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Development of the Depressive Symptoms Questionnaire for Children

The present study set out to develop a self-report instrument, the Depressive Symptoms Questionnaire (DSQ), for assessing depressed mood in school-aged children. Included were items based on research that reported symptoms of depressed mood in children, items related to negative psychosocial functioning, and items related to self-perceived academic ineffectiveness. Recent research had suggested that negative psychosocial functioning and self-perceived academic ineffectiveness were important to measure depressed mood in school children. After administration to a sample of children in grades 3 to 6, item-scale analyses supported a two-scale 30-item instrument representing depressed mood and academic ineffectiveness. Items that formed the DSQ suggest that sex, age, negative psychosocial functioning, and specific cognitive constructs that undergird self-perceptions of academic ineffectiveness are important when assessing the presence of depressed mood in children. Limitations and implications for future research on assessment of depressed mood in children are discussed.

Ce projet de recherche avait comme but de développer un instrument permettant de dépister les symptômes dépressifs chez les enfants en âge d'aller à l'école, le Depressive Symptoms Questionnaire (DSQ). Le questionnaire incluait des éléments tirés de la recherche portant sur les symptômes de dépression chez les enfants, des éléments liés au fonctionnement psychosocial négatif et des éléments liés à une auto-perception d'inefficacité académique. Selon des recherches récentes, un dysfonctionnement psychosocial et une auto-perception d'inefficacité académique représentent des mesures importantes de dépression chez les élèves. Après avoir administré le questionnaire à un échantillon d'élèves de la 3^e à la 6^e année, des analyses à partir d'échelles de Lickert ont appuyé un instrument comportant deux échelles et 30 items qui représentaient la dépression et l'inefficacité académique. Des items du DSQ permettent de conclure que le sexe, l'âge, le dysfonctionnement psychosocial et certains construits cognitifs spécifiques qui sous-tendent l'auto-perception de l'inefficacité académique sont des facteurs importants dans l'évaluation de la dépression chez les enfants. Nous discutons des limites et des implications quant à la recherche axée sur l'évaluation de la dépression chez les enfants.

The last 20 years have witnessed a substantial growth in research on childhood depression. This increased attention has added volumes to our present knowledge of the nature and development of depression in children. However, despite our increased understanding of childhood depression, many of these advances have not been incorporated into historical psychometric instruments for depression in youth populations. For example, the Children's Depression Inventory (CDI, Kovacs, 1983), one of the most widely used instruments for assessing the depressed mood subtype of depression in youth populations, has reached its 20th anniversary and has yet to be revised. Indeed researchers have begun to question the CDI and have hinted that it may need revision

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(Craighead, Smucker, Craighead, & Ilardi, 1998; Weiss et al., 1991). The present study merged research conducted over the last 20 years with the purpose of developing an instrument that would enable school personnel to identify self-reported depressed mood in children.

Contemporary self-report instruments for depressed mood focus on a cognitive construct and emphasize self-perception and self-evaluation. Research in the last two decades supports many of the underlying symptoms that inform this construct of depression. For example, studies endorse the role of symptoms like self-deprecation, low self-esteem, and hopelessness (Abramson, Metalsky, & Alloy, 1989; Greenberg, Pyszczynski, & Solomon, 1995); negative attributional style (Nolen-Hoeksema, Girgus, & Seligman, 1986; Peterson & Seligman, 1984); self-complexity (Linville, 1987); pessimism (Carver & Scheier, 1991); and self-discrepancies (Harter, 1990, 1992). Although current instruments reflect the findings of the studies cited above, these instruments do not attend to recent research suggesting that depressive symptomatology in children is both complex and developmental in nature.

Advances in Research on Childhood Depression

Two of the most recent and most comprehensive literature reviews examining the field of childhood depression suggest that the onset of depressive symptoms is developmentally different for children than for adolescents and for girls than for boys (Compas, Grant, & Ey, 1994; Hammen & Rudolph, 1996). These reviews make it clear that depression in youth is neither a unitary construct nor a normative by-product of progression into adulthood. Our increased knowledge of depressed mood in children is linked to a better understanding of how contextual factors like the school environment and psychological factors mediate the onset of specific depressive symptoms. These reviews and a large body of emergent research suggest that two psychological factors that contribute to the development of depressed mood in school-aged children emerge from their daily experiences: negative psychosocial functioning and self-perceptions of academic ineffectiveness. The following four sections review research specific to the factors that emerge from these reviews (age, sex, negative psychosocial functioning, and academic ineffectiveness) and inform the development of items to identify self-reported depressed mood in school-aged children.

Age Differences in Depressive Symptomatology

Consensus is emerging that the experience of depressed mood is different for children than for adolescents (Craighead et al., 1998; Weiss et al., 1991). In their study of 2,701 students using the CDI, Craighead et al. reported disparate symptom levels and different symptom clusters for these two age groups. The proportion of younger boys reporting depression was significantly greater than that of adolescent boys. In contrast, more adolescent girls reported depression than did younger girls. Regarding symptoms reported by children, levels of self-deprecation tended to rise with age, whereas social problems tended to decrease with age. During adolescence, depressed youths' levels of social problems, externalizing behaviors, self-deprecation, school problems, and overall levels of depression tended to increase with age.

Craighead et al. (1998) also reported different symptom clusters for the child and the adolescent groups. Factor analysis of children's and adolescents' responses on the CDI items suggested a six-factor structure for adolescents compared with a five-factor structure for children. The sixth factor for adolescents was formed by a cluster of symptoms related to what these researchers termed biological dysregulation. Their findings are supported by research that suggests that the transition from childhood to adolescence poses particular challenges when biological, social, and academic experiences complicate emotional growth and stability (Rutter, 1991). These new experiences contribute to a more expansive constellation of symptoms and emphasize a distinct set of depressive symptoms, especially in adolescent girls (Abramson et al., 1989; Craighead, Curry, & Ilardi, 1995). Moreover, childhood depression is less likely to be influenced by behavioral factors associated with physiological changes. The findings of these researchers suggest that self-report measures of depressed mood in children should include items specific to this age group and omit items specific to adolescents.

