

RUNNING HEAD: Latent Class Analysis of Depressive and Externalizing Symptoms

A Latent Class Analysis of Depressive and Externalizing Symptoms in Non-Referred  
Adolescents

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## Abstract

Both depressive and externalizing symptoms are common in adolescence and often co-occur. The purpose of this study was to examine whether adolescents' patterns of depressive and externalizing symptoms can be differentiated into discrete classes and whether these classes are best distinguished by the number or type of symptoms. In particular, we examined whether there are naturally occurring discrete classes of adolescents characterized by depressive symptoms only, externalizing symptoms only, or co-occurring depressive and externalizing symptoms. 2,187 nonreferred, public school 6<sup>th</sup> graders self-reported depressive and externalizing symptoms, and these symptoms were analyzed with latent class analysis. Six latent classes of depressive and externalizing symptoms were identified; classes differed primarily by the number, not type, of symptoms endorsed. Youth with elevations in one symptom type were likely to have elevations in the other symptom type. Approximately 5% of adolescents displayed clinically significant elevations in both depressive and externalizing symptoms. Implications for understanding the co-occurrence of depressive and externalizing symptoms in adolescence are discussed.

## Latent Class Analysis of Depressive and Externalizing Symptoms in Non-Referred Adolescents

On the basis of epidemiological longitudinal studies a clear understanding of the prevalence, incidence, and clinical course of childhood depressive and externalizing symptoms and disorders has emerged (Oldehinkel et al., 1999; Lewinsohn et al., 1995; Faulstich, 1986; Pardini et al., 2006; Burke et al., 2003; Burke et al., 2002; Tiet et al., 2001; Loeber et al., 2002; Keenan et al., 1999; Lahey et al., 1995). In recent years, researchers have suggested that co-occurrence between these two types of symptoms may be more common than previously believed, and that, in fact, co-occurrence of depressive and externalizing symptoms may be more prevalent than experiencing either depressive or externalizing symptoms alone (for reviews, see Boylan, Vaillancourt, Boyle, & Szatmari, 2007 and Zoccolillo, 1992). Children for whom depressive and externalizing symptoms co-occur have been shown to experience worse outcomes, including greater risk for substance abuse and suicide, than their peers with either depressive or externalizing symptoms alone (Verhulst & van der Ende, 1992; Fleming, Boyle, & Offord, 1993; Andrews & Lewinshohn, 1992; Lewinshon, Rohde, & Seeley, 1995).

### *Co-Occurring Depressive and Externalizing Symptoms*

Extensive research has suggested that depressive and externalizing problems are highly comorbid among adolescent populations. Kovacs and colleagues estimated that approximately one-third of youth with a major depression diagnosis also met criteria for an externalizing diagnosis (Kovacs, Paulauskas, Gatsonis, & Richards, 1988). More recent studies have suggested the prevalence of comorbidity may be even higher, especially when considering symptoms rather than diagnoses (see, e.g., Angold, Costello, & Erklani, 1999). Co-occurrence

of depression and externalizing symptoms has been observed among both clinical and community samples, and both concurrently and sequentially (Angold et al., 1999; Boylan et al., 2007; Lahey, Miller, Gordon, & Riley, 1999; Lahey, Loeber, Burke, Rathouz, & McBurnett, 2002; Beyers & Loeber, 2003; Wiesner, 2003).

While there is extensive evidence that depressive and externalizing symptoms are likely to co-occur, there is relatively less understanding of what it means when children exhibit both depressive and externalizing symptoms. An important, unanswered question is whether the expression of co-occurring depression and externalizing symptoms is unique and phenomenologically, and potentially etiologically, distinct from the expression of either depressive or conduct symptoms alone (Caron & Rutter, 1991). One way of addressing the question is to determine empirically whether there is a distinct group of children who report both depressive and externalizing symptoms and whether this group reports more differences in the number or type of symptoms than youth with either depression or externalizing symptoms alone. The ability to differentiate youth with co-occurring depressive and externalizing symptoms from youth with problems only on one dimension would assist clinicians and researchers in identifying unique phenomenology, etiological pathways and treatments.

