assessment of affect and substance use allow for closer approximations of the self-medication process and reduce recall bias of both affect and substance use (e.g., Carney, Tennen, Affleck, Del Boca, & Kranzler, 1998). In a methodologically innovative study of 18- to 21-year-old college students, Hussong et al. (2001) examined the influence of negative affect (i.e., hostility, guilt, sadness, and fear) on alcohol use as a function of time. Measurements of negative affect and alcohol use were recorded daily over a 3-week period. Increases in weekend hostility were found to predict increases in weekday drinking, which in turn, predicted greater levels of subsequent weekend hostility. This finding suggests that as students experienced increased distress (in the form of hostility), they drank more to cope with this dysphoric feeling. Importantly, Hussong et al. (2001) demonstrated a *short-term temporal* link between negative affect and alcohol use. Other research has supported this self-medication finding with daily perceived stress (Park, Armeli, & Tennen, 2004) and negative affect (Armeli, Tennen, Affleck, & Kranzler, 2000) predicting daily alcohol consumption.

Using a sample of 12 to 18 year old adolescents whose affect and drug use were assessed through experience sampling methodology, Henker, Whalen, Jamner, and Delfino (2002) found that adolescents who reported high anxiety on a daily basis were no more likely than non-anxious adolescents to drink alcohol but were two to three times more likely to smoke cigarettes and to have the urge to smoke. This study provides evidence for successfully obtaining mood and substance use ratings for adolescents on a daily basis through experience sampling. There was no evidence,

however, of a significant association between daily anxiety and drinking, but the authors did show that many other negative affects co-existed with anxiety on a daily basis, suggesting the need to look at a broader range of affects that may be implicated in motivating substance use. The design of the current project allowed for such a test of the close temporal relation between a broad range of negative affects and substance use among early adolescents. In a recent set of studies on self-medication among adolescents, Hussong et al. (in press) and Feagans Gould, Hussong, and Hersh (2007) assessed 14-year old adolescents over a three-week period for their daily reports of negative affect and alcohol use. Although no main effect for within-person daily negative mood on alcohol use was found, self-medication did hold for particular sub-populations of adolescents, namely those with more emotion dysregulation difficulties (avoidant coping, anger), anxiety and depressive symptoms (Feagans Gould et al., 2007), and those with fewer conduct problems (Hussong et al., in press). Taken together, these studies have provided promising evidence both for the utility of online assessments of affect and substance use and for the specification of vulnerable sub-populations of adolescents who may be at greatest risk for using substances in response to heightened negative mood. Although Hussong and colleagues addressed parental substance use as an important moderator of adolescent self-medication, no study to date has examined the role of parenting behaviors in the relation between daily negative mood and substance use.

Given the relatively consistent but weak effects found in studies on the relation between negative affect and substance use, researchers need to address the limitations that plague these studies. Examining particular developmental contexts during which self-medication may emerge, defining specific populations for whom this model may be most applicable, and examining affect and substance use as they exist in close temporal relation can help advance our understanding of this potentially important model of adolescent substance use. The current study addressed these limitations by examining the high school transition as a unique developmental context during which self-medication may develop and be readily examined, by exploring this model of substance use using a sample of rural adolescents at elevated risk for substance use, and by utilizing experience sampling

methodology to assess the close temporal association between negative mood and substance use over a three-week period.

Developmental context of adolescence and the high school transition

Adolescence is marked by significant biological, cognitive, social, and emotional changes that can affect adolescents in academic, socioemotional, and interpersonal domains (e.g., Calkins & Bell, 1998; Holmbeck, Paikoff, & Brooks-Gunn, 1995). These changes require from adolescents a substantial degree of flexibility, adaptation, and accommodation in order to successfully negotiate the concomitant developmental tasks. The transition to high school is a unique period during which particular academic and interpersonal stressors may occur and during which adolescents' personal and interpersonal functioning decline (Barber & Olson, 2004). Academic stress has been found to increase significantly and grades tend to decline with concomitant increases in drop out rates as early as ninth grade (e.g., Barone, Acuirre-Deandries, & Trickett, 1991; Seidman, Aber, Allen, & French, 1996). Peer relationships begin to take on a more prominent role in the configuration of adolescent social networks (Brown, 2004; Seidman et al., 1996), while manifestations of anxious and depressed negative affectivity also become more pronounced and normative during this general period (e.g., Kandel & Davies, 1982; Zahn-Waxler, Klimes-Dougan, & Kendziora, 1998). Furthermore, substance use behaviors increase dramatically, nearly doubling in prevalence from 8th to 10th grade (Duncan, Duncan, & Hops, 1994; Johnston et al., 2005). The confluence of these changes therefore can create a stressful landscape for adolescents. However, studies on self-medication during adolescence have not focused on this unique developmental context despite the important affective, social, and interpersonal changes that occur during this time (see Hussong et al., in press, for exception).

In addition to intrapersonal, peer, and school related changes, the emotional atmosphere of the family is also shifting during adolescence and the transition to high school. These familial changes include declining warmth and cohesion in the family (Conger & Ge, 1999), increased parental negative affect (Montemayor, Eberly, & Flannery, 1993), and lowered adolescent expectations of their parents' support (Zeman & Shipman, 1997). In fact, as Katz and Hunter (2007)

have recently suggested, adolescents may require a different kind of support from their parents during adolescence as adolescents come to rely less on parent-managed coping strategies and more on peers for help with stress and negative affect management (Cole & Kaslow, 1998). Nevertheless, it appears that parents continue to exert an importance influence on their children during both pre-adolescence and adolescence (Brook & Brook, 1988; Steinberg, 2001). In fact, parents generally have been found to have a stronger impact on adolescent mental health outcomes as compared to peers (Barrera & Garrison-Jones, 1992; Barrera & Li, 1996; McFarlane, Bellissimo, Norman, & Lange, 1994). Although parents have been shown to influence adolescents' negative affect and substance use, no specific empirical work exists on the relationship between parenting factors and adolescents' use of substances to self-medicate. However, there is evidence within several different theoretical and empirical literatures demonstrating the relationship between parental support and substance use in general and between PES and children's socio-emotional outcomes (Eisenberg et al., 1998).

Parenting processes and adolescent substance use

Family and parenting constructs have been strongly implicated in the development, maintenance, and prevention of adolescent substance use behaviors. Much of the literature on non-substance specific factors involves parental warmth and control, a positive relationship and communication between adolescent and parent, parental support, and parent-adolescent conflict (Jacob & Johnson, 1997; Wills & Yaeger, 2003). These family and parenting factors are presumed to represent sources of protection or risk for the development of adolescent substance use (Wills & Yaeger, 2003). Other family-level variables, such as family cohesion and organization, have been found to protect against adolescent substance use (Duncan et al., 1994; Hussong & Chassin, 1994).

Parental support is one aspect of parenting that has important theoretical links to the self-medication process and has been implicated in the initiation, maintenance, and escalation of adolescent substance use in general. Parental support can be considered one important component of authoritative parenting, a parenting style that consistently has been shown to relate inversely to adolescent problem behavior including substance use (e.g., Baumrind, 1991; Fletcher & Jeffries,

1999). The literature on the impact of parental support on adolescent substance use is fairly extensive and has generally shown that parental support is negatively associated with adolescent substance use (e.g., Barrera, Chassin, & Rogosch, 1993; Brook, Whiteman, Gordon, & Cohen, 1986; Wills & Vaughan, 1989). For example, Barnes, Farrell, and Cairns (1986) found that higher levels of mothers' acceptance, approval, and love of their children predicted fewer alcohol-related problems among adolescents. In other empirical work, how comfortable adolescents felt in revealing problems to their mothers was shown to be a key element in the prevention of adolescent alcohol abuse (Barnes, Farrell, & Banerjee, 1994), even after controlling for the influence of parental behavioral control.

Wills & colleagues have proposed a functional theory of parental support that involves the supportive functions that parents provide to their adolescents to help them cope with everyday life strains and reduce emotional distress (Cohen & Wills, 1985; Wills, 1991; Wills, Mariani & Filer, 1996). Emotional support can help validate the acceptability of adolescents' own feelings and provides functions that are useful for coping when adolescents are confronted with stress or challenging transitions (Wills, Blechman, & McNamara, 1996). Indeed, Wills, Mariani, and Filer (1996) found that both emotional and instrumental support from parents reduced the likelihood of adolescents' concurrent substance use in part through more adaptive coping, lower deviance proneness (e.g., negative mood states such as anger), and fewer negative life events. Moreover, in times of reorganization and transition, adolescents' knowledge that a family member is available to listen, validate negative emotions, and provide useful advice was found to buffer adolescents' experiences of stress and negative affect (Wills, Blechman, & McNamara, 1996). Conversely, more harsh and aversive parenting tends to diminish adolescents' sense of self and their ability to cope with stressors and to enhance the use of substances to regulate negative affect (Ge, Best, Conger, & Simons, 1996; Burge & Hammen, 1991). Thus, parents' emotional support appears to be an effective tool in reducing the likelihood of adolescent substance use through mechanisms related to adolescents' own emotions and coping resources.

In addition to evidence from cross-sectional studies, a few compelling studies demonstrate the prospective effects of parental support on adolescents' substance use and abuse (Stice & Barrera, 1995; Stice, Barrera, & Chassin, 1993; Wills & Vaughan, 1989; Windle, 1992). Parental support has been found to be negatively associated with subsequent substance use, even after controlling for initial levels of use. This research thus provides some evidence for parental support as a "brake" (Wills, Mariani, & Filer, 1996) that creates conditions under which adolescents are less likely over time to either develop or escalate their use.

Within a separate body of literature on parenting and adolescent psychopathology, researchers have provided evidence for links between parenting and adolescent stress, negative affect, and adjustment. Although research on family factors and the negative-affect model of alcohol abuse and dependence is in the beginning stages (Jacob & Johnson, 1997), there is evidence for both the protective and deleterious effects of different aspects of parenting on adolescent negative affectivity and well-being. Stern and Zevon (1990) have shown that adolescents who perceive more cohesion and less conflict in the family tend to engage in more active and less emotion-based coping responses. These coping strategies in turn have been shown to relate to better psychological adjustment among adolescents (Ebata & Moos, 1991). Emotional unavailability in parents has been linked to adolescent depressive affect (Lee & Gotlib, 1991; Peterson et al., 1993) whereas parental over-involvement has been shown to be associated with children's anxious affect (Hirshfeld et al., 1997; Stubbe et al., 1993). Allen, Hauser, Eickholt, Bell, and O'Conner (1994) examined the implications for parents' autonomous-relatedness with their adolescents and found that adolescents whose mothers who communicated more of *both* autonomous and relatedness behavior were less likely to experience depressed affect two years later.

Allen et al.'s (1994) findings highlight an important issue with respect to the concept of *styles* of parenting behavior (e.g., Baumrind, 1989). Consideration of combinations of several unidimensional constructs may indeed improve our prediction of important adolescent outcomes such as drug use and competence (Baumrind, 1991) and other externalizing behaviors (Rothbaum &

Weisz, 1994). In fact, Caron, Weiss, Harris, and Catron (2006) recently found that the interactive effects of dimensions of psychological control and warmth and of psychological control and behavioral control were important predictors of both internalizing and externalizing behaviors in children.

Although this work provides evidence for the impact parents have on adolescents' emotion-related processes, none of these forms of parenting directly address how parents socialize the emotional lives of their children, thus shaping coping responses to adolescents' actual experiences of negative affect. Instead, parental socialization of children's emotions may provide a more theoretically relevant framework for the role parents play in adolescents' affect regulation implicated in the self-medication process. This relatively fledgling literature has in large part focused on the socialization of young children's emotions, ignoring the socialization of adolescents' emotions and the relation of this construct to other outcomes of interest. However, parental socialization of children's emotion is an important theoretically relevant area of study that provides a unique perspective on how parents' contingent responses to youth's emotions can impact adolescents' emotional competence and related outcomes.

Parental emotion socialization and socio-emotional functioning

Emotion socialization is an important growing area of research that has until very recently been relegated to the field of developmental psychology. However, as the construct of emotion is increasingly recognized as a key mechanism in the development of psychopathology, developmental psychopathologists have begun to incorporate the myriad facets of emotion into theoretical models and empirical tests of child and adolescent psychopathology (e.g., Sroufe, 1992; Zahn-Waxler, Klimes-Dougan, & Slattery, 2000). Not surprisingly, parents are viewed as key socializers of children's emotions (Halberstadt, 1991) and can help shape children's emotional repertoires (e.g., Eisenberg et al., 1998). Indeed, ways in which parents socialize their children's emotions have been found to have meaningful concurrent and prospective associations with child outcomes including social competence, emotion regulation, and peer relationships (see Eisenberg et al., 1998 for review).

Parents' socialization of children's emotions can occur both through indirect and direct mechanisms. More indirect means broadly include modeling, imitation, living within a particular emotional climate, and exposure to emotionally eliciting stimuli, to name a few (Saarni, 1999). Eisenberg et al., (1998) proposed three major ways in which parents socialize their children's emotion: through discussion of emotion, through effects of parental emotional expressiveness, and through parents' reactions to children's emotions. Discussion of emotion between parent and child can occur around a family member's specific emotions or simply when the topic of emotion arises (Eisenberg et al., 1998), thus representing a relatively broad and diffuse mechanism of emotion socialization. A similarly broad mechanism is parental emotional expressiveness, or parents' stylistic ways of expressing negative and positive emotion, whereby children can be socialized through modeling of their parents' expressivity, through emotional cues from parents about important and salient aspects of the environment, through global positive and negative affectivity as an affective parenting style, and through more direct expression of emotion in the context of parent-child interactions (e.g., Cook, Kenny, & Goldstein, 1991; Eisenberg, 1998). A more direct and proximal mechanism of emotion socialization may be through parents' reactions to children's emotions that occurs in the context of parents' interactions with their children, encompasses both parents' supportive and non-supportive responses toward their children's emotions, and includes parents' own emotional expressions within parent-child interactions as a powerful emotion socializing force. Parental reactions to children's emotions were deemed most relevant for the current study due to their relatively more direct and specific impact on children's emotional awareness, expression, and regulation.

Theoretical and empirical work describing how parents react to their school-aged children's negative emotions has yielded two broad categories of reactions: supportive (i.e., facilitative and scaffolding of children's emotional experience and expression) and non-supportive (hindering or disrupting children's emotional experience and expression). This work has been advanced by a handful of researchers progressing along relatively parallel lines of work. Gottman and his colleagues

(Gottman, Katz, & Hooven, 1997) and Eisenberg and her colleagues (Eisenberg et al., 1998) have proposed that the ways in which parents react to their children's negative emotions have implications for children's emotional experience and expression, which in turn impact multiple domains of functioning. Gottman et al.'s (1997) theory of Meta-Emotion, which encompasses parents' philosophy about emotions as well as their more direct reactions to children's negative emotions, is, in part, derived from Ginott's (1969) clinical work with children and his belief in the necessity for parental validation of and empathy for the child when dealing with emotionally-charged situations. Gottman et al. (1997) posited that there exist two familial meta-emotion typologies, emotion-coaching and emotion-dismissing. Emotion-coaching families are typified by embracing their children's negative emotions, validating the emotions, empathizing with their children regarding their negative emotions, and using emotionally-charged events as a source of interpersonal intimacy. Emotion-dismissing families, on the other hand, are characterized by ignoring and denying children's negative affective experiences, viewing negative affect as a nuisance, and trivializing children's negative emotions. Eisenberg et al. (1998) proposed that parents who discourage their children's emotional expressiveness may influence the way their children learn to view their own and others' emotions as negative or threatening; these children may subsequently avoid opportunities to explore the reasons for and meaning of their negative affect. Parents' supportive reactions of validation, empathy, problem-solving, and encouragement of emotional expression, on the other hand, can facilitate a greater awareness, understanding, and regulation of emotion through the communication that the multiple facets of emotion are not necessarily threatening and that children's experience of negative emotion is understood and appreciated by parents.

Empirical support for these ideas suggests that parents' reactions to children's negative emotions can indeed impact children's social and emotional development. Parents' emotion-coaching behaviors have been found to strongly predict multiple child outcomes ranging from physical health to negative affectivity in the peer context (Gottman et al., 1997). Specifically, parents who accept and tolerate their children's emotional expressiveness, within the context of a willingness to help their

children with their negative affect or emotionally-charged event, have children who are better able to regulate their own emotions and who are more socially competent (Gottman et al., 1997; Katz & Windecker-Nelson, 2004; Roberts, 1999). Supportive parental reactions also have been found to be positively associated with children's social skills and their ability to cope with their own negative emotion (Eisenberg, Fabes, & Murphy, 1996). In developing a model of maternal socialization of children's post-divorce coping, Miller, Kliewer, Hepworth, and Sandler (1994) showed that mothers' assistance with their children's post-divorce stress through such strategies as positive cognitive restructuring and problem-focused coping was prospectively related to children's own use of such coping strategies. Although a body of evidence exists for the positive effects of supportive reactions to children's distress on children's socioemotional competence, the magnitude of these effects is generally modest. More consistently strong effects, however, have been found for the impact of non-supportive parental reactions to children's distress (e.g., punitive, minimizing) on children's social and emotional difficulties (see Eisenberg et al., 1998 for review). Taken together, these studies suggest that how parents react to children's distress may indeed affect children's socioemotional functioning and the development of coping capacities. It is important to note, however, that although such parental reactions are relatively stable over the course of middle childhood into pre-adolescence (Eisenberg et al., 1999), the impact on child outcomes into adolescence is not known.

Few researchers have examined this aspect of parenting for interactions between parents and *adolescents*. Calkins and Bell (1998) argue that adolescence is a unique and important developmental transitional period during which to examine the impact of parental socialization of emotion. Moreover, Zahn-Waxler, Klimes-Dougan, and Kendziora (1998) assert that adolescence can be viewed as a "period of reawakened emotional instability for many youth" (pp. 315). Indeed, the transition to adolescence is marked for many families by increased parental and familial negativity (Conger & Ge, 1999; Montemayor, Eberly, & Flannery, 1993) and increased adolescent negative affect (e.g., Kandel & Davies, 1982), although adolescents continue to maintain positive affectivity with parents across adolescence (Flannery, Torquati, & Lindemeier, 1994). Those familial contexts in

which adolescents and their parents are experiencing greater stress due to a salient school transition (e.g., transition to high school), for example, likely are the contexts in which parental socialization of adolescents' emotion may best be captured (Calkins & Bell, 1998).

The few empirical studies examining socialization of adolescents' emotions show a fairly consistent pattern of findings whereby less parental emotion-coaching and more emotion-dismissing behavior predict greater internalizing and externalizing difficulties in adolescents (Bronstein, Briones, Brooks, & Cowan, 1996; Garside & Klimes-Dougan, 2002; Katz, 1997; Katz & Hunter, 2007; Sheeber, Davis, Hops, & Leve, 2003; Shortt, Smith, and Stoolmiller, 2006). In particular, Katz and Hunter (2007) have demonstrated that mothers who were more accepting of their own emotions and more coaching of their adolescents' emotions had adolescents with higher levels of self-esteem and lower levels of internalizing and externalizing behavior, less physiological arousal, and lower likelihood of reciprocating parents' sadness with their own aversive behavior. Sheeber et al. (2003) and Shortt et al. (2006) have shown that maternal emotion-coaching is related to depressive symptomatology and externalizing behavior through emotion regulation difficulties, thus highlighting a purported mechanism involved in the effects of PES on adolescent outcomes.

Although such studies have demonstrated an association between parental reactions to children's emotion and important child and adolescent psychosocial outcomes, there is great need for observational measures to assess the subtle and nuanced ways in which parents may spontaneously react to their adolescents' experience of stress and negative emotion (Fivush, 1998). In fact, Gottman and colleagues have emphasized the need for naturalistic samples of parents interacting with their children during emotional moments to examine how parents coach the experience, expression, and regulation of emotion in their children at times of heightened emotion (Katz, Wilson, & Gottman, 1999). There are several reasons to employ observational measurements of parent-adolescent interactions in general. First, observational measurements allow for more subtle and context-dependent phenomena to be examined and provide an opportunity to observe actual parent-adolescent interactional processes in real-time (Aspland & Gardner, 2003). Second, coding video-taped

interactions reduces reporter bias and the influence on perceptions of particular parenting behaviors by intrapersonal variables (Barrera & Li, 1993; Sagrestano, Paikoff, Holmbeck, & Fendrich, 2003). Third, studies consistently demonstrate low parent-adolescent agreement on parenting variables. Thus, relying on one reporter or aggregating multiple informants' reports may distort the nature of the phenomenon of interest (e.g., Tein, Roosa, & Michaels, 1994; Welsh, Galliher, & Powers, 1998). The current study thus capitalized on observational methods that facilitate examination of "in-the-moment" parental reactions to adolescents' stress in the context of adolescents' disclosure of personal stressor.

Adolescent gender differences in self-medication and parental emotion socialization

Although no research exists on the interaction among adolescent gender, self-medication through substance use, and parental socialization of emotion, gender differences have been examined in the two disparate literatures. First, mixed findings characterize the empirical work on gender differences in the relation between stress (or negative affect) and substance use. Whereas some studies have shown that adult men compared to women are more apt to drink to cope and to have stronger relations between their stress and alcohol use (Cooper et al., 1992), studies on the relation between emotion and drinking in adolescents generally suggest that girls are more likely than boys to show such a relation (Lock & Newcomb, 2003; Thombs, Beck, & Mahoney, 1993; Windle & Barnes, 1988). However, evidence for this conclusion is equivocal (e.g., Catanzaro & Laurent, 2004; Laurent, Catanzaro, & Callan, 1997). The study lending the most relevant findings for the current study was conducted by Windle (1992) who found that high levels of stress and low family support predicted alcohol consumption for adolescent girls but not for boys. Thus, although this literature is certainly characterized by mixed findings, it seems that adolescent girls may be more likely than boys to respond to heightened negative affect with substance use.

Mixed findings also characterize the literature on the effects of child gender on parental socialization of emotion. Some studies show that parents differ in their reactions to their sons' versus their daughters' emotions (e.g., Block, 1979; Casey & Fuller, 1994), whereas other research finds that

parents do not report reacting differently to the negative emotions of boys or girls (e.g., Eisenberg & Fabes, 1994; Eisenberg et al., 1996). When differences are found, they tend to be emotion specific. For example, parents may be more likely to attempt to inhibit the expression of fear in boys as compared to girls (Casey & Fuller, 1994) but to react less negatively to boys' than girls' expression of anger (Eisenberg et al., 1998). Boys and girls also expect their parents to react differently to their respective displays of emotion, with boys expecting more instrumental reactions from fathers, and girls expecting more emotion-focused reactions from mothers (Dino, Barnett, & Howard, 1984). Moreover, boys, as compared to girls, expect more negative interpersonal response to their displays of emotion (Zeman & Shipman, 1997); specifically, boys expect more disapproval of their sadness but less disapproval of their anger (Dino et al., 1984). Most studies on this matter have been conducted with parents of infants or young children, making the inference of specific gender differences in an adolescent population more problematic. Thus, although some differences exist, the gender of the parent and the specific emotion to which parents are reacting make particular predictions difficult.

Because both the adolescent self-medication and PES literatures have produced relatively equivocal and complex findings with respect to gender differences, no specific hypotheses were made for the current study. However, testing for gender effects is important given the relative lack of research on gender differences in self-medication among adolescents and the future research needed on adolescent gender as a moderator of the processes involved in parental socialization of emotion (Eisenberg et al., 1998).

