# Brief Report: Associations between Emotional Competence and Adolescent Risky Behavior

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## Abstract

The current study examines associations between emotional competence (i.e., awareness, regulation, comfort with expression) and adolescent risky behavior. Children from a longitudinal study participated at age 9 and 16 (N=88). Semi-structured interviews were conducted with children about their emotional experiences and coded for areas of emotional competence. Associations were examined for the emotions of sadness and anger concurrently during adolescence, and longitudinally from middle childhood to adolescence. Results suggested that children with poor emotional awareness and regulation had a higher likelihood of using hard drugs. Difficulty regulating emotions was associated with having more sexual partners, and both emotion regulation and expression difficulties were associated with greater behavioral adjustment problems. Results were consistent across the concurrent and longitudinal findings and pointed to anger as an important emotion. Findings suggest that children's emotional competence may serve as a useful point of intervention to decrease risky behavior in adolescence.

## Keywords

Risky behavior; emotional development; emotion regulation; longitudinal

Adolescence is a period of transition when children are at higher risk for a number of behaviors including substance use, risky sexual behavior, and behavioral adjustment problems. Engagement in these risky behaviors and adjustment difficulties at a young age are particularly problematic because they are associated with many negative outcomes later in life including early pregnancy and adult alcohol dependence or abuse (Sher & Zalsman, 2005). Factors both within children's environments (e.g., parent substance use) and within the child (e.g., temperament) have been linked with risky behavior.

Recent theories have suggested that dysfunctional styles of regulating emotions and emotionally driven behaviors may be an important predictor of risky behaviors in adolescence (Cooper, Wood, Orcutt, Albino, 2003). Adolescents who lack skills for dealing with their

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emotional experiences may be more likely to engage in risky behaviors in an effort to deal with their negative affect or block out their feelings. The stress vulnerability model proposes that individuals who lack strategies for working through their emotions may turn to using substances as a way to relieve their negative emotions (Cooper, Russell, Skinner, Frone, & Mudar, 1992). In support of the model, emotion avoidant strategies have been associated with greater substance abuse (Cooper, Russell, & George, 1988), and similar findings have linked risky sexual behavior with avoidance of negative emotions (Cooper, Shapiro, & Powers, 1998). This lack of skills could involve problems in multiple emotion-related competencies including: regulating emotions, being aware of one's emotions, and effective expressing emotion. Deficits in each of these emotion-related competencies have been linked with problematic behaviors in childhood, however little work has examined outcomes in adolescence to determine their association with risky behavior (Penza-Clyve & Zeman, 2002). In this paper we will be examining associations between adolescent risky behavior and three areas of emotion–related skills collectively referred to as 'emotional competence': emotion regulation, expression, and awareness.

Where tested empirically, emotion regulation has rarely been examined as a pure measure of affect regulation in studies of risky behavior, but rather combined with impulse control, cognitive, or behavioral regulation. For example, one study found lower self-regulation in early adolescence was associated with a greater number of sexual partners in late adolescence using a multidimensional measure of self-regulation that included emotional, attentional, and behavioral regulation (Raffaelli & Crockett, 2003). Both behavioral ego undercontrol in pre-school and in adolescence were associated with higher rates of adolescent marijuana and hard drug use (Block, Block, & Keyes, 1988), and a lack of control in childhood predicted later adolescent internalizing and externalizing behaviors (Caspi, Henry, McGee, Moffitt, & Silva, 1995). Greater emotional restraint, a measure of how adolescents deal with negative affect, was associated with lower gateway drug use across an 18-month period in early adolescence for boys, but not girls (Farrell & Danish, 1993). These findings support the notion that emotion regulation plays an important role in adolescents' engagement in risky behaviors.

Emotional awareness and expressivity are emotion-related skills known to be associated with emotion regulation, and awareness has been viewed as an important precursor to regulation (Gottman, Katz & Hooven, 1997; Saarni, 1999). Poor emotional awareness and expressivity, have been linked with problematic behavior and peer relations in childhood (Saarni, 1999), and the few studies that have looked at outcomes in adolescence have found parallel behavioral results. For example, adolescents with poor understanding of emotions were found to have more internalizing problems (Penza-Clyve & Zeman, 2002). However, more work is needed to understand how adolescents' awareness of emotions or ability to effectively express emotion may relate to their decisions to engage in risky behaviors. Adolescents who are not in tune with their emotions or do not have an outlet to express emotion may have limited resources for getting over their negative feelings and turn to risky behaviors as a way to alleviate strong emotions.