Sex Differences in Depressive Symptomatology

Sex differences have been observed in self-reported depressive symptomatology. Craighead et al. (1998) highlight typical findings regarding developmental differences associated with sex. In their study, boys in the child group reported more depressive symptoms than girls. However, in the adolescent sample, girls reported more depressive symptoms than boys. Sex differences were also reported in the child and in the adolescent samples. Compared with young girls, young boys endorsed higher levels of symptoms related to externalizing, school problems, and social problems, whereas young girls reported higher levels of symptoms related to dysphoria and self-deprecation than young boys. A reversal of symptom endorsement seemed to occur in the adolescent sample. Older boys reported significantly higher levels of dysphoria than older girls, whereas older girls reported significantly higher levels of social problems, externalizing, and biological dysregulation than older boys.

That girls report higher rates of depression than boys, particularly relating to biological factors, has been replicated in numerous studies. Supportive of this position are studies that indicate that this difference emerges between the ages of 14 and 15 years (Hankin et al., 1998). A combination of biological changes and social transitions, coupled with an increasingly complex environment that exposes girls to a widening array of stressors and challenges, is hypothesized to contribute to sex differences in self-reported and clinically assessed depression in adolescents (Ge, Conger, & Elder, 2001; Wichstrom, 1999). However, Craighead et al. (1998) and others (Kashani, Allan, Beck, Bledsoe, & Reid, 1997) indicate that sex differences in depressive symptomatology are also apparent during childhood. These findings suggest that self-report measures of depressive symptoms in children should contain those items that are likely to be endorsed by boys and those that are more likely to be endorsed by girls.

Psychosocial Functioning Related to Depressed Mood

Recent research suggests that psychosocial functioning is related to depressed mood in school-aged children. Kazdin (1996) argues that psychosocial

functioning can be categorized in two general domains: psychological processes and interpersonal influences. Psychological processes include elements such as motivation and learning. Heath (1995, 1996), in a series of studies using the CDI, suggests that children who are inefficient learners are also more likely to report depressed mood. Nolen-Hoeksema et al. (1986) reported a relationship between motivational deficits and depressed mood. Similarly, Hilsman and Garber (1995) found that attributional deficits were related to depressed mood in children.

Interpersonal influences, according to Kazdin (1996), refer to interactions with others that influence how a person feels (affect), thinks (cognition), and acts (behavior). These effects are also thought to be important in our understanding of depression in school-aged children. For example, low self-esteem (affect, Allgood-Merten, Lewinsohn, & Hops, 1990), effortful processing (cognition, Hartlage, Alloy, Vazquez, & Dykman, 1993), and social withdrawal (behavior, Kennedy, Spence, & Hensley, 1989) have all been associated with depressed mood in children.

The role of interpersonal influences may be reciprocal. For example, depressed children demonstrate poor social skills (Kennedy et al., 1989) and greater difficulty in being assertive and socializing with peers than nondepressed children (Wierzbicki & McGabe, 1988). They also report more instances of being rejected and neglected by their peers and teachers than nondepressed children (Lewinsohn, Rohde, & Seeley, 1994). The studies cited in this section highlight the need to include items on psychosocial functioning in any newly developed measure to identify self-reported depressed mood in school-aged children.

Academic Ineffectiveness Related to Depressed Mood

Understanding children's social-emotional functioning at school is linked to a complex web of academic imperatives ubiquitous in the school environment. In particular, depressed mood has been associated with cognitive constructs that undergird self-perceptions of academic ineffectiveness. Research on four cognitive constructs—learned helplessness, incompetence, noncontingency, and negative mood—is reviewed here to illustrate the relationship between self-perceptions of academic ineffectiveness and the development of depressive symptoms.

Learned Helplessness

Given the academic imperatives of school, researchers have looked at the implications of learned helplessness for the appearance of depressed mood in school-aged children. Habitual exposure to self-perceived negative events can cause individuals to develop or to adopt a belief that negative events will inevitably recur (Maier & Seligman, 1976; Seligman, 1975). Nolen-Hoeksema et al. (1986) examined relationships among learned helplessness, self-reported depressed mood, and academic achievement in 308 children in grades 3 to 5. The researchers reported that low academic achievement was associated with a learned-helplessness response style. Moreover, low academic achievement and learned helplessness predicted current and future depressed mood. The connection between depressed mood and self-perceptions of academic helplessness can be related to a specific school stressor. Hilsman and Garber (1995)

revealed that depressed mood is associated with low levels of academic achievement, even if the measure of achievement is a specific method such as a report card. These researchers found that increased levels of self-reported depressed mood were associated with receiving a poor set of grades. The higher the level of the grade stressor (i.e., the more the grades received were lower than acceptable to the students) the higher was the level of reported depressed mood. Learned helplessness was implicated when students who had reported a week earlier that they had low levels of academic competence also reported higher levels of depressive symptoms the day after receiving report cards with poor grades. Items about learned helplessness are thus important to include when measuring depressed mood in school children.

Incompetence

Research has investigated relationships between depressed mood and specific self-perceptions of incompetence in different areas of school (Cole, 1990, 1991; Seroczynski, Cole, & Maxwell, 1997). As reported by Cole and colleagues (Cole, 1991; Cole, Martin, Peeke, Seroczynski, & Fier, 1999), self-perceptions of academic incompetence are linked to the development, maintenance, and increase of depressed mood in school children. Cole et al. examined depressed mood and self-perceived academic competence in children and adolescents. Their results indicated that children's self-reports of depressed mood were inversely related to feelings of academic competence. That is, children with increased feelings of depressed mood also reported reduced feelings of competence. Cole et al. also noted connections and interactions among depressed mood, academic competence, and environmental influences (e.g., the internalization of significant others' perceptions). Specifically, low levels of self-perceived social competence and self-perceived academic competence were associated with high levels of self-reported depressed mood (Cole, 1990). Moreover, when low levels of self-perceived social competence and low levels of self-perceived academic competence occurred together, levels of depressed mood were higher than if a child reported low levels of self-perceived competence in only one area. Items on self-perceptions of academic incompetence may, therefore, have a place in measures of depressed mood.

