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Control-Related Beliefs and Depression Among Clinic-Referred Children and Adolescents

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Does childhood depression involve a perceived lack of control? The answer may depend on which dimension of control one examines. Here, building on recent theory, we distinguished between two dimensions: beliefs about the contingency of outcomes and beliefs about one's own competence to perform outcome-relevant behavior. Three separate groups of clinic-referred children (aged 8–17) were sampled, one before therapy and two afterward. In all three groups, low levels of perceived competence were significantly correlated with children's Childhood Depression Inventory (CDI) scores. Multiple regression analyses with several predictors revealed that, in each sample, competence beliefs accounted for substantial unique variance in CDI scores. In contrast, contingency beliefs were not correlated with CDI scores in any of the samples. Finally, CDI scores were consistently correlated with attributions of success and failure to "unknown" causes. Overall, the results link childhood depression to perceived incompetence and to "contingency uncertainty," but not to perceived noncontingency. This suggests, in turn, that children may be more susceptible to "personal helplessness" forms of depression than to forms identified with "universal helplessness."

Does depression involve a perceived lack of control? The notion is central to several major theories of depression, and research with adults provides moderate support (Coyne & Gotlib, 1983; Peterson & Seligman, 1984). However, research with children and adolescents (here referred to as "children") is still too scanty to permit firm conclusions. Evidence does suggest that children can experience depressionlike syndromes (e.g., Achenbach, 1978; Achenbach & Edelbrock, 1979; Kaslow, Rehm, & Siegel, 1984) and that depressed youngsters are more likely than their nondepressed peers to show self-blame for negative events (Moyal, 1977; Seligman et al., 1984); low self-esteem and negative self-assessments (Haley, Fine, Marriage, Moretti, & Freeman, 1985; Kaslow et al., 1984); a depressive attributional style that includes internal, stable, and global attributions for failure (Kaslow et al., 1984; Seligman et al., 1984); and hopelessness regarding the future (Kazdin, French, Unis, Ezveldt-Dawson, & Sherick, 1983). Several of these findings suggest, indirectly, that depressed children may indeed perceive themselves as lacking in control.

In more direct evidence, Moyal (1977) found that depressive symptoms were correlated with external locus of control among normal school children. Moyal's findings and the others suggest two further questions: (a) Are control beliefs related to depression among children who are disturbed enough to warrant clinic referral? and (b) Are different dimensions of perceived control differentially related to child depression? Moyal's internal–external (I–E) scale generated a single locus of control score. Some, however, view control as a multi-dimensional construct, and for research on child depression a focus on separate dimensions of control may be especially informative. A particularly relevant conceptualization is the two-dimensional model of control cognition developed by Weisz and others (Weisz, 1983, 1986a; Weisz & Cameron, 1985; Weisz & Stipek, 1982).

In the model, control is defined as the capacity to cause an intended outcome. Control, thus defined, is construed as a joint function of two factors: outcome contingency and personal competence. The contingency of a target outcome—say, solving a problem—is defined as the degree to which that outcome depends on the behavior of relevant individuals—in the case of a child, "kids" in general. The individual's competence with respect to the outcome is defined as that individual's level of ability to produce the behavior on which the outcome is contingent.

As discussed elsewhere (e.g., Weisz, 1986a), the model builds on the work of several earlier theorists (e.g., Abramson, Seligman, & Teasdale, 1978; Bandura, 1977; Crandall, 1971; Gurin, 1980). Bandura (1977), for example, distinguished between "outcome expectancies" (i.e., beliefs that "a given behavior will lead to certain outcomes" [p. 193]) and "self-efficacy expectations" (i.e., individuals' beliefs that they can "successfully execute the behavior required to produce the outcomes" [p. 193]).

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This distinction resembles that between contingency and competence beliefs. However, Bandura's (1986) description and some of his measurement procedures suggest differences between his constructs and those of the two-dimensional model[1]; the two perspectives do appear similar, though, in their linking of depressive thoughts and feelings to the belief that one cannot accomplish desired goals.

