Effect of coping on substance use in adolescent girls: a dyadic analysis of parent and adolescent perceptions

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This study retrospectively investigated the relationship between internalising/externalising behaviours, coping behaviours and substance use in adolescent girls using data from 91 mother–daughter dyads. Participants filled out self- or parent questionnaires that incorporated Achenbach’s [Achenbach, T. M. (1991). Manual for the youth self-report and 1991 profile. Burlington, VT: Department of Psychiatry, University of Vermont] Young Adult Behavior Checklist (YABCL) and Young Adult Self-Report Form (YASR) to measure internalising/externalising and drug use, as well as additional questions on coping behaviours. Data analysis included exploratory factor analysis, linear regression and structural equation modelling utilising a common fate model for the analysis of dyadic data. The results demonstrated a significant positive relationship between escape/avoidance coping and internalising/externalising and a significant positive relationship between externalising and drug use. Implications for the use of dyadic data and future research are also discussed.

Keywords: adolescents; externalising; internalising; coping; drug use; dyadic data analysis

Introduction

Adolescent female drug and alcohol use in the USA is an issue on the rise and often under addressed in prevention efforts (Kumpfer, Smith, & Summerhays, 2008). Although adolescent males have historically had higher substance use prevalence than their female counterparts, the scales appear to be balancing and, in some cases, tipping in the opposite direction (Kumpfer et al., 2008; Office of National Drug Control Policy, 2006; Substance Abuse and Mental Health Services Administration, 2010, 2011).

According to the National Survey on Drug Use and Health (Substance Abuse and Mental Health Services Administration, 2010), adolescent females aged 12–17 have higher substance dependence and abuse prevalence rates (7.4%) than males in the same age group (6.7%). Recreational use of psychotropic drugs and pain relievers is also higher among adolescent females (Substance Abuse and Mental Health Services Administration, 2011), and rates of current, binge or heavy alcohol use were relatively similar for adolescent females and males, with 13.5% of females and 13.7% of males reporting use (Substance Abuse and Mental Health Services Administration, 2010).

Studies on both males and females have demonstrated negative behavioural health and developmental trajectories resulting from adolescent substance use, including an association between adolescent alcohol use, suicidality and depression (Galaif, Sussman,
Newcomb, & Locke, 2007) and between adolescent substance abuse that requires treatment and deficits in verbal learning/memory and visuospatial memory (Hanson, Cummins, Tapert, & Brown, 2011).

Internalising and externalising behaviours have been proposed as mediators between adolescent stress coping and substance use through pathways of negative affect regulation and deviance proneness, respectively (Sher, Grekin, & Williams, 2005). Although girls tend to report more internalising behaviours and symptoms than boys, a study by Winters, Stinchfield, Latimer, and Stone (2008) demonstrated that drug-abusing girls show both higher internalising and externalising behaviours than drug-abusing boys.

In addition to the call for research regarding gender-specific trajectories and mediators of substance use, there is an identified need for standardised adolescent-specific models of coping (Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001; Garcia, 2010). Compas et al. (2001) recommended supplementing adolescent self-reports with reports from parents and teachers for greater accuracy in studies of coping in children and adolescents.

This study uses data from a retrospective matched-pair mother and daughter survey to investigate the role of internalising/externalising and coping behaviours on female adolescent substance use. The following research questions guided this study: (a) Is there a correlation between female adolescent levels of coping, substance use, and internalising and externalising behaviours? (b) Does problem-focused coping as reported by the dyad predict levels of internalising and externalising behaviours and daughter’s self-report of substance use?

Literature review

Coping

Emotion-focused and problem-focused coping

Lazarus and Folkman’s (1984) model of coping distinguishes between emotion-focused and problem-focused coping. Emotion-focused coping refers to approaches in which the individual copes with distress by reappraising the situation. Problem-focused coping, in comparison, refers to approaches such as ‘defining the problem, generating alternative solutions, weighing the alternatives in terms of their cost and benefits, choosing among them, and acting’ (p. 152). According to Lazarus and Folkman (1984), emotion-focused and problem-focused coping are not mutually exclusive processes and each have adaptive and maladaptive applications.