Present Study and Hypotheses

Data from a short-term prospective study of rural adolescents at elevated risk for substance use were used to answer questions regarding the impact of PES on adolescent self-medication. A new observational measure of parental reactions to adolescents' stress assessed PES, and experience sampling methodology was employed to capture the online daily process of self-medication. Multi-level modeling was used to analyze this nested data in which PES predicted repeated assessments of negative mood and substance use within adolescents over time.

The current study followed two main aims. The first aim was to examine the structure, reliability, and validity of the observational coding system designed to assess PES. The second aim involved testing the substantive hypotheses regarding the buffering and risk-promoting effects of PES on adolescent self-medication. Four sets of hypotheses follow:

1) Emotion-coaching (EC) parental reactions to adolescents' stress were predicted to weaken the daily covariation of negative mood and substance use, thus serving as a buffer for adolescent self-medication.

2) Emotion-dismissing (ED) parental reactions to adolescents' stress were predicted to strengthen the daily covariation of negative mood and substance use, thus serving as a risk for adolescent self-medication.

3) There is evidence to suggest that the interaction between EC and ED parental reactions to adolescents' stress may hold additional predictive value for adolescent self-medication.

Although no theoretical or empirical literature exists on the specific interactive effects of different forms of emotion socialization on child outcomes, accumulating evidence points to the utility of examining combinations of parenting processes in the prediction of youth functioning (Baumrind, 1989; Caron et al., 2006; Rothbaum & Weisz, 1994). In fact, an entire line of research has been devoted to considering constructs of both autonomy and relatedness in adolescence in the context of one another, not as independent or unidimensional concepts (Allen et al., 1994). Given this compelling theoretical and empirical research, the interactive effect of emotion-coaching and emotion-dismissing PES on adolescent self-medication was examined.

4) Although exploratory, adolescent gender differences in the relation between PES and self-medication were examined.

CHAPTER 2

METHODS

Study overview

The current study used data collected through the High School Transition Study (HSTS), a multi-phase, longitudinal study of adolescents, their parents, and their friends (Hussong, 2000). The HSTS includes four phases of data collection. In Phase 1, 399 of 436 8th grade students in participating schools completed classroom administered surveys assessing a broad array of factors, including risk indicators for substance use in high school (i.e., initiation of alcohol use themselves or by their friends). For Phase 2, participants were recruited during a time-limited period from the Phase 1 sample according to their rank-ordering of risk status (i.e., from high to low). (Because this Phase required completion during the summer between 8th and 9th grade, we limited recruitment efforts to an eight-week period.) We attempted to contact 198 Phase 1 participants, with 81 agreeing to participate. Primary reasons for non-participation were inability to contact (n=33), ineligibility (n=20, language barrier, moving, did not pass grade), limited availability (n=17), and privacy concerns (n=11). Of 145 eligible, contacted families, 56% participated in Phase 2. In Phase 3, we conducted school-based assessments in 9th grade at two of three county high schools with 351 out of 434 enrolled students participating. Because 8th grade schools did not include all feeder schools for 9th grade schools (i.e., one 8th grade school attended the non-participating high school, one non-participating 8th grade school attended a participating high school), our Phase III sample included 273 of those participating in the Phase 1 sample. In Phase 4, we conducted follow-up interviews with 56 participants from our Phase 2 sample (69% participation rate). Because the current study only used data from Phases 1 and 2 (referred to for the current study as Stages 1 and 2), only those stages are discussed in detail below (see Figure 1).

Participants

Of the 81 potential parent-adolescent dyads participating in Stage 2, 77 (95%) participated in the parent-adolescent observation tasks from which the PES construct was derived. Of these, nine interactions could not be coded due to audio problems or poor task engagement, and one adolescent had sufficient missing data on measures of interest to be excluded from coding system validation. The final *observational* sample thus consisted of 67 adolescent-parent dyads; this sub-group of Stage 2 participants was used to compute all coding system psychometric properties (Aim 1). Adolescents in this validation sample were predominantly female (54%), 14 years of age ($m=13.9$), and Caucasian (57%), with 13% identifying as African-American, 1.5% as Latino/Hispanic, 1.5% Asian American or Pacific Islander, 1.5% as American Indian, 1.5% as other, and 24% as multiracial. At least 86% of adolescents were deemed to be at elevated risk based on the criteria of having initiated or having friends who had initiated substance use. Parents were predominantly female (94%) whose mean age was 43. The majority of parents identified as Caucasian (64%), 25% as African-American, 1.5% as Latino/Hispanic, 3% as Asian American or Pacific Islander, and 1.5% as Native American, and 4.5% as multi-racial. Parents generally were highly educated with 13% having graduated high school, 24% having completed some college or vocational school, 43% having completed college, and 20% having complete graduate training.

An additional two participants were dropped from the observational sample to test substantive hypotheses due to missing data on the 21-day Experience Sampling Method (ESM) procedure, yielding a analysis sample of 65 adolescents (and their parents) (80% of the original Stage 2 sample). The demographics of this analysis sample were highly similar to the coding validation sample (see Table 1 for the demographics of both samples).

A series of t-tests and chi-square tests examined the representativeness of the analysis sample ($N=65$) relative to the full Stage 2 ($N=81$) and to the school-based sample at Stage 1 ($N=399$). In comparing the current and full Stage 2 samples, no differences were found for adolescents' age ($t [78] = .07$, ns), gender ($\chi^2 = .29$, ns), or risk status ($\chi^2 [6] = 6.86$, ns), or on measures of adolescent anxiety

($t [78] = 1.54$, ns), aggression ($t [78] = -.99$, ns), impulsivity, ($t [75] = .71$, ns), or adolescent-parent communication ($t [78] = -1.09$, ns). However, participants dropped from analyses reported lower substance use ($t [78] = -2.28$, $p=.03$) and parent educational attainment ($t [78] = -2.42$, $p=.02$) and were marginally more likely to be adolescents of color/biracial ($\chi^2 = 3.82$, $p=.06$). Thus, with some exceptions, the present sample was representative of the full Stage 2. Compared to the Stage 1 sample, adolescents in current elevated risk sample had as expected higher levels of depression ($t [352] = -2.70$, $p<.01$), aggression ($t [351] = -2.70$, $p<.01$), anger ($t [353] = -2.72$, $p<.01$), stress ($t [353] = -1.84$, $p=.06$), and substance use ($t [351] = -2.38$, $p<.05$). No differences emerged for positive affect ($t [76] = 1.42$, ns), gender ($\chi^2 [1] = 1.25$, ns), or race ($\chi^2 [1] = 1.38$, ns).

Procedure

The current study focused on Stages 1 and 2 of the HSTS. In the first stage, all nine middle schools in a rural North Carolina school district were contacted to participate in the HSTS. Principals from seven of the nine middle schools agreed to have their students invited to participate. Subsequently, all enrolled middle school students were sent letters through their schools, and letters describing the study and inviting adolescents to participate were mailed home to parents. Parents who refused to have their adolescents participate were asked to mail notification of their decision back to the HSTS offices. A team of interviewers facilitated survey-based data collection during the Spring Semester of 2002. Students answered questions regarding demographics, substance use, psychopathology, school functioning, and friendships. Teachers were invited to stay during testing, but were asked not to interact with students to protect confidentiality. Students received a token gift and schools received a financial gift for participating in the study. One make-up day per school was also held to assess students absent on the original testing day.

Following Stage 1, families were contacted by phone and by mail based on pre-established risk criteria involving adolescents' or friends' initiation of substance use by the Spring semester of 8th grade. Thus, from high to low risk, families were contacted to participate in the more intensive Summer follow-up (Stage 2). We obtained verbal consent from the adolescent and at least one parent

from each family over the phone and written consent upon interview. No participants were excluded based on gender, ethnicity, or socioeconomic status, although we were only able to interview families for Stage 2 Summer interviews in which the adolescent and at least one parent spoke English at a level that allowed them to complete the interview and consent procedures.

Stage 2 data collection involved two home- or university visits set three weeks apart conducted by trained pairs of graduate and undergraduate interviewers. These visits employed multiple methods of assessment and were multi-informant. During the initial visit (IV), adolescents completed computerized interviews in which sensitive questions were administered via an audio-casi procedure. In a separate location within the house, parents completed parallel measures. Research assistants read aloud questions to parents who recorded their answers privately using paper-and-pencil methods.

After completing these surveys, adolescents and parents were asked to engage in three video-taped interaction tasks: a 1-minute vacation planning warm-up task, a 5-minute adolescent stress disclosure task (which is the focus of the current project), and a 5-minute revealed differences conflict negotiation task. To ensure privacy, interviewers used white noise machines and guarded participants from other family disruptions during testing. Adolescents and their parents each received \$15 for completing this interview.

At the end of the IV, adolescents were given a watch with pre-set alarms to remind them over the subsequent 3-week period to record thrice daily their affect and once daily their substance use. The three alarms signaled affect recordings at randomly selected times between 10AM-2PM, 2PM-6PM, and 6PM-10PM to capture varying mood over the day. The fourth alarm was set at 10PM to remind participants to complete daily substance use ratings. Attached to the watch was a mood rating booklet on which adolescents placed stickers on numbers corresponding to the extent to which they felt particular emotions at that moment. At the end of each day, adolescents recorded their past 24-hour substance use (i.e., number of drinks and any marijuana or hard drug use) on booklets that adolescents were then instructed to place in secure boxes stored in a safe place in their room to help

ensure confidentiality and privacy. Adolescents were also encouraged to call the research project toll-free to confidentially report their data for the day, as a back-up system for lost data. The actual affect and substance use rating slips that adolescents completed each day were collected at the end of the 3-week experience sampling period.

Adolescents received \$1 per day of recordings and were also entered in a lottery for three \$30 prizes for each time they called in their data. (Because the present study did not utilize data from the final visit that occurred three weeks later, these are not described further.)

Measures

Demographics. During Stage 1, adolescents reported on their race and gender. Due to limited diversity, race comparisons were only between Caucasian and non-Caucasian youth. All other demographic variables were assessed at Stage 2. Adolescents reported on their age, and parents reported on mother and father educational status, with the higher of the two forming the parental educational attainment variable. Tables 2 and 3 display the intercorrelations among measures and comparisons of measures by gender and race, respectively.

Daily negative mood and substance use. Daily mood and substance use were assessed during the 21-day period of Stage 2 through the experience sampling procedure. Adolescents rated on a 5-point scale their experience of four negatively-valenced moods (sad, worried, stressed, mad) and one positively-valenced mood (cheerfulness) (items are from MAACL-R, Lubin, Denman & Van Whitlock, 1998). For the current study, only sad, worried, stressed, and the reverse score of cheerfulness were averaged to form a composite negative mood score.¹ To approximate temporal precedence of daily negative mood to substance use, the maximum of the first two daily averaged negative mood recordings was computed. Thus, individuals' daily negative mood score reflected the

¹ Anger was omitted from the formation of the daily negative mood variable due to its relatively low alpha within days and to the ways in which this emotion may relate differently to substance use as compared to sadness, worry, or feeling stressed. There were no differences in findings for models tested with or without anger in the composite of daily negative mood.

peak intensity of negative mood sometime in the morning or afternoon. The resulting daily reports of mood were adequately reliable (average $\alpha = .75$).

Adolescents recorded their past 24 hour substance use on a daily basis during or just after the 10PM watch alarm. Substance use ratings comprised a 5-point alcohol use scale ranging from 0 (none) to 5 (5 or more drinks) to reflect the number of drinks consumed and a presence/absence response choice for marijuana use and other illicit drugs (0 [no] - 1[yes]), respectively. Because alcohol use conformed to the expected reverse *J* curve, representing extreme positive skew, this variable was dichotomized to reflect a 0 for absence and 1 for presence. The maximum of the dichotomized alcohol, marijuana, and other illicit drug ratings formed the substance use variable for the present study, with 1 and 0 representing any and no substance use, respectively. The base rate of any substance use across the three week sampling period was low (N=60 observations [5% of the total observations] for 16 adolescents [25% of the sample for the present study]). Of these 60 observations, the most frequently used substance was alcohol alone (48% of total instances of use), followed by marijuana alone (41%). Use of other illicit drugs only constituted 3% of the total instances of substance use, and other combinations of poly-substance use comprised the balance (9%). The base rate of any substance use during the 21-day sampling period was in between national two week and monthly prevalence rates as would be expected (Johnston et al., 2005).

Online daily mood and substance use data were compared with data phoned in each night by our adolescents (see Procedures section above) to screen the quality of the data. A quality rating system was developed to score the confidence in each data point. Ratings ranged from “very confident” where the two forms of reported data overlapped (45%) to “skeptical” where only booklet ratings were available and stickers were placed in between response options (less than 1%). For the current analyses, we only used data in which we were “confident” (99%), that is in which a participant clearly reported their mood or drinking in at least one form.

Parental emotion socialization (PES). This construct reflected how parents responded to their adolescents’ disclosure of personal stress. PES was assessed through a 5-minute adolescent-parent

interaction task subjected to a newly adapted observational coding system (see Brand, Mulvihill, & Zahn-Waxler, 2002 for original coding system). Table 4 shows labels and brief definitions of the observational codes, and Appendix A contains the full coding manual.

During the initial visit of Stage 2 data collection, adolescent-parent dyads were asked to engage in a series of video-taped interaction tasks in which adolescents disclosed a personal stressor that they felt they could discuss with their parent for five minutes. (If adolescents had significant trouble generating a stress-related topic to discuss, they were asked to discuss the upcoming high school transition.) Interviewers made every effort to prevent discussion of a topic of mutual concern or conflict between adolescents and parents. The task was relatively open-ended, adolescents were able to choose their own meaningful personal stressor to discuss, interviewers and other family members remained as unobtrusive as possible, and white noise machines were used to help ensure confidentiality of the content of the discussions. Thus, participant reactivity was relatively low, and generalizability of the observed interactions was enhanced (Aspland & Gardner, 2003).

Data from this observational task were coded with a system adapted from Brand, Mulvihill, and Zahn-Waxler (2002). First, given the increasing importance of autonomy during adolescence (Steinberg, 2001) and its relation to both depressed affect and externalizing behaviors (Allen et al., 1994), it was important to include an observational code that reflected the extent to which parents may be inhibiting adolescents' capacity to experience, express, and manage their stress relatively independently. Thus, the *autonomy-inhibiting* code was added. Second, although the development of autonomous psychological and emotional functioning is certainly a key ingredient to the formation of psychological well-being, this aspect of development must be placed within the context of connectedness to the family (Grotevant & Cooper, 1998; Guisinger & Blatt, 1994). Indeed, as the child-parent relationship undergoes significant changes across adolescence, it is important for parents to remain accepting, responsive, and sensitive to their adolescents' bids to discuss their stress. Therefore, the *facilitative engagement* code was added. Finally, given the use of instrumental support (e.g., advice giving, offering solutions) as one of the primary types of parental support provision

during adolescence and the idea that parents may encourage their older children to deal with their problems in more direct ways (Eisenberg et al., 1999), a *problem-focused* code was also included in the current coding system (following Fabes, Poulin, Eisenberg, and Madden-Derdich, 2002).

Further modification and expansion of the original coding system was based in part on mapping the observational codes onto the conceptualization and structure of emotion socialization held by Fabes and colleagues (Fabes et al., 2002) and by Gottman et al. (1996). Definitions of the five other codes are as follows. *Minimizing* parental reactions involved underestimating, playing down, or otherwise diminishing the importance of the stress(or) or emotion. *Punitive* parental reactions involved punishing or expressing disapproval of the stress, emotion, or stressor itself. Punitive reactions also can involve parents blaming the adolescent for their stress or emotion, or disputing or negating the fact that the adolescent is indeed experiencing stress or particular negative affect. *Magnify* reflected the extent to which parents exacerbate or escalate adolescents' experience of stress by reacting with their own (dis)stress, inappropriately sharing their own emotions, or by making catastrophic predictions about adolescents' well-being due to the stress(or). The *emotion-focused* code reflected a combination of Brand et al. (2002) reward code and the empathy subscale of Fabes et al. (2002). As such, these reactions involved parents conveying a sense of empathy, understanding, and comfort as well as parents' use of emotion-related words and inquiry into adolescents' emotional state (see Table 5 for descriptive statistics for all codes and Appendix A for code operationalizations and details on coding system development).

The current coding system followed a meso-analytic rating approach (Mahoney, Coffield, Lewis, & Lashley, 2001) in which global Likert scale ratings were given for each minute of the interaction. Such ratings are believed to minimize inference and potential error in global codes based on general impressions over a relatively extended period of time (Mahoney et al., 2001). Also following Allen et al.'s (1994) Autonomy-Relatedness coding system, the current coding system was designed to capture not only specific parental verbal content, but also tone, rhythm, and intensity of speech. Each of the seven observational codes was rated on a 4-point Likert type scale (5-point scale

for the *Facilitative Engagement* code).² The 4-point scale represented an absence (1), minimal (2), moderate (3), and strong (4) presence of the behavior reflected in each code. The 5-point scale for *Facilitative Engagement* represented an absence (1), minimal (2), moderate (3), strong (4), and very strong (5) presence. See Appendix B for the rating form used for the present study.

Training in observational coding included approximately 30 hours of training of group-based discussion of case examples and the principles of the coding system between three undergraduate coders and myself. An additional 15 hours were devoted to training and practice with specific adolescent-parent interactions for which reliability was established at an ICC cut-off of .65 (see Mahoney et al., 2001). Observer agreement can decline over time with the application of a coding system to observational data (Taplin & Reid, 1973). Thus, as each coder rated one-third of the total adolescent-parent interactions, every third interaction was subjected to a reliability check against the criterion coder. If the reliability estimate fell below the established cut-off (ICC=.65; Mahoney et al., 2001), retraining was required involving the criterion coder discussing with the unreliable coder(s) the reasons for the discrepancies in the ratings, having the unreliable coder code other pre-established training tapes until the ICC was at or above the cut-off, and subsequently having the coder proceed to code the next set of designated interactions.

Coding Validation Measures

To validate the coding system, measures of convergent and divergent validity were selected from the larger HSTS. Measures for convergent validity included the open communication subscale of the Parent-Adolescent Communication Scale (Olson et al., 1985) and the Parental Encouragement of Autonomy and Indirect Control scale (Steinberg, Mounts, Lamborn, and Dornbusch, 1991). Adolescent negative affectivity (composite of depressive, anxious, and angry affect) was chosen as a divergent validity comparison in order to validate that the construct of observed PES was more similar to other like parenting constructs than to adolescents' problematic affective experience.

² Within the coding system development phase, it was determined that a 5-point scale best captured the variability observed in a code characterized more by a "style" than particular behaviors.

Convergent validity measures. Participants reported on the extent of open adolescent-parent communication using the 10-item subscale of the Parent-Adolescent Communication Scale (Olson et al., 1985). Adolescents rated on a 5-point Likert scale ranging from strongly agree (5) to strongly disagree (1) the extent to which they agreed with statements reflecting ease and comfort of communication with one another. The Open Communication subscale has been shown to have good to excellent internal consistency ($\alpha = .80 - .92$) and good test-retest reliability ($r = .77 - .78$; Olson et al., 1985).

Adolescents also reported on the extent to which parents encouraged autonomy of behavior and decision-making in their adolescents in the past three months using the Parental Encouragement of Autonomy and Indirect Control scale (Steinberg et al., 1991). Participants rated these six items on a 5-point scale ranging from 1 (never) to 5 (very often). Higher scores reflected more autonomy granting. The six items were adapted from the psychological autonomy subscale ($\alpha = .72$).

Discriminant validity measure. Adolescent negative affectivity was a composite measure of adolescent report of depressive, anxious, and angry affect. Adolescents rated their depressive symptoms using the 13-item Short Mood and Feelings Questionnaire (see Angold et al., 1995; Messer, Angold, Costello, Loeber, et al., 1995 for supporting reliability and validity data), indicating whether each symptom was true, sometimes true, or not true in the past three months. Items were then averaged. Adolescents answered ten items from the Revised Children's Manifest Anxiety Scale (RCMAS; Reynolds & Richmond, 1978) to assess anxiety. Items were selected on the basis of Chorpita et al. (2000) and pilot testing showing high factor loadings on the underlying factor. Adolescents indicated the extent to which each statement was true of the adolescent using a yes (1) – no (0) response format, and these items were the averaged to form the anxiety scale. Finally, adolescents completed three items from the Mood and Affect Adjective Checklist (Lubin et al., 1998) to assess their experience of anger in the past three months using a three-point response scale ranging from 1 (hardly ever) to 3 (often). These three items were averaged to form the anger scale. The depressive, anxious, and angry affect scales were moderately correlated with one another ($r = .39$ to

.61 for adolescent report) and were averaged to form the negative affectivity scale used for tests of divergent validity.

CHAPTER 3

RESULTS

Aim 1: Coding system reliability, structure, and validation

The interaction task from which the current data were derived involved adolescents' discussion with their parent of personal stressors, including interpersonal (25%), academic (25%), time management (15%), and general high school transition (35%) issues. Post-interaction task questionnaires (developed by project staff) revealed relatively strong ecological validity of this task in that the majority of adolescents (74%) and parents (83%) felt that the stress disclosure discussions were at least *somewhat similar* to conversations they typically had about adolescents' concerns and that they at least *sometimes* had this type of conversation. Inter-rater reliability for the observational coding system involved ratings from each coder judged against the criterion coder for each of the seven codes, with each minute of the five minute interaction serving as the unit of analysis. To compute final reliability estimates for each observational code, ICCs were averaged across the three coders.

To test convergent-discriminant validity, correlations between the seven coding subscales and the convergent measures (adolescent-parent open communication, parental autonomy-granting) and the discriminant measure (adolescent negative affectivity) were examined. The observational codes generally were expected to show stronger relations, on balance, with the convergent validity measures than with adolescent negative affectivity. Open adolescent-parent communication was expected to relate positively with problem-focused and facilitative engagement reactions and negatively with punitive and autonomy-inhibiting reactions, whereas parental autonomy-granting was expected to relate positively to the facilitative engagement reactions and inversely to punitive and autonomy-inhibiting reactions. Following Steiger (1980), convergent-discriminant validity was tested using the

Hotelling-William formula for comparing equality of dependent correlations (see Table 6).³ Validity support was found for problem-focused and facilitative engagement but not for punitive and autonomy-inhibiting such that the problem-focused ($t [64] = 2.06, p < .05$) and facilitative engagement ($t [64] = 1.99, p < .05$) codes were more strongly related to the open communication scale than to adolescent negative affectivity. In addition, the facilitative engagement code was marginally more strongly associated with the parental autonomy-granting scale than with adolescent negative affectivity ($t [64] = 1.92, p < .10$). This can be considered a relatively conservative test of validity given the cross-method source of associations and the unavailability of more appropriate constructs similar to PES.

Tables 2 and 3 show the associations among the observed codes and select socio-demographic indicators of parental education and adolescent gender and race. Parents with higher educational attainment were found to show more problem-focused and facilitative engagement reactions but less autonomy-inhibiting reactions to adolescents' stress. Parents of adolescent girls, as compared with boys, also showed more problem-focused and facilitative engagement reactions, and parents of (self-identified) Caucasian adolescents, as compared with non-Caucasian adolescents, reacted with more punitiveness.