While past work on emotion-related skills has concentrated on looking across emotions, work with specific emotions (e.g., anger) is needed about whether associations with emotional competence are the same across emotions or emotion specific. A related body of literature has found associations between negative mood for specific emotions and risky behavior. While mixed support has been found for links between sadness or depression and substance use, more consistent support has been found for associations between anger and increased substance use (Swaim, Oetting, Edwards, & Beauvais, 1989). Understanding how competencies around specific emotions function in predicting risky behavior could help inform potential interventions targeting emotional competence in at-risk youth.

To explore gaps in the literature, the current study examines associations between emotional competence (i.e., awareness, expressivity, and regulation) and adolescent risky behavior. Both concurrent and longitudinal work is needed to determine if the development of early emotional competencies may lay the groundwork for adolescent outcomes. Thus, associations were examined both: (1) concurrently during the adolescent period, and (2) longitudinally from middle childhood to adolescence. The specific emotions of sadness and anger were examined, as these two emotions have been linked to aggression and depression that commonly co-occur with risky behaviors such as substance use and sexual activity. Negative relations were hypothesized between each aspect of emotional competence and the adolescent risky behaviors of drug use, behavior problems, and number of sexual partners. To the extent that deficits in children's emotional competence predict heightened risky behavior, components of emotional competence can provide an important point for intervention and prevention.

## Methods

### Sample

The sample was part of a larger longitudinal study on family communication and children's conduct problems. Inclusion into the study was determined by scores on the Eyberg Child Behavior Inventory (ECBI; Robinson, Eyberg, & Ross, 1980). Following established cut-offs, children who received a score of 11 or higher on the ECBI were assigned to the CP group (N=65) and children who received a score of 7 or lower were assigned to the control group (N=65). Families were recruited through local newspapers, preschools, and pediatric offices. 130 families were originally recruited when children were on average 4.43 years old (SD=.51, range=4–6 years). Families were re-contacted four years later for Time 1 (T1) procedures (*M* age=9.03 years, *SD*=.44, range=8–10). Of the original 130 families, 65% participated in T1 procedures (N=85; 54 males, 31 females). Families were contacted again seven years later for Time 2 (T1) procedures (*M* age=16.15 years, *SD*=.63, range=14.6–17.5), and 68% of the original families participated (*N*=88; 85 completed interviews and 76 that completed questionnaires; 56 males, 32 females). Forty-four percent of the families from the original sample (n=56) participated in both T1 and T2. Ethnicity was largely Caucasian (T1=89.8%; T2=91.9). Families who continued to participate at Time 1 or Time 2 were compared to the original sample at baseline, and did not significantly differ on child gender (T1 $\chi^2$(1)=0.601, p=n.s.; T2 $\chi^2$(1)=0.363, p=n.s) or ethnicity (T1 $\chi^2$(2)=2.339, p=n.s.; T2 $\chi^2$(2)=0.079, p=n.s.).

### Procedures

At both time points children participated in the Child and Adolescent Meta-Emotion Interview (CMEI; Katz & Windecker-Nelson, 2004), a semi-structured interview that asks children to report on their experiences with anger and sadness. Sample questions from the interview are: "What does it look like when you are angry? Can you give me a recent example of a time when you were angry?" Interviews lasted approximately 45 minutes.

### Measures

**Background demographics—**Parents reported on children's gender (coded 0= male; 1=female), and family income on a scale using 10,000 dollar increments. Income for 49% of the families was over 90,000 dollars.

**Time 1 and 2 Emotional Competence—**Recordings of the CMEI were coded using the CMEI Coding System (Katz & Windecker-Nelson, 2004), a checklist rating system based on the established Parent Meta-Emotion Interview Coding System (Katz, Mittman, & Hooven, 1994). Items were coded on a Likert-type scale with 5="strongly agree" to 1="strongly disagree" and 0="don't know". Scores were derived by summing items within each dimension and using mean substitution for "don't know" responses (78% of children had 1 or fewer don't