Noncontingency

Noncontingency, a perceived lack of control over desired outcomes, has also been associated with self-reported depressed mood. Helplessness and noncontingency are similar; both are related to self-perceptions that negative events will recur. However, noncontingency is differentiated by a self-perception that neither the individual nor a significant other has the ability to influence or control a desired outcome (Abramson, Seligman, & Teasdale, 1978). Weisz, Sweeney, Proffitt, and Carr (1993) investigated whether perceived incompetence and perceived noncontingency, each in a general academic context, were associated with self-reported depressed mood in elementary schoolchildren. These researchers reported that perceived lack of competence coupled with feelings of noncontingency were significantly related to depressed mood. Along with these general associations with depressed mood, individual subscores for noncontingency and incompetence also showed strong associations with academic, social, and behavioral indices. However,

the most powerful predictor of depressed mood was the cumulative effect of self-perceived incompetence and self-perceived noncontingency. In the academic domain these two constructs accounted for 35% of the variance in depressed mood.

Negative Mood

Much of the research on depressed mood and school-related ineffectiveness contexts has focused on connections through the three areas of negative self-perceptions reviewed above: learned helplessness, incompetence, and noncontingency. To examine whether students' feelings representative of a general internalization of academic dislike are associated with depressed mood, negative mood about school subjects was examined. The focus on negative mood is based on the centrality of such feelings to the constellation of symptoms that inform depressed mood (American Psychiatric Association, 2000). In the context of academic ineffectiveness, it is important to understand whether negative mood (i.e., dislike of a given subject) is implicated in the presence of depressed mood in school-aged children.

Rationale for the Depressive Symptoms Questionnaire

Increasingly, educators and parents are recognizing the importance of children's perceptions of themselves and the importance of children's ability to negotiate the social-emotional and academic challenges of school (Adelman & Taylor, 1999). As some of the principal caregivers in children's lives, teachers and other school personnel are often expected to participate in the preliminary steps of student referral to professional health services (Adelman & Taylor; Klein, McNully, & Flatau, 1998). To respond better to children's social-emotional difficulties, schools are introducing programs aimed at promoting positive self-perceptions and healthy relationships and at ameliorating present difficulties (Adelman & Taylor; Waxman, Weist, & Benson, 1999). However, although teachers demonstrate keen perceptual ability in observing a range of childhood behaviors and possess unique contextual knowledge of children's experiences in school (Verhulst, Koot, & Van Der Ende, 1994), they often report feeling ill prepared or hesitant to identify the academic difficulties and negative social-emotional functioning that might underlie children's psychological well-being (Lamarine, 1995). Complicating this situation further is that children often look to teachers and other school staff for guidance about health and emotional issues (Fotheringham & Sawyer, 1995; Klein et al., 1998).

To identify the social-emotional difficulties experienced by school-aged children, school personnel need reliable and valid assessment tools. Interventions for young children could minimize the long-term effects of psychological disorders like depression that can persist throughout the lifespan with cumulative and long-term consequences (Resnick et al., 1997). Initiation of referral processes, whether specific to social-emotional deficits or academic difficulties, relies on assessment; thus development of effective assessments for school-aged children is critical. With this rationale, the present study attempted to merge lines of research conducted over the last 20 years. The purpose of this study was to develop the Depressive Symptoms Questionnaire, an instrument that would provide school personnel with a means to identify self-reported depressed mood in children.

Method

Participants

The participants were 89 students (47 boys and 42 girls) from grades 3 to 6 from two urban elementary schools. Children in these grades were included because their ages are representative of the lower age range targeted by the CDI. Older children (aged 13-17 years), those in grade 7 and above, who would be representative of the adolescent sample targeted by the CDI, were not included in the present study. Participants were selected through school referrals. Schools were asked to identify and exclude students who would be unable to complete the questionnaires because of insufficient English proficiency or because of limited cognitive ability such as severe developmental disabilities. The remaining students were asked to take information letters and consent forms home. Signed consent was obtained from parents and oral assent from the children.

Instruments

Children's Depression Inventory

The Children's Depression Inventory (CDI, Kovacs, 1983) was administered to obtain a measure of self-reported depressed mood. The CDI is a 27-item self-rated questionnaire designed to assess the presence of depressive symptoms in children and adolescents from 8 to 17 years. The CDI rates each item on a continuum from absence of symptom (0), to mild symptom (1), to severe symptom (2). Numerous studies have reported favorable reliability of the CDI (Craighead et al., 1998; Weiss et al., 1991). For populations like that in the present study, children in grades 3 to 6, Cronbach alphas range from .79 to .89 (Kovacs, 1992).

Consistent with ethical considerations mentioned in other studies using the CDI in school settings, the present study omitted the CDI item dealing with suicide ideation (Cole, Martin, & Powers, 1997). As well, this item phrased in an alternate form was not included on the Depressive Symptoms Questionnaire. Many researchers are concerned that the suicide ideation item has the potential to place an undue emotional burden on participants (Cole, Peeke, Martin, Truglio, & Seroczynski, 1998). Others feel the question may be suggestive to those who are experiencing depressive symptoms (Weiss et al., 1991). There are two other reasons for eliminating this item. First, the focus of the current study was to examine areas in the school context that present challenges to the social-emotional functioning of children at school. Suicide presents an extreme position or manifestation on the continuum of depressive symptomatology, a position not representative of typical daily experience for children. Second, suicide ideation is a depressive symptom representative of adolescent and adult populations. Research suggests that suicide as a concept and a practice emerges during adolescence, not childhood (Resnick et al., 1997). Studies that have excluded the suicide item when administering the CDI have noted that omitting the item did not affect the reliability or validity of the instrument when used for research purposes (Cole et al., 1997; Craighead et al., 1998; Weiss et al., 1991).

Depressive Symptoms Questionnaire

The Depressive Symptoms Questionnaire (DSQ) is a self-report instrument I have developed to assess depressive symptoms in schoolchildren. The format

of the items on the DSQ paralleled the format of the items on the CDI. As well, items were phrased so to be sensitive to the developmental level at which children understand items representative of the scale's constructs. Items were developed based on reviews of recent studies on childhood depression and from reviews of recent studies investigating depressed mood correlates representative of negative psychosocial functioning and representative of cognitive constructs that inform self-perceived academic ineffectiveness in school children. The original form of the DSQ administered in this study contained 60 items: 40 representative of past and present research on depressed mood and 20 representative of self-perceived academic ineffectiveness. In the present study academic ineffectiveness was viewed as a general domain made up of four cognitive constructs: helplessness (e.g., "I can't get better at math"), incompetence (e.g., "I am bad at math"), noncontingency (e.g., "If I try I won't get better at math"), and subject dislike (e.g., "I don't like math"). Each of the cognitive constructs was associated with each of five specific subject areas: math, reading, writing, spelling, and gym.