Evidence showing that youth with co-occurring depressive and externalizing symptoms display distinctive symptom phenomenology would support the premise that co-occurrence of depressive and externalizing symptoms may represent a unique form of psychopathology in adolescence. Results from prior studies are inconclusive as to whether co-occurring externalizing symptoms with depressive symptoms is a distinct phenomenon. Ezpeleta, Domenech, and Angold (2006) reported that children with comorbid depression and externalizing/oppositional defiant disorders displayed greater severity of affective symptoms than children with only one

disorder. By contrast, Simic and Fombonne (2001) concluded that children with comorbid disorders displayed less severe externalizing symptoms than children with externalizing disorder alone. Some studies have shown that children with co-occurring symptoms report higher levels of symptomatology on both of the contributing dimensions (Verhulst & van der Ende, 1993).

These prior studies have examined depressive and externalizing symptoms among youth who meet clinical criteria for depression and/or conduct disorder. Use of diagnostic categories has many strengths, but can also result in loss of important information about children whose symptoms fall just below diagnostic thresholds (Kraemer, 2006). By contrast, examining depressive and externalizing symptoms in a community sample may yield insights into the full range of symptom overlap. The current study builds upon prior research by examining depressive and externalizing symptom patterns in a community sample of non-referred adolescents. We examined whether there is a distinctive class of children with co-occurring depressive and externalizing symptoms and, if so, whether these youth differ from youth displaying depressive or externalizing symptoms alone in terms of symptom type or number of symptoms.

#### *Latent Class Analysis to Examine Classes of Youth with Depressive and/or Externalizing Symptoms*

Latent class analysis (LCA) is a statistical technique used to empirically discern discrete subpopulations of individuals by probabilistically assigning participants to classes based on similar item response profiles. LCA is particularly helpful in examining the relative merits of categorical versus continuous approaches to defining psychopathology because the latent classes revealed may display symptom patterns that differ from each other in qualitative and/or quantitative ways. LCA has been applied to several types of child psychopathological problems

(Ferdinand, de Jijis, Van Lier, & Verhulst, 2005; Hudziak et al., 1999; Fergusson et al., 1994). For example, Hudziak et al. (1999) used LCA to identify three different levels of ADHD symptom severity among youth in both nonclinical and clinical samples. Similarly, Ferdinand and colleagues examined comorbidity between anxiety and depressive disorders among adolescents using latent class analysis; they found that among classes of youth with severe or elevated symptoms in one category (depression or anxiety), the majority of youth also displayed elevated symptoms of the other category (Ferdinand et al., 2005). Only 5% of the clinical sample had high anxiety scores but low depression scores. The current study employs LCA to characterize discrete patterns of depressive and externalizing symptoms in a community sample of young adolescents.

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Methods

## *Participants*

Participants were 2,187 6<sup>th</sup> grade students (46.8% female) from four middle schools in an urban area of the Pacific Northwest. The four schools were selected to collectively represent the racial, ethnic, and socioeconomic class composition of the students enrolled in the district. Of the study participants 24.9% were African American, 24.7% were Asian American, 9.6% were Hispanic, and 38.9% were European American. All 6<sup>th</sup> graders at the four schools were eligible for participation in the study if (1) their parent provided consent and (2) they understood spoken English at a 3<sup>rd</sup> grade level (as reported by their homeroom teacher). Of 2,928 eligible students, a total of 2,187 students (74.7%) were screened.

## *Procedures*

Two weeks prior to screening, parents of all sixth graders enrolled in the four participating schools received a letter from the school principal with information describing the research project. Instructional assistants who spoke the predominant non-English languages in each school (e.g., Spanish, Somali, Vietnamese, Tagalog) helped communicate program information by phone to parents with limited English proficiency.