know responses across all items). Reliability coding was completed by an independent coder (100% of the interviews at T1 and 32% at T2). Inter-rater reliability using Pearson r correlations ranged from $r$=.60 to $r$=.91 across the scales and time points. Coding of CMEI was organized into three conceptually based dimensions per emotion (sadness and anger) including children's: (1) *awareness/understanding* of their own emotion, which was assessed with seven items at T1, *M's*=25.43, 24.89, *SD's*=2.42, 3.07, for anger and sadness at T2, *M's*=25.84, 25.57, *SD's*=2.37, 3.61, respectively); (2) comfort with their *expressivity* of their own emotion, which was assessed with four items (e.g., expressed the emotion whether alone or with others; for anger and sadness at T1, *M's*=14.25, 14.00, *SD's*=1.74, 2.07, for anger and sadness at T2, *M's*=13.58, 13.07, *SD's*=1.66, 2.14, respectively), and (3) *regulation* of their own emotion, which was assessed with five items (e.g., had difficulty regulating the intensity of the emotion; for anger and sadness at T1, *M's*=18.96, 19.53, *SD's*=1.24, 0.67, for anger and sadness at T2, *M's*=18.67, 18.85, *SD's*=1.86, 2.58, respectively). The average alpha across scales and time points was .68. Alphas for individual scales were comparable to those previously found (Hunter, 2008).

### Time 2 Adolescent Risky Behavior

**Hard Drug Use:** Adolescents reported on their use of individual hard drugs (i.e., amphetamines, cocaine, crack, LSD, heroin/other narcotics, methamphetamines, ecstasy, GHB/rohypnol) on the American Drug and Alcohol Survey (Edwards, 1993). Due to the low levels of endorsement, responses were scored as a dichotomous variable for lifetime drug use ["0"=never used any hard drugs (88%), "1"=tried one or more hard drugs (12%].

**Number of Sexual Partners:** Adolescents completed a Sexual Behavior Questionnaire based on items utilized in previous studies (Beadnell et al., 2005). For the current study, a single item "In the last year, how many people have you had sexual intercourse with?" was used to assess recent sexual risk as indexed by number of sexual partners (*M*=0.40, *SD*=0.94).

**Behavioral Problems:** Adolescents completed the CBCL-Youth Self-Report Form (Achenbach, 1991). The broad-band scale of total behavior problems (which encompasses both internalizing and externalizing problems) was used to assess general levels of behavioral adjustment (Total score *M*= 9.82, *SD*=7.25). There was very minimal overlap between the measure of behavioral problems and the measures of substance use and sexual risk taking, with 1 CBCL item pertaining to drug use on the overlapping with the ADAS measure of drug use.

## Results

### Preliminary and Bivariate Analyses

Because of the skewness typical of constructs with low base rate, transformed variables were calculated where necessary and used in all analyses. A log transformation was used on emotion regulation for sadness and anger at Time 1, and a square root transformation was used for number of sexual partners. Relations among the measures of emotional competence displayed a range in strength of association (*r's* ranged from .02–.56). Adolescent risky behavior measures were all moderately inter-correlated (*r's* ranged from .36–.55).

### Regression Analyses

To examine relations between emotional competence and risky behaviors, multiple regression analyses were conducted using hierarchical regression for continuous outcomes (sexual partners and behavior problems), and logistic regression for the dichotomous outcome of hard drug use. Analyses were conducted for the two emotions of sadness and anger individually. In each regression, the covariates of age, income, and gender, which have been noted to be associated with risky behaviors, were entered on Step 1. On Step 2 the three areas of emotional

competence (i.e., awareness, expression, and regulation) were entered simultaneously. This allowed for determining the unique contribution of each area of emotional competence. Identical sets of analyses were conducted concurrently (within adolescence) and longitudinally (from middle childhood to adolescence).

When examining the number of sexual partners, the concurrent models were significant for anger and sadness (see Table 1 for anger results). During adolescence having fewer sexual partners was associated with a greater ability to regulate anger and sadness ($\Delta R^2 = .16$, $\Delta F (3,66) = 4.36$, $\beta = -.28$, $p < .05$). The longitudinal model for anger specifically also reached significance. Greater anger emotion regulation during middle childhood was associated with fewer sexual partners during adolescence. This effect remained significant even after controlling for concurrent anger emotion regulation abilities during adolescence ($\beta = -.31$, *p<. 05*).