Folkman, Lazarus, Dunkel-Schetter, DeLongis, and Gruen (1986) identified eight forms of coping consisting of both emotion-focused and problem-focused strategies: confrontative coping, distancing, self-control, seeking social support, accepting responsibility, escape/avoidance, planful problem-solving and positive reappraisal. In an earlier article with slightly different coping scales, Folkman and Lazarus (1985) identified emotion-focused ways of coping as wishful thinking, distancing, emphasising the positive, self-blame, tension reduction and self-isolation. Problem-focused coping stood alone as its own category and social support was categorised as a mixed emotion-focused and problem-focused form (Folkman & Lazarus, 1985).

Adolescent coping and substance use

Although studies have used various coping models, findings have been generally consistent in identifying emotion-focused approaches with higher levels of substance use in
adolescent populations and/or problem-focused approaches with lower levels of substance use (Aldridge-Gerry et al., 2011; Wagner, Myers, & McIninch, 1999; Wills & Hirky, 1996). Ohannessian et al. (2010) found that adolescents engaged in coping behaviours including religious involvement, planning and social support reported the lowest levels of alcohol consumption, while those who engaged in denial, disengagement and drinking to cope reported the highest levels. In contrast, positive correlations have been found between alcohol use and emotional rumination and minimising (Aldridge-Gerry et al., 2011) as well as between alcohol use and avoidant coping (Digdon & Landry, 2013).

In terms of gender differences in adolescent coping and substance use, Wills, Sandy, Yaeger, Cleary, and Shinar (2001) studied the relationship between adolescent substance use and engagement and disengagement dimensions of coping and found a stronger positive correlation between life stress and substance use for girls than boys. However, Wills et al. (2001) did not find gender differences in the effects of coping on substance use. Adolescent girls may also be more likely than boys to engage in emotion-focused coping such as co-rumination (Carlson & Grant, 2008; Rose, Carlson, & Waller, 2007), which consists of ‘excessively discussing problems’ (Rose et al., 2007, p. 1019). Carlson and Grant (2008) found a positive correlation between stress and psychological symptoms and found that certain types of coping mediated this relationship. For example, ‘more use of ruminative coping was associated with higher levels of symptoms’ (p. 397). Rose et al. (2007) found that co-rumination was a protective factor against friendship problems but a risk factor for internalising symptoms such as depression and anxiety in adolescent girls. Rose et al. (2007) proposed that the positive friendship benefits of co-rumination might be particularly reinforcing for adolescent girls in spite of the increased risk of internalising symptoms.

Internalising and externalising behaviours

A number of theories have postulated a relationship between internalising (anxiety, depression) and externalising (aggression, delinquency) behaviours and substance use (King & Chassin, 2008; Sinha, 2001; Wills & Hirky, 1996; Wills et al., 2001). According to King and Chassin (2008), ‘Each theory hypothesizes that exposure to stressors produces elevations in negative emotions (or internalizing symptoms), and these increases in negative emotions in turn lead to increased substance use and risk for substance-use disorders’ (p. 630).

Despite these theories, some studies have found limited evidence on the effects of internalising behaviours on substance use disorders and adolescent substance use (Chassin, Pitts, DeLucia, & Todd, 1999; King & Chassin, 2008). Generally, the relationship between externalising behaviour and substance use has been better established. Wills et al. (2001) found that life stressors led to externalising behaviours and that these behaviours predisposed individuals to peer contexts that further promoted externalising behaviours which, in turn, reinforced substance use. Tarter, Kirisci, Ridenour, and Vanyukov (2008) found externalising behaviours to be predictors of adolescent marijuana use but did not find support for internalising behaviours as predictors. Winters et al. (2008) also reported that individuals with externalising behaviours, compared with individuals with internalising behaviours, were particularly resistant to substance use treatment and demonstrated higher levels of drug use post-treatment. Winters et al. (2008) argue that because externalising disorders often result from ‘poor affiliation with parents, schools, and prosocial institutions’ (p. 276), substance use treatment programmes should address these disparities rather than allow them to negatively impact treatment.
Some studies have offered support for a relationship between internalising behaviours and substance use. Schlauch, O’Malley, Rounsaville, and Ball (2012), in their study of internalising and externalising behaviours for first time DWI offenders, found that the ‘internalizing dimension indirectly predicted problematic alcohol use through coping self-efficacy in negative situations only, whereas an externalizing dimension indirectly predicted problematic alcohol use through coping self-efficacy in positive situations only’ (p. 133). In other words, situations provoking negative affect (internalising) often elicited coping through substance use to manage the negative affect, while situations provoking positive affect often elicited coping through substance use to enhance the positive affect (externalising). Sher et al. (2005) argued that the relationship between alcohol use disorders and internalising and externalising disorders lies along the dispositional dimensions of neuroticism/negative emotionality, impulsivity/disinhibition and extraversion/sociability.