A particularly important connection between the two-dimensional model and earlier theory on depression involves Abramson et al.'s (1978) learned helplessness reformulation. Abramson et al. described two forms of depression. One involves "personal helplessness," a belief that one cannot generate responses that will produce personally important outcomes but that others can do so; self-blame and low self-esteem may result. Personal helplessness appears to hinge on the belief that one is less *competent* than others at important outcome-relevant behavior (see also Beck, 1967). The second form of depression involves "universal helplessness," a belief that desired outcomes are not contingent on responses that either the individual or relevant others might produce; hopelessness may result, but often without self-blame. Universal helplessness appears to hinge on the belief that *outcome contingency* is at a very low level (see also Seligman, 1975). So depression, in adults, may involve a belief that either personal competence or outcome contingency is low, with the two belief patterns linked to quite different forms of depression.

Might this reasoning apply to children? To find out, we need to explore whether the child's experience of depression is related to beliefs about outcome contingency, and about personal competence, in personally significant problem situations. This requires (a) an acceptable measure of depression as experienced and reported by children themselves, (b) separate assessment of children's contingency and competence beliefs, and (c) a focus on outcomes of personally significant problem situations, rather than on global locus of control. Requirement (a) is satisfied by the Children's Depression Inventory (CDI; Kovacs & Beck, 1977); (b) and (c) are more difficult to satisfy. Locus of control scales do not distinguish between contingency and competence beliefs or focus on the types of outcomes most relevant to the questions raised here.

Accordingly, a set of contingency, competence, and control (CCC) probes was constructed, with questions focused on children's beliefs about solution of their problems at home and at school. Home and school problems had special personal significance for the youngsters sampled because all had been referred to clinics for the treatment of such problems. In the CCC probes children were asked how contingent they believed the solutions to these problems were on "kids and what they do," how competent they themselves were at solution-relevant behavior, and how likely it was that they could control the problems—that is, solve the problems if they tried.

To complement these focused probes, we also included a well-standardized measure of perceived control: Connell's (1980, 1985) Multidimensional Measure of Children's Perceptions of Control (MMCPC). Unlike most I–E scales, it distinguishes "external" from "unknown" sources of control; thus it permitted exploration of whether childhood depression is more strongly associated with *externality* or with *uncertainty* about the causes of events. Finally, we assessed robustness of findings by including three separate groups: (a) children sampled at clinic intake, just prior to treatment, (b) children sampled 6 months after treatment had begun, and (c) children sampled 1 year after treatment had begun.

Method

Clinic Settings and Therapists

The young clients ($N = 186$) were drawn from eight public outpatient clinics in eight different communities, and multiple therapists were involved; this helped ensure that findings would not reflect idiosyncratic characteristics of any particular community, treatment setting, or (for the two groups sampled after therapy) therapist. We sought information about the correlates of depression under naturally occurring clinical conditions, among children with a normal range of referral problems; thus, we focused on children who had been referred spontaneously by family members or school staff, we did not select for depressive diagnoses, and we did not attempt to influence therapist assignment or type or extent of therapy.

Subjects

Three groups, aged 8–17, were included: Sample A, 77 children (64 white) who were making their initial clinic visit (data from 53 of these were also used in Weisz, 1986b); Sample B, 57 children (42 white) who had completed treatment and who provided the data for this study 6 months after their first clinic visit; and Sample C, 52 children (43 white) who had completed treatment and who provided the data for this study 1 year after their first clinic visit (more than 6 months after completion of therapy). All received individual therapy, with 25 different therapists involved in Sample B and 29 in Sample C. No child was a subject in more than one sample.

As is typical in child outpatient clinics, the youngsters were referred for a variety of problems at home and school. A minority (29 in Sample A, 20 in Sample B, and 16 in Sample C) received specific DSM-III (American Psychiatric Association, 1980) diagnoses, with the remainder diagnosed as "adjustment disorders" (25, 18, 24), "deferred" (21, 19, 11), or "residual" (2, 0, 1). Specific diagnoses spanned 12 DSM-III categories in Sample A, 12 in Sample B, and 9 in Sample C. Consistent with most research on child psychopathology (see Rutter & Garmezy, 1983), formal diagnoses of major depression and dysthymic disorder were rare (1 in each sample). Table 1 shows that, appropriate to the purpose of this study, the range of CDI scores was broad. CDI scores declined nonsignificantly from Sample A to Sample B to Sample C ($p = .11$), whereas T scores on the Child Behavior Checklist (CBCL; see next section) revealed significant declines from Sample A to Sample B to Sample C on Internalizing, Externalizing, and Total Problems (for overall ANOVA, all Fs > 5.0, all ps $< .01$; for linear trend, all Fs > 10.0, all ps $< .005$). The samples did not differ significantly in age, socioeconomic status (SES), number of therapy sessions, or therapist's estimates