Procedure

The CDI and the DSQ were administered to students in groups of five and six. Students were taken by the researcher to the school's learning support center to complete the questionnaires. This arrangement provided the students with a comfortable setting while also ensuring the confidentiality of each student's responses. The duration of the session was 30 to 45 minutes for each group.

Results

Depressive Symptomatology

Analyses were conducted to provide a picture of the self-reported depressive symptomatology in the study sample and to determine whether children's CDI scores were consistent with CDI scores of children in other studies. Using Cronbach's alpha, the internal consistency of the CDI for the sample measured .87. This represented an acceptable level of internal consistency for a psychometric instrument (Pedhazur & Pedhazur Schmelkin, 1991) and was within the range reported by other studies using a similar population (Kovacs, 1992). To make comparisons with rates of depressive symptomatology in earlier studies, the present study used a total score of 17 or above on the CDI to indicate the presence of a distinct level of depressed mood (Craighead et al., 1998). Nine children (10%) met this criterion. This percentage suggests that the participants in the present study may be an approximate representative sample of children in general. This observation was made in the light of other researchers' (Reynolds & Johnston, 1994) estimates that 10% of the general childhood population reports depressed mood. A *t*-test indicated that the mean CDI scores for male ($M=6.55$, $SD=6.18$) and female ($M=7.12$, $SD=6.59$) students did not differ significantly $t(87)=-.42$, $p=.68$ (two-tailed).

Refinement of the DSQ

Analyses were conducted to obtain a parsimonious set of items for the DSQ. Factor analysis is the most used statistical procedure for developing self-report instruments. However, the present study's sample size ($N=89$) suggests that factor analysis was not an appropriate method for this stage of analysis. Conceptual and empirical research suggests that factor analysis is effective when

dealing with sample sizes in the hundreds (Comrey & Lee, 1992). Using factor analysis with sample sizes under 100, coupled with the number of variables ($N=60$) included on the questionnaire (DSQ) in the present study, challenges the structure and interpretability of a resulting factor structure (Velicer & Fava, 1998). Instead, the present study used item-scale total score and item-cross scale total score comparisons to determine the most psychometrically appropriate items to represent each of the scales (Dawis, 1987).

The same statistical procedures were employed for refinement of each of the scales. First, Cronbach alpha was calculated to assess the reliability of each of the scales. Second, a two-stage correlational analysis was conducted of the items in each of the two scales. In stage one, each item in a scale (e.g., academic ineffectiveness) was correlated with the total score for its respective scale (i.e., academic ineffectiveness). In deciding which items were to be retained for stage two analyses, attention was given to whether an item correlated highly and positively with its respective scale. In stage two, each of the retained items was correlated with the total score of the retained items (e.g., academic ineffectiveness) and was correlated with the total score of the adjacent scale (i.e., depressed mood). In deciding which items were to be retained for the final instrument, attention was given to whether an item correlated highly and positively with its respective scale and to the variance shared between each item and the scales. For example, if a depressed mood item correlated highly and positively with the depressed mood scale, it was considered for retention in the final instrument. However, if a depressed mood item correlated at a comparable level with the depressed mood scale and with the academic ineffectiveness scale, it was not included in the final scale.

Depressed Mood

The original depressed mood scale consisted of 40 items. Cronbach alpha for these items was .92. In stage one analysis of this scale, 24 items were preserved after correlating each item with the total score. Items retained were those that correlated at or above .50 with the total score. A summary of each item's correlation with the scale's total score is listed in Table 1. These items were the most highly and positively correlated with the total score.

In the second stage of analysis of this scale, a total score was calculated for the remaining 24 items. These items were correlated with the revised depressed mood scale total score and the original academic ineffectiveness scale total score. A summary of each item's correlation with each of the scales' total scores is listed in Table 1. Item-scale comparisons suggested that 16 items should be retained for the final depressed mood scale. Each of these items correlated above .50 with the total score of the remaining depressed mood items, and each maintained at least a .13 difference in correlations between the depressed mood total score and the academic ineffectiveness total score.

Academic Ineffectiveness

The original academic ineffectiveness domain contained 20 items. The four cognitive constructs of ineffectiveness (helplessness, incompetence, noncontingency, and subject dislike) were crossed with the five academic subject areas (math, reading, writing, spelling, and gym) under investigation. These groupings were not intended to form discrete scales; rather, each ineffectiveness

Table 1
Correlations between Depressed Mood Items and the Depressed Mood and Academic Ineffectiveness Scale Total Scores

DSQ Item Description	Stage One Correlations		Stage Two Correlations
	Depressed Mood (n=40)	Depressed Mood (n=24)	Academic Ineffectiveness (n=20)
Unhappy	.69	.70	.51
Sadness	.41	-	-
General pessimism	.55	.53	.30
Irritability	.58	.54	.23
Dislike school	.35	-	-
Crying spells	.53	.55	.39
School not fun	.65	.65	.57
Unhappy at school	.53	.50	.26
General lack of fun	.57	.55	.44
Misbehavior at school	.56	.55	.34
Dislike self	.53	.55	.47
Negative intellectual self-worth	.61	.68	.58
Dislike appearance	.37	-	-
Unimportant—peer comparison	.68	.74	.53
Feeling uncared for	.56	.57	.33
Not a nice person	.23	-	-
Change appearance peer evaluation	.23	-	-
Pessimistic—negative future events	.71	.71	.42
Self-blame for negative events	.32	-	-
General helplessness	.31	-	-
Reduced social interest	.42	-	-
Lack of friends	.58	.56	.44
Fighting with peers	.32	-	-
Difficulty making friends	.65	.67	.54
Feeling lonely	.72	.78	.60
Lack of peer academic support	.41	-	-
Doesn't seek assistance from teacher	.39	-	-
Disliked by peers	.38	-	-
Disobedience	.50	.50	.32
Change behavior peer comparison	.13	-	-
General incompetence	.51	.55	.55
Worry about trying new things	.45	-	-
Indecisiveness	.52	.55	.35
School work difficulty	.58	.61	.44
Difficulty sleeping	.49	-	-
Tired at school	.54	.56	.34
General school incompetence	.60	.64	.56
Negative intellectual self-worth—peer comparison	.60	.65	.50
Intellectual self-worth noncontingency	.30	-	-
General school helplessness	.70	.75	.67

Note. Boldface items in stage one correlations indicate items retained for stage two correlations. Boldface items in stage two correlations indicate items retained in revised DSQ. All correlations are significant at the $p \leq .01$ level.