To test the structure of the current observational codes, the seven subscales were subjected to a principal components analysis.⁴ Based on the scree plot and conventional Eigenvalue (EV) cut-offs, two- and three-factor solutions were examined. A two-factor solution did not reveal simple structure as there were significant cross-loadings for more than two codes. Thus, a three-factor solution was considered optimal, revealing an interpretable simple structure using factor loadings above 0.40 (see

³ The Hotelling-William test is designed for testing the equality of correlations derived from the same sample. The formula is as follows: $t = (((r_{12}-r_{13}) (\sqrt{N*(1+r_{23})}) / ((2(N) / (N-3)(|R| + r^{-2} (1- r_{23})^3))))$, where $|R| = 1 - r_{12}^2 - r_{13}^2 - r_{23}^2 + 2r_{12}r_{13}r_{23}$ and $\tilde{r} = (r_{12}+r_{13})/2$

⁴ A confirmatory factor analysis was performed on the observational data that conformed to two proposed factors, emotion-coaching parental reactions (emotion focused, problem focused, and facilitative engagement) and emotion-dismissing parental reactions (punitive, minimizing, magnifying, and autonomy-inhibiting). The CFA testing the proposed structure failed to converge.

Table 7). The first factor accounted for 35% of variance and consisted of the (negatively loading) *emotion-focused (EF)* reaction, *punitive* reaction, and *autonomy-inhibiting* reaction. This factor appeared to reflect *emotion-dismissing* parental reactions to adolescents' stress. The second factor accounted for 21% of the variance and consisted of the *problem-focused* and *facilitative engagement* codes, reflecting *emotion-coaching* parental reactions to adolescents' stress. The third factor accounted for 15% of the variance and consisted of the magnifying and (negatively loading) minimizing/trivializing codes to reflect *parental distress* reactions to adolescents' stress disclosures. Bivariate correlations among the three factors show that they were quite distinct from one another ($r_{\text{coaching-dismissing}} = -.36, p=.002$; $r_{\text{coaching-distress}} = -.04, \text{ns}$; $r_{\text{dismissing-distress}} = -.09, \text{ns}$). Because the first two factors, emotion-dismissing and emotion-coaching parental reactions, most closely resembled the a priori conceptualizations of PES relevant to the hypotheses in Aim 2 (Gottman et al., 1996), they were the focus of all subsequent analyses. Internal consistency of the emotion-coaching factor was good ($\alpha=.87$), and thus the problem-focused and facilitative engagement codes were standardized and averaged to form the emotion-coaching variable. However, the emotion-dismissing factor yielded poor reliability ($\alpha=.55$), likely due to highly non-normally distributed indicators of this factor and unclear theoretical rationale for this particular structure. Therefore, the emotion-dismissing factor indicators (i.e., non-EF, punitive, and autonomy-inhibiting) were dichotomized at 0 (absence) and 1 (any presence) and were tested in separate models for all hypotheses.⁵

Aim 2: Hypothesis testing

General approach. Mixed modeling was used to test all substantive hypotheses. Mixed modeling is an ideal analytic approach for modeling repeated observations that represent a nested data structure (Bryk & Raudenbush, 1992). In the present study, data conformed to a nested structure such that there were repeated observations of negative mood and substance use over time within each

⁵ When continuous (versus dichotomous) emotion-dismissing indicators were tested, significant effects moved to marginal or non-significance for emotion-coaching x non-EF ($\beta = -.59, p=.10$), emotion-coaching x punitive ($\beta = 1.31, p=.11$), emotion-coaching x autonomy-inhibiting ($\beta = 1.35, p=.10$), gender x non-EF ($\beta = -.157, \text{ns}$), and gender x autonomy-inhibiting ($\beta = -1.02, p=.08$). No other changes were noted.

adolescent. For heuristic purposes, each level of hierarchical data can be represented separately within the model. However, ultimately one reduced equation is produced, akin to standard multiple regression.

Thus, daily negative mood and substance use were time-varying variables, allowing the daily within-person covariation of negative mood and substance use to be modeled at Level 1 of the multi-level model. Following Raudenbush and Bryk (2002), daily negative mood was person-centered to examine whether the use of substances on any given day was related to higher negative mood than was typical for a given individual. On Level 2, grand-mean centered PES indicators predicted inter-individual variation in substance use and in the covariation between daily negative mood and substance use. Because daily substance use was a binary variable, all models were estimated in HLM 6.0 (Raudenbush, Bryk, Cheong, & Congdon, 2004) using a log-link function with a Bernoulli distribution (correcting for overdispersion). As intra-individual processes over time were of interest, effects were interpreted using unit-specific models with robust standard errors.

Another strength of the multi-level modeling approach is that missing data are incorporated into the modeling strategy. Thus, not every adolescent was required to have all data points. In the current study, adolescents reported a range of 1 to 20 days of data, with 82% of adolescents providing over 14 days of data. The 65 adolescents in the current sample provided 1116 within-person observations to be modeled at Level 1.

Outlier analyses were conducted for each model. All models were tested for the effects of outlying or suspicious cases due to poor engagement in the interaction (N=1), extreme responding (N=1 for substance use), and a high frequency of missing daily data (N=3). Few substantive changes were noted.⁶

⁶ Omitting the one extreme responder resulted in the model for Hypothesis 2 involving the three-way interaction among EC reactions, punitive reactions, and daily negative mood to move from marginal significance to significance ($\beta = 1.18, p < .001$). The model testing Hypothesis 3 involving gender differences in the relation between non-EF reactions and self-medication moved from significance to non-significance ($\beta = .03, ns$).

Covariates. Theoretically relevant demographic variables were tested as potential predictors of substance use. No significant associations were found between substance use and adolescent gender ($\beta = -0.55$, ns), race/ethnicity ($\beta = 1.09$, ns), age ($\beta = -.24$, ns), social desirability ($\beta = -4.79$, ns), or parent education ($\beta = .55$, ns). No covariates therefore were included in subsequent models.

Baseline model. In the baseline model predicting daily reports of substance use, level one predictors included person-centered negative mood as well as weekday status (i.e., whether the day of assessment was on a weekend or weekday). The random effects of the model intercept and the (slope for) daily effect of negative mood on substance use were also estimated, yielding the equation:

$$\hat{\eta}_i = \beta_{00} + \beta_{10} * \text{Daily Neg. Mood} + \beta_{20} * \text{Weekday} + r_0 + r_1 * \text{Daily Neg. Mood}$$

No significant relation between negative mood and substance use was found across individuals in this model ($\beta = -0.44$, ns). Moreover, weekday status was not associated with daily substance use ($\beta = 0.11$, ns). The random effect for the model intercept (for daily substance use) was significant ($\psi = 6.5$, $\chi^2(61) = 2089.39$, $p < .001$) indicating that there was significant variability about the mean of substance use. However, the random effect of the negative mood-substance use slope parameter was non-significant ($\psi = 1.94$, $\chi^2(61) = 81.2$, ns). All models thus excluded weekday status and the random effect for the negative mood-substance use slope⁷ (see Table 8 for comparison of the baseline model with and without the random effect for mood-use slope), yielding the final baseline equation from which all subsequent models were constructed:

$$\hat{\eta}_i = \beta_{00} + \beta_{10} * \text{Daily Neg. Mood} + r_0$$

Hypothesis 1. Hypothesis 1 involved the prediction that emotion-coaching (EC) reactions would weaken the daily covariation between negative mood and substance use. One HLM model

⁷ When the slope of negative mood-substance use was allowed to vary randomly, all subsequent significant interaction effects moved to non-significance. Based on the non-significant chi-square of the random effect for the slope, the experimental nature of the study, and the notion that the covariance between daily negative mood and substance use in such a young adolescent population may not yet be consistent enough to allow for random variability about its mean, the random effect for slope was omitted from all models.

involving a two-way interaction between EC and daily negative mood tested the buffering effect of EC on self-medication. The equation for this model was as follows:

$$\hat{\eta} = \beta_{00} + \beta_{01} * \text{Emotion-Coaching} + \beta_{10} * \text{Daily Neg. Mood} + \beta_{11} * \text{Emotion-Coaching} * \text{Daily Neg. Mood} + r_0$$

Although EC did not significantly moderate the self-medication process ($\beta = -0.11$, ns), there was a significant main effect for EC such that adolescents were 2.56 times less likely to use substances on any given day with every unit increase in parental EC reactions ($\beta = -1.02$, $p=.02$; see Table 9).

Hypothesis 2. Emotion-dismissing (ED) reactions were expected to strengthen the relationship between daily negative mood and substance. Three separate models tested the potentiating effects of the ED indicators on self-medication. None of the ED indicators of non-EF ($\beta = 0.03$, ns), punitive ($\beta = 0.36$, ns), or autonomy-inhibiting ($\beta = 0.12$, ns) reactions were found to be significant moderators. In addition, there were no main effects for the ED indicators on daily substance use (see Tables 10-12 for results of these moderation analyses).

Hypothesis 3. We expected that the effect of the EC reactions on the covariation of daily negative mood and substance use would depend on ED reactions. To test this hypothesis, the three ED indicators were added independently to the model for hypothesis 1 involving EC reactions, thus producing three separate models to test these three-way interactions. The models were represented by the following general equation:

$$\hat{\eta} = \beta_{00} + \beta_{01} * \text{EC} + \beta_{02} * \text{ED} + \beta_{10} * \text{Mood} + \beta_{11} * \text{Mood} * \text{EC} + \beta_{12} * \text{Mood} * \text{ED} + \beta_{13} * \text{Mood} * \text{EC} * \text{ED} + r_0$$

A significant three-way interaction emerged among the EC reactions, non-EF reactions, and daily negative mood ($\beta = -0.97$, $p=.005$; see Table 13). Following Aiken & West (1991) and Bauer and Curran (in press), the daily negative mood-substance use relation was plotted across varying levels of the continuous EC predictor and the presence and absence of the non-EF predictor to determine a pattern of findings.⁸ Adolescents were at risk for self-medication when parents reacted to adolescents'

⁸ As no precedent has been established to test simple slopes of significant cross-level interactions within linear growth models, daily negative mood-substance use slopes were probed over varying values of the moderators to reveal basic patterns of effects.

stress with low EC and EF behaviors. Interestingly, adolescents whose parents displayed high levels of EC but low levels of EF behaviors had a relatively high probability of using substances on days when their negative mood was at its *lowest* (see Figure 2).

Next, punitive reactions were added to the model for hypothesis 1, revealing a marginally significant interaction effect ($\beta = 0.62$, $p=.06$; see Table 14). The self-medication pattern was evident for adolescents whose parents displayed little punitiveness and EC behaviors (see Figure 3).

Finally, autonomy-inhibiting reactions were added to the model for hypothesis 1, revealing a significant moderation effect ($\beta = 1.72$, $p<.001$; see Table 15). A self-medication pattern was evident for adolescents whose parents demonstrated two different styles of reactions to their adolescents' stress, one associated with greater autonomy-inhibiting and EC reactions, and the other associated with relatively low autonomy-inhibiting and EC reactions. Interestingly, adolescents whose parents showed high autonomy-inhibiting and low EC behaviors had a relatively high probability of using substances on days of when their negative mood was lowest (see Figure 4).

In sum, the risk pattern for adolescent self-medication varied over indicators of PES such that when relatively high levels of punitive or autonomy-inhibiting parental reactions were displayed in the context of high EC reactions, adolescents increased their likelihood of using substances on days when their negative mood was heightened. Adolescents were at similar risk for self-medication when parents demonstrated low levels of either emotion-focused, punitive, or autonomy-inhibiting parental reactions coupled with low levels of EC behaviors.

Hypothesis 4. This exploratory hypothesis tested adolescent gender differences in the relation between PES and self-medication. Four separate models tested the three-way interactions between gender and each of the OPRAS variables (i.e., emotion-coaching, emotion-focused, punitive, and autonomy-inhibiting) represented by the following general equation:

$$\hat{\eta} = \beta_{00} + \beta_{01} * \text{Gen} + \beta_{02} * \text{PES} + \beta_{10} * \text{Mood} + \beta_{11} * \text{Mood} * \text{Gen} + \beta_{12} * \text{Mood} * \text{PES} + \beta_{13} * \text{Mood} * \text{Gen} * \text{PES} + r_0$$

No interactions among gender, PES, and daily negative mood were found in models testing EC reactions ($\beta = 0.24$, ns; see Table 16), punitive reactions ($\beta = -0.63$, ns; see Table 17), or autonomy-

inhibiting reactions ($\beta = -1.28$, ns; see Table 18). However, there was a significant interaction among gender, non-EF reactions, and daily negative mood ($\beta = -1.29$, $p=.04$; see Table 19) such that girls whose parents showed no emotion-focused behavior were more likely to self-medicate whereas girls whose parents showed emotion-focused behavior were not (see Figure 5). Boys showed no elevated risk for self-medication with either the presence or absence of emotion-focused reactions.

In sum, minimal gender differences emerged in the relation between PES and self-medication such that elevated risk for self-medication was evident only for girls whose parents did not show emotion-focused behavior.

CHAPTER 4

DISCUSSION

This study had two main aims. The first was to establish reliability, structure, and validity of a new observational coding system of PES of adolescents (i.e., OPRAS). Regarding the first aim, results generally showed that the specific OPRAS were assessed reliably, followed a structure that was in general agreement with previous research (Fabes et al., 2002; Gottman et al., 1996), and were associated with socio-demographic indicators (i.e., gender, race, and parental education) such that more EC reactions were demonstrated by higher educated parents and for daughters as compared to sons. The second aim was to test the substantive hypotheses regarding associations between PES and the self-medication process among adolescents. Results did not support consistent gender differences or effects of unidimensional EC or ED parental reactions in the relation between PES and self-medication. However, promising support was found for the interactive effects of EC and ED reactions. Such interactive effects revealed a set of PES *styles* that appear to play a meaningful role in adolescents' negative affect-motivated substance use. Findings from the current study therefore are discussed within two themes, the structure and function of the new observational coding system of PES and the importance of considering PES styles in predicting adolescent self-medication.

The structure and function of observed parental reactions to adolescents' stress (OPRAS)

The current observational coding system was designed to capture theoretically and developmentally relevant ways in which parents socialize their adolescents' emotions. For the present study, I focused on two factors of OPRAS: EC and ED parental reactions. The EC factor captured emotion-related parenting behaviors that were consistent with the emotion-coaching philosophy depicted by Gottman et al. (1996) and supportive parental reactions to children's negative emotions described by Fabes et al. (2002). This philosophy and set of reactions reflects parents' acceptance of

children's displays of negative emotion, parents' motivation to help children productively work through their emotions, and a desire to use negative emotions as a source of intimacy building within the parent-child dyad. Parents' combined acceptance-based and problem-focused reactions may signal a valuing of negative emotion in its own right, something adolescents may need as they experience more frequent and intense negative affectivity (Katz & Hunter, 2007), as well as provide adolescents more active ways of dealing with their stressors. Indeed, tests of convergent-discriminant validity for the current study showed some shared variance between the EC reactions and another measure of dyadic relationship quality such that EC reactions were moderately associated with adolescents' feelings of ease, comfort, and affection in communicating with their parents.

The indicators of the ED factor, however, did not appear to reflect one cohesive set of emotion- controlling behaviors. This may be due in part to conceptual differences between the non-EF reactions and the punitive and autonomy-inhibiting reactions. Non-EF reactions primarily reflected the *absence* of empathy and attention to emotions, whereas punitive and autonomy-inhibiting reactions involved more active behaviors reflecting emotional control and restrictiveness. In fact, punitive and autonomy-inhibiting reactions were more strongly associated to one another than either was to non-EF reactions. Punitive and autonomy-inhibiting reactions seemed to fit with Gottman et al.'s (1996) emotion-dismissing philosophy in which parents are uncomfortable with emotion in themselves and in their children, see emotion as a nuisance, and try to change or fix the emotion without much emotional acceptance and exploration. In the face of adolescents' stress disclosures in the current study, parents receiving these codes displayed behaviors that reflected negation and control of adolescents' experience and expression of emotion. From a more functionalist perspective, punitive and autonomy-inhibiting behavior may have taken on overlapping but slightly distinct meanings. Punitive reactions may have served to distance and (callus) adolescents both from their own emotions and from developmentally appropriate closeness to their parent, whereas autonomy-inhibiting reactions may have served to keep these increasingly autonomous adolescents inappropriately close to parents (see Barber, Stolz, & Olsen, 2005 for effects of psychological

control), as parents who displayed relatively strong autonomy-inhibiting behavior appeared to assume a managerial role in adolescents' experience and expression of their own stress.

EF reactions, however, did not appear to have captured the full definitional range of this code. Upon more qualitative examination, EF behavior seemed to reflect parents' mild inquiry into adolescents' emotions (vs. other indicators of empathy, comfort, and understanding), and higher ratings of EF more often occurred at the outset of the five minute stress disclosure discussion than at later points. Thus, the EF code may better capture parents' relatively benign initial questions about their adolescents' stress and not empathy, understanding, or a tremendously rich emotion-oriented discussion. Therefore, less emphasis is placed on the few significant effects involving the emotion-focused code.

The importance of parental emotion socialization (PES) styles

Results provided no support for the hypothesized unidimensional moderating effects of either EC or ED parental reactions on adolescent self-medication. However, the lack of moderation of either EC or ED behavior on daily negative mood is qualified by the set of significant three-way interactions among EC reactions, ED reactions, and daily negative mood that predicted adolescent daily substance use.

Significant three-way interaction effects emerged when both EC and ED parental reactions were considered in the context of one another, reflecting the emergence of PES styles in relation to risk for adolescent self-medication. Although there is a lack of theoretical and empirical evidence for this effect in the emotion socialization literature, the notion of parenting typologies or styles is not new. For over two decades, researchers have suggested that typologies or combinations of various parenting processes may best predict child-adolescent outcomes (e.g., Baumrind, 1989). Indeed, through meta-analysis, Rothbaum & Weisz (1994) found that combinations of parenting measures showed better predictive value for child-adolescent externalizing behavior than single parenting dimensions. Caron et al. (2006) recently supported the importance of parenting typologies with respect to both externalizing and internalizing problems in children, showing that particular

combinations of psychological control, warmth, and behavioral control held additional meaning for child outcomes beyond the individual dimensions that comprised them. Findings from the present study are consistent with such an effect. However, this is the first study to my knowledge that has tested and found evidence for the effect of styles in the domain of emotion socialization.

Two PES styles were identified that served to place adolescents at risk for self-medication. First, adolescents were more apt to self-medicate when parents demonstrated little EC and ED behavior, as reflected by low levels of responsiveness, sensitivity, and problem orientation toward adolescents' stress coupled with an absence of punitiveness or autonomy-inhibiting reactions (i.e., *disengaged* PES style). In effect, these parents were interpersonally disengaged and often affectively flat. This pattern held when ED reactions were assessed as either punitive or autonomy-inhibiting, providing evidence for the robustness of this phenomenon. Second, adolescents were more likely to self-medicate when parents showed relatively high levels of *both* EC and autonomy-inhibiting behaviors. Within the same five minute interaction, parents provided a problem-focused and acceptance-based set of responses to adolescents' stress while also conveying a constriction of adolescents' autonomous functioning vis-à-vis their stressful situation (i.e., *over-involved* PES style). Thus, two very different styles of PES were found to be associated with self-medication among adolescents.

Two potential mechanisms through which the disengaged and over-involved PES styles impacted self-medication may be adolescents' poor coping and limited opportunities to receive appropriate parental support. The two PES styles, however, may have operated in somewhat different ways. Disengaged parents in the current study were observed not only as unresponsive to adolescents' bids to discuss their stress but also as lacking in dismissing reactions, indicating an even greater psychological distance between parent and adolescent. Research shows that adolescents whose parents are neglectful (Lamborn, Mounts, Steinberg, & Dornbusch, 1991) are less likely to rely on problem-focused coping strategies and more on emotion-focused coping (Dusek & Danko, 1994), and adolescents of withdrawn parents tend to have more involuntary engagement stress responses (i.e.,

emotional or physiological arousal and intrusive thoughts (Langrock, Compas, Keller, Merchant, & Copeland, 2002). Thus, healthy coping strategies and responses to stress may be compromised for adolescents whose parents show a disengaged PES style, resulting in higher risk for self-medication. Indeed, Feagans Gould et al. (2007) have recently shown that avoidant coping appears to exacerbate adolescents' tendency to self-medicate. Adolescents of parents showing a disengaged PES style may also have internalized the notion that emotions are to be ignored in the interpersonal context and that support is neither necessary nor available when negative emotions are actually experienced. Thus, with little incentive and opportunity to rely on parents as a source of emotional support, adolescents instead may turn to substances when experiencing elevated daily negative mood.

The over-involved style of PES may have impacted self-medication through the same pathways, albeit in a different fashion. Over-involved parents in the present study validated and helped problem-solve adolescents' stress but also demonstrated some restriction of adolescents' emotional experience and expression. Parents' investment in accepting their adolescents' emotions seemed to reach beyond being highly responsive to being invasive. Thus, it may be that the unique combination of validation and restriction created ambivalence in adolescents' coping with their daily affective experience. Indeed, individuals who have strained relationships with their overly intrusive mothers tend to use more avoidant coping strategies in the face of negative affective stimuli (Ingram, Bailey, Siegle, 2004) and respond to stress with greater defensiveness and lower deliberate affect regulation strategies (Glezerman, 2000). Perhaps most closely related to the current study, Barber et al. (2005) found that high levels of both parental support and psychological control were related to greater problem behavior among adolescents. Adolescents may be receiving a double message or "double bind" (Bateson, 1972) about how to experience and express their stress. These mixed messages may also create confusion about the type of support adolescents might receive from parents who are simultaneously accepting and controlling of their stress. This unpredictability of parental support in itself may act as a risk factor for affective and substance use problems (Juang &

Silbereisen, 1999), and over time it may also produce in adolescents less reliance on parents for support and more dependence on substances to manage daily stress.

An alternative potential risk pathway for self-medication specific to the disengaged style of PES may have involved elevation of trait levels of adolescents' negative affect, thereby compromising regulation of daily negative mood. Disengaged and neglectful parenting is associated with heightened negative affect and psychological distress as well as increased likelihood of substance use in adolescents (Lamborn et al., 1991; Steinberg, Lamborn, Darling, Mounts, & Dornbusch, 1994; Volk, Edwards, Lewis, & Sprenkle, 1989). Parental depression, perhaps reflecting the current study's disengaged PES style or giving rise to it, has been shown to be related to adolescents' depression (Ohannessian, Hesselbrock, Kramer, et al., 2005), and general emotional unavailability in parents has been linked to adolescent depressive affect (Lee & Gotlib, 1991; Peterson et al., 1993). With respect to emotion socialization specifically, parents' outright neglect of children's displays of negative emotion has been associated with greater psychological distress and internalizing problems among adolescents (Garside & Klimes-Dougan, 2002; O'Neal & Magai, 2005). Given a more proximal, intrapersonal vulnerability of negative affect, adolescents may be equipped with fewer emotional resources to effectively manage negative mood that arises on a daily basis.

Whether by compromising effective coping, diminishing healthy parental support, or increasing general negative affectivity, the disengaged and over-involved PES styles found in the current study ultimately may have impacted the self-medication process through difficulties with emotion regulation. As emotion dysregulation is increasingly implicated in multiple forms of psychopathology (Zahn-Waxler, Klimes-Dougan, & Slattery, 2000), it follows that this far-reaching deficit would impact adolescents' tendency to use substances to regulate their heightened negative mood (Feagans Gould et al., 2007).