[1] For example, in Bandura's measurement procedures people are given "self-efficacy scales representing tasks varying in difficulty, complexity, stressfulness, or in some other dimension" and are asked "which tasks they judge they can do and their degree of certainty that they can execute them" (Bandura, 1986, p. 422). This procedure, which may be quite appropriate for Bandura's purposes, appears to blend two elements that are construed and assessed separately in the two-dimensional model: competence (level of ability) and control (capacity to cause intended outcomes).

Table 1
Characteristics of the Three Samples

Characteristic	Sample A		Sample B		Sample C	
	M	*SD*	*M*	*SD*	*M*	*SD*
Age (years)	11.70	2.44	11.89	2.76	12.10	2.76
Number of boys/girls	44/33		34/23		31/21	
SES[a]	4.87	2.06	4.42	1.86	4.66	1.65
CDI[b] score	11.65	8.31	10.25	8.52	9.23	7.93
CBCL Internalizing[c] *T* score	65.96	9.58	65.05	10.21	59.65	11.79
CBCL Externalizing[c] *T* score	67.62	10.38	65.79	9.63	61.46	11.39
CBCL Total Problems[c] *T* score	69.71	10.64	67.98	11.43	62.50	12.82

[a] Hollingshead (1975) SES (socioeconomic status) ratings are based on parent occupation; each sample spanned the full range from 1 (lowest) through 9.
[b] Children's Depression Inventory (CDI) means for the three samples were not significantly different ($p = .11$).
[c] Child Behavior Checklist (CBCL) *T* scores for Internalizing, Externalizing, and Total Problems declined significantly from Sample A to Sample B to Sample C (all $ps < .01$).

of the percentage of therapy devoted to behavioral, dynamic, or cognitive approaches.

Measures Used

CBCL. Parents filled in the CBCL (Achenbach & Edelbrock, 1983), a standardized measure that lists 118 child behavior problems. CBCL *T* scores reflect a child's status relative to others of the same sex and similar age in Internalizing (e.g., worry, social withdrawal), Externalizing (e.g., aggression, arguing), and Total Problems.[2]

CDI. Each child filled in the CDI (Kovacs & Beck, 1977). One item involving suicide was deleted out of concern about suggesting suicide to children who might not otherwise have seriously considered it. CDI reliability and validity have been documented in several studies (Kaslow et al., 1984; Seligman et al., 1984; Smucker, Craighead, Craighead, & Green, 1986).

MMCPC. Children's control-related beliefs were assessed via two approaches. One was the 24-item Personal Experience–Form A of Connell's (1980, 1985) MMCPC. The items involve either internal causal attributions, external attributions, or attributions to unknown causes (e.g., "When I get a good grade in school, I usually don't understand why I did so well."). Half involve successes, and half involve failures. Children's ratings of how true each item is are summed to form 6 perceived control scores: internal success and failure, other success and failure, and unknown success and failure. Internal consistency (Cronbach's alpha) ranges from .39 to .70 for the various subscales across various samples, and scale validity is supported by findings linking scores to other control-related constructs (see Connell, 1985; Connell & Tero, 1982).

CCC probes. Concurrent with the MMCPC, children working independently answered the 12 questions that formed the CCC probes, based on the two-dimensional control model described earlier (Weisz, 1983, 1986a). Four questions concerned perceived contingency (e.g., "When kids have problems at home, solving the problem depends on the kids and what they do."). Four concerned perceived competence ("e.g., When I have problems at home, I am better than most kids at helping to solve the problems."). Four concerned perceived control—that is, the belief that the individual can cause the desired outcome (e.g., "When I have problems at home, I can solve them if I try."). Within each set of four items, half dealt with problems at home, and half dealt with problems at school. Each pair of home items and each pair of school items included one positively worded item (e.g., the items quoted above) and one negatively worded item (e.g., "When I have problems at home, I cannot solve them even if I try.").