Research staff visited home room classes to describe the upcoming screening activities to all sixth graders. At these events, students received an informational flyer and had an opportunity to ask questions. Students whose parents provided written permission were invited to provide their own assent. Study participants completed a screening questionnaire, administered in classrooms by study staff during one 50-minute class period. Study procedures were approved by the University of Washington Human Subjects Division and are described in greater detail in Vander Stoep and colleagues (2015).

### *Measures*

**Depression Symptoms.** The Mood and Feelings Questionnaire (MFQ; Angold, 1987) was used to assess children's depressive symptoms. The MFQ is a self-report instrument with 33 statements assessing the common affective, cognitive, and vegetative features of childhood depression (Costello & Angold, 1988), such as "cried a lot," "felt I was no good," "less hungry than usual," and "hated myself." Youth are asked to indicate whether each symptom statement was "true about you most of the time," "true about you sometimes," or "not true about you" over the past two weeks. The MFQ can be administered to children aged 8-18 years. Previous validation studies have demonstrated high content and criterion validity, showing concordance with depressive diagnoses derived from standardized diagnostic interviews (Wood, Kroll, Moore & Harrington, 1995; Kent et al., 1997; Daviss, et al., 2006). In the current study, three suicide

items were removed due to the research team's inability to follow up with positive endorsements in a timely fashion. In the current sample, internal consistency reliability of the 30-item MFQ was very high ( $\alpha = .92$ ).

Externalizing symptoms. Externalizing symptoms were assessed with the 30-item externalizing dimension scale of the Youth Self-Report (YSR; Achenbach, 1991). The externalizing dimension scale includes 30 statements assessing common externalizing symptoms and behaviors, such as “mean to others,” “destroyed others’ things,” “got in fights,” and “set fires.” Content, criterion-related, and construct validity of the YSR have been demonstrated in diverse populations by four decades of research (Achenbach, 2001). In the current study, internal consistency reliability of the YSR externalizing scale was very high ( $\alpha = .90$ ). As with the MFQ, youth were asked whether statements were “true about you most of the time,” “true about you sometimes,” or “not true about you” over the past two weeks.

#### *Data Analytic Approach*

We applied latent class analysis to derive discrete subgroups of children within the community sample based on their depressive and conduct symptoms. To make the data more amenable to LCA, we needed to (1) reduce the number of total items entered into the analysis and (2) dichotomize the data. To reduce the number of total items, we ran an exploratory factor analysis on all 60 items across all 2,187 participants. The resulting scree plot suggested a two factor model, with one factor comprised primarily of MFQ items and the second factor primarily of YSR items. We then selected the items that loaded on each factor with a loading of 0.60. This approach reduced the total number of symptoms from 60 to 32, with 16 contributed by the MFQ and 16 contributed by the YSR. The LCA was run using these 32 items (see Table 1 for a list of items).

To dichotomize the data, we first examined response patterns across the 32 items. For all of these items, the response “not true” was the most common response, followed by “sometimes true” and then “true most of the time” (see Table 1). We elected to combine the responses “sometimes true” and “true most of the time” into one category. This yielded two endorsement categories: *endorsement* meant that a child responded that the item was “sometimes true” or “true most of the time” in the prior two weeks, and *no endorsement* meant that the children responded that the item was “not true” in the prior two weeks. This is an inclusive strategy for dichotomizing the data. Given that we were examining symptoms in a community sample of non-referred adolescents, this dichotomization strategy ensured that youth endorsing any symptomatology were adequately represented in analyses.