Although the PES styles described above were associated with the self-medication process, interestingly, one style, autonomy-inhibiting and low emotion-coaching, was related to a high

probability of substance use only on days when adolescents' negative mood was lowest. Adolescents whose parents demonstrated this PES style may have been prompted to use substances when relatively happy or even somewhat bored as a means of positive affect enhancement or social cohesion (Newcomb, Chou, Bentler, & Huba, 1988). Why this particular pattern of substance use was found only for adolescents whose parents were restrictive but un-accepting of emotions may relate to adolescents' motivation to seek out alternative experiences (i.e., substance use) that increase their opportunity for more positive affective expression and exploration, perhaps within a more accepting, peer context. Alternatively, as this PES style may resemble a more authoritarian parenting approach (Baumrind, 1989), the only opportunity adolescents may have to use substances is when they are relatively happy or bored (vs. stressed or worried), emotional states that may draw less restrictiveness from parents. Either way, this PES style did not carry the same risk for negative affect-motivated substance use. However, to more fully understand the many pathways and models of substance use risk among adolescents, it is important to bear this particular PES style in mind for future work.

Alternative interpretations

As the current study measured parenting and self-medication within close temporal relationship to one another, there are of course alternative interpretations to these findings that warrant brief discussion. Directionality of the relation between PES and self-medication cannot be discerned from such a study, and thus it is important to entertain evocative or child-driven models, whereby adolescents' pre-existing characteristics provoke parenting behavior (Belsky, Lerner, & Spanier, 1984; Huh, Tristan, Wade, & Stice, 2006; Stice & Barrera, 1995). For example, parents may respond to adolescents' negative mood, substance use, or poor emotion-regulation skills by disengaging if they feel unsure as to how to respond or by becoming over-involved if they try to actively "fix" adolescents' problems. Thus, to better assess directionality of effects in the long- and short-term, study designs should consider transactional models in which the adolescent, parent, and the adolescent-parent relationship all become targets of assessment over time.

Strengths, limitations, and future directions

This is the first study to directly test the effects of parenting processes on adolescent self-medication using experience sampling methods which optimally match the mechanism of interest (i.e., covariation of negative mood and substance use) to the level of analysis (i.e., daily assessments) (Hussong et al., in press). Furthermore, this is the first application of a developmentally sensitive observational measure of PES. Taken together, these contributions help advance the extant literatures on both PES and adolescent self-medication. The current study demonstrated that the observed measure of PES can be assessed reliably and follows a structure that is in general agreement with previous research on PES. In addition, complex styles of OPRAS best characterized the effects on self-medication, certainly a point for future work on emotion socialization to consider more seriously.

These strengths should be considered in light of the study's limitations. First, sample size was relatively small, thus limiting generalizability and power to detect small effects. Second, low occurrence of substance use events and reports of particularly elevated negative mood limited the opportunity for more meaningful covariation of daily mood and use. Third, on balance, the magnitude of significant effects was small, although these were conservative tests of the relation between PES and self-medication given that interaction effects are inherently small and that new and diverse methods of assessment were employed for the constructs of interest.

Fourth, a limitation of the observational work involved the difficulty some adolescents had in generating anything stressful to discuss with their parents during the summer months, thus potentially limiting the opportunity to observe parents' socialization of adolescents' emotions. As such, future studies may want to consider timing by assessing adolescents during the school year when more stressful events are likely to occur.

Finally, it is difficult to generalize the effects of emotion socialization to all parents from our sample of predominantly mothers, although there were certainly enough fathers to have exerted some effect. One reason for our lack of meaningful adolescent gender effects may have been due to such an issue. Nevertheless, future work must take care to design studies that can address the complexities of

gender within adolescent-parent relationships, within emotion socialization practices, and within the self-medication process.

There are several ways to enhance the study of PES and adolescent self-medication. First, because the field of PES of adolescents is in its infancy, little is known about the similarities and differences between PES and other important parenting constructs relevant for adolescents (Gondoli & Braungart-Rieker, 1998). Moreover, despite the significant changes children and parents undergo during the transition to adolescence, little information is available regarding the relevance of particular emotion socialization behaviors from a developmental perspective (Jones & Garner, 1998; Katz & Hunter, 2007) and how PES may change across this relatively stressful developmental period. Future studies would benefit from applying a developmental framework to the study of PES and from examining the unique contribution of emotion socialization above and beyond other related parenting constructs. In addition, as the current study found evidence for risk-oriented PES styles, it is worth examining parents' individual differences to help identify which parents may be at greatest risk for more harmful emotion socialization.

Second, as precedent has yet to be established concerning the short-term temporal precedence of daily negative mood on substance use in an adolescent population, a matter complicated by low base rates of daily substance use among adolescents, assessing the self-medication process at different developmental stages may help define the particular "lag" of negative mood to substance use that researchers should consider to appropriately test this covariation.

Third, given the assumed directionality of effects in the current study, it would be useful to understand how PES and self-medication reciprocally influence one another over time. That a construct like parental support can fluctuate across adolescence (Juang & Silbereisen, 1999) generates awareness of the notion of stability and change in PES and how different manifestations of PES over time may predict changes in self-medication. However, if the styles of PES found in this study are robust to time and place, we should see adolescents whose parents demonstrate disengaged or over-involved styles of emotion socialization at even higher risk for self-medication over time as they

encounter increased stressors and experience greater developmental demands after the transition to high school.

Fourth, a further way to help build a more comprehensive model of the impact of emotion socialization on self-medication would involve testing theoretically relevant moderators of this association, namely race and socioeconomic status, variables that may indeed meaningfully impact how parents' socialize and how adolescents' cope with emotion (Jones & Garner, 1998) and how negative affect-motivated substance use may function differently for different racial and SES groups. Fifth, models of adolescent substance use that ignore peer context are missing key socializing forces with respect to stress, coping, and substance use involvement (Hussong et al., 2001). Thus, future work should address the complex interplay between PES and adolescents' regulation of emotion within their peer group.

Additionally, although the current study informs us about who may be at particular risk for self-medication, it does not answer the question of how. It appears that the effect of PES on adolescent adjustment functions in part through emotion-regulation (Katz, 1997; Sheeber et al., 2003, Shortt et al., 2006). Thus, extending the current study to include intrapersonal mechanisms of action may provide additional support for how self-medication may function as a compromised self-regulation system.

Finally, in joining the disparate literatures of PES and adolescent self-medication, it may indeed be worth focusing not only on how parents impact adolescent self-medication, but also on how parent and adolescent characteristics interact to create particularly heightened risk for self-medication and emotion dysregulation (Jones, Eisenberg, Fabes, MacKinnon, 2002). By paying attention to both parents and adolescents, we reduce the risk of blaming parents, and we follow theoretical models that may more accurately depict the complexities of reality.

Implications and conclusion

This study shows promise for PES as a factor in adolescent self-medication. The idea of PES styles has proven quite useful in illuminating how the interactive effects of emotion-coaching and

emotion-dismissing parental reactions to adolescents' stress may better predict self-medication than unidimensional socialization behaviors. Thus, the literature on emotion socialization of adolescents could be advanced if PES styles were given further consideration. The ultimate goal then is to learn which styles of emotion socialization promote optimal functioning in adolescents and which styles are associated with greatest risk for emotion dysregulation and related outcomes.

This study can lend practical information to families and practitioners. If it is true that parents who demonstrate both disengaged and over-involved styles of PES may increase the risk for self-medication in their adolescents, then families would benefit from interventions that target parents' awareness of how they interact with their adolescents around affectively charged personal issues. This may be particularly important for depressed or emotionally distressed parents. Ultimately, parents could be taught skills of emotional engagement, learn to examine the effect of their own personal issues (e.g., depression, emotional distress) on their adolescents' mood regulation, and seek out more balanced ways of communicating that may help build adolescents' emotion-regulation capacities and thus lower risk for self-medication. Nystul (2002) has proposed a parenting technique to enhance the quality of parent-child relationships called emotional balancing. As parents often function at one extreme or fluctuate between being overly disengaged or overly enmeshed, emotional balancing can help parents make an appropriate connection with their adolescents (Nystul, 2002). This technique would be valuable considering the elevated risk for self-medication that was found to be associated with parents who are both disengaged from and over-involved with their adolescents' stress.

Although promising, this study is only a first step in uncovering parenting processes related to adolescent self-medication. However, if we are to more deeply understand how self-medication develops in vulnerable populations, it is imperative that we turn to theoretically relevant predictors like PES, as this construct can help us understand both the potential root cause of self-medication (i.e., self-regulation and coping difficulties) as well as the link to interpersonal (i.e., parent-adolescent relationship) mechanisms of risk related to emotion and substance use.

APPENDIX A

Parental Emotion Socialization Coding Manual

Parental Emotion Socialization:
Parental Reactions to Adolescents' Stress
Behavioral Observation Coding Manual

Development of the Coding System

The observational coding system (Mulvihill, Brand, Klimes-Dougan, & Zahn-Waxler, 2001) from which the current coding system was adapted is based on Malatesta-Magai and colleagues' (Magai, 1996; Malatesta-Magai, 1991; Malatesta & Wilson's, 1988) theory and measurement of parental socialization of children's discrete emotion. I have modified and expanded upon the five specific parental reactions to adolescents' emotion (reward, punish, override, neglect, and magnify). The following description highlights the adaptations made based on developmental considerations as well as on relevant issues within the extant literature regarding emotion socialization. First, the parental reaction of neglect, or complete parental ignoring of adolescents' emotions, was dropped as there was virtually no display of this parental reaction as applied by Brand (personal communication, 2004) using the original coding system. Second, developmental theory guided decisions to append the coding system with codes that captured relevant parent-child dynamics for parents of adolescents. During adolescence, the development of psychological autonomy, or the experience of having and asserting one's own opinions and beliefs independently, is a crucial developmental task that often involves and can be fostered by the interaction between parents and adolescents (Steinberg, 2001). Psychological autonomy granting has been found to be a general protective factor for adolescents as well as to confer protection for adolescents' experience of internalized distress (Steinberg, 2001). The presence of psychological control is also associated with more problematic family relationships and higher levels of distress in adolescents (Barber, 2005). In their development of a hypothetical scenario-based self-report measure of parental reactions to late adolescents' distress, Hersh and Hussong (2003) found that parental autonomy-inhibiting reactions, or those parental responses that conveyed lack of faith in adolescents' ability to handle their own distress, loaded strongly on a factor of non-supportive/emotion-dismissing parental reactions to adolescents' distress.

Although the development of autonomous psychological and emotional functioning is certainly a key ingredient to the formation of psychological well-being, this aspect of development must be placed within the context of connectedness to the family (Grotevant & Cooper, 1998;

Guisinger, & Blatt, 1994). The interactive roles of autonomy-granting and familial connection was demonstrated by Allen, Hauser, Eickholt, Bell, and O'Conner (1994) who showed that adolescents whose parents were low in autonomy-relatedness behavior (i.e., promoting adolescents' autonomy while facilitating connectedness to the family) during a revealed differences interaction task were more likely to experience greater depressed affect and externalizing behaviors two and three years later, respectively. These findings provide some evidence for the utility of examining how parents handle adolescents' autonomy of thought and emotion as well as the facilitation of connectedness to parents as adolescents under stress are attempting to communicate their vulnerabilities.

Given the use of instrumental support (e.g., advice giving, offering solutions) as one of the primary types of parental support provision during adolescence and the idea that parents may encourage their older children to deal with their problems in more direct ways (Eisenberg et al., 1999), problem-focused code was also included in the current coding system (following Fabes et al., 2002).

Thus, I appended three observational codes to the original coding system, autonomy-inhibiting, facilitative engagement and problem-focused reactions. Autonomy-inhibiting reflects parents lack of trust or confidence in the adolescent's ability to handle the stress(or) or their over-involvement in the adolescents' stress , and facilitative engagement reflects verbal and non-verbal manifestations of parental responsiveness and sensitivity to the adolescent' stress and emotions, active listening, and allowing for a free flow of discussion. Problem-focused reactions to adolescents' stress disclosures reflect behaviors or statements involving a focus on or inquiry into adolescents' stressors themselves rather than on the particular emotions or feeling states associated with the stressor.

CODING CONVENTIONS

GENERAL CODING CONVENTIONS

1. Begin to code parental reactions when timer starts/when the interviewer says “Begin” or when the timer beeps.
2. If adolescent and parent are “topic shopping” after the timer starts, you may still code parental responses/behaviors that serve to encourage or discourage discussion of stress. You must determine if these parental behaviors are indeed relevant to the adolescent’s motivation or ability to discuss their personal stressor. “Topic shopping” is a process whereby the parent and adolescent are searching for a personal stressor the adolescent can discuss with his/her parent. During this process, a parent may shoot down the adolescent’s bid to discuss a certain stressor or may trivialize the extent of the stress related to a suggested stressor. Any of these types of parental behaviors should be coded.
3. If more than one legitimate topic is discussed (i.e., dyad switches topics in middle of the 5 minutes), you should note this and code both discussions.
4. If dyad ends initial discussion early and does not return to the original stressor or another any significant/meaningful stress topic, stop coding. I.e., if they’re just “shooting the breeze,” mark “N” in the “on-topic” column, and make a note of this at the bottom of the rating form. Similarly, if the dyad switches from a meaningful topic to a non-meaningful topic and back again, do not code the duration of the non-meaningful material. Make clear documentation of this on the rating form.
 - Examples of non-meaningful topics may include a) dinner plans, b) household chores, etc. See “On-topic behavior” section in Coding Manual.
 - When in doubt, see criterion coder to discuss.
5. If a parent’s statement or behavior spills over only a few seconds into the next codable minute, rate that behavior in the minute the behavior began (e.g., Minute 1). If the behavior/statement that began in Minute 1 continues well into the next minute, use the information in these statements/behaviors to inform both Minute 1 ratings as well as Minute 2 ratings.

SPECIFIC CODING CONVENTIONS

6. In general, you will end up applying one code per utterance. A series of utterances or set of behaviors may also be coded using different codes. For example, a parent may spend the entire minute asking questions related to the adolescent’s stressor (**problem-focused**). This might receive a high rating on problem-focused. However, embedded within the questions may be an utterance that would serve to magnify the adolescent’s stress (which would thus also be coded as **magnify**). Another example might involve a parent who receives a high rating on engagement (due to strong eye contact and postural involvement) and a moderate rating on minimizing/trivializing (due to statements about how the stress isn’t that big of a deal).

There are times when you will simply have to give multiple codes for the same parental behavior/response. It would do a disservice to the coding project to only rate one code when more than one are clearly evident. BUT, be judicious with this coding process and only reserve multiple codes for the same single response for those clear cases in which using just one code simply does not capture the essence of what’s occurring.
7. Code the parent’s statements/behaviors but in the context of the dyad
8. When considering your ratings for individual codes, take into consideration the actual on-topic time as your reference base to measure against. For example, if ½ of the minute was

off-topic, and the parent was strongly minimizing for the ½ that was on-topic, consider a “4” rating because this behavior was occurring during the time that is truly codable.

GENERAL APPROACH TO MACRO-LEVEL BEHAVIOR RATINGS

The parental reactions to adolescents’ stress disclosures are rated on a 4-point Likert type scale. Borrowing from Brody et al.’s (1995) observational coding system for assessing a variety of parental and family-level behaviors for adolescent-parent interactions, the presence, quality, and the intensity of the particular parental behaviors are all considered equally important. Below is a general rubric to keep in mind when making your ratings for each behavioral code. More specific rating scale definitions are provided within each code.

<u>Rating</u>	<u>General Description</u>
1	<u>Absent.</u> Not at all characteristic, never occurring; no intensity. <i>(The absence of a particular behavioral code can occur for a variety of reasons including that the code was simply not germane to the topic at hand or because the parent does not engage in such behaviors)</i>
2	<u>Minimal.</u> Mainly uncharacteristic; occurring rarely or infrequently; low intensity
3	<u>Moderate.</u> Moderately characteristic; occurring fairly often or only moderately consistently, or at low, moderate, or high intensity (i.e., can occur fairly frequently but still at low intensities)
4	<u>Strong.</u> Very characteristic; occurring very frequently or consistently; with considerable evidence; low, moderate, or high intensity (i.e., can occur very frequently at low intensities)

RATING USING CONTEXT

Embedded within the following code definitions is the implicit idea that the parent is not behaving in a vacuum. Rather, the meaning of the parent’s behavior is in part determined by the adolescent’s reactions to his/her parent. Therefore, the adolescent’s reactions need to be considered when making a rating of parent reactions to adolescents’ stress. Provided below are examples of scenarios in which the adolescent’s behavior may alter your rating of the parent’s reactions to the adolescent’s stress.

- Parent makes what can be considered a joke. However, the adolescent does not respond in kind and clearly does not take the parent’s comments as a joke. This may lead you to consider a code of “punitiveness” because parental behaviors that are punitive can include “making fun of or teasing the adolescent for their negative feelings or stress.”
- Parent begins to help adolescent problem-solve the stressor. However, as the parent continues, the adolescent shuts down and becomes more withdrawn and less participatory. The parent is seemingly helping problem-solve and behaving positively toward the adolescent but is becoming “non-supportive” in that she is inhibiting the adolescent’s own disclosure of the stress and is potentially hindering the adolescents’ ability to problem-solve on his/her own in the presence of his/her parent. Thus, this parent may receive a high rating of “problem-focused” for the first minute of the discussion but may then receive high ratings of

“autonomy-inhibiting” as the parent steals the floor and as the adolescent, in effect, retreats into his/her own space. (Without considering the adolescents’ behavior in response to his/her parent, it is enticing to view this scenario as largely supportive and rate “problem-focused” very highly throughout the entire interaction.

Similarly, the adolescent may engage in some behavior or make a statement preceding the parent’s codable behavior that can provide you with a context in which to view the whole set of exchanges between the dyad. Parent behavior remains the focus of the coding system, but the context in which the parent’s behavior is manifested can provide the coder with additional helpful information. The following scenarios are examples of how such context can help inform your ratings.

- The parent tries to probe for how stressful the topic is to the adolescent and the adolescent implies that their topic isn’t really that stressful. The parent then makes a joke about the stressor that the adolescent does not respond to in kind. Under other circumstances, you may consider a code of **punitiveness**. However, because the adolescent just told the parent that the stressor was not of great concern, the presence of **punitiveness** may not be justified.

ABBREVIATIONS OR VERNACULAR RELEVANT TO THIS SAMPLE
(to be appended as coding progresses)

<u>Vernacular Used in Discussions</u>	<u>Definition or Translation</u>
“Chatham”	Chatham county; Chatham high school
“Northwood”	Northwood high school

ADOLESCENT’S INTIAL DISCLOSURE (AID)

This is a rating of the extent to which the adolescent discloses or presents the stressor topic to the parent. This rating should be based on the first minute of interaction. The adolescent’s disclosure or presentation of the personal stressor can include both verbal and nonverbal indicators. For example, the adolescent may tell the parent that his/her personal stressor involves transitioning to high school and is concerned about not making friends at the new school. If the parent asks a clarifying question about the stressor and the adolescent elaborates, the parent would then, in effect, have a significant amount of “material” to work with and to respond to. However, if the adolescent began by remaining silent, waiting for the parent to take the floor, and then only responded to the parent with a shrug or a statement of “I don’t know,” this would give the parent very little to respond to and would put the parent more in the driver’s seat. Adolescent’s initial disclosure would then receive a low rating. The presentation style of the adolescent does not necessarily have to be positive in order for a high score to be given. For example, an adolescent may be very irritated and discuss his stressor in a very negative light but still gives the parent a great deal to respond to. **Note. This is the only code involving the adolescent as the primary focus.

1. **Absence** of verbal or non-verbal indication of what stressor is and interest in discussing stressor with parent. What this means is that the adolescent either does not give any indication of what his/her stress topic is or gives very minimal information to parent such as a shrug or simply repeating the stress topic label back to parent. Adolescent does not respond to

parent's inquiries or comments or does so in very minimalist way. In essence, adolescent gives virtually nothing new for parent to work with above and beyond what the label of the stressor is.

2. **Minimal** disclosure and interest in presenting topic. Adolescent does little to let parent know what his/her stressor is. To warrant a "2" rating, adolescent is giving slightly more than just repeating the label of the stress topic but is not going well beyond that minimal information. S/he may mention a few other elements about the stressor in a broken and inconsistent way rather than delineating even moderately what the stressor is all about. We get to know disparate parts the adolescent's stressor but by no means have a solid grasp on what the full story is. Adolescent is seen responding minimally to parent and will give more than shrug as a response but does not use that response to more fully elaborate on their stressor.
3. **Moderate presence** of disclosure and interest in presenting topic. Adolescent may talk a fair amount about stressor and gives some indication of interest in discussing their stressor. Adolescent may be fairly animated in the presentation of the stressor and moderately engages in discussion. Adolescent does a fair amount of responding to parent's inquiries or comments.
4. **Strong presence** of disclosure and interest in presenting topic. The initial minute is filled with adolescent's presentation of his/her stressor topic and shows interest in engaging in such a discussion. The adolescent discusses the stressor in such a way that the parent has a lot to "work with." Even if parent dominates the first minute, the adolescent has presented his/her topic with interest, engagement, and enough content for the parent to be an active member of the discussion. Adolescent will also attempt to respond actively to parent's inquiries even if parent dominates this first minute.

EMOTION-FOCUSED (EF)

DEFINITION

Emotion-focused responses are parental responses to adolescents' emotion or stress that generally serve to encourage the expression of emotion or open up the possibility of expression of the stressful experience. Specifically, these parental responses convey a sense of empathy/understanding, comfort, and inquiry into the adolescent's emotional experiences and stress. These responses include the following:

OPERATIONALIZATIONS

Verbal Content

- Asking stress/distress related questions or trying to understand the adolescent's emotional state
 - E.g., "So what else about the situation stresses you out?"; "What other things about it bother you?"; "How did that make you feel? "Did it make you worried?"; Is it because you were stressed?")
 - E.g., "Tell me what you mean by that" (said in response to the adolescent's emotion/stress related utterance
 - The key here is that the parent is homing in on the adolescent's emotional state rather than merely the issue/stressor that can be discussed without any affective quality

- Empathizing with or understanding the adolescent and his/her stress or negative emotion
 - e.g., “yeah, I know, I can understand how you feel”
- providing comfort to the adolescent’s emotion displays or statements indicating negative affect
 - “it’s going to be Ok.” (However, if “it’s going to be Ok” is followed by a statement like “don’t worry about,” this whole string of responses would be most likely coded “Minimize/Trivialize”)
- reflecting the adolescent’s emotion (e.g., “you seemed stressed”)
- trying to understand the adolescent’s emotional state//sharing of the adolescent’s emotional state (e.g., “I felt that way once. Tell me more about it.”)
 - You will need to consider whether or not the parent is adolescent-focused here or whether they talk so much about how they themselves felt that it steals the adolescent’s speaking space. If the parent appears distressed in their recounting of how they may have felt, look to “Magnify” code. If parent appears to steal the floor at the expense of the adolescent’s autonomy, look to “Autonomy-Inhibiting” code.
- Validating the adolescent’s emotional experience
 - “I know this is hard for you, it’s a difficult time.”
- Offering emotion-oriented help
 - “Feel free to talk to me about how you’re feeling”
- normalizing of adolescent’s emotional state or stress
 - e.g., “It’s ok to feel stressed about that. It’s normal to feel pretty frustrated in that situation”.
 - e.g., “When you play in front of people for the first time, that can always be a really nerve-racking experience.”
 - The decision to make here is whether this reflects a minimizing/trivializing stance toward the adolescent’s emotion or stress (**minimize/trivialize**), or whether it is truly a comforting statement that allows the adolescent to feel that emotion or stress because it’s natural to experience it (**emotion-focused**).
- Statements such as “I’m proud of you” or “you’re doing a great job”
 - These may serve to not only comfort the teen but also to provide a sense of emotional security in dealing with future stressor and stress
- If statement contains any emotion-focused content but is said in a way that reflects a problem-focused code (e.g., constructive reframe), code this one statement as **EF**. In this case, content would override process.