Table 2
Correlations Between Academic Ineffectiveness Items and Cognitive Domain Subscales, the DSQ Subscales Total Scores

<i>DSQ Item Description</i>	<i>Stage One Correlations</i>		<i>Stage Two Correlations</i>	
	<i>Subscale</i>	<i>Academic Ineffectiveness</i>	<i>Academic Ineffectiveness</i>	<i>Depressed Mood</i>
<i>Subject Dislike</i>				
Dislike gym	.57	.53	.51	.50
Dislike reading	.57	.39	-	-
Dislike writing	.69	.60	.61	.41
Dislike math	.75	.59	.59	.51
Dislike spelling	.65	.61	.62	.43
<i>Incompetence</i>				
Gym incompetence	.67	.61	.59	.48
Reading incompetence	.75	.65	.65	.46
Writing incompetence	.81	.67	.68	.46
Math incompetence	.69	.63	.64	.50
Spelling incompetence	.83	.62	.63	.36
<i>Noncontingency</i>				
Gym noncontingency	.44	.46	-	-
Reading noncontingency	.74	.47	.49	.18
Writing noncontingency	.81	.46	.48	.14
Math noncontingency	.73	.46	.48	.22
Spelling noncontingency	.73	.57	.57	.23
<i>Helplessness</i>				
Gym helplessness	.62	.56	.54	.46
Reading helplessness	.78	.72	.71	.57
Writing helplessness	.76	.75	.75	.54
Math helplessness	.80	.62	.63	.33
Spelling helplessness	.67	.63	.63	.32

Note. Boldface items in stage one correlations indicate items retained for stage two correlations. Boldface items in stage two correlations indicate items retained in revised DSQ. All correlations are significant at the $p \leq .01$ level.

group was examined for its ability to represent the intended construct (e.g., helplessness), but also was expected to correlate strongly and positively with the overall construct, academic ineffectiveness. Cronbach alphas for the four cognitive ineffectiveness constructs were helplessness .76, incompetence .80, noncontingency .72, and subject dislike .66. In stage one analysis for this scale, each item was correlated with its cognitive ineffectiveness subscale's total score and with the original academic ineffectiveness total score. A summary is listed in Table 2.

Within-scale item analyses of each of the academic ineffectiveness cognitive contexts indicated that 18 items should be retained for further analysis. Items retained were those that correlated at a minimum of .57 with their respective cognitive ineffectiveness subscale and maintained a minimum of a .46 correla-

tion with the academic ineffectiveness total score. Cronbach alpha for these items was .89. In stage two analysis of this scale, reported in Table 2, cross-scale analyses between these items and the original depressed mood scale suggested that 14 items should be retained for the revised academic ineffectiveness scale. These were items that correlated at a minimum of .48 with the revised academic ineffectiveness total score and maintained a minimum difference of .14 between its correlation with the academic ineffectiveness total score and its correlation with the depressed mood total score.

In sum, analyses suggested a two-scale format for the revised Depressive Symptoms Questionnaire (DSQ-R). Item analyses suggested that 30 items should be retained and placed in the DSQ-R: 16 items representative of a depressed mood scale and 14 items representative of an academic ineffectiveness scale. Analyses were conducted to examine whether items on the DSQ-R correlated more highly and positively with their corresponding scale than with the alternate scale. The depressed mood items and the academic ineffectiveness items were correlated with the total score for each of the revised scales. Table 3 provides a summary of these correlations. Examination of these correlations indicated that all 16 depressed mood items discriminated from the academic ineffectiveness scale. As well, all 14 academic ineffectiveness items discriminated from the depressed mood scale.

Psychometric Properties of the Revised Instrument

Reliability

To assess the reliability of the DSQ-R, Cronbach alpha was calculated for the instrument and for each of the scales. Cronbach alpha for the DSQ-R was .92, for the depressed mood subscale .89, and for the academic ineffectiveness subscale .88. These levels of reliability among items suggested that the respective items of each scale formed internally consistent scales.

Validity

Validity of the DSQ-R score as a measure of depressed mood was examined by correlating the CDI total score and the DSQ-R total score. The correlation coefficient was .83. Validity of the depressed mood scale of the DSQ-R was assessed by correlating its total score with the CDI total score. The correlation coefficient was .86. The high internal consistencies of the CDI (Cronbach alpha was .87) and of the DSQ-R depressed mood scale (Cronbach alpha was .89) combined with a high correlation between the two instruments suggest initial support for the validity of the DSQ-R depressed mood scale. Discriminant validity was provided by examining the correlations between the CDI and the two scales of the DSQ-R. The correlation between the CDI and the depressed mood scale was .89, and the correlation between the CDI and the academic ineffectiveness scale was .59. This suggested that the academic ineffectiveness scale was measuring something different than the depressed mood construct of the CDI. Discriminant validity in the DSQ-R was supported by examining the correlations between the DSQ-R total score and the depressed mood scale and between the DSQ-R total score the academic ineffectiveness scale of the DSQ-R. These correlations measured .91 and .59 respectively. This suggested that the two subscales of the DSQ-R were assessing related but different constructs.