The research to date on the relationship between internalising and externalising behaviours and substance use in adolescent populations has demonstrated differences across genders. Clingempeel, Britt, and Henggeler (2008) found that while higher levels of externalising disorders were correlated with higher internalising, delinquency and criminality for both genders, internalising diagnoses were associated with higher levels of criminality in females only. Winters et al. (2008) also reported higher internalising and externalising behaviours in drug-abusing girls than drug-abusing boys.

**Research questions**

The research to date suggests that emotion-focused coping is associated with higher substance use levels in adolescents than problem-focused coping. There is also support for internalising and externalising behaviours serving as mediators between stress coping and substance use. The relationship between depression and substance use in adolescent girls is also in line with the research demonstrating a higher representation of internalising behaviours and symptoms by females. As Winters et al. (2008) argue that treatment programmes should be designed to optimise care for substance using individuals with externalising disorder, it is important that there are treatment and prevention programmes also designed for individuals with internalising disorders and for the gender-specific needs and trajectories of adolescent females.

This study will test the following hypotheses: (a) emotion-focused coping is positively related to internalising and externalising behaviours and substance use, (b) problem-focused coping is negatively related to internalising and externalising behaviours and substance use, (c) internalising and externalising behaviours mediate the relationship between coping and substance use and (d) emotion and problem-focused coping are positively related to internalising and externalising behaviours and daughter’s self-report of substance use.

**Methodology**

**Data collection procedures**

Data were collected from undergraduate students in classes in a variety of majors (but predominantly in Human Development and Family Studies courses) at a large university in the western USA. The first author received permission to come to classes and hand out questionnaire packets. The questionnaire packet included a self-report version as well as a parent version and included self-addressed stamped envelopes for each so that the student and parent could return the questionnaires separately. Students were asked to have one of
their parents or some other close relative complete the parent version. Classrooms were visited a second time to remind students to complete the questionnaires.

**Measures**

The survey instrument included YABCL (Achenbach, 1991) and YASR (Achenbach, 1991). Achenbach (1997) reports test–retest reliability mean rs of 0.84 for the YASR and 0.87 for the YABCL. These correlations were significant at \( p < 0.001 \). In terms of cross-informant reliability, the mean \( r \) between adolescent self-report on the YASR and parent report on the YABCL was 0.42.

Achenbach’s (1997) analysis of content validity found significant evidence that adaptive functioning and substance use items effectively differentiated adults who had been referred to mental health services from those who had not been referred. Similarly, analysis of criterion-related validity demonstrated significant variation between referred and non-referred populations on the YASR/YABCL problem scales (including the internalising and externalising groupings).

Most of the YASR substance use scale also demonstrated criterion validity; however, the clinical cut-off point on the alcohol scale differentiated between referred and non-referred adults for females only. Second-order factor analysis was used to determine the categorisation of syndrome scales into internalising or externalising groupings. The internalising grouping includes the Anxious/Depressed and Withdrawn scales, while the externalising grouping contains the Intrusive, Aggressive Behaviour, and Delinquent Behaviour scales.

This study focuses on the substance use scales for drug use from the YASR (the parent version of the survey did not ask about substance use), strategies used to cope with stress during adolescence, as well as descriptions of perceptions regarding safety in the community and risk behaviours of the adolescents’ peers. The YASR and YABCL internalising and externalising summary scores were also used. Raw scores (rather than \( T \)-scores or percentiles) from the YASR and YABCL were used in the analyses based on recommendations by Achenbach (1991). Questions on coping behaviours were developed by the first author based on extensive review of the literature on coping.