LCA was performed using Latent GOLD software version 4.0 (Vermunt & Magidson, 2005). Multiple fit indices were used to determine the best fitting and most parsimonious model. Primary focus was given to the Bayesian Information Criteria (BIC), which is a function of the log likelihood (LL) statistic that takes sample size and number of parameters into consideration ( $BIC = (-2LL + [(\# \text{ of parameters}) * \log(\text{sample size})])$ ). The lowest BIC generally indicates the best fitting model (Magidson & Vermunt, 2003). The Akaike Information Criteria (AIC), which is similar to the BIC but does not incorporate sample size, is provided in the fit indices for comparison. Attention was also given to classification error, which provides an indication of the percent of the sample that may have been classified into an incorrect class (Vermunt & Magidson, 2002). When selecting the final best fit model, it is also important to take into consideration parsimony and sample size within each class. Finally, we examined the bivariate residuals to ensure that the assumption of conditional independence was met.

## Results

### *Descriptive Statistics*

Means and standard deviations for study variables are presented in Table 2. T-tests indicated no significant gender difference on depressive symptoms ( $t=.31$ ,  $p=.76$ ). Boys reported significantly more externalizing symptoms than girls ( $t=3.68$ ,  $p<.001$ ). Across the entire sample, YSR and MFQ scores were positively and significantly correlated ( $r=.68$ ,  $p<.001$ ).

### *Latent Class Analysis*

One through seven class models were consecutively estimated to find the best fitting model. The 6-class model was selected for several reasons. First, the BIC indicated that the 6-class model was more favorable than both the 5-class and 7-class models (see Table 3). Second, the classification error increased from 11% to 14% when moving from the 6-class to the 7-class model. Third, the addition of the 7-class model produced small class sizes, creating two classes that consisted of 5% or less of the sample. In light of these findings, the 6-class model was selected as the best fitting and most parsimonious model.

We additionally examined the bivariate residuals to examine whether the statistical assumption of conditional independence was met. This analysis indicated a marginal violation of the condition of local independence between five symptom pairs (*hard to think* and *talked less*; *not as good as other kids* and *felt ugly*; *cut class* and *used drugs/alcohol*; *nothing good in future* and *felt no good*; and *swear* and *lie/cheat*). For all five symptoms pairs, the bivariate residual values were above 20 but below 30. We re-ran the 6-class LCA with the condition of independence relaxed for these specific pairs. This allowed the correlation to be accounted for in the modeling process. Relaxing the condition of independence for these symptom pairs improved the model fit, and therefore this model was retained as the final model. It is labeled 6-Class Model (Final) in Table 3.

### *Symptom Patterns among the Latent Classes*

Item response patterns for each symptom by class were visually examined for group differences and are represented in Figure 1. Mean MFQ and YSR symptom scale scores for each class are reported in Table 4. Class 1 included 38.5% of the sample and can be described as endorsing very low depressive and externalizing symptoms (*Very Low Depressive and Externalizing Class*). Class 2 included 22.6% of the sample, and can be described as endorsing low to moderate depressive symptoms with low externalizing symptoms (*Moderate Depressive and Low Externalizing Class*). Class 3 included 13.9% of the sample, and can be described as endorsing low to moderate externalizing symptoms with low depressive symptoms (*Moderate Externalizing and Low Depressive Class*). Class 4 included 12.4% of the sample, and can be described as endorsing high depressive symptoms with low to moderate externalizing symptoms (*Moderate Externalizing and High Depressive Class*). Class 5 included 7.5% of the sample, and can be described as endorsing moderately high externalizing symptoms with moderately high depressive symptoms (*High Depressive and Externalizing Class*). Finally, Class 6 included 5.0% of the sample, and can be described as endorsing very high externalizing and very high depressive symptoms (*Very High Depressive and Externalizing Class*).

We used multiple analyses of variance to determine whether the classes differed in total MFQ or YSR externalizing scores. An omnibus MANOVA was computed with Class being the between-subjects variable and MFQ and YSR scores being the within-subjects variables. There were significant omnibus Class differences on both MFQ ( $F = 1298.64, p < .001$ ) and YSR ( $F = 977.51, p < .001$ ) scale scores. Tukey's HSD post-hoc comparisons were conducted to examine specific pair-wise differences between classes. Because of the large number of comparisons, the significance level for pair-wise comparisons was adjusted using a Bonferroni correction, yielding

a corrected significance level of .002. Thus, only pair-wise differences significant at the  $p < .002$  level were considered statistically significant.