Table 3
Correlations Between DSQ-R Items and the DSQ-R Subscales

<i>Item Description</i>	<i>Depressed Mood</i>	<i>Academic Ineffectiveness</i>
	<i>Depressed Mood Scale</i>	
Unhappy	.72	.47
General pessimism	.53	.29
Irritability	.58	.21
Crying	.57	.39
Unhappy at school	.51	.21
Misbehavior at school	.58	.33
Unimportant—peer comparison	.70	.44
Feeling uncared for	.58	.27
Pessimistic—negative future events	.75	.40
Difficulty making friends	.67	.48
Feeling lonely	.78	.57
Disobedience	.51	.25
Indecisiveness	.58	.30
School work difficulty	.60	.37
Tired at school	.58	.30
Negative intellectual self-worth—peer comparison	.64	.45
	<i>Academic Ineffectiveness Scale</i>	
Reading incompetence	.47	.65
Reading noncontingency	.10	.52
Reading helplessness	.56	.70
Dislike writing	.37	.66
Writing incompetence	.45	.70
Writing noncontingency	.10	.52
Writing helplessness	.52	.73
Math incompetence	.39	.63
Math noncontingency	.19	.50
Math helplessness	.37	.63
Dislike spelling	.42	.64
Spelling incompetence	.40	.68
Spelling noncontingency	.18	.58
Spelling helplessness	.25	.62

Note. All correlations significant at the $p \leq .01$ level.

Discussion

Children spend a large amount of time at school. Along with the family, the school is one of the two principal influences on the social and emotional development of children. The potential for schools to contribute to the development of psychological difficulties in children underscores the need to include school-related constructs like negative psychosocial functioning and cognitive constructs that undergird self-perceptions of academic ineffectiveness in measures of depressed mood in children. The purpose of this study was to develop a self-report instrument for assessing depressed mood in school-children. The original Depressive Symptoms Questionnaire contained items

that research suggests are representative of depressed mood and self-perceived academic ineffectiveness in school-aged children. Item analyses suggested a 30-item two-scale format: 16 items representative of a depressed mood scale and 14 items representative of an academic ineffectiveness scale. Analysis of the DSQ-R and each of its scales suggested an acceptable degree of reliability and validity for the early stages of this instrument's development.

Depressed Mood Scale

Analyses of the internal consistency of the depressed mood scale of the DSQ-R (.89) indicated a high level of reliability. Interestingly, the internal consistency of the CDI measured .87. A comparison of the reliability coefficients of the DSQ-R and the CDI suggested that items that composed the DSQ-R might have contributed to this difference. It is possible that emphasis on a more complex set of symptoms—traditional depressed mood items (13) and negative psychosocial functioning items (3)—which were included in the revised DSQ added to its increased internal consistency compared with the CDI. As well, inclusion of subject-specific areas and cognitive-specific ineffectiveness (i.e., noncontingency and helplessness) might have increased the internal consistency of the DSQ-R.

Items that were retained in the depressed mood scale suggested support for the rationale underlying the development of the depressed mood scale. First, the revised DSQ indicated that depressive symptomatology is informed by a larger constellation of symptoms than operationalized into earlier instruments. As reported by others, depressed mood experienced by children of this age (Craighead et al., 1998) and younger children (Kashani et al., 1997) may encompass a different constellation of symptoms than that of adolescents and adults. This complexity might be informed by the contexts that encompass children's day-to-day experiences. For example, several items, but not all, that referred specifically to school contexts (e.g., "misbehavior at school" and "tired at school") emerged in the final form of the DSQ. Although the complex emotional environment of the school may play an important role in the development and maintenance of depressed mood, the school environment may also produce a multifaceted set of depressive symptoms. A direction for future research on this topic would be to uncover the developmental stage when children begin to make distinctions among depressive symptoms.

Second, research on childhood depression suggests that male and female children report different clusters of depressive symptoms (Craighead et al., 1998). Thus items were developed for the DSQ depressed mood scale that are associated with each sex. For example, items were included that deal with aspects of depression typical of males (e.g., interpersonal problems) and items typical of females (e.g., self-deprecation, Craighead et al., 1998; Weiss et al., 1991). For example, the item "negative intellectual self-worth—peer comparison" conceptually related to self-deprecation, and the item "difficulty making friends" associated with interpersonal problems were both retained in the DSQ-R. Third, recent research has suggested also that depression in youth populations is informed by a complex web of symptoms that are related to social relationships. Symptoms associated with self-perceptions based on the internalization of significant others' perceptions are suggested to influence the development of children's self-worth (Cole, 1990; Cole et al., 1997). The emer-

gence of the item “unimportant—peer comparison” on the DSQ-R reflects this body of research.

Academic Ineffectiveness Scale

Analysis of the internal consistency of the academic ineffectiveness scale (.88) of the DSQ-R suggested a high level of reliability. Items that were retained in the revised academic ineffectiveness scale suggested several important features of the relationship between self-reported depressed mood in school-aged children and specific cognitive constructs and subject contexts of self-perceived academic ineffectiveness. First, the gym subject area contributed no items to the scale. This suggested that in relation to other subject areas, gym did not represent a domain where specific feelings of academic ineffectiveness are associated with depressed mood. In contrast, each of the four other subject areas (math, reading, writing, and spelling) surfaced in the revised form. Given that success in these areas is representative of individual intellectual abilities, self-perceptions related to the emergence of depressed mood in schoolchildren may be closely related to idiosyncratic beliefs about cognitive abilities. Success in gym may be related to negotiating interpersonal relationships. As noted by others, the influence of social relationships may be more pronounced during adolescence (Ge et al., 2001; Wichstrom, 1999). Moreover, the importance of social relationships might emerge in relation to self-perceived difficulty in other areas of children’s lives. Cole (1990) reports that children are more susceptible to depressed mood when they perceive difficulty in academic areas in combination with perceived difficulty in social areas than when they perceive difficulty only in academic areas.

Second, as an indicator of general academic ineffectiveness, subject dislike was important only in the contexts of writing and spelling. This distinction may be attributable to the importance placed on these abilities in school. Most academic activities in which children engage in school involve writing and thus to some degree spelling. Dislike for writing and spelling may represent an accumulation of a general dislike of the writing activities present in other subject areas. That is, a dislike of writing and spelling may reflect a general sense of academic dislike related to depressed mood. That subject dislike was not retained in the DSQ-R outside the contexts of writing and spelling also suggested that feelings of academic dislike are not significantly associated with general academic ineffectiveness or depressed mood. Children might feel ineffective in a single subject or in several subjects, yet may not report feelings of dislike toward these subject areas.