Children's ratings of how true each statement is were summed to form separate scores for perceived contingency, competence, and control. High internal consistencies were not expected given the substantial situational difference within each scale; that is, the contingency of outcomes at home should not correlate highly with the contingency of outcomes at school because the two should be unrelated in reality. As Mischel, Zeiss, and Zeiss (1974) explained, control-belief items involving different life domains or settings can be combined into an empirically valuable composite score even when the individual component items would not be expected to correlate strongly with one another. In fact, high correlations across different life settings might raise suspicions that a response set had overridden attention to important situational differences. In the present case, internal consistencies, assessed via Cronbach's alphas for a sample of 216 clinic-referred children aged 8–17, were .39 for contingency, .50 for competence, and .66 for control—a range similar to that found for the MMCPC.

Construct validity is supported by the fact that, in harmony with the theory, in the internal consistency sample just mentioned, CCC control scores were moderately correlated with contingency ($r = .43$) and competence ($r = .37$), whereas contingency and competence were poorly correlated with one another ($r = .15$). Predictive validity of the probes is supported by the finding that children's reductions in problem behavior during therapy were significantly correlated with contingency scores ($r = .48$) and control scores ($r = .41$), with the two scores together accounting for 29% of the variance in problem reduction (Weisz, 1986b).

Data Collection Procedures

Sample A children independently filled in the CDI, CCC probes, and MMCPC, and their parents filled in the CBCL, during the first clinic visit. The measures were mailed to children and parents in Samples B and C. If necessary, a second mailing and phone reminders followed. Sample B measures were filled in an average of 198.4 days after the initial clinic visit; for Sample C, the mean was 429.7 days.

Results

Table 2 shows the degree to which CDI scores and CBCL Internalizing and Externalizing *T* scores were correlated with the control belief measures (from the CCC probes and the MMCPC), and with age and sex, for each of the three samples. Here, and in other correlational analyses, we first evaluated the overall significance of the matrices by counting the number of coefficients significant at or beyond .05 and computing the binomial distribution probability (Hayes, 1981) of finding this many significant correlations by chance. This probability value, the overall significance level of the matrix, was significant beyond the .01 level for each matrix. Next, we protected against chance findings within each matrix by using binomial tables to determine the number of significant findings likely to arise by chance given the number of coefficients tested (Field & Armenakis, 1974). The lowest statistically significant values, up to that number, were then regarded as nonsignificant, with asterisks deleted

[2] Because CBCL norms only extend to age 16, the five 17-year-olds in the three samples were scored as 16-year-olds.

Table 2
Control Belief Measures as Correlates of CDI and CBCL Scores

CDI and CBCL scales	CCC probes			MMCPC						Demographic	
	Contingency	Competence	Control	Internal success	Internal failure	Other success	Other failure	Unknown success	Unknown failure	Age	Sex[a]
					Sample A (n = 77)						
CDI Depression	−.11	−.38***	−.32**	−.41***	.19	.23	.34**	.31**	.25*	.08	.18
CBCL Internal	.07	−.04	−.12	−.01	.08	.10	.04	.06	.02	−.21	.13
CBCL External	−.14	−.17	−.16	−.01	.13	.32**	.09	.20	.13	−.38***	−.09
					Sample B (n = 57)						
CDI Depression	−.14	−.39**	−.42***	−.27*	−.04	.23	.12	.34**	.38**	−.04	−.02
CBCL Internal	−.13	−.24	−.14	−.27*	−.17	−.04	−.21	.01	.13	.10	.09
CBCL External	−.07	−.24	−.20	−.23	.03	.10	−.08	.14	.20	.02	−.02
					Sample C (n = 52)						
CDI Depression	−.27	−.29*	−.38**	−.41***	.25	.32*	.15	.37**	.32*	−.10	.11
CBCL Internal	−.09	−.36**	−.29*	−.27	.21	.25	.23	.26	.36*	.10	−.01
CBCL External	−.20	−.19	−.25	−.20	.40**	.28*	.28*	.25	.30*	−.09	−.24