Post-hoc analyses indicated that all 6 classes differed significantly from one another on mean depressive symptoms. All pair-wise class comparisons were significant at  $p < .001$ . For externalizing symptoms, all pair-wise class comparisons were significant with one exception. Class 3 did not differ significantly from Class 4 on mean externalizing symptoms ( $p=.54$ ); the difference between these classes, the *Moderate Externalizing and Low Depressive Class* and the *Moderate Externalizing and High Depressive Class*, was accounted for primarily by differences in depressive symptom levels.

#### *Gender Distribution among Latent Classes*

The proportion of males and females in each latent class is shown in Table 4. Logistic regression analyses were conducted with Class membership as the outcome variable and gender as the predictor variable. Class 1, the *Very Low Depressive and Externalizing Class*, served as the reference category. Sex was a significant predictor of membership in two classes relative to Class 1. Boys were more likely than girls to be members of Class 3, the *Moderate Externalizing and Low Depressive Class* (Wald statistic = 34.26,  $B = .83$ ,  $p < .001$ ). Boys were also more likely to be members of Class 5, the *High Depressive and Externalizing Class* (Wald statistic = 24.32,  $B = .90$ ,  $p < .001$ ).

#### Discussion

The purpose of the current study was to better understand depressive and externalizing symptoms among adolescents by determining if there are naturally occurring discrete classes of adolescents characterized by depressive symptoms only, externalizing symptoms only, or co-occurring depressive and externalizing symptoms. The Mood and Feelings Questionnaire as

well as the externalizing scale of the Youth Self-Report were administered to 2187 6<sup>th</sup> graders attending public middle school in a large urban setting. Depressive and externalizing symptoms were then analyzed using latent class analysis (LCA).

*Naturally Occurring Classes of Youth with Depressive and Externalizing Symptoms*

The LCA suggested that there were six naturally occurring classes of youth based on their endorsement of depressive and externalizing symptoms. As would be expected among an unselected, community sample, there was a large class (nearly 40% of the entire sample) that endorsed very low depressive and externalizing symptoms. There were two additional classes (Classes 2 and 3) which were also characterized by relatively low to moderate endorsement of symptoms on both dimensions; mean MFQ and YSR scores for these classes were all near the sample mean on these symptom measures.

However, a substantial portion of the sample endorsed clinically significant symptoms on one or both of the symptom dimensions. Achenbach (1991) suggests that a YSR externalizing scale clinical cutoff of 13 for girls and 15 for boys indicates clinically significant elevations in externalizing symptoms. Similarly, several studies have suggested that an MFQ score of 24 or higher indicates clinically significant elevations in depressive symptoms (Wood et al., 1995; Kent et al., 1997; and Daviss et al., 2006). Using these published norms as a guideline, approximately 12% of youth endorsed clinically significant depressive symptoms only (Class 4). Another 12.6% of youth belonged to two classes (Classes 5 and 6) which were characterized by co-occurring elevations on both dimensions, with mean scores on both the MFQ and YSR well above the sample means. Youth in Class 5 were above the clinical cutoff score on externalizing symptoms and near the clinical cutoff score on depressive symptoms. Of particular note is that a full 5% of the sample (Class 6) endorsed clinically significant elevations on both depressive and

externalizing symptoms. This may represent a population of young adolescents displaying significant and co-occurring depressive and externalizing problems.