Nonverbal Cues

- Nonverbal empathic/comforting gestures in response to adolescent’s discussion of stress(or)/distress
 - e.g., gently touching the adolescent’s arm, hand, leg
 - clear empathic/comforting facial expressions (e.g., clear look of sympathy with a head nod that would serve to encourage the continued expression of the adolescent’s affect)
 - these nonverbal cues should be distinguished from non-specific nonverbal cues of “engagement”(e.g., eye contact, engaged posture) that would characterize the **engagement** code
- comforting tone and soft inflection
 - a comforting statement of “it’s really going to be fine” said with gentle and empathic tone would be considered an emotion-focused response. However, this same

statement said with a rushed and impatient quality may not deserve the code of “emotion-focused” or warrants a relatively low rating.

RATINGS

1. There is an **absence** of any kind of emotion-focused utterances or behaviors or any general impression of parental responses that encourage the expression of emotion or open up the possibility for the adolescent to discuss the stress experienced through behaviors such as comforting, empathizing, or reflection of the adolescent’s emotional state.
2. There is **minimal** indication of emotion-focused utterances or behaviors or the general impression of parental responses that encourage the expression of emotion or open up the possibility for the adolescent to discuss the stress experienced. To be rated a “2,” there is slight evidence of emotion-focused behavior but this behavior is seen very infrequently, is not at all characteristic of the minute-long duration, and is of low intensity. There is one brief, subtle, or low intensity statement or emotion-focused question. Parents receiving a “2” for a given minute may have an EF responses in passing without a great deal of emphasis or simply ask one stress focused question that attempts to reveal how the teen is feeling.
3. There is a **moderate presence** of emotion-focused utterances or behaviors or the general impression of parental responses that encourage the expression of emotion or open up the possibility for the adolescent to discuss the stress experienced. Moderate presence indicates more than just slight evidence or a passing EF statement. To warrant a “3”, a parent is more “actively” involved in the emotions of the teen whether by EF questions, normalizing of the teen’s distress, or empathizing with the teens’ emotions. A parent can be rated a “3” if there is more than one EF response and these multiple responses represent moderate intensity and/or frequency. A “3” is also warranted if there is just one EF response but it is of moderate to strong intensity. However, a “3” still does not involve a pervasive, characteristic, or overwhelming sense of EF responses. Parents receiving a “3” respond to their teens with a fair amount of empathy, EF questions, etc. that goes beyond mere slight evidence but without being characteristic of the minute.
4. There is a **strong presence** of emotion-focused utterances or behaviors or general impression of parental responses that encourage the expression of emotion or open up the possibility for the adolescent to discuss the stress experienced. Parents receiving a “4” rating for a give minute are clearly invested in their teen’s stress/distress. They are focusing on or emphasizing the emotional aspects of the stressor through reflections of the teen’s emotion, consistent empathy, EF questions, normalizing of the stress, etc. A parent can be rated a “4” under the following conditions: a) there is a consistent or pervasive EF responding that fills the minute, b) there are several EF behaviors of low to moderate intensity that go beyond a moderate or fair amount, c) there are a few very strong EF behaviors that indicate that the parent is invested in the teen’s emotions surrounding the stress/distress. This parent is clearly tuned in to the adolescent’s stress or negative emotions and relates to adolescent in emotion-focused manner for much of the minute. Adolescent’s subsequent and appropriate stress disclosures may indicate that parents are providing emotion-focused responses.

PROBLEM-FOCUSED (PF)

DEFINITION

Problem-focused responses are parental responses to adolescent’s negative emotion or stress that generally serve to assist the adolescent with the adolescent’s stressor itself. There is less of a focus on the negative affect elicited by the stressor and more of an emphasis on helping the

adolescent deal with the actual stressor. These responses are necessarily more “solution-focused.” Specifically, parental problem-focused responses involve asking stressor-related questions and helping the adolescent deal more directly with what is causing the stress rather than with the distress itself. These responses include the following:

OPERATIONALIZATIONS

Verbal Content

- Asking stressor-focused questions (e.g., “What started the fight that made your friend mad at you?”)
- Helping generate solutions for the adolescent’s stress(or) (e.g., what do you think about talking to your teacher about it. Would that help?”)
 - This needs to be carefully considered and distinguished from **autonomy-inhibiting** statements. To be coded as **problem-focused**, there should be an overall quality of cooperative discussion and process of mutual resolution of the adolescent’s stressor. This is the adolescent’s stressor after all and not for the parent to resolve alone.
- Providing guidance and/or advice for adolescent to deal with stress(or) (e.g., “You might think about letting your friend know that you didn’t mean to say what you said.”)
 - Watch for unsolicited advice that takes on the quality of a lack of faith in the adolescent’s ability to handle the stressor on their own. Consider the alternative code of **autonomy-inhibiting** if these cases are true.
- Providing instrumental/tangible aid to help adolescent deal with stressor (e.g., I could drive you to the movies on the weekends if that would help solve the transportation issue.”)
 - Watch for quality of parental over-protectiveness. The above example is **problem-focused**, but a parent may say “I could drive you there because it’s so dangerous to go the mall with your friends”
 - in this case, a code of autonomy-inhibiting would be considered.
- Helping reframe the situation so that adolescent can think about situation in different (more constructive) way (e.g., have you thought about the idea that maybe your teacher was interested in seeing you succeed rather than really trying to punish you?)
 - With these types of “reframing” responses, watch for **minimizing/trivializing** parental behavior. A parent could appear to help the adolescent view the stressful situation in a different and positive light but could actually be minimizing the stress the adolescent is under. Look to **minimize/trivialize** code if parent seems to diminish the importance of the adolescent’s stressor/stress (e.g., “It’s probably just that your teacher was trying to help you succeed. I don’t think you should be upset by his conversation with you.”)

Communication Style

- Parents who problem-solve **with** their adolescent should be coded **problem-focused**. However, parents who problem-solve **for** their adolescent may be coded **autonomy-inhibiting** if appropriate. This may be subtle to detect within one particular statement, but as the full minute transpires, you may get the sense that the parent is overriding the adolescent’s potential to work on the stressor him/herself.
 - You may see a parent who begins the minute “helping” the adolescent with his stressor but who ends the minute by taking over and making plans **for** the adolescent. This minute can show the presence of both problem-focused and autonomy-inhibiting codes if appropriate (see “2” rating below).

- Parents who engage in “chit-chat” with the adolescent around the stressor topic but who do not appear to be constructively focusing on the stress(or) itself should not be rated highly on **problem-focused**. There is no code that actively captures mere banter or chit-chat.
- Parents who diverge from the topic at hand or who introduce other peripheral or tangential issues and then attempt to help problem-solve should not be rated highly on **problem-focused**. High rating on the **problem-focused** code are reserved for parents who stick to the adolescent’s stressor as they initially disclosed it or as the adolescent appears comfortable discussing relevant off-shoots that they themselves have generated.

OTHER CONSIDERATIONS:

To make this rating appropriately, you may need to take into account:

- Parental statements that focus on the stressor itself rather than the affect generated from the stressor. A statement of “how did you deal with that?” would fall under problem-focused. However, parental statements such as “how did you deal with your anger?” would fall under Emotion-focused.
- In general, you will look for problem-focused statements that are generated by the discussion of the stressor and that are derived from the adolescent’s issues rather than from parental anxiety or from a parent attempting to impose their will on the adolescent.

RATINGS

1. There is an **absence** of problem-focused utterances or any general impression of parental responses that serve to assist with or help problem-solve the adolescent’s stress(or). In addition, if parents engage in behavior that seems to be an honest attempt at providing advice or reframing, for example, but appears to be a “stretch” or appears to really be minimizing or autonomy-inhibiting, rate as “1.”
2. There is **minimal** indication of problem-focused utterances or the general impression of parental responses that serve to assist or help problem-solve the adolescent’s stress(or). There are only one or two behaviors evident here, and they are of low-intensity. A parent would receive a “2” rating if there appears to be some problem-solving, provision of aid, and/or reframing of the stressor for the adolescent but this tendency is quite weak and is demonstrated only once with fairly low intensity. In other words, you get the slight impression of a problem-focused response for the minute but nothing more. A parent may ask a mild stressor-focused question or make a very brief reframe that doesn’t really lead anywhere. Consider a “1” for statements within a minute that really seem to border on autonomy-inhibiting or minimizing.
3. There is a **moderate presence** of problem-focused utterances or the general impression of parental responses that serve to assist or help problem-solve the adolescent’s stress(or). To warrant a rating of “3,” a parent is seen during a given minute clearly assisting/trying to assist the adolescent with his/her stress(or), making constructive re-interpretations of the stressor (i.e., reframing), or otherwise providing aid to help the teen deal with the stressor. This tendency is more than just subtle behavior (if just one than it is of moderate to strong intensity) and consists of more than just one PF behavior/response. A “3” can consist of a series of PF statements, a few moderate PF responses, or a moderate style of PF for a decent portion of the minute. However, this tendency is still not pervasive, altogether characteristic of the minute, or very strong in intensity.

4. There is a **strong presence** of problem-focused utterances or the general impression of parental responses that serve to assist or help problem-solve the adolescent's stress(or). To warrant a rating of "4," a given minute is dominated by such behaviors or the problem-focused utterances are very characteristic of the minute-long duration, very strong in intensity, or there are a few very strong utterances. A parent may spend much of the minute discussing ways to help the teen deal with his/her stressor or providing constructive interpretations in order to reframe the stressor in a more positive light. *A strong presence of problem-focused reactions still means that the parent problem-solved **with** not **for** the adolescent. Consider a lower rating for problem-focused if the parent is **problem-solving** for the adolescent.*

FACILITATIVE ENGAGEMENT (FE)

DEFINITION

Facilitative engagement responses are parental responses that generally serve to encourage the expression of the adolescent's stress(or) or negative emotion. These responses, or stylistic ways on communication, convey a genuine interest in the discussion of the adolescent's stressor and are manifested by parental responsiveness, active listening, and allowing for a free flow of discussion. Nonverbal indications of facilitative engagement include maintaining a postural engagement, keeping eye contact, and using a relatively gentle and respectful tone with the adolescent. The following are several operationalizations of facilitative engagement organized by communication style and nonverbal cues:

OPERATIONALIZATIONS

Attentive and Responsive

- Is responsive to adolescent and his/her stress(or) or negative affect
 - Responds to adolescent in timely fashion and does not delay in answering questions or responding to adolescent's bids
 - Reasonably attempts to answer adolescent's questions or follows up on bids for further discussion
 - If adolescent stops speaking or wants to end the discussion, parent helps generate new avenues to explore the stressor rather than sitting idly by
 - Parent responds to adolescent in an engaged fashion that implies spontaneity rather than in a mechanical or perfunctory (duty-driven) manner
- Uses active listening skills
 - May use "mm-hms" or head nods to promote continued discussion of stress(or)
 - May gently and empathically finish adolescent's sentence as if to know exactly how they feeling or what they thinking
 - May comment reflecting on what adolescent has just talked about
- Attends to adolescent and his/her concerns rather than being self-focused and caught up in own issues
- Attempts to understand what s/he is concerned about
- Helps generate and allows free flow of discussions
 - If adolescent's style is marked by interrupting parent, however, and the parent needs to interrupt to say anything, consider this in your rating.

Respectful and non-argumentative responding

- Tone of voice
 - parent's voice is relatively animated and reflects an interest in the adolescent and task at hand
 - patient and accepting vs. impatient, rushed, or bothered style
 - respectful vs. condescending or patronizing tone
 - comforting or gentle style of communication
- Body posture, eye contact, and facial expressions
 - Parents are posturally engaged, maintain eye contact, and facially appear interested in a respectful manner
- Doesn't get into disagreements over small details that would prevent adolescent from wanting to disclose or further discuss his personal stressor
- Accommodating of the adolescent's view point and willing to hear him/her out on his perspective

OTHER CONSIDERATIONS:

- Parent's talking does not necessarily preclude a high rating of FE. If the parent is attentive, appears genuinely involved, and during the discussion responds to the adolescent rather than ignoring his/her bids, then the parent may still receive a relatively high rating of FE. But a parent who dominates the discussion (gently or harshly) would most likely not have the chance to receive as high a rating as a parent who attended more to the teen and listened with intent on understanding.
- However, if a parent dominates the discussion in a more ego-centric, controlling, or disrespectful manner, or does not respond to the adolescent's bids for discussion (even though parent may be maintaining eye contact and is posturally engaged), consider a lower rating of FE. The first pass (without making ratings) of the interaction may help you get a sense of whether or not the parent is generally engaged in the discussion in the service of facilitating the adolescent's comfort with discussing their stressor.

RATINGS

1. There is an **absence** of facilitative engagement behaviors or general communication style that would promote adolescent's disclosure or discussion of their stress(or) or negative emotion. Several conditions would warrant a "1" rating: very little postural and facial engagement (e.g., not turned toward adolescent or looking bored), ignores adolescent's bids for further discussion, leaves adolescent no time to speak, gives very little evidence of interest in discussion, initiates very little interaction, participates in conversation but in perfunctory or mechanical fashion, gives 'unresponsive' lectures to adolescent. In essence, there is an absence of true connection from parent to adolescent. Also consider the presence of a more negative interactive style in which the parent is generally bothered (impatient, rushed, annoyed) with intent on proving their own position (which may involve interrupting) or ignoring completely what the teen has or wants to say. This parent may talk for much of the minute (or remain very unengaged) and do so in manner that is mechanical or lecturing or negatively toned.
2. There is **minimal** indication of facilitative engagement behaviors or the general communication style that would promote adolescent's disclosure or discussion of their stress(or) or negative emotion. A rating of "2" is warranted under the following conditions: parent is minimally attentive and participates in discussion but still with more argumentative or disrespectful tone or in self-focused manner, listens but with intent on proving or supporting their own position, little attempt to understand adolescent's stated stressor. A parent rated a "2" will appear somewhat engaged but with more bothered, rushed, or annoyed

- tone or with little genuine responsiveness to adolescent's stress or stressor. A perfunctory or mechanical style may still be quite present. This parent may talk for much of the minute and do so in a manner that is generally less open and facilitative of the teen's opening up to discuss his stress(or).
3. There is a **moderate presence** of facilitative engagement behaviors or the general communication style that would promote adolescent's disclosure or discussion of their stress(or) or negative emotion. A parent receiving a "3" is characterized by some attentiveness and responsiveness but also with some degree of negative tone or lack of understanding (or trying to understand the teen's issue). This parent may still be trying to persuade the teen of their perspective rather than facilitate a more open discussion of the stress(or) but the persuasion or parental self-focus is not altogether that strong (weaker than in a "2" rating). However, this parent still does not frequently (but may moderately) seek to actively understand the teen's issues and be responsive. This parent may talk for much of the minute but do so in a manner that is reasonably engaging and open.
 4. There is a **strong presence** of facilitative engagement behaviors or the general communication style that would promote adolescent's disclosure or discussion of their stress(or) or negative emotion. This parent is fairly consistently maintaining eye contact, posturally engaged, and respectful in voice and face. She is responsive to adolescent's bids for further discussion of the stressor or will help generate new avenues of exploration when the discussion has reached a lull. She is infrequently argumentative or disrespectful in content or tone or is infrequently self-focused and is frequently actively seeking to understand the adolescent's point of view. There still may be some disruption of the flow of the discussion and lack of responsiveness and respect but these moments are fleeting and the overall tone reflects interest, engagement, attentiveness, and responsiveness. Typically, these parents will not be talking the whole minute.
 5. There is a **very strong presence** of facilitative engagement behaviors or the general communication style that would promote adolescent's disclosure or discussion of their stress(or) or negative emotion. A rating of "5" is reserved for the parent who demonstrates consistent, frequent, and strong displays of nonverbal engagement, is clearly attentive to the adolescent, attempts to understand his/her position stressor and point of view, and allows the adolescent chances to speak about their stress. They are clearly facilitating an open stance to discussion of the stress(or). An emotional and genuine connection is strongly present. Typically, these parents will not be talking the entire minute.

MINIMIZE/TRIVIALIZE (MT)

DEFINITION

Minimizing/trivializing responses are parental responses to adolescents' negative affect or stress that serve to discourage the expression of emotion through minimizing, trivializing, or distracting from negative emotion or the stress elicited from the stressor being discussed. These responses distract from the presentation of distress or from the stressor itself by underestimating, playing down, or otherwise diminishing the importance of the stress(or). Metaphorically, minimizing/trivializing behaviors serve to "sweep the stress under the rug." These can be indirect and insidious vs. direct and confrontative (like punitive responses). These responses include the following:

OPERATIONALIZATIONS

Verbal Content

- Verbal directives that minimize the adolescent's concerns (this may be subtle)
 - Parental statements such as "Don't worry" and "There's no need to be scared."
 - These statements may seem comforting and may be coded as **emotion-focused** only if they are embedded within an empathic response that opens the adolescent up to talk about the stress. Otherwise, these statements are considered to convey a message to the adolescent that the stress or negative affect experienced is not worth experiencing or is too overwhelming to be discussed.
 - Parental statements such as "Things aren't so bad" and "it's not that big a deal."
 - Statements such as "you just have to do the best you can" or any statement that implies the teen should just "roll with the punches"
 - However, if the parent has a harsher tone and tells the adolescent that they just need to get over it or deal with it, consider **punitive** code.
 - Statements such as "that's your responsibility at this point, you're old enough" convey a sense of dismissing of the adolescent's stressor and in effect gives the message that it's not worth discussing the stressor because it's should be taken care of solely by the adolescent. This could be interpreted as "it's not that big of deal for us to discuss it now."
- Explaining away of teen's stress(or)
 - E.g., making excuses for others involved in interpersonally related stressor
 - "It was just because you go to bed late, that's probably why you can't focus on your work."

Communication Style

- Distracting from the adolescent's stress disclosure
 - Parents may joke about the situation or poke fun at the adolescent that distracts from the adolescent's intention to discuss the situation. The adolescent may indeed share in the joke. May code as **punitive** if parent teases adolescent and the adolescent does not share in joke.
- Making assumptions about how the adolescent's stress, stressor, or negative affect is not meaningful
 - A parent may convey the idea that the adolescent has fewer worries, is not as stressed, or doesn't have the severity of problems that the adolescent says s/he does
 - Important to consider here is actual wording – parent clearly makes an assumption vs. presumes something but then checks in with adolescent and is responsive to their clarification of the issue
 - Also important to consider is the quality of the assumption. If the assumption involves a message about the lack of meaning or importance of the adolescent's stress(or) or negative affect, consider code of **MT**. However, if the assumption is more general and appears to limit the adolescent's overall decision making ability surrounding the stress(or) or negative affect, consider code of **autonomy-inhibiting**.

OTHER CONSIDERATIONS:

- A code of **autonomy-inhibiting** may be warranted if the adolescent's emotion or stress is acknowledged by the parent but an effort is made by the parent to regulate the emotion or stress for the adolescent.

To make this rating appropriately, you may need to take into account:

- the adolescent's reactions

- the adolescent begins speaking less openly about his/her stress
- the adolescent appears discouraged from talking about his/her stress or even made statements indicating an escalation in emotion or stress as s/he tries to maintain the floor or assert that the stress needs to be talked about
- this behavior need not be intentional or seemingly intentional. I.e. many parents minimize their children's stress/distress because of their own issues.
- **Minimize** will more often appear as unintentional and more gentle as compared to **punitive** responses

RATINGS

1. There is an **absence** of minimizing/trivializing statements or any general impression of parental responses that discourage the expression of emotion through underestimating or diminishing the importance of the stressor or impact of the stress.
2. There is **minimal** indication of minimizing/trivializing statements or the general impression of parental responses that discourage the expression of emotion through underestimating or diminishing the importance of the stressor or impact of the stress. The parent may make one subtle or brief minimizing statement or there may be a subtle minimizing/trivializing stylistic quality to the communication. This is typically short in duration, low in intensity and is not at all characteristic of the minute and does not color the quality of the full minute of interaction. Generally, parents receiving a "2" rating will make statements that are not terribly actively diminishing/underestimating of the stress(or) importance.
3. There is a **moderate presence** of minimizing/trivializing statements or the general impression of parental responses that discourage the expression of emotion through underestimating or diminishing the importance of the stressor or impact of the stress. The parent may make a few low intensity minimizing statements or may engage in one or two moderate to high intensity behaviors. A "3" is reserved for parents who engage in more than one or two subtle or brief minimizing statements. There is now a discernable quality of minimizing/trivializing communication for the minute of interaction. However, this quality does not dominate the entire interaction and is not characteristic of the entire minute. Some impact on adolescent *may* be observed.
4. There is a **strong presence** of minimizing/trivializing statements or the general impression of parental responses that discourage the expression of emotion through underestimating or diminishing the importance of the stressor or impact of the stress. These statements characterize the minute, are of strong consistency, or are potentially few but of strong intensity and impact. For this minute, the parent is reacting to the adolescent's stress(or) in a clear and consistent minimizing/trivializing fashion. A "4" is also warranted if there are a few very strong statements that seem to color the quality of the interaction for that given minute (despite not being entirely characteristic of the full minute).

PUNITIVENESS (PUN)

DEFINITION

Punitive responses are parental responses to adolescents' negative emotion or stress(or) that serve to discourage the expression of emotion by punishing or expressing disapproval of negative emotion or the stress elicited from the stressful situation. Parents may also express disapproval of the stressor itself. Punitive responses involve negating, disputing, or blaming. Punitive responses typically are confrontative and direct rather than subtle and insidious (like minimizing/trivializing responses).