**Participants**

A total of 157 questionnaires were returned. There were 141 returned student questionnaires (132 females and 9 males), and 124 parent questionnaires (109 females and 15 males). Because of the extremely small numbers of male respondents, the first author decided to focus on matched pairs of female adolescents and their mothers. This results in 91 matched pairs with complete data for both the adolescent females and their mothers. The mean age of the adolescents was 20.7, while the mean age of the parents was 49. The sample was predominately Caucasian (85.7% of the adolescents and 90.1% of the reporting parents). The adolescents reported that they grew up in primarily suburban (70.8%) or rural (19.1% settings). Most reported that their parents were not divorced (68.1%). The reporting parents were well educated, with only 14% having no college education.

**Results**

Exploratory factor analysis was used to identify coping items related to different styles of coping. Lazarus and colleagues’ (1986) eight forms of coping (confrontative coping,
distancing, self-control, seeking social support, accepting responsibility, escape/avoidance, planful problem-solving and positive reappraisal) were used as a framework to understand the resultant factors. Analysis yielded four coping scales: self-control/distancing (a combination of two of Lazarus and colleagues coping scales), seeking social support, escape/avoidance and community orientation (a coping scale not identified by Lazarus and colleagues, 1986). Table 1 summarises the factor loadings of each item on its corresponding coping scale.

Table 2 summarises the correlations and descriptive statistics for the YASR and YABCL internalising and externalising raw scores, the coping scale raw scores and the YASR drug use raw score. The self-report and parent report mean scores for internalising and externalising were significantly different (internalising \( t (89) = 10.28, p < 0.001 \); externalising \( t (89) = 4.27, p < 0.001 \) – see Table 2), indicating that the adolescents reported significantly higher levels of internalising and externalising than the parents reported. However, strong positive correlations were found between self-report and parent report of internalising \( r = 0.614 \), indicating that although the scores from these reports were significantly different (see above), they were related.

Mean differences were found between self-report and parent report on all coping scales except for seeking social support (self-controlling/distancing \( t (90) = 3.940, p < 0.001 \); escape/avoidance \( t (90) = 3.141, p < 0.001 \) and community orientation \( t (90) = 2.263, p = 0.026 \) – see Table 3). Because the survey did not ask about parent report of drug use, it was not possible to assess the mean differences between self-report and parent report for this variable.

Table 1. Factor loadings on coping items on corresponding coping scale.

| Coping items                        | Self-control/distancing | Seeking social support | Escape/avoidance | Community orientation |
|-------------------------------------|-------------------------|------------------------|------------------|-----------------------|
| Kept things to self                 | 0.6                     |                        |                  |                       |
| Spent time alone                    | 0.708                   |                        |                  |                       |
| Watched TV                          | 0.376                   |                        |                  |                       |
| Slept                               | 0.613                   |                        |                  |                       |
| Asked others for help               | 0.792                   |                        |                  |                       |
| Talked to others in same situation  | 0.73                    |                        |                  |                       |
| Used religion/spirituality          | 0.54                    |                        |                  |                       |
| Spent time with family              | 0.718                   |                        |                  |                       |
| Had relationships that made me feel important | 0.452                |                        |                  |                       |
| Concentrated on hobbies             | -0.427                  |                        |                  |                       |
| Used drugs/alcohol                  | 0.576                   |                        |                  |                       |
| Ate for comfort                     | 0.592                   |                        |                  |                       |
| Allowed myself to get angry         | 0.482                   |                        |                  |                       |
| Cried                               | 0.469                   |                        |                  |                       |
| Active in community                 |                         |                        |                  | 0.702                 |
| Put time into work                  |                         |                        |                  | 0.249                 |
| Put time into school                |                         |                        |                  | 0.484                 |
| Acted strong/indep.                 |                         |                        |                  | 0.598                 |
| Sought professional help             |                         |                        |                  | 0.452                 |
Table 2. Correlations between internalising/externalising, coping behaviours and drug use.