One question of interest in this study was whether there would be naturally occurring classes characterized by elevations on only one symptom dimension. Across all six classes, it appeared that as the likelihood of endorsing symptoms in one category (e.g. depression) rose, the likelihood of endorsing symptoms in the other category (e.g. externalizing) rose as well. The one exception was Class 4, which was characterized by high depressive symptoms but moderate externalizing symptoms. This was the only class that differed from another class (Class 3) solely on the basis of one type of symptom, e.g. depressive symptoms.

Another question of interest in this study was whether there would be classes characterized by particular symptom patterns. As Figure 1 visually displays, the rank ordering of symptom endorsement by class was consistent across the symptoms examined. Thus, we conclude that the latent classes revealed in this analysis differed primarily in the mean number of symptoms endorsed (e.g. symptom severity), not in the type of symptoms endorsed.

#### *Gender and Class Membership*

Given well-established gender differences in both depressive and externalizing disorders, we also examined gender as a predictor of class membership in the current study. Boys were significantly more likely than girls to belong to two latent classes, one characterized by somewhat greater elevations in externalizing symptoms relative to depressive symptoms (Class 3, the *Moderate Externalizing and Low Depressive Class*) and one characterized by moderately high elevations on both dimensions (Class 5, the *High Depressive and Externalizing Class*).

Interestingly, there were no classes in which there were significantly more girls than boys. The *High Depressive and Moderate Externalizing Class* (Class 4) displayed a trend

toward greater prevalence of girls (58.3%) than boys (41.7%), but gender was not a significant predictor of membership in this class. However, participants in our sample ranged in age from 11-13 years old, and the gender difference in depression does not typically emerge until between 13 and 15 (Hankin et al., 1998). If this latent class analysis were conducted with older adolescents, it is likely that a class characterized by greater depressive relative to externalizing symptoms may contain more girls relative to boys.

The class characterized by the most marked elevations in both depressive and externalizing symptoms (Class 6) was evenly populated by boys and girls. This is consistent with a small number of recent studies among clinical samples suggesting that, despite gender differences in prevalence of depressive disorders alone and externalizing disorders alone, comorbidity between the two disorders may not differ between boys and girls (Boylan, Vaillancourt, Boyle, & Szamari, 2007; Zahn-Waxler, Shickel, & Maccioni, 2008).

*Prior Estimates of the Prevalence of Comorbid Depression and Conduct Problems in Early Adolescence*

The current study sample is over four times larger and represents a more inclusive range of socioeconomic conditions and racial groups than samples from previous studies. Three other community-based studies have examined the rates of comorbid conduct problems and depressive symptoms in early adolescence (Capaldi, 1999; Ingoldsby, Kohl, McMahon, & Lengua, 2006; Essex, et al., 2006). Each study varied somewhat in symptom scales and cutoff values used to categorize subjects, as well as in demographic characteristics of populations sampled. However, our findings are remarkably consistent with those reported in other studies. Among 6<sup>th</sup> grade boys, Capaldi reported that rates of elevated conduct problems only were 17.9%; elevated depressive symptoms only were 15.4%; and elevations in both depressive and

conduct symptoms were 11.4%. Similarly, Essex and colleagues reported that among 5<sup>th</sup> grade youth, the rates for conduct problems only were 14.3%; depressive symptoms only were 11.9%; and co-occurring symptoms were 14.0%. These estimates are nearly equivalent to estimates of the prevalence of Class 3 (externalizing symptoms primarily, 13.9%), Class 4 (depressive symptoms primarily, 12.4%), and Class 5 + 6 (comorbid elevations, 12.6%) in the current study. By contrast, Ingoldsby and colleagues' 7th grade estimates were somewhat lower for conduct problems and depressive symptoms only (8.4% and 9.3% respectively) but similar for co-occurring problems (12.5%). The overall similarities among these estimates lend credence to our ability to generalize from the current study sample to the broader young adolescent population.