OPERATIONALIZATIONS

Verbal Content

- Targeting the adolescent's stress(or) or negative emotions in disapproving or punishing manner
 - Parent tells adolescent to "grow up" or to "stop crying" or to "just deal with it."
 - Parent expresses disapproval of adolescent's feelings (e.g. "You should be ashamed") or experience of the stressor as stressful
 - Parent who feels that the adolescent doesn't feel "enough" of something (e.g., sadness)
 - Consider the distinction between a parent who says condescendingly, "you could feel a little more grief for your grandmother, you know" (**punitive**) vs. a parent who anxiously asks "weren't you really sad about that, didn't that make you really sad to hear the news?" (**magnify**)
- Outright discounting (and sometimes disputing) youth's emotion or stress when stated (e.g. You weren't angry, you were worried)
 - Parent may discount adolescent's wish to talk about their personal stressor (e.g., "that's not a good topic to talk about" or "you want to talk about that?") – this is both discounting and directly confronting in a harsh manner
 - Discounting the stressor may also manifest itself in the form of the parent telling the adolescent that s/he "just needs to deal with it", implying that the adolescent's stress(or) isn't worth discussing.
 - Parent who argues with adolescent over which emotion s/he is feeling
 - Watch for overlap with **minimize/trivialize** in that a parent may make certain assumptions about the idea that the adolescent's stressor really isn't stressful. This would reflect more of a minimizing stance. One major way to distinguish punitive from minimizing in this case would be to examine the tone of the communication. If it appears harsh or condescending, it is most likely punitive. If it takes on more of a benign dismissive attitude, consider minimizing.
- Blaming adolescent for creating their own stress
 - "I'm amazed you don't fight more with your brothers and sisters" (implying that the adolescent instigates fights)

Communication Style

- Making fun of or teasing adolescent for experiencing or expressing negative feelings, stress, or the stressor
 - Adolescent becomes the object of a joke in the context of the personal stressor disclosed
 - Parent makes fun of adolescent for making a bad grade (when clearly that is an issue for the adolescent)

- Harshness or sarcasm - there is a disapproving stance in general to either the stress(or) or the discussion itself

Nonverbal Cues

- Harsh or condescending tone
- Disapproving facial expressions

OTHER CONSIDERATIONS:

To make this rating appropriately, you may need to take into account:

- the adolescent's reactions
 - the adolescent began speaking less openly about his/her stress
 - the adolescent appeared discouraged from talking about his/her stress or even made statements indicating an escalation in emotion or stress as s/he tries to maintain the floor or assert that the stress needs to be talked about
 - the adolescent simply appears shut down, humiliated, or disparaged

In general, you want to rate punitiveness as it relates to the teen's stress(or) or negative emotions. Stylistic punitiveness or harshness would not typically be rated. If you observe a parent to be generally harsh to their teen without a specific focus on the teen's stress(or)/negative affect, consider a lower rating for **Facilitative Engagement**.

RATINGS

1. There is an **absence** of punitive statements or any general impression of parental responses that discourage the expression of emotion through punishing/expressing disapproval of emotion or the stress elicited from the stressful situation. There are also no elements of blaming of the teen for his/her own stress(or).
2. There is **minimal** indication of punitive statements or the general impression of parental responses that discourage the expression of emotion through punishing or expressing disapproval of emotion or the stress elicited from the stressful situation. There may be one subtle or low intensity statement or behavior and little to no discernable impact on the adolescent. A "2" is warranted when parents do not typically or characteristically make punitive statements or communicate in a punitive, punishing, or disapproving stance or with qualities of harshness or sarcasm. However, there is the slightest indication of such responses to the adolescent. Both content and intensity of "punitive harshness" are minimal.
3. There is a **moderate presence** of punitive statements or the general impression of parental responses that discourage the expression of emotion through disapproval or dismissing emotion or the stress elicited from the stressful situation. Parents receiving a "3" will respond to their teen's stress(or) with more than just one statement or display of punitive behavior – even if there is one statement/behavior, it may be deemed to be of moderate to strong intensity thus warranting a "3." Stylistically, parents receiving a "3" rating may talk to their teen about their stress(or) in a harsh manner that reflects a disapproval or blaming stance. To warrant a "3" rating, a parent must demonstrate more than just minimally but not to an overwhelming degree a quality of punitiveness. The content and "punitive harshness" of response is more than minimal but not entirely strong. May have a discernable impact on adolescent.

4. There is a **strong presence** of punitive statements or the general impression of parental responses that discourage the expression of emotion through disapproval or dismissing emotion or the stress elicited from the stressful situation. This parent “characteristically” responds to the adolescent in a punitive manner or makes several punitive statements and behaviors or engages in a few very strong punitive displays. There is a punitive, punishing, or disapproving stance to the adolescent’s stress(or) that dominates the minute or the style of communicating for a good portion of minute reflects a disapproving, punishing, or blaming stance toward the teen’s stress(or). Both content and quality of “punitive harshness” may be quite strong and/or pervasive of the minute.

MAGNIFY (MAG)

DEFINITION

Magnifying responses are parental responses to adolescent’s negative emotion or stress(or) that serve to encourage (*or discourage*) the expression of negative emotion or stress through parental matching of adolescents’ negative emotion or stress level, parental escalation of adolescents’ negative emotion or stress level, or parents’ expanding on adolescents’ disclosed negative emotion or stress. These behaviors can be communicated through both non-verbal and verbal channels.

OPERATIONALIZATIONS

Verbal Content

- Verbal expression of heightened emotion
 - e.g. “That made me so sad, I am sad too”
 - e.g., “It’s been very stressful for me too”
 - e.g., “I started to feel really scared as well”
- Inappropriate sharing of emotion
 - e.g. “What gives me nightmares is to think about your friend’s disease”
- Expanding on topic with details that exacerbate the emotion or stress(or)
 - e.g. “To have a friend die in such a really terrible way all by himself up on that mountain.”
 - e.g., “I can’t believe no one has taken you seriously about being picked on at school.”
- Parent broaches own stressor topic that seems to derive from their own anxiety or issues with the adolescent’s original stressor
 - e.g., parent asks adolescent how he might deal with balancing sports and academics when the original topic was strictly related to difficulties concentrating in class
 - e.g., parent brings up a topic that was only peripheral to the stressor topic and that upsets the adolescent
- Makes seemingly catastrophic predictions about the adolescent and his/her well-being due to the stressor
 - “If you keep working on your school work that way, you might end up on the street” [more extreme]
 - “Those problems are only going to get harder when you get into college.” [less extreme]
 - this type of comment should not be mistaken for **autonomy-inhibiting** because it doesn’t reflect a parental message of limiting the adolescent’s sense of freedom or free choice, but rather it seems to heighten the emotions of present moment by predicting that things will get even worse in the future.

Communication Style

- Reacting with own distress to adolescent's displays of stress or negative affect
 - Parent cries in reaction to adolescent's stress disclosure
 - Parent becomes upset when adolescent talks about stress(or) or negative affect
 - Parent becomes anxious at disclosure of adolescent's stress
 - This can be communicated non-verbally in parents' facial expressions of anxiety
 - This can be communicated verbally through parents' statements regarding their uneasiness or discomfort with what adolescent is bringing to the discussion

Nonverbal Cues

- Anxious, upset, depressed, distressed tone in response to adolescent's disclosure of stress(or)
- Anxious, frustrated, depressed, distressed facial expressions regarding disclosure of stress(or) or negative affect

OTHER CONSIDERATIONS:

To make this rating appropriately, you may need to take into account:

- the adolescent's reactions
 - the adolescent begins to display more distress or appears overwhelmed
 - the adolescent appears discouraged from talking about his/her stress because of parent's distress reactions (i.e., inhibitory response)
 - adolescent appears to have to take care of parent for their distress

RATINGS

1. There is an **absence** of magnifying statements or any general impression of parental responses that encourage or discourage the expression of emotion through parent's own distress reactions or other behaviors indicating a parental escalation/exacerbation of emotion or emotional over-response to the adolescent's emotions.
2. There is **minimal** indication of magnifying statements or any general impression of parental responses that encourage or discourage the expression of emotion through parent's own distress reactions or other behaviors indicating a parental escalation/exacerbation of emotion or emotional over-response to the adolescent's emotions. There may be one indication of such behavior and the intensity is very low. Magnifying behavior or communication is subtle and is not at all characteristic of the minute of interaction. A parent may engage in one subtle magnifying behavior or the style of communication is only minimally magnifying. Both content of magnifying response and over-emotional quality of communication are minimal. There is little or no discernable impact on adolescent.
3. There is a **moderate presence** of magnifying statements or any general impression of parental responses that encourage or discourage the expression of emotion through parent's own distress reactions or other behaviors indicating a parental escalation/exacerbation of emotion or emotional over-response to the adolescent's emotions. There is more than just one magnifying statement/behavior or if just one then the intensity is moderate to strong. However, such behavior or communication style does not dominate the entire minute of

interaction. Both content and quality of over-emotional response should be more than just minimal but not entirely that strong.

4. There is a **strong presence** of magnifying statements or any general impression of parental responses that encourage or discourage the expression of emotion through parent's own distress reactions or other behaviors indicating a parental escalation/exacerbation of emotion or emotional over-response to the adolescent's emotions. This parent is consistently and characteristically engaging in magnifying behaviors. If there are a few statements/behaviors, the intensity is quite strong and overwhelming. Both the content of magnifying responses and the quality of over-emotional response are strong. There may be discernable impact on the adolescent although this is not necessary to warrant a "4" rating.

AUTONOMY-INHIBITING (AI)

DEFINITION

Parental responses to adolescent's emotion or stress that discourage the expression of emotion or disclosure of stress through parents' conveying a lack of confidence or trust in the adolescent's ability to handle their stress(or) on their own or by utilizing resources in their own way. Parents who engage in autonomy-inhibiting behaviors may attempt to solve the adolescent's stress for them or override the adolescent's sense of how to deal with their own stress. There is a general sense of blurring of boundaries from parent to adolescent that gives rise to an overriding of the adolescent's independent capabilities.

OPERATIONALIZATIONS

Verbal Content

- Direct statements that indicate a lack of faith in the adolescent's handling of their stress(or)/distress on their own [keep in mind context here as the adolescent may admit that s/he has difficulties and doubts his/her own abilities to handle his stress(or) or distress – unsolicited lack of faith may warrant a higher rating than parental doubt that echoes the adolescent's doubts]
 - E.g., "I'm not sure you'll be able to follow through with that plan for improving your grades"
- Indirect statements indicating a lack of faith in the adolescent's handling the stress(or)/distress on their own
 - E.g., "I should probably take care of that just in case it's too difficult. You know how difficult it can be."
 - E.g., "You need to do this. That will help you in the long run." "You should do it that way." (Statements of this type can be mistaken for **problem-focused** responses. Look to the context of conversation and adolescents' behavior for clarification of code.)
- Makes assumptions about what adolescent is thinking regarding stress, stressor, or negative affect
- Makes predictions about how they will behave or feel in the future without any input from the adolescent and in a manner that conveys a determination about how the adolescent will end up
 - These assumptions/predictions limit the adolescent's autonomy of thought and decision making ability regarding his/her stress
 - Watch for overlap with **magnify** response. A parent may make a prediction about the adolescent's future in a deterministic fashion without being overly dramatic. This

would simply be coded as **A-I**. However, the parent can also be dramatic in their predictions which would warrant a code of **magnify**. **Magnify** in this case would overshadow the **AI**.

- Making statements that would indicate undue over-protectiveness of the adolescent
 - E.g., “You can’t handle that yourself. It’s just that you’re not old enough and it’s such a difficult task”
 - E.g., “I don’t want you to feel that way again.”
 - Consider differential between a true empathic quality (**emotion-focused**) vs. a quality of overriding the teen’s ability to cope with stress on his own, in his own way (**A-I**)
- Excessive identification with adolescent that blurs boundaries between teen and parent
 - “If you don’t feel well, we don’t feel well.”

Communication Style

- The way a parent talks to the adolescent that does not allow them to generate any solutions to their stressor or discuss their stress.
 - E.g., a parent actively steals the floor (and not allowing the adolescent to generate solutions, discuss the stress, or assert their own opinion about their own situation)
 - E.g., parents speaking for the adolescent and takes away independence of thought, decision making – overlaps with making assumptions about what adolescent is thinking or feeling (vs. parent arguing with or convincing the teen of his or her emotion which is **punitiveness**).
- Verbal cues that imply that the parent is not giving the adolescent a choice regarding the discussion of their stress(or)/distress or resolution of their stressor.
 - Parent who ends utterances using words like “right?” at the end of sentences. This serves to have the adolescent agree tacitly, without any discussion, with the parent’s point of view [parental inflection and tone is crucial here – parent says “right?” in such a way as to convey that there will not be any further discussion on the issue]

Nonverbal Cues

- Parents tilting head downward while frowning and looking straight into the adolescent’s eyes (i.e., “looking down” on adolescent)
- Moves closer toward adolescent to blur boundaries and encroach on personal space
- Parent’s voice gets louder at certain points to override adolescent’s speaking turn

OTHER CONSIDERATIONS:

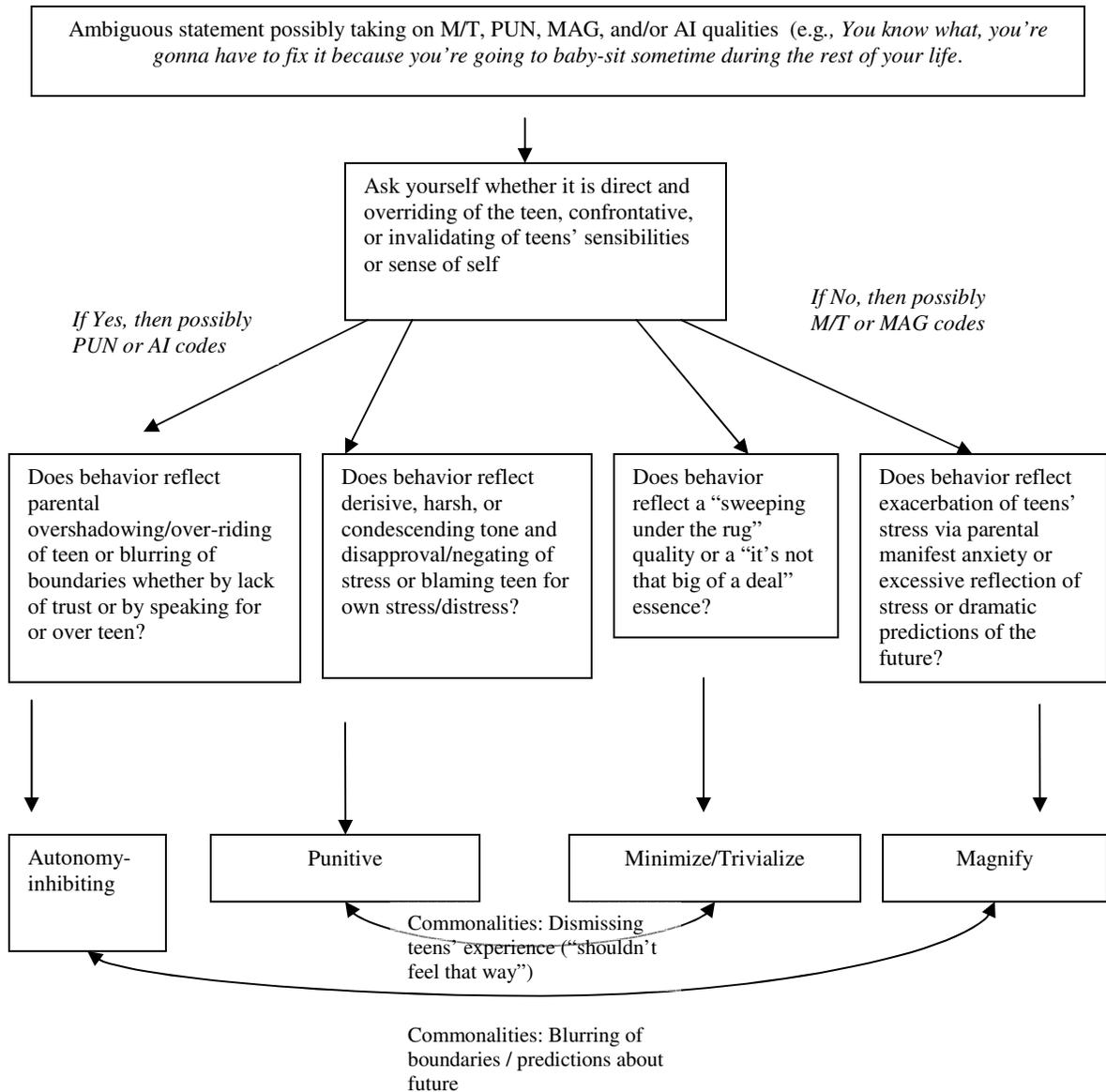
To make this rating appropriately, you may need to take into account:

- the adolescent’s reactions
 - the adolescent begins to display more distress or appears overwhelmed by parents’ statements or behavior
 - the adolescent appears discouraged from talking about his/her stress because of parent’s autonomy-inhibiting behavior or statements; you may see a change in adolescent demeanor
- if the adolescent is not giving the parent much to work with and the parent seems to display autonomy-inhibiting behaviors, you may consider a lower rating due to the passivity of the adolescent

RATINGS

1. There is an **absence** of autonomy-inhibiting statements/behavior or any general impression of parental responses that convey a lack of confidence in the adolescent's ability to handle their stress(or) on their own or by utilizing resources in their own way. There is no style of autonomy-inhibiting communication in which a parent dominates the minute of interaction or speaks for the adolescent, thus limiting his/her autonomy of thought and action regarding his/her stress(or).
2. There is **minimal** indication of autonomy-inhibiting statements/behavior or any general impression of parental responses conveying a lack of confidence in the adolescent's ability to handle their stress(or) on their own, utilizing resources in their own way, or convincing the adolescent that the parent's way of talking about or dealing with the stress(or) is more correct than the adolescent's way. There is only one instance of this type of statement/behavior or the style of autonomy-inhibiting communication is quite subtle. There may be a hint of the parent dominating the discussion or problem-solving for the adolescent but this tendency is not at all strong or pervasive of the minute of interaction. Little to no discernable impact on the adolescent.
3. There is a **moderate presence** of autonomy-inhibiting statements/behavior or any general impression of parental responses conveying a lack of confidence in the adolescent's ability to handle their stress(or) on their own, by utilizing resources in their own way, or convincing the adolescent that the parent's way of talking about or dealing with the stress(or) is more correct than the adolescent's way. The parent receiving a "3" for a given minute is engaging in more than one instance of AI behavior, or if one instance, the intensity is judged to be of moderate to strong intensity behaviors. There may be a more discernable quality of autonomy-inhibiting communication from parent to adolescent in which the parent is problem-solving for the adolescent or dominating the discussion, not allowing the adolescent to speak. In addition, the way in which the parent discusses the stress(or) with the adolescent moderately diminishes the adolescent's autonomy of thought and decision making.
4. There is a **strong presence** of autonomy-inhibiting statements/behavior or any general impression of parental responses conveying a lack of confidence in the adolescent's ability to handle their stress(or) on their own or, utilizing resources in their own way, or convincing the adolescent that the parent's way of talking about or dealing with the stress(or) is more correct than the adolescent's way. This parent is characteristically or consistently engaging in autonomy-inhibiting behaviors. If there are only a few behaviors, they are judged to be of high intensity. Boundaries between parent and adolescent are clearly blurred and the communication style is characteristic of the parent's limiting of the adolescent's independence or assertion of thought or action.

DIFFERENTIAL CODING PROCESS
(DECISION MAKING CONVENTIONS USING DECISION TREE)



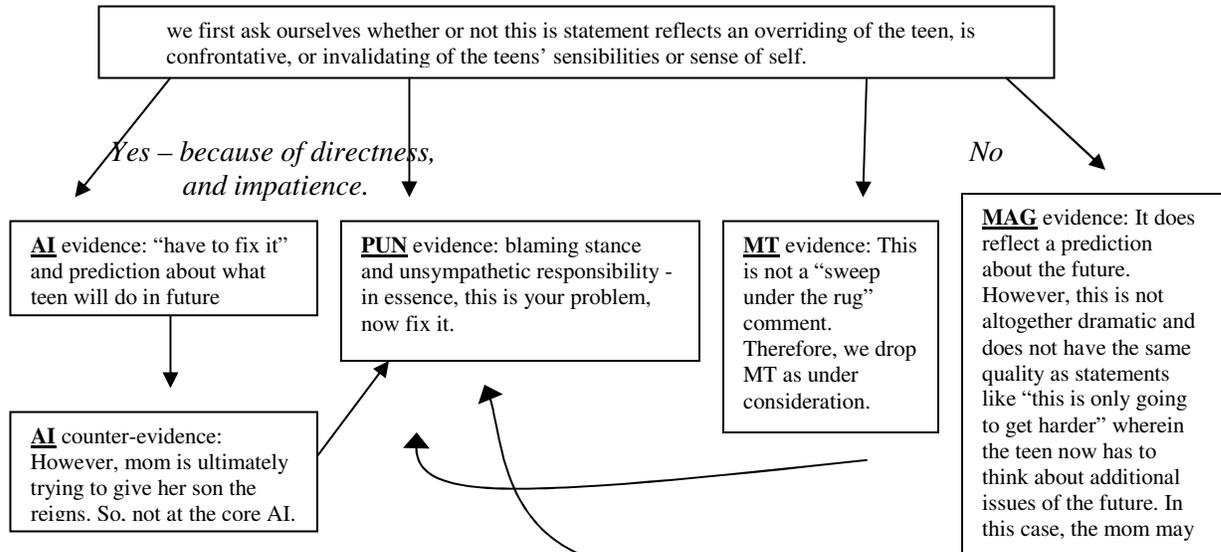
DIFFERENTIAL CODING CONVENTIONS

Consult these conventions if you should view a behavior that takes on several emotion socializing qualities, and it is difficult to choose a code without confusion.

- If both PUN (i.e. blaming, disapproving) and M/T (i.e., dismissive, distracting) qualities exist, code as PUN. PUN will override M/T when both are present.
- If both PUN and MAG (i.e., parental anxiety and exacerbation of stress) qualities exist, consider which seems primary as the core of the behavior. If takes on blaming quality, code as PUN. However, if parental anxiety or affect seems to drive the entire behavior and overrides any disapproving/blaming/negating quality, code as MAG.
- Both MAG and AI behaviors have a “blurring of parent-teen boundaries” quality. However, if both MAG and AI (i.e., overriding/overshadowing of teen, lack of trust) qualities exist and it is unclear which one predominates, consider if the primary quality derives from a parental anxiety that manifests itself in excessive reflection of teens’ stress or teens’ having to ‘take care’ of their parents because of parental issues (MAG) vs. parents’ encroaching on teens’ boundaries, conveying a lack of trust, or overshadowing their sense of independent self. (“If you don’t feel well, we don’t feel well” is a great example of the presence of both MAG and AI qualities. It would be coded as AI because the primary implication is that the teens’ stress *has become* the parents’ stress (i.e., blurring of boundaries) and that he’s not allowed any more to feel negative emotions about this topic. Autonomous experiencing and subsequent coping is jeopardized in this case. It is true that the teen may feel like he has to ‘take care’ of his parents because of this statement, but the A I qualities dominate and therefore this statement is coded AI.

APPLICATION OF DECISION TREE

- Let’s look at the above example that may reflect more than one code and is not easily coded at first glance. Our example is: “*You know what, you’re gonna have to fix it because you’re going to baby-sit sometime during the rest of your life.*” Using our decision tree above,



We can answer “YES” to this question because of the tone, the directness of the message, and the impatience in mom’s voice. We then choose from **AI** or **PUN** codes. The **PUN** code best captures this statement not necessarily because it’s invalidating or strongly harsh but because mom turns the stressor back on the teen in a somewhat punishing fashion – it’s now his problem and he needs to take it seriously. This is not a strong **PUN** intensity – it takes on more of annoyance and impatience than harshness and condescension. However, it is remains subtly blaming in the sense that mom is holding teen accountable but in a mildly unsympathetic and insensitive fashion. We may have also considered **AI** because of the “have to fix it” segment as well as the prediction about what the teen will be doing in the future. However, because mom is attempting to encourage her son’s autonomous problem-solving in this case, we do not strongly consider an **AI** code. We also consider **MAG** because of the *dramatic prediction about the future* quality to this statement. However, this message is less indicative of “impending doom” that would create additional teen stress/distress than is a message like “you know that this work will only get harder in the future.” Therefore, we can put **MAG** aside and come back to a “2” rating on **PUN**.