A third important finding was the emergence of helplessness, incompetence, and noncontingency items across four subject areas: reading, writing, math, and spelling. As well, each of these cognitive ineffectiveness constructs in each subject area was significantly related to depressed mood. This suggested that although each of these cognitive contexts of ineffectiveness manifests in subject-specific areas, each can permeate across subject areas and manifest in feelings associated with depressed mood.

Limitations and Implications

A combination of factors challenges the generalizability of the findings of this study. First, the sample size was smaller than samples reported in most studies

examining depressive symptomatology in youth populations. Most studies contain samples of several hundred children (e.g., 558 elementary students, Cole et al., 1998) and samples in the thousands (e.g., 2,701 elementary and senior high students, Craighead et al., 1998). This discrepancy may restrict the concurrence between the present study's results and those of other studies. As well, the absence of a large sample of students (male and female) who report high levels of depressive symptomatology make comparisons between the present study's results and assessed depressed mood in other studies difficult. Without examining how individual elements of depressed mood in the DSQ-R function in relation to scores indicative of major levels of depressed mood, the validity of the DSQ-R depressed mood items in relation to depression is not conclusive.

With respect to the present instrument, the DSQ-R must be considered as an instrument still in development. Although initial findings support the theory and structure of the DSQ-R, research is needed to address the methodological limitations of the present study. Investigations are necessary to build on the reliability and validity as an indicator of depression, specifically studies that use a larger sample size and multiple locations. Moreover, further development of the DSQ-R would benefit from an examination of its utility. That is, studies directed at evaluating the DSQ-R when used by school personnel (e.g., teachers) and nonteaching school personnel (e.g., school psychologists) would be useful. Research is needed to establish a criterion for identification using the DSQ-R. Future research could establish a cut-off score on the DSQ-R that would indicate the presence of depressed mood, a level that would indicate that school personnel should initiate a referral process to have the student's emotional functioning further assessed.

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References

- Abramson, L.Y., Metalsky, G.L., & Alloy, L.B. (1989). Hopelessness depression: A theory-based subtype of depression. *Psychological Review*, *96*, 358-372.
- Abramson, L.Y., Seligman, M.E., & Teasdale, J.D. (1978). Learned helplessness in humans: Critique and reformulation. *Journal of Abnormal Psychology*, *37*, 49-74.
- Adelman, H.S., & Taylor, L. (1999). Mental health in schools and system restructuring. *Clinical Psychology Review*, *19*, 137-163.
- Allgood-Merten, B., Lewinsohn, P., & Hops, H. (1990). Sex differences and adolescent depression. *Journal of Abnormal Psychology*, *99*, 55-63.
- American Psychological Association. (2000). *Diagnostic and statistical manual of mental disorders* (4th ed.). Washington, DC: Author.
- Carver, C.S., & Scheier, M.F. (1991). A control-process perspective on anxiety. In R. Schwarzer & R.A. Wicklund (Eds.), *Anxiety and self-focused attention* (pp. 3-8). Amsterdam: Harwood Academic.
- Cole, D.A. (1990). Relation of social and academic competence to depressive symptoms in childhood. *Journal of Abnormal Psychology*, *99*, 422-429.
- Cole, D.A. (1991). Change in self-perceived competence as a function of peer and teacher evaluation. *Developmental Psychology*, *27*, 682-688.
- Cole, D.A., Martin, J.M., Peeke, L.A., Seroczynski, A.D., & Fier, J. (1999). Children's over and underestimation of academic competence: A longitudinal study of gender differences, depression, and anxiety. *Child Development*, *70*, 459-473.

- Cole, D.A., Martin, J.M., & Powers, B. (1997). A competency-based model of child depression: A longitudinal study of peer, parent, teachers, and self-evaluations. *Journal of Child Psychology and Psychiatry*, 38, 505-514.
- Cole, D.A., Peeke, L.G., Martin, J.M., Truglio, R., & Seroczynski, A.D. (1998). A longitudinal look at the relation between depression and anxiety in children and adolescents. *Journal of Consulting and Clinical Psychology*, 66, 451-460.
- Compas, B.E., Grant, K.E., & Ey, S. (1994). Psychosocial stress and child and adolescent depression: Can we be more specific? In W.M. Reynolds & H.F. Johnston (Eds.), *Handbook of depression in children and adolescents. Issues in clinical child psychology* (pp. 509-523). New York: Plenum Press.
- Comrey, A.L., & Lee, H.B. (1992). *A first course in factor analysis*. Hillsdale, NJ: Erlbaum.
- Craighead, W.E., Curry, J.F., & Ilardi, S.S. (1995). Relationship of Children's Depression Inventory factors to major depression among adolescents. *Psychological Assessment*, 7, 171-176.
- Craighead, W.E., Smucker, M.R., Craighead, L.W., & Ilardi, S.S. (1998). Factor analysis of the Children's Depression Inventory in a community population. *Psychological Assessment*, 10, 156-165.
- Dawis, R.V. (1987). Scale construction. *Journal of Consulting Psychology*, 34, 481-489.
- Fotheringham, M.J., & Sawyer, M.G. (1995). Do adolescents know where to find help for mental health problems? A brief report. *Journal of Paediatrics and Clinical Health*, 31, 41-43.
- Ge, X., Conger, R.D., & Elder, G.H. (2001). Pubertal transition, stressful life events, and the emergence of gender differences of adolescent depressive symptoms. *Developmental Psychology*, 37, 404-417.
- Greenberg, J., Pyszczynski, T., & Solomon, S. (1995). Toward a dual-motive depth psychology of self and social behavior. In M.H. Kernis (Ed.), *Efficacy, agency, and self-esteem* (pp. 73-99). New York: Plenum Press.
- Hammen, C., & Rudolph, K.D. (1996). Childhood depression. In E.J. Mash & R.A. Barkley (Eds.), *Child psychopathology* (pp. 153-195). New York: Guilford Press.
- Hankin, B.L., Abramson, L.Y., Moffitt, T.E., Silva, P.A., McGee, R., & Angell, K.E. (1998). Development of depression from preadolescence to young adulthood: Emerging gender differences in a 10-year longitudinal study. *Journal of Abnormal Psychology*, 107, 128-140.
- Harter, S. (1990). Developmental differences in the nature of self-representations: Implications for the understanding, assessment, and treatment of maladaptive behavior. *Cognitive Therapy and Research*, 14, 113-142.
- Harter, S. (1992). The relationship between perceived competence, affect, and motivational orientation within the classroom: Processes and patterns of change. In A.K. Boggiano & T.S. Pittman (Eds.), *Achievement and motivation: A social-developmental perspective. Cambridge studies in social and emotional development* (pp. 77-114). New York: Cambridge University Press.
- Hartlage, S., Alloy, L.B., Vazquez, C., & Dykman, B. (1993). Automatic and effortful processing in depression. *Psychological Bulletin*, 113, 247-278.
- Heath, N.L. (1995). Distortion and deficit: Self-perception versus actual academic competence in depressed and nondepressed children with and without learning disabilities. *Learning Disabilities Research*, 10(1), 2-10.
- Heath, N.L. (1996). The emotional domain: Self-concept and depression in children with learning disabilities. *Advances in Learning and Behavioural Disabilities*, 10, 47-75.
- Hilsman, R., & Garber, J. (1995). A test of the cognitive diathesis-stress model of depression in children: Academic stressors, attributional style, perceived competence, and control. *Journal of Personality and Social Psychology*, 69, 370-380.
- Kashani, J.H., Allan, W.D., Beck, N.C., Bledsoe, Y., & Reid, J.C. (1997). Dysthymic disorder in clinically referred preschool children. *Journal of the American Academy of Child and Adolescent Psychology and Psychiatry*, 36, 1426-1433.
- Kazdin, A.E. (1996). Developing effective treatments for children with anxiety disorders. In E.D. Hibbs & P.S. Jensen (Eds.), *Psychosocial treatments for child and adolescent disorders: Empirically based strategies for clinical practice* (pp. 9-18). Washington, DC: American Psychological Association.
- Kennedy, E., Spence, S.H., & Hensley, R. (1989). An examination of the relationship between childhood depression and social competence among primary school children. *Journal of Child Psychology and Psychiatry*, 30, 561-573.
- Klein, J.D., McNully, M., & Flatau, C.N. (1998). Adolescents' access to care: Teenagers' self-reported use of services and perceived access to confidential care. *Archives of Pediatrics and Adolescent Medicine*, 152, 676-682.