| Variables     | 1   | 2   | 3   | 4   | 5   | 6   | 7   | 8   | 9   | 10  | 11  | 12  | 13  |
|---------------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| SR internalising | –   |     |     |     |     |     |     |     |     |     |     |     |     |
| PR internalising | 0.614** | –   |     |     |     |     |     |     |     |     |     |     |     |
| SR externalising | 0.362** | 0.095 | –   |     |     |     |     |     |     |     |     |     |     |
| PR externalising | 0.365** | 0.673** | 0.261* | –   |     |     |     |     |     |     |     |     |     |
| SR distance    | 0.232* | 0.053 | 0.074 | –0.015 | –   |     |     |     |     |     |     |     |     |
| PR distance    | 0.130 | 0.216* | 0.132 | 0.179 | 0.059 | –   |     |     |     |     |     |     |     |
| SR SocSupp     | –0.181 | –0.058 | –0.268* | –0.142 | 0.087 | –0.100 | –   |     |     |     |     |     |     |
| PR SocSupp     | –0.216* | –0.139 | –0.117 | –0.214* | –0.044 | 0.077 | 0.252* | –   |     |     |     |     |     |
| SR avoid       | 0.364** | 0.141 | 0.477** | 0.254* | 0.291* | –0.012 | –0.020 | –0.198 | –   |     |     |     |     |
| PR avoid       | 0.262* | 0.347** | 0.297** | 0.375** | –0.049 | 0.296** | –0.072 | 0.218* | 0.258* | –   |     |     |     |
| SR comm        | –0.065 | 0.008 | 0.031 | 0.118 | –0.046 | –0.031 | 0.085 | 0.246* | –0.037 | 0.075 | –   |     |     |
| PR comm        | –0.081 | 0.060 | –0.126 | 0.008 | –0.111 | 0.223* | –0.064 | 0.410** | –0.145 | 0.201* | 0.338** | –   |     |
| Drug use       | 0.320** | 0.162 | 0.555** | 0.239* | 0.058 | 0.000 | –0.300 | –0.135 | 0.377** | 0.195 | –0.095 | –0.043 | –   |
| M             | 12.21  | 5.32  | 6.63  | 3.93  | 0.5934 | 0.4176 | 0.6396 | 0.6330 | 0.4451 | 0.3352 | 0.3571 | 0.2949 | 8.26 |
| SD            | 7.934  | 5.421 | 4.783 | 4.905 | 0.30425 | 0.31635 | 0.29847 | 0.27205 | 0.28578 | 0.26146 | 0.22577 | 0.23051 | 32.147 |

Note: SR, self-report; PR, parent report; Int, internalising; Ext, externalising distance = self-controlling/distancing. SocSupp, seeking social support; Avoid, escape/avoidance; comm, community orientation; *p < 0.05; **p < 0.01.
In terms of correlations between internalising/externalising, coping behaviours and drug use, the results demonstrated a strong correlation between self-report of externalising behaviour and drug use ($r = 0.555$). A moderate positive correlation was also found between self-report of internalising behaviour and drug use ($r = 0.377$). Finally, there was a moderate negative correlation between self-report of seeking social support and drug use ($r = -0.300$).

Structural equation modelling was used to analyze the relationship between internalising/externalising, coping behaviours and drug use (see Figures 1 and 2). Because this study looked at dyadic data, a common fate model was used that accounts for the correlations between self-report and parent report (Kenny, Kashy, & Cook, 2006). Table 4 shows the parameter estimates and goodness-of-fit statistics for the model shown in the figures. Overall, the model demonstrated good fit with the data. Also, in general, the model demonstrated stronger covariance between self-report and the latent variables than between parent report and latent variables.

This model demonstrated a number of significant relationships between internalising/externalising behaviours, coping behaviour and drug use. A positive relationship was

![Figure 1](image-url)
found between escape/avoidance coping and internalising and externalising behaviours, as well as between externalising and drug use. Significant relationships were not found between any of the other coping behaviours and internalising or externalising.