The purpose of this dichotomous (yes/no) code is to track whether or not the parent-adolescent dyad stays on-topic for the duration of the 5 minutes. On-topic behavior is discussion of the original personal stressor or any meaningful offshoot. Off-topic behavior consists of discussion of trivial issues such as what to have for dinner or any topic that is truly tangential to the topic at hand.

Examples of “Off-topic” discussion:

- Dinner plans
 - How to get somewhere they are going after the home visit
 - Taking care of siblings
 - When other parent is coming home
-
- Adolescents may stray off topic and some parents will follow. If the dyad remains off-topic for better part of the minute, circle “N”, and do not code this minute. However, if there is at least some behavior that is deemed codable for the minute, circle “Y,” make a note of this on the bottom of the rating form and make your ratings for this minute as you normally would. Only circle “N” if the discussion has clearly strayed into a tangential or trivial area and the full minute is thus not codable. Make a note of this at the bottom of the form but do not make any ratings for that minute.
 - Chit-chat during a given minute that is embedded within other meaningful behavior should simply not be coded. This minute, however, would still be marked “Y” for **On-topic behavior** code.
 - If dyad ends discussion early in the beginning of Minute 5, consider the coding the small amount of codable behavior in this last minute in Minute 4.
 - If dyad falls relatively silent but still seems to be in the middle of discussing the initial stress topic, code as On-topic behavior and circle a “Y.”

SUPPORTIVE REACTIONS TO ADOLESCENTS' STRESS (GLOBAL CODE)

GOAL AND DEFINITIONS

The goal here is to obtain a global (overall) assessment of how supportive the parent is as they respond to her adolescent's disclosures of stress. This rating is theoretically distinct from the minute-by-minute ratings you have just made in that you are making an assessment of the parent's general supportive and non-supportive qualities displayed during the entire 5-minute interaction, taking into account and synthesizing all parental behavior from the very beginning to the very end of the interaction. Generally, the behavior across the 5 minutes is to be averaged to form the global score. However, if a parent starts to truly listen to the teen or begins to finally understand the teen's issues and demonstrates a clearer appreciation for the stressor, you may consider this in your overall rating (likewise for significant deterioration of the interaction).

Supportive reactions are parental reactions that serve to assist, comfort, and communicate a degree of understanding where the adolescent is coming from and provide a matching or meeting of the adolescent's needs and concerns in a supportive, responsive, interested, and/or engaged manner. To be supportive does not necessitate a resolution to the adolescent's personal stressor. Therefore, a parent who provides a great deal of emotional support may be rated just as highly as a parent who provides tangible/instrumental aid to help resolve a stressor.

Non-supportive reactions are parental reactions that serve to undermine, distract from, and inhibit the adolescent's experience and expression of his/her concerns. There is a lack of understanding of the adolescents' needs and concerns and the parent does not match or meet the adolescent's needs and presents in an unresponsive, uninterested, and/or disengaged manner. There may be a harshness to these non-supportive behaviors in addition to a lack of understanding and meeting of the adolescent's needs.

RATINGS

1. **Clearly non-supportive.** The parent displays very little physical and verbal engagement or communicates a very low degree of caring and understanding of or sensitivity to the adolescent's concerns/stress. The parent offered little positive support when it was clearly called for, engaged in several non-supportive behaviors, or the overall tone of the interaction had a negative or non-supportive feel. A "1" rating is warranted for clear and consistent non-supportive parental behavior.
2. **Somewhat non-supportive.** A "2" rating still reflects an overall non-supportive quality of behavior but may be less consistently or overwhelmingly non-supportive. There is room here for some display of supportive elements, but the non-supportive elements clearly overshadow the supportive.
3. **Neutral.** The interaction did not take on the quality of being either supportive or non-supportive. This may occur through a) an overall neutral feeling, b) a balance of supportive and non-supportive elements, or c) through a balanced wave of supportive and non-supportive elements that cycles throughout the discussion.
4. **Somewhat supportive.** A "4" rating is reserved for an overall supportive quality of parental behavior but that is not entirely clear and consistent. There is room here for minimal non-supportive elements, but the supportive elements clearly overshadow the non-supportive.

5. **Clearly supportive.** Overall, this type of interaction is clearly and consistently supportive and leaves the adolescent feeling helped, comforted, and otherwise listened to appropriately. The parent displays non-verbal and verbal engagement and a high level of interest. Parents' responsiveness was high in that they responded appropriately to the adolescent's concerns and generally matched or met the adolescent's needs/concerns/stress.

DOUBLE-BIND PHENOMENON ***(GLOBAL CODE)***

This global code is intended to capture the phenomenon of parents' responses to adolescents' stress disclosures that contradict themselves in such a way as to send the adolescent a mixed message about how to cope with their stress and who they can go to for support. In essence, the double-bind involves communicating in such a way that inhibits the very behavior the parent is trying to encourage. Parents who place their adolescents in a double-bind situation convey through content one message that is simultaneously contradicted through more process-oriented communication.

Examples of double-binds

- Verbally communicating that the adolescent should be more autonomous and solve the stressor on his/her own while actually inhibiting the adolescent's decision-making and choice in the moment. (e.g., mom telling daughter she can go to her for support and to talk things over and yet does not allow her daughter to say two words during the whole interaction).
- Mother insisting that her son discuss his issue during the 5-minute discussion yet communicating in such a way that does not make son feel comfortable to openly discuss issue.
- Mother telling son that he's on his own in high school and that he needs to function more independently at this point. However, process-wise, she dominates the discussion and tells him what to do and how to do it. Thus, her message of independence contradicts her autonomy-inhibiting style of communication.

Rating Scale (3-point scale)

1. Absent. There is an absence of the double-bind phenomenon. There is no evidence of a parent verbally communicating to her teen that the teen needs to become more independent, autonomous, assertive, or responsible while simultaneously communicating (through a more subtle style) in a way that inhibits the very behavior the parent is trying to encourage.
2. Some indication. The double-bind occurs in only once instance or is subtle and not overwhelmingly strong.
3. Strong and pervasive presence. The double-bind phenomenon is characteristic of the interaction. For much of the 5 minute interaction, the parent is communicating one thing to the adolescent but behaving (in the moment) in such a way as to have the effect of inhibiting the very behavior the parent is trying to encourage in the adolescent.

Appendix B

Coding System Rating Form

Rating Form
Parental Reactions to Adolescents' Stress

Case # and Phase: _____

Coder: _____

Date Coded: _____

Stressor: _____

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Time Interval	Adolescent's Initial Disclosure (AID)	Emotion-Focused (EF)	Problem-Focused (PF)	Facilitative Engagement (FE)	Minimize/Trivialize (MT)	Punitive-ness (PUN)	Magnify (MAG)	Autonomy-Inhibiting (AI)	On-topic (OT)
1 (0-1:00) Time _____	1 2 3 4	<input type="checkbox"/> 1 2 3 4	<input type="checkbox"/> 1 2 3 4	<input type="checkbox"/> 1 2 3 4 5	<input type="checkbox"/> 1 2 3 4	Y N			
2 (1-2:00) Time _____		1 2 3 4	1 2 3 4	1 2 3 4 5	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	Y N
3 (2-3:00) Time _____		1 2 3 4	1 2 3 4	1 2 3 4 5	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	Y N
4 (3-4:00) Time _____		1 2 3 4	1 2 3 4	1 2 3 4 5	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	Y N
5 (4-5:00) Time _____		1 2 3 4	1 2 3 4	1 2 3 4 5	1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4	Y N

Case # and Phase: _____

Coder: _____

Date Coded: _____

Global Ratings (Refer to pg. 26 & 27 of the coding manual for code definitions):

Supportive Reactions to Adolescents' Stress: 1 2 3 4 5

Double-Bind: 1 2 3

Table 1: Demographics of the Coding System Validation and Final Analysis Samples

	Coding Validation Sample (N=67)		Analysis Sample (N=65)	
	Adolescent	Parent	Adolescent	Parent
Age	13.9	43.0	13.9	43.0
Elevated risk status	87%	---	86%	---
Gender (% female)	54	94	52	94
Race				
Caucasian	57	64	58.5	64.5
Black/African American	13	25	14	24.5
Latino/Hispanic	1.5	1.5	1.5	1.5
American Indian	1.5	3	1.5	3
Asian American	1.5	1.5	1.5	1.5
Other	1.5	---	---	---
Multi-racial	24	4.5	23	5
Educational Attainment				
High school		13		14
Some college		24		24.5
College grad		43		41.5
Professional School		20		20

Note. The elevated risk status variable represented the percentage of adolescents classified as having at least some past lifetime substance use. The majority of adolescents in the elevated risk category reported both current use and peer use.

Table 2: Intercorrelations Among (Continuous) Variables of Interest

	1	2	3	4	5	6	7	8	9	10	11
1. Social Desirability	---										
2. Parent Education	.13	---									
Experience Sampling Measures											
3. Aggregate Negative Mood	.21+	-.08	---								
4. Aggregate Substance Use	-.13	.13	.08	---							
Parental Emotion Socialization Codes											
5. Problem-focused	.28*	.11	-.15	-.22+	---						
6. Facilitative Engagement	.11	.30*	-.15	-.26*	.78**	---					
7. Emotion-focused	-.07	.27*	-.21+	-.17	.06	.37**	---				
8. Minimize	.13	-.06	.18	-.10	-.05	-.25*	-.11	---			
9. Punitive	.09	-.01	.18	.14	-.16	-.38**	-.28*	.25*	---		
10. Magnify	-.10	-.09	-.06	.05	-.32**	-.14	.01	-.38**	-.07	---	
11. Autonomy-Inhibiting	-.09	-.26*	-.17	-.05	-.14	-.35**	-.20	.15	.30*	.09	---
Means (SD)	.20(.19)	2.68(.95)	2.0(.58)	.06(.14)	2.32(.60)	3.15(.92)	1.7(.51)	1.53(.49)	1.21(.32)	1.51(.45)	1.67(.73)
Range	0-78	1-4	1.06-3.32	0-.81	1-3.67	1.25-5.0	1-3.2	1-3	1-2.2	1-2.8	1-3.6

Note. All correlations based on N of 65. Experience sampling measures were aggregated across the 21-day period. +p<.10, *p<.05, **p<.01.

Table 3: Comparisons of Measures by Adolescent Gender and Race

	Gender			Race		
	Girl	Boy	t	Caucasian	Non-Caucasian/ Biracial	t (χ^2)
1. Social Desirability	.21	.18	.61	.17	.23	-1.45
2. Parent Education	2.74	2.61	.51	2.71	2.66	.24
Experience Sampling Measures						
3. Aggregate Negative Mood	1.99	2.01	-.10	1.94	2.11	-.16
4. Aggregate Substance Use	.08	.03	1.53	.04	.09	-1.19
Parental Emotion Socialization Codes						
5. Problem-focused	2.45	2.17	1.89+	2.34	2.25	.59
6. Facilitative Engagement	3.35	2.94	1.82+	3.29	2.90	1.71+
7. Emotion-focused	1.66	.174	-.64	1.73	1.60	1.02
8. Minimize	1.58	1.47	.86	1.54	1.55	-.03
9. Punitive	1.20	1.23	-.44	1.24	1.21	.40
10. Magnify	1.44	1.59	-1.37	1.49	1.55	-.44
11. Autonomy-Inhibiting	1.64	1.72	-.45	1.61	1.82	-1.13
Percentages of Gender and Race	52%	48%		58	42	.20 ^a

Note. All comparisons based on N= 65. Experience sampling measures were aggregated across the 21-day period; ⁺p<.10, *p<.05, **p<.01. ^a Chi-square test revealed no differences between categories of gender and race.

Table 4: Labels and Definitions for the Observational Codes of Parental Reactions to Adolescents' Stress

Labels	Definitions
Problem-focused	Focusing on the stressor itself, providing advice, or helping problem-solve
Facilitative Engagement	Conveying responsiveness and sensitivity to adolescents' bids for discussion of their stress(or); active listening and displaying genuine interest in adolescents' stress disclosure
Emotion-focused	Focusing on the stress or emotions themselves, including provision of empathy and understanding and posing emotion-related questions
Minimizing	Trivializing or distracting from emotions or stress; underestimating or diminishing the importance of the stress/emotion
Punitive	Punishing or expressing disapproval of adolescents' stress/emotion; negating or blaming adolescents for their experience or expression of the stress/emotion.
Magnifying	Matching, escalating, or exacerbating adolescents' emotion; parents reacting with their own distress
Autonomy-Inhibiting	Conveying lack of confidence in adolescents' ability to handle their stress/emotion on their own or by utilizing resources in their own way; blurring of boundaries between parent and adolescent

Table 5: Descriptive Statistics for Observed Parental Reactions to Adolescents' Stress

	ICC	Mean (SD)	Range
Problem-focused	.59	0.69 (.51)	1.0-2.2
Facilitative Engagement	.77	2.32 (.61)	1-3.67
Emotion-focused	.80	3.13 (.93)	1.25-5.0
Minimizing	.70	1.55 (.49)	1.0-3.0
Punitive	.73	1.23 (.35)	1.0-2.5
Magnifying	.65	1.51 (.45)	1.0-2.8
Autonomy-Inhibiting	.79	1.71 (.76)	1.0-3.75

Note. N=67. ICCs represent the averaged ratings of the three coders.

Table 6: Convergent-Discriminant Validity for Observed Parental Reactions to Adolescents' Stress

	Convergent Measures		Discriminant Measure Adolescent Negative Affectivity
	Parent-Adolescent Open Communication	Parental Granting of Adolescent Autonomy	
Problem-focused (PF)	.31*** ^a	.08	-.22+
Facilitative Engagement (FE)	.31*** ^a	.26* ^b	-.20
Emotion-focused (EF)	.12	.21+	-.05
Minimizing (MIN)	.04	-.07	.15
Punitive (PUN)	-.12	-.13	.05
Magnifying (MAG)	-.15	-.03	.02
Autonomy-Inhibiting (AI)	.03	-.20+	.12

Note. Based on N=67. ⁺ < .10, * < .05, ** < .01, ***p<.001. All validity measures are based on adolescent report. ^a Significant difference between correlations for PF or FE with open communication and PF or FE with negative affectivity. ^b Significant difference between correlations for FE with autonomy-granting and FE with negative affectivity. Significant differences were in the expected direction.

Table 7: Factor Loadings for Observed Parental Reactions to Adolescents' Stress

	Factors		
	Emotion-Dismissing	Emotion-Coaching	Parental Distress
Emotion-focused	-.51	.11	.09
Problem-focused	.19	1.00	-.09
Facilitative Engagement	-.27	.82	.08
Minimize	.16	-.18	-.80
Punitive	.79	.02	.07
Magnify	.15	-.23	.83
Autonomy-Inhibiting	.85	.12	.16
Alpha	.87	.55	.53
Mean (SD)	2.08(.40)	0 (.94)	2.48(.39)
Range	1.33 - 3.33	-1.96 - 2.12	1.5 - 3.4

Note. N=67. Cut-offs for loadings were above 0.40. The *emotion-focused* and *minimize* codes were reverse-scored to form the emotion-dismissing and parental distress factor scores, respectively. The emotion-coaching factor mean reflects standardizing of its indicators as they were on different scales.

Table 8: Comparison of Baseline Model with and Without Random Effect for Negative Mood-Substance Use Slope

	Estimates for random slope				Estimates for non-random slope	
	Fixed effect		Random effect		Fixed effect	
	β	t	Variance component	χ^2	β	t
Intercept (Substance Use)	-4.94	-12.40***			-4.82	-12.24***
Level 1 predictors						
Daily Negative Mood	-0.44	-1.21	1.95	81.2	0.02	0.10
Weekday status	.11	0.28			.01	0.03

Note. N=65. Observations=1116. + p<.10, *p<.05, **p<.01, ***p<.001. D.f. = 1114 for fixed effect for slope and 64 for the random slope.

Table 9: Multi-Level Model for EC Reaction Predicting Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood (Level 1)	.02	.10
STEP 2: Main Effect		
Emotion-Coaching (Level 2)	-1.02	-2.34*
STEP 3: Interaction		
Emotion-coaching x Daily negative mood	-.11	-.66

Note. N=65. Observations=1116. D.f. = 1112 for the interaction term. ⁺ p< .10, * p< .05.

Step 3 represents a cross-level interaction between daily negative mood and EC behaviors.

Table 10: Multi-Level Model for Non-EF Parental Reactions Predicting Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative Mood (Level 1)	.02	.10
STEP 2: Main Effect		
Non-emotion-focused (Level 2)	1.44	1.15
STEP 3: Interaction		
Emotion-focused x Daily negative mood	.03	.08

Note. N=65. Observations=1116. D.f. = 1112 for the interaction term. ⁺ p< .10, * p< .05.

Step 3 represents a cross-level interaction between daily negative mood and non-EF behaviors.

Table 11: Multi-Level Model for Punitive Parental Reactions Predicting Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood (Level 1)	.02	.10
STEP 2: Main Effect		
Punitive (Level 2)	.41	.50
STEP 3: Interaction		
Punitive x Daily negative mood	.36	.78

Note. N=65. Observations=1116; D.f. = 1112 for the interaction term. ⁺ p< .10, * p< .05.

Step 3 represents a cross-level interaction between daily negative mood and punitive behaviors.

Table 12: Multi-Level Model for Autonomy-Inhibiting Parental Reactions Predicting Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood (Level 1)	.02	.10
STEP 2: Main Effect		
Autonomy-Inhibiting (Level 2)	-.88	-1.01
STEP 3: Interaction		
Autonomy-Inhibiting x Daily negative mood	.12	.28

Note. N=65. Observations=1116. D.f. = 1112 for the interaction termⁱ +p < .10, *p < .05.

Step 3 represents a cross-level interaction between daily negative mood and punitive behaviors.

Table 13: Multi-Level Model for the Interactive Effects of Non-EF and Emotion-Coaching Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Emotion-focused (EF)	.53	.46
Emotion-Coaching (EC)	-.94	-2.23*
STEP 3: Two-way interactions		
Non-EF x Daily negative mood	-.13	-.30
EC x Daily negative mood	-.14	-.69
STEP 4: Three-way interaction		
Non-EF x EC x Daily negative mood	-.97	-2.81*

Note. N=65. Observations=1116. D.f. = 1109 for the three-way interaction term. ⁺ p < .10, *p < .05.

Table 14: Multi-Level Model for the Interactive Effects of Punitive and Emotion-Coaching Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Punitive (PUN)	-.03	-.03
Emotion-Coaching (EC)	-1.02	-2.45*
STEP 3: Two-way interactions		
PUN x Daily negative mood	.32	.65
EC x Daily negative mood	-.08	-.37
STEP 4: Three-way interaction		
PUN x EC x Daily negative mood	.62	1.83+

Note. N=65. Observations=1116; D.f. = 1109 for the three-way interaction term. ⁺ p < .10, *p < .05.

Table 15: Multi-Level Model for the Interactive Effects of Autonomy-Inhibiting and Emotion-Coaching Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Autonomy-Inhibiting (AI)	-1.18	-1.47
Emotion-Coaching (EC)	-1.09	-2.66**
STEP 3: Two-way interactions		
AI x Daily negative mood	.18	.44
EC x Daily negative mood	-.13	-.81
STEP 4: Three-way interaction		
AI x EC x Daily negative mood	1.72	3.65***

Note. N=65. Observations=1116. D.f. = 1109 for the three-way interaction term. ⁺ p< .10, * p< .05,

p<.01, *p<.001.

Table 16: Multi-Level Model for the Interactive Effects of Adolescent Gender and Emotion-Coaching Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Adolescent Gender	-1.28	-1.48
Emotion-Coaching (EC)	-1.23	-2.59*
STEP 3: Two-way interactions		
Gender x Daily negative mood	.24	.55
EC x Daily negative mood	-.10	-.58
STEP 4: Three-way interaction		
Gender x EC x Daily negative mood	.24	.63

Note. N=65. Observations=1116. D.f. = 1109 for the three-way interaction term. ⁺ p< .10, * p< .05,

p<.01, *p<.001.

Table 17: Multi-Level Model for the Interactive Effects of Adolescent Gender and Non-EF Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Adolescent Gender	-.71	-.88
Non-Emotion-focused (Non EF)	1.54	1.21
STEP 3: Two-way interactions		
Gender x Daily negative mood	.27	.63
Non EF x Daily negative mood	.06	.14
STEP 4: Three-way interaction		
Gender x Non EF x Daily negative mood	-1.29	-2.02*

Note. N=65. Observations=1116; D.f. = 1109 for the three-way interaction term. ⁺ p< .10, * p< .05,

p<.01, *p<.001.

Table 18: Multi-Level Model for the Interactive Effects of Adolescent Gender and Punitive Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Adolescent Gender	-.69	-.84
Punitive (PUN)	.53	.62
STEP 3: Two-way interactions		
Gender x Daily negative mood	.26	.59
PUN x Daily negative mood	.35	.79
STEP 4: Three-way interaction		
Gender x PUN x Daily negative mood	-.64	-.71

Note. N=65. Observations=1116. D.f. = 1109 for the three-way interaction term. ⁺ p< .10, * p< .05,

p<.01, *p<.001.