- Kovacs, M. (1983). *The Child Depression Inventory: A self-rated depression scale for school-aged youngsters*. Unpublished manuscript, University of Pittsburgh School of Medicine, Pittsburgh.
- Kovacs, M. (1992). *Children's Depression Inventory*. Toronto, ON: Multi-Health Systems.
- Lamarine, R.J. (1995). Child and adolescent depression. *Journal of School Health*, 65, 390-393.
- Lewinsohn, P.M., Rohde, P., & Seeley, J.R. (1994). Psychosocial risk factors for future adolescent suicide attempts. *Journal of Consulting and Clinical Psychology*, 62, 297-305.
- Linville, P.W. (1987). Self-complexity as a cognitive buffer against stress-related illness and depression. *Journal of Personality and Social Psychology*, 52, 663-676.
- Maier, S.F., & Seligman, M.E.P. (1976). Learned helplessness: Theory and evidence. *Journal of Experimental Psychology*, 105, 3-46.
- Nolen-Hoeksema, S., Girgus, J.S., & Seligman, M.E.P. (1986). Learned helplessness in children: A longitudinal study of depression, achievement, and explanatory style. *Journal of Personality and Social Psychology*, 51, 435-442.
- Pedhazur, E.J., & Pedhazur Schmelkin, L. (1991). *Measurement, design, and analysis: An integrated approach*. Hillsdale, NJ: Erlbaum.
- Peterson, C., & Seligman, M.E.P. (1984). Causal explanations as a risk factor for depression: Theory and evidence. *Psychological Review*, 91, 347-374.
- Resnick, M.D., Bearman, P.S., Blum, R.W., Bauman, K.E., Harris, K.M., Jones, J., et al. (1997). Protecting adolescents from harm: Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 278, 823-832.
- Reynolds, W.M., & Johnston, H.F. (1994). *Handbook of depression in children and adolescents*. New York: Plenum Press.
- Rutter, M. (1991). Age changes in depressive disorders: Some developmental considerations. In J. Garber & K.A. Dodge (Eds.), *The development of emotion regulation and dysregulation. Cambridge studies in social and emotional development* (pp. 273-300). New York: Cambridge University Press.
- Seroczynski, A.D., Cole, D.A., & Maxwell, S.E. (1997). Cumulative and compensatory effects of competence and incompetence on depressive symptoms in children. *Journal of Abnormal Psychology*, 106, 586-597.
- Seligman, M.E.P. (1975). *Helplessness: On depression, development, and death*. San Francisco, CA: Freeman.
- Velicer, W.F., & Fava, J.L. (1998). Effects of variable and subject sampling on factor pattern recovery. *Psychological Methods*, 3, 231-251.
- Verhulst, F.C., Koot, H.M., & Van Der Ende, J. (1994). Differential predictive value of parents' and teachers' reports of children's problem behaviors: A longitudinal study. *Journal of Abnormal Child Psychology*, 22, 531-545.
- Waxman, R.P., Weist, M.D., & Benson, D.M. (1999). Toward collaboration in the growing education-mental health interface. *Clinical Psychology Review*, 19, 239-253.
- Weiss, B., Weisz, J.R., Politano, M., Carey, M., Nelson, W.M., & Finch, A.J. (1991). Developmental differences in the factor structure of the Children's Depression Inventory. *Psychological Assessment*, 3, 38-45.
- Weisz, J.R., Sweeney, L., Proffitt, V., & Carr, T. (1993). Control-related beliefs and self-reported depressive symptoms in late childhood. *Journal of Abnormal Psychology*, 102, 411-418.
- Wichstrom, L. (1999). The emergence of gender difference in depressed mood during adolescence: The role of intensified gender socialization. *Developmental Psychology*, 35, 232-245.
- Wierzbicki, M., & McGabe, M. (1988). Social skills and subsequent depressive symptomatology in children. *Journal of Clinical Child Psychology*, 17, 203-208.