Note. CDI = Children's Depression Inventory; CBCL = Child Behavior Checklist; MMCPC = Multidimensional Measure of Children's Perceptions of Control.
[a] Point-biserial correlation coefficients; 1 = male, 2 = female.
* $p < .05$. ** $p < .01$. *** $p < .001$.

from the table (see Achenbach & Edelbrook, 1981, for further details and rationale).

The table reveals that neither age nor sex was correlated with CDI scores in any of the samples; moreover, neither age, sex, nor the belief measures showed robust (i.e., significant in all three samples) correlations with the CBCL measures. In contrast, five control belief measures were significantly correlated with CDI scores in all three samples. Low levels of perceived competence and perceived control, from the CCC probes, were consistently correlated with CDI scores. In harmony with these findings, CDI scores were consistently linked to low levels of belief in oneself as a cause of success (from the MMCPC). Finally, CDI scores were consistently correlated with *uncertainty* as to the causes of either positive or negative outcomes (i.e., "unknown" scores from the MMCPC).

To test whether the cognitive correlates of depression might differ as a function of age or sex, we explored the impact of both factors on relations between CDI scores and the five robust correlates within each of the three samples considered separately. Again we corrected for the number of tests calculated to protect against chance findings. For each robust correlate, in each sample, we first carried out general linear models tests of (a) the interaction of age with the robust predictor and (b) the effect of the robust predictor with age eliminated (i.e., controlled statistically; see Appelbaum & Cramer, 1974). We used parallel procedures to test the effect of sex. The age analyses revealed only one interaction, Age × Competence, for Sample C, $F(1, 48) = 5.60$, $p < .05$. Competence beliefs were significantly linked to depression among adolescents ($r = -.62$, $p = .001$), but not among children aged 8–11 ($r = -.13$, $p = ns$). Sex analyses revealed a Sex × Unknown Success interaction in Sample A, $F(1, 71) = 8.13$, $p < .01$. Unknown success beliefs were significantly related to CDI scores among girls ($r = .50$, $p < .01$) but not boys ($r = .17$, $p = ns$). The most important finding, though, was that across *all* eliminating tests, the effects of all of the original robust predictors remained significant with age and sex controlled.

Multiple Regression Findings

Because our five robust predictors were not completely orthogonal (i.e., perfectly uncorrelated), simple Pearson rs alone do not give a complete picture of the relationship between the control belief measures and depression. To fill out the picture, we carried out three multiple regression analyses, one for each sample, using the five robust predictors shown in Table 2 as predictors of CDI scores. This allowed us to determine how well the five variables as a whole predicted depression and to determine each variable's unique contribution to the prediction (i.e., its relationship to depression controlling for all other predictors).

Table 3 shows that in each sample the combined control belief measures accounted for about one fourth of the variance in CDI scores after correction for the number of predictors (see adjusted R^2 values). Table 3 also contains those predictors that added significantly to the predictability of the model with all other predictors included in the comparison model, that is, those predictors with significant eliminating betas. The only predictor significant in all three samples was the competence score from the CCC probes.

Discussion

Does childhood depression involve a perceived lack of control? The answer may be yes for one dimension of control, but no for another. Literature on depression and control (Abramson

Table 3
Multiple Regression Results for Three Samples

Primary predictor	Standardized beta[a]	Predictor *p* value	R^2	Adjusted R^2
	Sample A (n = 77)			
Internal success	−.33	.005	.28	.23
Competence	−.24	.045		
	Sample B (n = 57)			
Control	−.29	.031	.34	.27
Unknown failure	.28	.041		
Competence	−.24	.067		
	Sample C (n = 52)			
Internal success	−.31	.018	.35	.28
Competence	−.24	.056		

[a] Standardized beta reflects the unique relationship between Children's Depression Inventory scores and the predictor in question, controlling for the four other predictors in the regression equation.

et al., 1978; Seligman, 1975; Beck, 1967; Weisz, 1986a) suggests two possible control-related cognitive patterns in depression, one involving perceived incompetence and the other involving perceived noncontingency. Our findings with the CCC probes, among three samples of children, support the first possibility but not the second. In all three samples, depression was associated with low levels of perceived personal competence; in no sample was depression related to perceived noncontingency. To the extent that perceived competence resembles self-efficacy (Bandura, 1977, 1986), the findings suggest that low levels of self-efficacy may be linked to child depression.