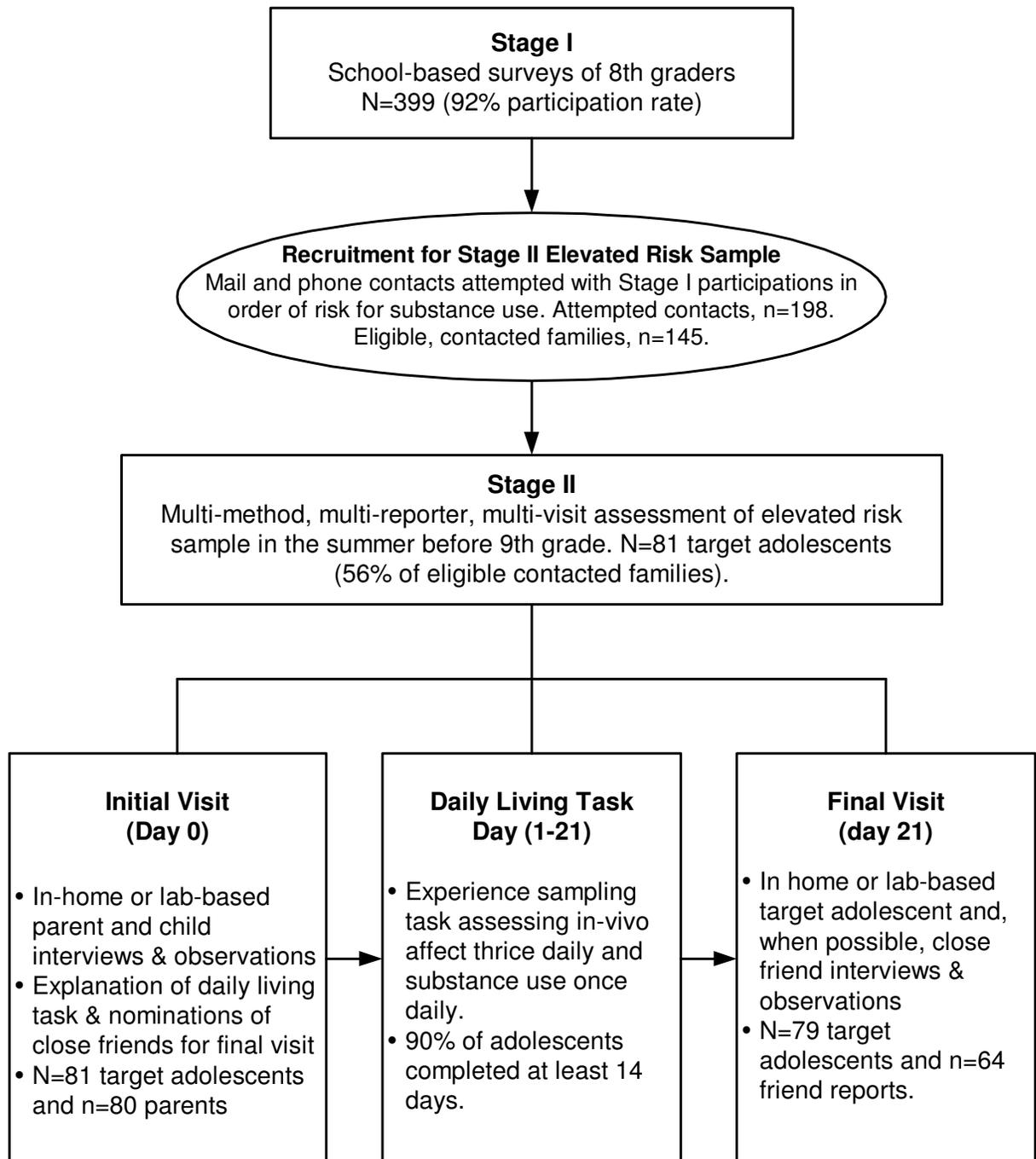
Table 19: Multi-Level Model for the Interactive Effects of Adolescent Gender and Autonomy-Inhibiting Reactions on Self-Medication

	β	t
STEP 1: Baseline model		
Daily negative mood	.02	.10
STEP 2: Main Effects		
Adolescent Gender	-.60	-.77
Autonomy-Inhibiting (AI)	-.88	-1.10
STEP 3: Two-way interactions		
Gender x Daily negative mood	.25	.55
AI x Daily negative mood	.04	.10
STEP 4: Three-way interaction		
Gender x AI x Daily negative mood	-1.28	.11

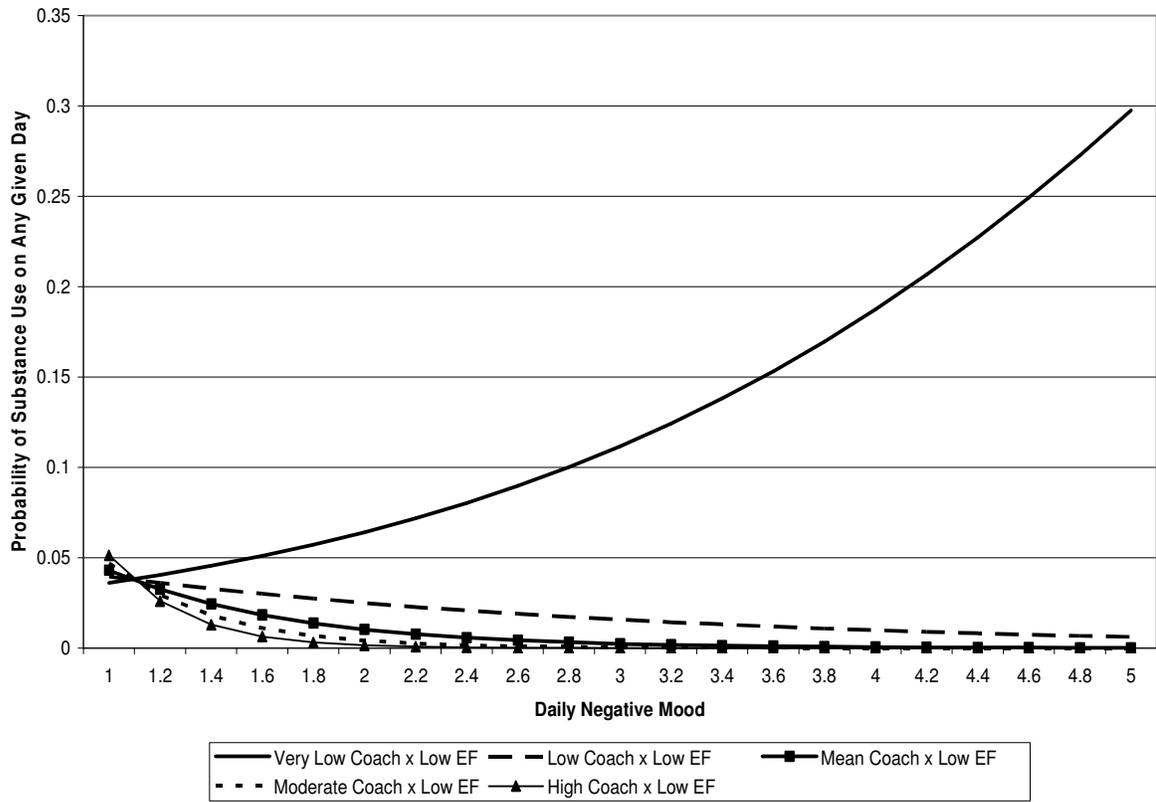
Note. N=65. Observations=1116. D.f. = 1109 for the three-way interaction term. ⁺ p< .10, * p< .05,

p<.01, *p<.001.

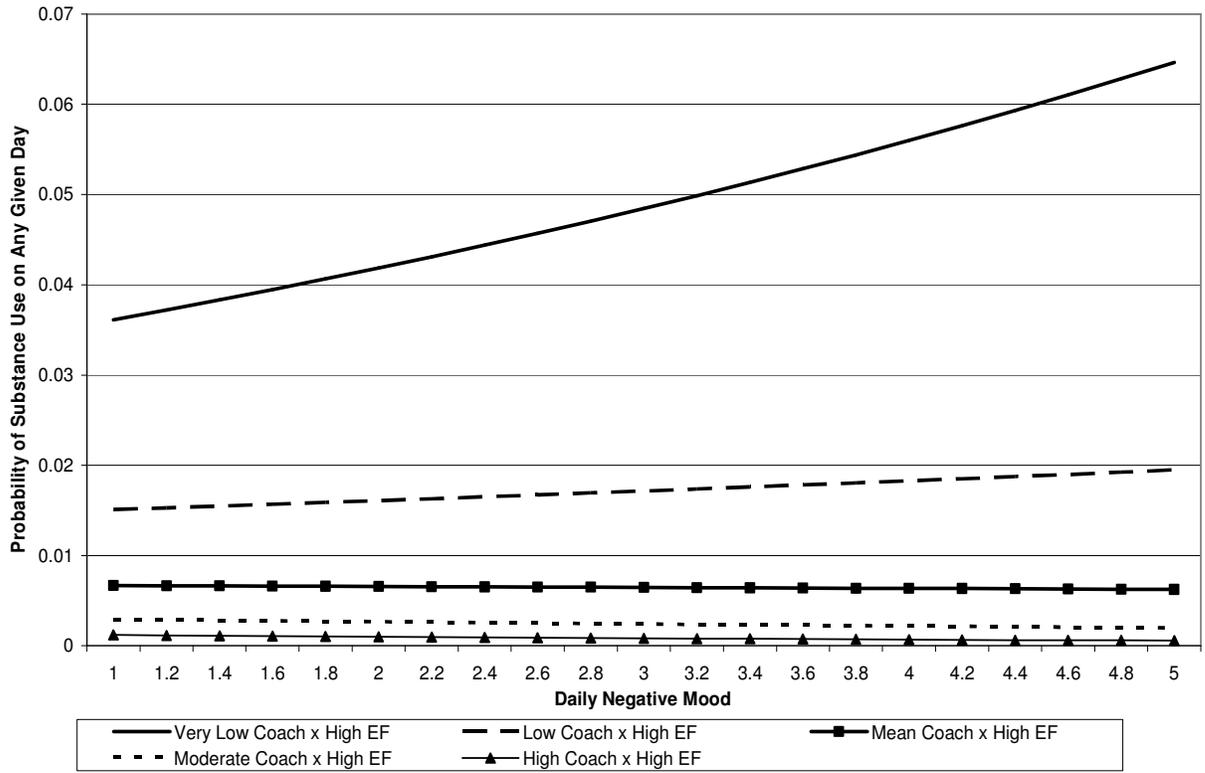
The High School Transition Study Design Overview



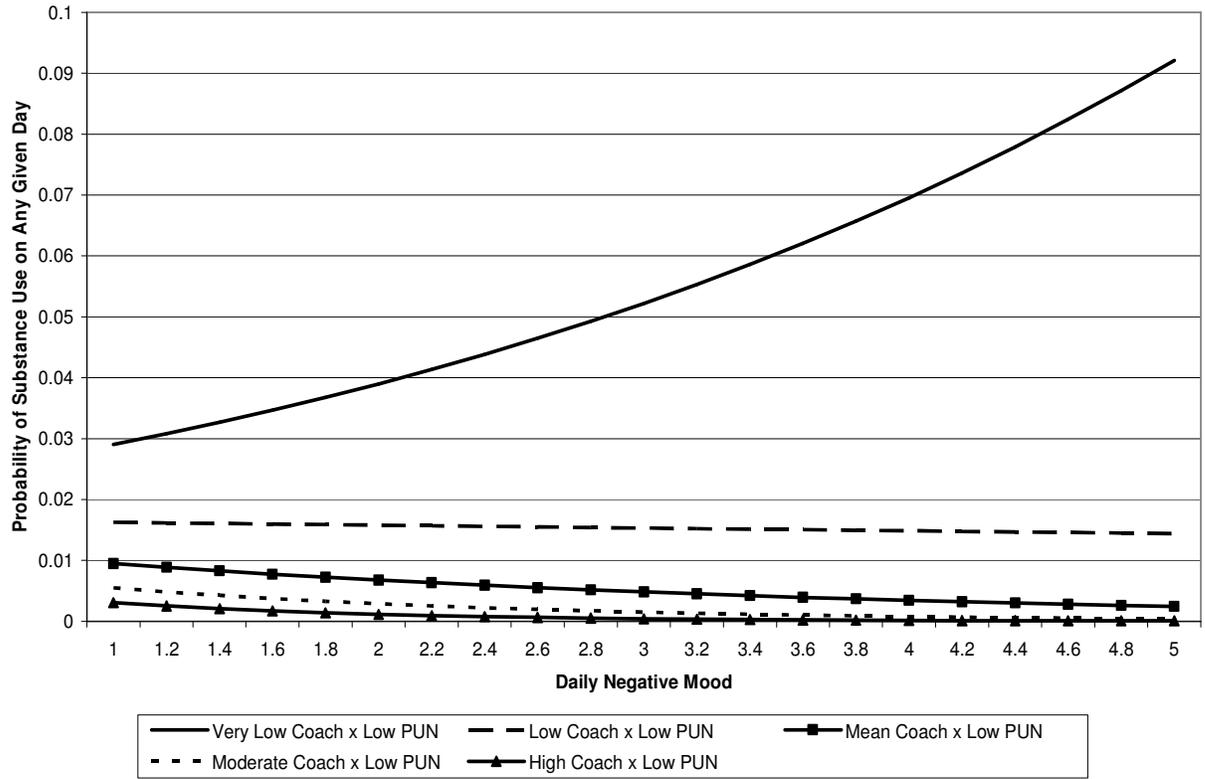
Emotion-Coaching and Low Emotion-Focused Responses Moderate Self-Medication



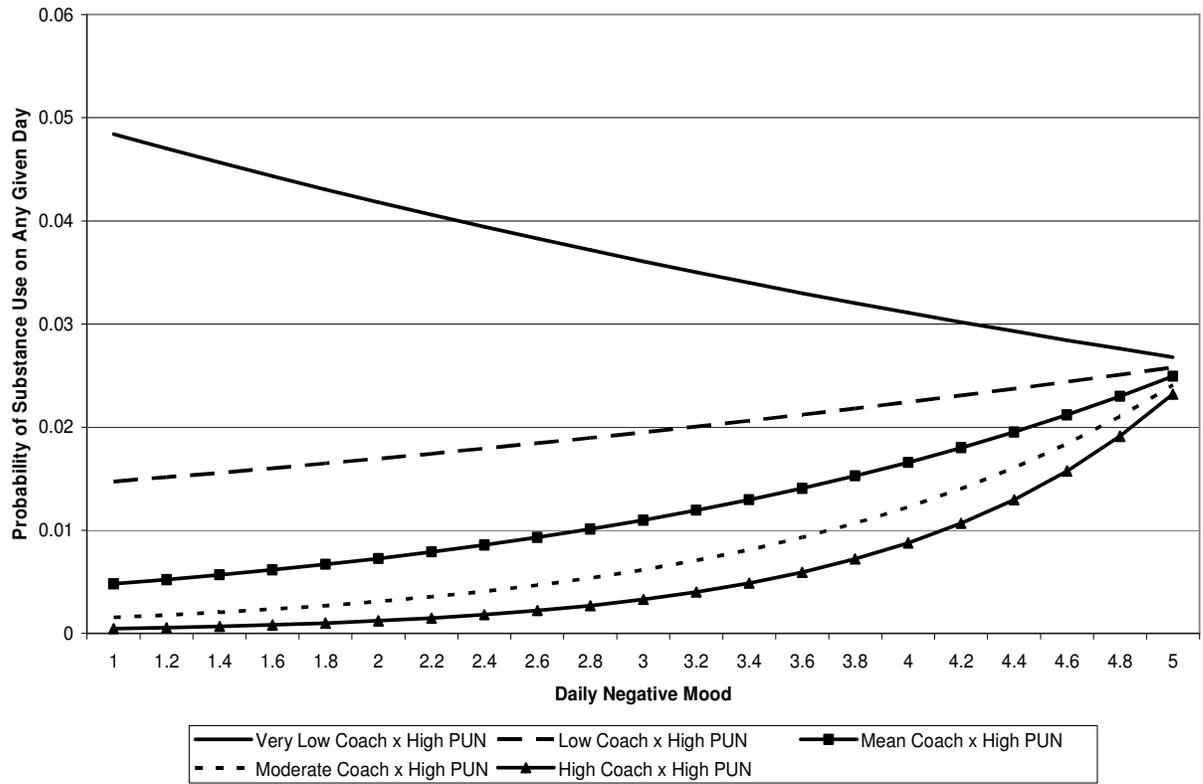
Emotion-Coaching and High Emotion-Focused Responses Moderate Self-Medication



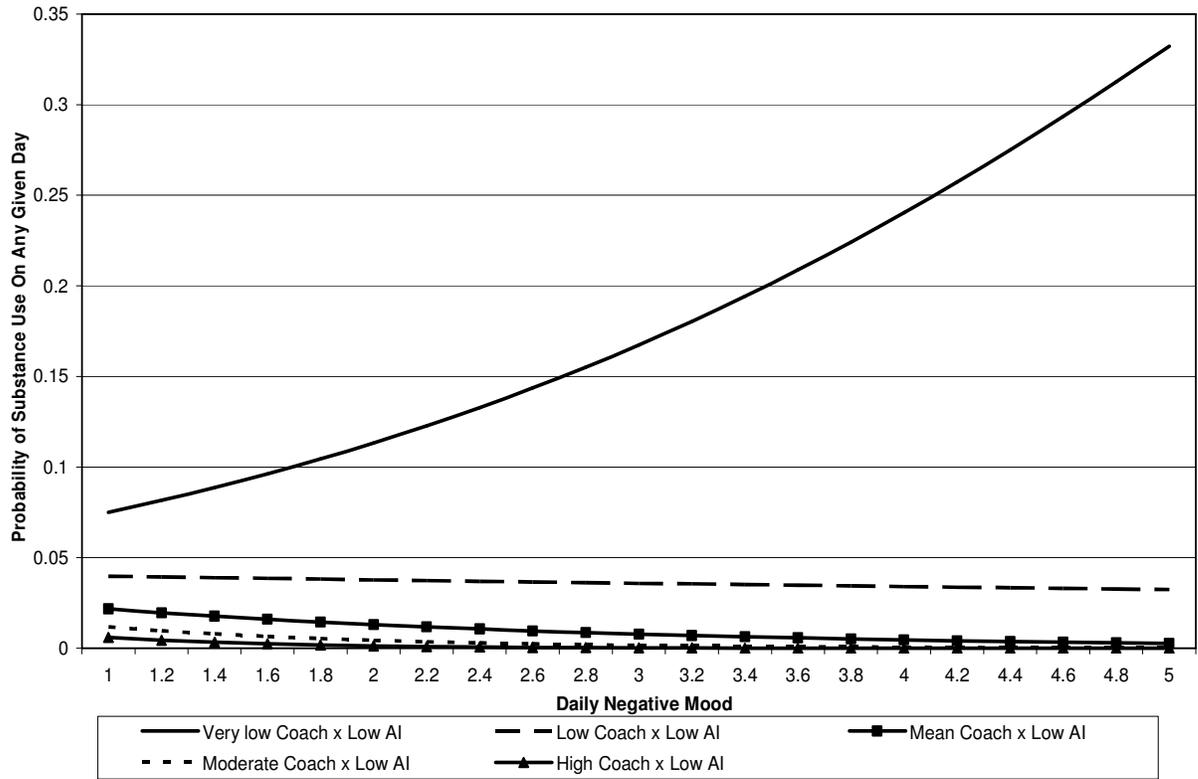
Emotion-Coaching and Low Punitiveness Responses Moderate Self-Medication



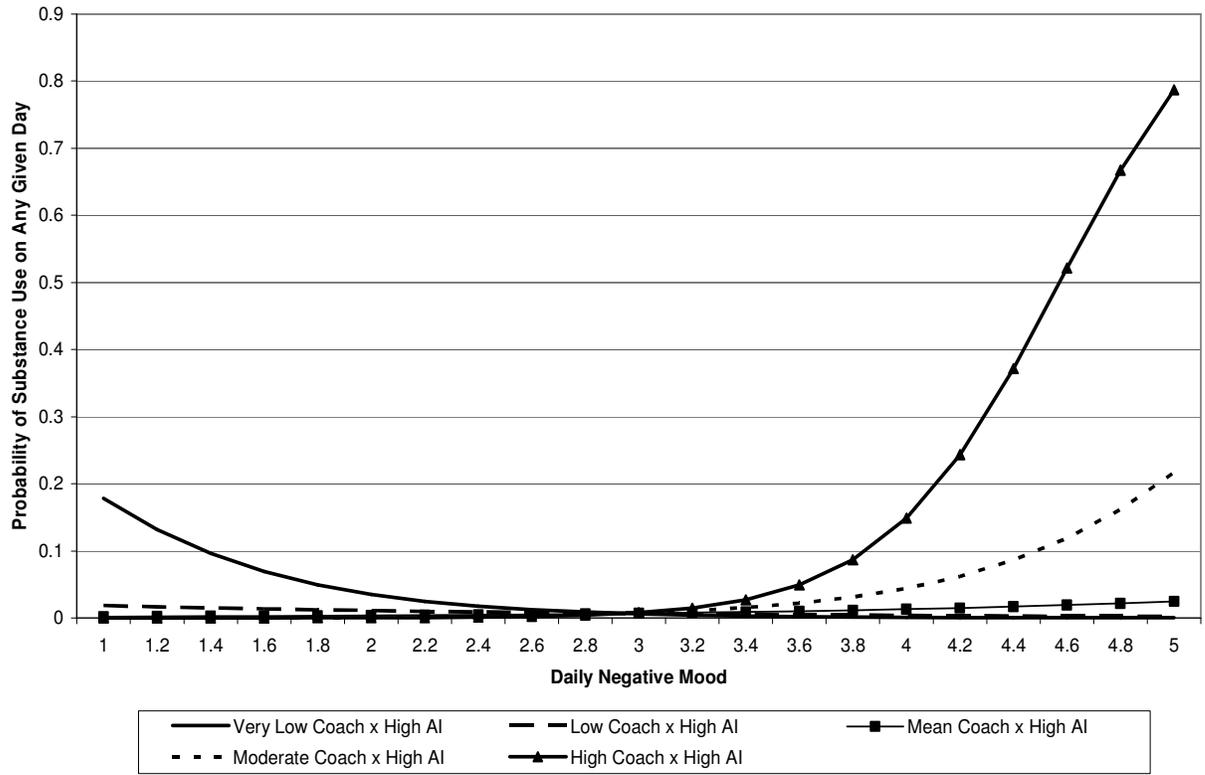
Emotion-Coaching and High Punitiveness Responses Moderate Self-Medication



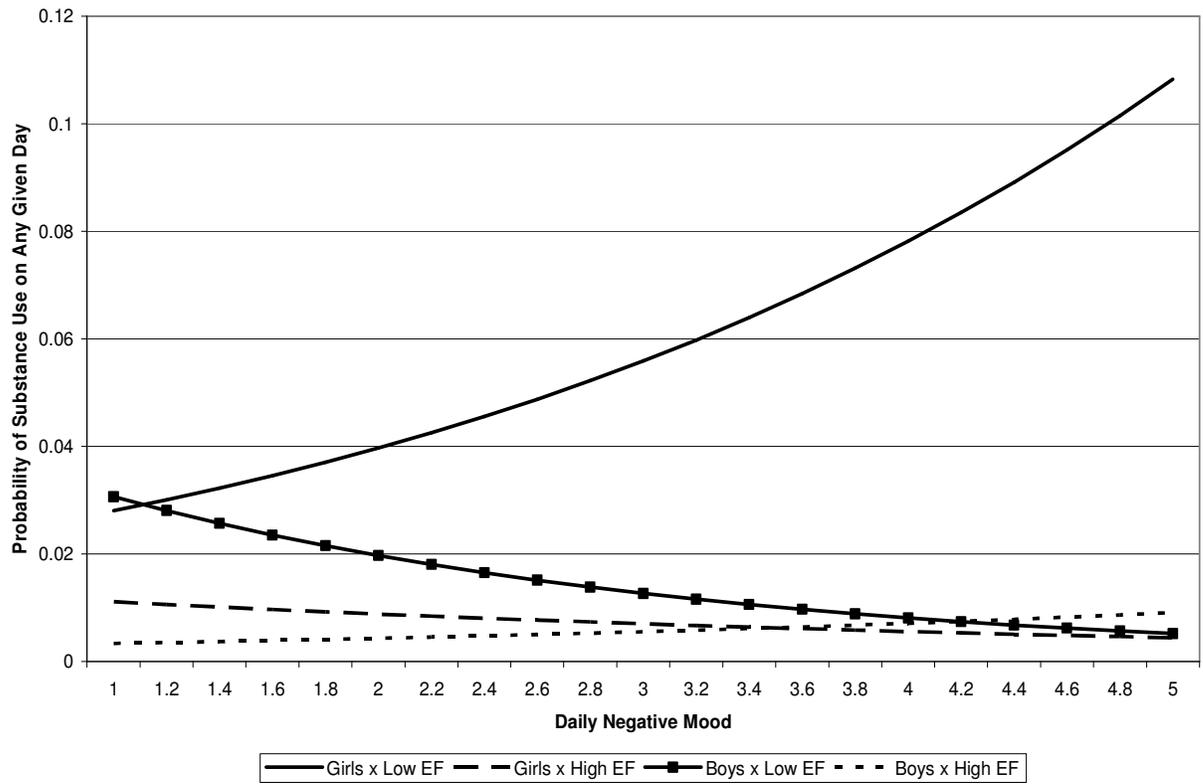
Emotion-Coaching and Low Autonomy-Inhibiting Responses Moderate Self-Medication



Emotion-Coaching and High Autonomy-Inhibiting Responses Moderate Self-Medication



Gender and Emotion-Focused Responses Moderate Self-Medication



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