#### *Limitations*

While our results enhance understanding of the phenomenology of co-occurring depressive and externalizing symptoms, conclusions drawn from the current study are necessarily limited by research design and sample. First, our study relied upon self-reported symptoms among a non-referred community sample. Latent classes of depressive and externalizing symptoms may differ among clinical samples or if diagnostic criteria were utilized. In addition, shared self-report method variance may explain some of the co-occurrence of symptoms observed in the study. Second, we were not able to validate our latent classes with any type of data on functional impairment. A subsample of the current community sample is currently being followed longitudinally, and we plan to examine functional impairment data from children, parents, and teachers in future analyses. Third, it is possible that children with co-occurring depressive and externalizing symptoms differ from children with depressive or externalizing symptoms alone not in the types or numbers of depressive and externalizing

symptoms they report, but in other ways not measured here, such as family history, prognosis, other indicators of distress, or even tendency toward over-endorsement. Fourth, it is important to note that the majority of symptom endorsements came from the “Sometimes True” response category as opposed to the “True Most of the Time” response category. While using this response category to indicate endorsement is an inclusive strategy with many benefits for most thoroughly characterizing symptoms among an unselected population, this strategy may also overestimate actual symptom endorsement in our sample. Finally, it is important to note that the number or characteristics of latent classes based upon depressive and externalizing symptoms may differ significantly across the lifespan. In particular, we would not be surprised to find that symptom differentiation into distinctive forms of psychopathology increased with age.

#### *Implications*

One important clinical implication is that youth presenting with elevated depressive or externalizing symptoms should be evaluated for co-occurring symptoms. Our results suggest that elevations in one symptom domain are often accompanied by elevations in the other symptom domain. Thus, parents, teachers, or clinicians working with youth presenting with either depressive or externalizing symptoms should assess for the presence of the other type of symptomatology to ensure that the youth’s mental health needs are met.

Unfortunately no indicated, proven treatment approach targeting comorbid depressive and externalizing problems in youth has been established to date, although efforts are underway (Ruscio, 2006; Wolff, 2008). Initial studies suggest that effects of treatment tend to be specific to the symptom domains targeted in treatment with little or no generalization to other areas (Kolko, Brent, Baugher, Bridge & Birmaher, 2000; Rohde et al., 2001). These results underscore the importance of targeting both depressive and externalizing symptoms among referred youth. A

number of strategies can be employed by clinicians managing depressive and comorbid externalizing problems in youth. First, clinicians can combine evidence from the treatment literature in each domain to apply a multi-component intervention that incorporates the approaches proven for both externalizing problems (i.e., family involvement, parent management training) and depressive symptoms (i.e., cognitive restructuring, activity scheduling, skill building/emotion regulation training, safety planning). Second, they can employ a more unified treatment as proposed by Moses and Barlow (2006). This approach focuses on identifying and treating the common diatheses (e.g., emotion regulation and impulsivity) of both seemingly divergent disorders. Modular approaches that allow inclusion of elements common to treatments for multiple disorders also show promise in addressing comorbidity (Chorpita & Daleiden, 2009). Finally, prevention and early intervention efforts implemented by community based clinicians, school personnel or parents could include skill building efforts that focus on teaching social skills and problem-solving strategies as these are two treatment elements that have strong empirical support for reducing both depression and conduct problems in adolescents (Daleiden, Chorpita, Donkervoet, Arensdorf, & Brogan, 2006) possibly through the mechanism of addressing the common diatheses.

### *Summary*

In conclusion, this paper contributes to our growing understanding of the phenomenon of co-occurring depressive and externalizing problems. The findings support that co-occurrence is reported by a small but substantial subgroup of youth even within a community-based sample and that increasing report of one set of symptoms is most commonly associated with an increase in the other set of symptoms as well, thereby suggesting a strong link between what would seem to be disparate problems. Finally the classes of youth identified did not differentiate on the types

of symptoms they reported but did differentiate on the number of symptoms reported. This suggests that the presence of co-occurring depression and externalizing problems is not so much a unique form of psychopathology as a reflection of greater severity and distress as experience by the youth.

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