For total behavior problems the concurrent model was significant for anger, where adolescents with greater regulation and comfort with expression of anger reported fewer behavior problems (Table 1). A similar pattern of results was found in the corresponding longitudinal model. The effect for anger regulation was a trend, however the effect for expression remained significant even after controlling for anger expression during adolescence ($\beta = -.30$, *p<.05*). Neither of the models for sadness reached significance.[1]

When examining hard drug use, the concurrent model for anger was significant $\chi^2(6) = 24.23$, *p<.01* (see Table 1). During adolescence, greater emotion regulation and awareness of anger was associated with decreased likelihood of using hard drugs. The same pattern of results was found in the longitudinal model ($\chi^2(6) = 18.25$, *p<.01*), and emotion regulation and awareness during middle childhood continued to predict hard drug use even after controlling for these competencies during adolescence (*OR*=.36 and .55 for regulation and awareness respectively). Neither of the models for sadness reached significance.

## Discussion

The present study examined associations between aspects of emotional competence (i.e., awareness, expression, and regulation) and adolescent risky behavior (i.e., hard drug use, sexual partners, and behavior problems). Our hypotheses were largely supported with each area of risky behavior being associated with deficits in emotion-related skills. A virtually identical pattern of results was found across the longitudinal and concurrent results. Findings demonstrate that problematic emotional competence skills formed during middle childhood predict risky behavior in adolescence-- above and beyond emotional competence difficulties experienced during adolescence-- making emotional competence a viable point to intervene for the prevention of adolescent engagement in risky behavior.

Having a higher number of recent sexual partners was linked with difficulty regulating emotions in both middle childhood and adolescence. The current findings extend our knowledge to show that the skill of emotion regulation is predictive of later sexual activity. Adolescents who experience intense feelings may seek out situations that will immediately alleviate their emotions, leading them to make more impulsive sexual decisions. Findings are in line with Cooper and colleagues (1998) who found adolescents that use sex as a way to get over negative emotions are more likely to have a greater number of sexual partners. This can have serious consequences, such as acquiring sexually transmitted diseases and unwanted pregnancies.

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[1]Note: A virtually identical pattern of results was found for the internalizing problems scale and the externalizing problems scale, which combined are the total problems scale.

Likelihood of using hard drugs was associated with deficits in emotion regulation and awareness of anger in both middle childhood and adolescence. The results build on previous work that has found associations between substance use and emotional under-control, and extends our knowledge to other areas of emotional competence (Farell & Danish, 1993). In line with the stress vulnerability model, results suggest that when emotionally upsetting events occur, adolescents who are without strategies for understanding or getting over their negative feelings are at increased risk for using substances. Past research has shown that adolescents with higher levels of substance use are more likely to hold the belief that engaging in risky behaviors will lower their negative affect (Caffray & Schneider, 2000). The pharmacological effect of using substances may provide a way for adolescents to deal with their negative affect or block out feelings.

Behavioral adjustment problems were associated with difficulty regulating anger and a lack of comfort expressing anger. Studies have consistently reported higher levels of internalizing and externalizing behavior problems among children with emotion regulation difficulties (e.g., Eisenberg et al., 2001). The current results build on this literature by demonstrating that deficits in emotional competence during middle childhood and adolescence continue to impact behavioral problems during the adolescent period. While little work has explored comfort with expressing negative emotions, related research has proposed that an inhibition or over-control of emotional expression may be linked with internalizing problems (Plutchik, 1993). If adolescents do not have adequate regulation abilities or outlets for expression, the negative emotion could fester to the point of internalizing their feeling or take the form of the adolescent aggressively lashing out at their environment.

Interesting differences emerged for anger and sadness. Findings for anger-related skills are consistent with literature reporting relatively robust links between anger and substance use (e.g., Swaim et al., 1989). Difficulties with anger regulation were broadly associated with heightened risk for a range of risky behaviors. Results are in agreement with clinical impressions and previous work that has found anger to be associated with outwardly aggressive or destructive tendencies such as substance use and behavioral maladjustment that may result from a lack of effective strategies for dealing with anger (e.g., Nichols et al., 2008). Findings support previous work that argue for risky behavior intervention programs to include components aimed at strengthening anger emotion-related skills (Nichols et al., 2008).

In contrast to the consistent findings for anger, the sole finding for sadness was the concurrent association between sadness emotion regulation and number of sexual partners. Findings are agreement with inconsistent findings for sadness in previous literature on mood and risky behavior (Swaim et al., 1989). Sadness may represent a more intimate emotion, with effects that are seen clearest in close interpersonal situations, such as romantic and sexual contexts. When youth have difficulty regulating sadness, they may attempt to fill the emotional void and sense of loneliness by searching for a connection with others through sex. Given the important psychological and health-related risks associated with having multiple sexual partners, the results point to the importance of understanding how regulation of specific emotions affects psychosocial adjustment. The majority of related work on sadness and risky behavior has assessed sadness via depression or MDD, rather than experience of sadness per se. This may partially explain the lack of findings for sadness emotion-related skills, which are related, but distinct from depression. Interventions focused on dysfunction in youth's intimate relations may benefit from discussing how dysregulated sadness may lead to risky sexual activity.