Table 4. Unstandardized and standardized parameter estimates, and significance levels for model in Figure 1 (standard errors in parentheses; \(N = 91\)).

| Parameter estimate | Unstandardised | Standardised | \(p\) |
|--------------------|----------------|--------------|-------|
| **Measurement model estimates** | | | |
| Distancing coping \(\rightarrow\) SR distancing | 1.00 | 0.51 | Na |
| Distancing coping \(\rightarrow\) PR distancing | 0.49 (0.43) | 0.24 | 0.25 |
| Social support coping \(\rightarrow\) SR social support | 1.00 | 0.98 | Na |
| Social support coping \(\rightarrow\) PR social support | 0.27 (0.26) | 0.28 | 0.30 |
| Avoidance coping \(\rightarrow\) SR avoidance | 1.00 | 0.72 | Na |
| Avoidance coping \(\rightarrow\) PR avoidance | 0.59 (0.16) | 0.46 | \(<0.001\) |
| Internalising \(\rightarrow\) SR internalising | 1.00 | 0.96 | Na |
| Internalising \(\rightarrow\) PR internalising | 0.54 (0.11) | 0.57 | \(<0.001\) |
| Externalising \(\rightarrow\) SR externalising | 1.00 | 0.68 | Na |
| Externalising \(\rightarrow\) PR externalising | 0.71 (0.18) | 0.47 | \(<0.001\) |
| **Structural model** | | | |
| Distancing \(\rightarrow\) Internalising | 17.22 (17.67) | 0.49 | 0.33 |
| Social support \(\rightarrow\) Internalising | −2.75 (3.13) | −0.15 | 0.34 |
| Avoidance \(\rightarrow\) Internalising | 14.29 (5.59) | 0.55 | 0.01 |
| Distancing \(\rightarrow\) Externalising | 7.07 (11.88) | 0.27 | 0.55 |
| Social support \(\rightarrow\) Externalising | −5.47 (5.08) | −0.40 | 0.28 |
| Avoidance \(\rightarrow\) Externalising | 19.71 (7.14) | 1.01 | \(<0.01\) |
| Internalising \(\rightarrow\) Externalising | −0.14 (0.31) | −0.19 | 0.64 |
| Internalising \(\rightarrow\) Drug use | −0.54 (0.36) | −0.25 | 0.14 |
| Externalising \(\rightarrow\) Drug use | 2.17 (0.60) | 0.76 | \(<0.001\) |

Notes: GFI, goodness-of-fit index; B-BNFI, Bentler-Bonett nonnormed fit index; RMSEA, root mean square error of approximation. \(\chi^2 (28) = 30.38; p = 0.35;\) GFI = 0.94; B-BNFI = 0.88; RMSEA = 0.03.
Discussion

Several interesting interactions were identified in this study that suggest internalising/externalising as possible mediating variables between coping behaviour and drug use. Escape/avoidance was found to have a significant positive correlation with internalising and externalising, and externalising, in turn, was found to have a significant positive correlation with drug use. Because both the self- and parent questionnaires asked participants to reflect on the adolescents’ years in high school, this suggests that escape/avoidance coping in high school was related to current levels of internalising and externalising. Higher reported levels of externalising behaviour were, in turn, associated with an increased risk of current drug use.

This finding partially supported the first hypothesis of this study that high levels of emotion-focused coping and internalising behaviour would be correlated with increased substance use. Escape/avoidance coping is an emotion-focused coping strategy and the model demonstrated a statistically significant positive relationship between this type of coping and increased internalising and externalising. It is worth noting that self-controlling/distancing, also an emotion-focused coping strategy, was not significantly related to internalising/externalising. Furthermore, in contrast to the first hypothesis, the model demonstrated that the significant pathway to substance use was from current levels of externalising, and not internalising, behaviour.

The findings for escape/avoidance coping are in line with the literature stating that substance use is correlated with emotion-focused coping (Aldridge-Gerry et al., 2011; Wagner et al., 1999; Wills & Hirky, 1996) and internalising/externalising (King & Chassin, 2008; Sinha, 2001; Wills & Hirky, 1996; Wills et al., 2001). However, the findings for self-controlling/distancing were not correlated as hypothesised. It is possible that in the case of this particular emotion-focused coping strategy, there are confounding variables. For example, as Schlauch et al. (2012) reported, the type of situation (positive or negative, per adolescents’ self-report) also had bearing on the interaction between coping, internalising/externalising and substance use.