The findings should also be viewed in the light of reformulated helplessness theory (Abramson et al., 1978). They suggest that the pattern labeled "personal helplessness"—in which people perceive themselves as less competent than others to produce significant outcome-relevant behavior—may well characterize some states of depression in childhood. On the other hand, the findings do not support a linkage between childhood and depression and a "universal helplessness" rooted in perceived noncontingency, and this may ultimately distinguish children from adults. Perhaps the notion of noncontingency is too abstract and impersonal to have serious affective consequences for children. Children may feel a sense of personal responsibility for their competence and for their level of control over events, but not for the contingency of events (which, after all, they do not determine). Certainly it is also true that children are often reinforced by parents and others for competence (e.g., being "good" at schoolwork or at sports) and control (i.e., producing good outcomes by trying) but not for contingency.

Alternately, children's cognitive limitations may make it difficult for them to understand noncontingency (for supporting evidence, see Weisz, 1980, 1981; Weisz, Yeates, Robertson, & Beckham, 1982). In fact, even college students show this cognitive limitation to some extent (see Langer, 1975; Weisz et al., 1982; Wortman, 1975), and recent data indicate, accordingly, that college students' scores on the Beck Depression Inventory correlate with their perceptions of competence but not contingency (Weiss & Weisz, 1986). The present measure of contingency beliefs spanned events at home and at school and achieved relatively low internal consistency. This, too, may have contributed to the nonfindings here regarding contingency; yet the contingency measure did relate significantly to control beliefs, in the manner predicted by the model (see data above), and, in an earlier study (Weisz, 1986b), to children's improvements in therapy. Whatever the reasons for the present findings, they do suggest two complementary possibilities that warrant further study: (a) The depressed states experienced by children may be especially likely to involve a sense of personal helplessness, with associated perceptions of personal incompetence and self-esteem deficits, and (b) depression linked to universal helplessness may be relatively unlikely to occur in children.

Children's CDI scores showed consistent negative correlations with internal attributions for success on the MMCPC. This seems consistent with the finding that depressed children perceived themselves as low in competence. In all three samples, CDI scores were correlated with both unknown success and failure on the MMCPC. These findings may have implications both for helplessness theory and for our understanding of contingency beliefs. Endorsement of the "unknown" MMCPC items appears to be equivalent to stating that one cannot determine what contingencies govern outcomes or even whether reliable contingencies exist at all. Such "contingency uncertainty" might actually be a more powerful contributor to depression than would a firm belief in noncontingency. A belief that events are noncontingent might at least reduce one's sense of personal responsibility for outcomes, moderating self-blame for failure and facilitating a shift from primary to secondary control (i.e., reducing efforts to change events and increasing efforts to adjust to and accept the unchangeable; see Rothbaum, Weisz, & Snyder, 1982; Weisz, Rothbaum, & Blackburn, 1984). Contingency uncertainty, in contrast, might leave children floundering—wondering whether failure means something about the world or something about their own competence, wondering whether they should keep trying or give up when they fail, and depressed at their inability to figure it all out. An important task for the therapist may be to help the depressed child identify causes of success and failure in significant life domains.

Our findings, overall, are notable for their specificity to depression and for their durability. The control belief measures from the CCC probes and the MMCPC were generally unrelated to Internalizing, Externalizing, and Total Problem scores. This suggests that the cognitions involved are not simply one part of a general pattern of disruption and disturbance, but rather that these belief patterns may relate in a rather specific way to depressed states. Moreover, the fact that these cognition–depression linkages persisted across three separate clinical samples, differing in therapeutic status and severity of problem behavior, argues that they may be more than fleeting or sample-specific associations.

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