The current study has several limitations that are worth noting. The sample size was moderate with a considerable amount of attrition over the course of the longitudinal project, leading to a limited power to detect small effects. As a result of the sample being a community sample, there was also a lack of ethnic diversity and low levels of some of the risky behaviors. Finally,

some of the measures (i.e., number of sexual partners and hard drug use) referred to different reporting periods, and the measure of income was ordinal in nature, which could limit the findings. Future research should replicate the current findings with larger and more diverse samples and with populations of high risk adolescents.

Findings from the current study suggest that emotional competence, and most notably anger emotion regulation, predicted adolescent's engagement in risky behaviors. The findings support the stress vulnerability model by exploring associations for multiple emotion-related skills, and pinpointing emotional risk factors, both in the type of skill (i.e., regulation) and in the specific emotion (i.e., anger). The current results also contribute to the emotional competence literature, by extending associations between emotion-related skills and problematic outcomes into the adolescent period and into the realm of risky behaviors. Findings point to the importance of children's emotional competence for future intervention and prevention work. Several interventions have reported success in helping children with deficits in emotional competence learn to recognize emotions and teach emotion regulation strategies (e.g., Greenberg, Kusche, Cook, & Quamma, 1995), making this a practical point of intervention for children aimed at decreasing adolescent risky behavior. The emotion specific findings for anger have potential implications for targeting children at risk for engaging in risky behaviors, and for the design of interventions aimed at building specific emotion-related skills. Based on the current findings, one emphasis of such programs should be on building emotion regulation skills for handling anger. In addition, increasing youth awareness of their emotions (particularly anger) and their comfort around expressing feelings in appropriate ways may help protect them against different forms of risky behaviors.

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**Table 1**

Regressions of anger emotion-related skills on adolescent risky behaviors.

| | Number of sexual partners | | | | | | | | Behavior problems | | | | | | | |
| | Concurrent | | | | Longitudinal | | | | Concurrent | | | | Longitudinal | | | |
| | ΔR² | ΔF | df | β | ΔR² | ΔF | df | β | ΔR² | ΔF | df | β | ΔR² | ΔF | df | β |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Step 1 | .05 | 1.24 | 3,69 | | .11 | 2.08 | 3,53 | | .10 | 2.66 | 3,69 | | .07 | 1.36 | 3,53 | |
| Age | | | | .08 | | | | .29* | | | | .28* | | | | .29* |
| Gender | | | | -.11 | | | | .15 | | | | -.02 | | | | .16 |
| Income | | | | -.05 | | | | -.04 | | | | .01 | | | | .19 |
| Step 2 | .25 | 7.82 | 3,66 | | .14 | 3.11 | 3,50 | | .18 | 5.41 | 3,66 | | .16 | 3.39 | 3,50 | |
| Awareness | | | | -.08 | | | | .01 | | | | .20 | | | | .06 |
| Expression | | | | -.09 | | | | -.09 | | | | -.23* | | | | -.35** |
| Regulation | | | | -.51*** | | | | -.40*** | | | | -.37** | | | | -.25+ |

Hard drug use

| | Concurrent | | | Longitudinal | | |
| | OR | 95% CI | p | OR | 95% CI | p |
|---|---|---|---|---|---|---|
| Age | 0.21 | (.02–1.89) | .16 | 12.67 | (.38–424.81) | .16 |
| Gender | 1.82 | (.10–34.30) | .69 | 3.87 | (.25–60.07) | .33 |
| Income | 0.85 | (.61–1.20) | .37 | 0.91 | (.62–1.34) | .63 |
| Awareness | 0.51* | (.31–.83) | .01 | 0.57* | (.32–1.01) | .05 |
| Expression | 1.31 | (.57–3.01) | .52 | 3.11 | (.49–19.99) | .23 |
| Regulation | 0.51* | (.29–.88) | .02 | 0.28* | (.10–.81) | .02 |

Note: Betas are from the final step of the regression.

+ p < .10

*
$p < .05$

**
$p < .01$

***
$p < .001$