The results of this study do not support the second hypothesis that higher levels of problem-focused coping and lower levels of internalising behaviours would be correlated with decreased substance use. Neither community orientation (a problem-focused coping strategy) nor seeking social support (a mixed emotion-focused and problem-focused coping strategy) was related to internalising/externalising. Furthermore, this study did not find a significant relationship between internalising behaviours and drug use, suggesting that higher levels of internalising would not necessarily be correlated with increased substance use.

This finding is somewhat unexpected. Studies that have looked at adolescent female populations have found internalising behaviours play an important role in substance use, and also in the presentation of externalising symptoms (Clingempeel, Britt, & Henggeler, 2008; Winters et al., 2008). This study, however, detected a higher correlation between self-reported externalising symptoms and drug use (0.555) than between self-reported internalising and drug use (0.320). It is possible that there may be a more complex interaction effect between internalising behaviours, externalising behaviours and substance use in this population. For example, as was the case with escape/avoidance coping, internalising behaviours may be indirectly correlated with substance use through externalising behaviours as a mediator.

The third hypothesis, that internalising/externalising behaviours mediate the relationship between coping and substance use, was, therefore, only partially supported. One of the emotion-focused coping strategies, escape/avoidance, followed the expected
pathway, with an increase in this type of coping being correlated with increased internalising and externalising with a significant pathway from externalising to drug use. However, this relationship was found neither for the second emotion-focused coping behaviour, self-controlling/distancing, nor for either problem-focusing coping behaviour.

The fourth hypothesis that coping behaviour (i.e., emotion or problem-focused) as reported by the dyad would predict levels of internalising/externalising and daughter’s self-report of substance use was, therefore, partially supported. The results demonstrated no significant differences between self- and parent-reported T-scores for internalising/externalising and correlations between self-report and parent report on three out of four of the coping behaviours measured. While this supports the dyadic relationship between self-report and parent report posited in the third hypothesis, the results did not support the specific posited relationship between variables (coping behaviour predicting levels of internalising/externalising and substance use).

This study was also interested in looking at the utility of using dyadic data to measure levels of internalising/externalising and coping behaviour and to predict daughter’s self-report of substance use. The results of this study demonstrated no significant differences between self- and parent-reported T-scores for internalising/externalising; however, self-report scores did load more strongly on the model than the parent report scores. In terms of coping behaviour, only the variable seeking social support was found to have no mean differences between self-report and parent report. However, with the exception of the distancing coping scale, there were significant correlations between the self-report and parent report of each of the respective coping behaviours.

There are a couple of potential clinical implications from this study, though the sample was not a clinical sample. First is the potential importance of looking at escape/avoidance coping behaviours and how these may be related to problem behaviours. There is a bit of a confound in that one of the items relates to using drugs to cope, what is clear is that this coping style may carry over to later adolescent drug use during the college age years. A second, and potentially more interesting implication, is that parent- and self-reports were often different, with parents underestimating each of the variables of interest compared with self-report (with the exception of one of the coping scales where scores were virtually identical). This finding implies that parents may not be aware of the problem behaviours of their adolescents, nor of their use of various problematic coping strategies.

There are several limitations to this research, which should be considered primarily exploratory. First, while the variables of interest relate to risk and protective factors and later problem behaviours (internalising, externalising and drug use), the sample was relatively low risk (college students). Future studies would need to explore the relationship between coping and problem behaviours in higher-risk populations. Second, the lack of gender diversity in responses could be seen as a limitation. However, given that a great deal of research on problem behaviours has focused on boys and young men, the focus here on young women can also be seen as a strength of this study.

The sample size is also a limiting factor – having only 91 parent–child dyads limits the ability to test complex models using structural equation modelling software. On the other hand, this study is relatively unique in having access to dyadic data – this is the study’s primary strength. A final limitation lies in the retrospective nature of the data collected. Respondents were asked to reflect on the adolescents’ years in high school, but it is quite possible that the reality of those experiences differed from the current perception. Conversely, it is possible that what matters is perception, and so the links between retrospective perceptions of risk and current problematic behaviour should not be discounted. Clearly, though, the longitudinal research would better tease apart these effects.
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