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Resilience as a Predictor of Depressive Symptoms: A Correlational Study with Young Adolescents

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ABSTRACT

This correlational study explored the Resilience Scale for Adolescents (READ)[1] as a predictor for developing depressive symptoms controlling for known risk factors. A young adolescent sample ($N = 387$) completed the READ, the Short Mood and Feeling Questionnaire (SMFQ), Social Phobia Anxiety Index for Children (SPAI-C), and the occurrence of Stressful Life Events (SLE). In addition, a subsample of their parents ($N = 240$) completed a parental version of READ (READ-P). The results indicated that the READ assesses important protective factors that are associated with fewer depressive symptoms among young adolescents even when controlling for known risk factors. All five READ-factors were predictors of depressive symptoms, while the READ-P showed no predictive value. There were no significant interaction effects between READ and SLE. There were, however, significant main-effects supporting a compensatory model of protective factors. The findings suggest that the READ is a significant predictor of mental health and a useful tool for further research examining differences in stress tolerance among young adolescents.

KEYWORDS

adolescent, depression, protective factors, resilience, scale

THE INTEREST IN protective factors and the concept of resilience in particular have recently increased substantially with 85% of the publications appearing the last decade. The growing interest in resilience is largely motivated by the possible potential of identifying protective factors and mechanisms essential to prevent the development of psychiatric disorders such as depression despite exposure to significant life stressors. Findings might have implications for designing prevention and treatment interventions based on principles derived from actual survivors of adversity. Resilience is concerned

with studies of individuals or groups that survive significant stressors without developing psychiatric difficulties. The stressors reported by individuals in resilience research are often similar to those reported by individuals in clinical and depressive studies (e.g. Denny, Clark, Fleming, & Wall, 2004; Dumont & Provost, 1999; Werner & Smith, 2001). Children and adolescents low on resilience and high on risk or vulnerability may benefit from preventive interventions aimed at increasing their positive adaptation to adversity. Within a treatment-intervention context, increasing resilience resources in a child or adolescent may decrease the probability of relapse of psychiatric problems.

The field is, however, in a crucial transitional stage, where potential might be converted into application. One of the essential obstacles remaining is establishing a valid and reliable direct measure of the protective factors of resilience. This study reports on the validation of one such measure of protective factors for adolescents. Developing measures that can reliably identify protective factors for psychiatric disorders with high prevalence such as depression (Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993), is of general interest, especially since an early onset of depression has been shown to predict poor prognosis (Compas, Davis, Forsythe, & Wagner, 1987; Goodyer, 1996; Pine, Cohen, Johnson, & Brook, 2002).

Resilience has been defined as a relatively good outcome despite experiencing situations that have been shown to carry significant risk for developing psychopathology (Luthar, Cicchetti, & Becker, 2000; Masten & Reed, 2002; Rutter, 2000). The definition leaves very little room for prediction since the main focus is on the final outcome. This is not surprising since the focus in many longitudinal studies of resilience has been to

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identify characteristics associated with a good outcome, and not the processes leading to that outcome. To include the predictive perspective and facilitate research on processes, resilience may alternatively be defined as the protective factors, processes and mechanisms that contribute to a good outcome despite experiences with stressors shown to carry significant risks for developing psychopathology (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006).

Protective factors and mechanisms span broadly and can be divided into the following overarching categories: (1) Positive characteristics and resources of the individual; (2) a stable and supportive family environment marked by coherence; and (3) external social networks that support and reinforce adaptive coping (Garmezy, 1993; Werner, 1989, 1993). A direct measure of resilience should include protective factors associated with all these overarching categories.

The Resilience Scale for Adolescents (READ) was developed in a previous study. It is one of few direct measures of adolescent resilience that include all three overarching factors (Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006). This adolescent scale was based on a previously developed Resilience Scale for Adults (RSA; Friborg, Hjemdal, Rosenvinge, & Martinussen, 2003; Hjemdal, Friborg, Martinussen, & Rosenvinge, 2001), which has been shown to possess adequate psychometric properties. Both explorative and confirmatory factor analyses have yielded a five-factor solution (Friborg, Barlaug, Martinussen, Rosenvinge, & Hjemdal, 2005; Friborg & Hjemdal, 2004). Recently, the RSA has shown predictive validity in both prospective studies of psychiatric symptoms (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006) and experimental studies of pain and stress (Friborg et al., 2006). The READ has demonstrated adequate psychometric properties and initial promising validity (Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006). Other resilience scales such as the Adolescent Resilience Scale (Oshio, Kaneko, Nagamine, & Nakaya, 2003), the Resilience as a Belief System (Jew, Green, & Kroger, 1999) and the Resilience Inventory (Song, 2004) do not incorporate the social aspects as extensively as the READ.

A valid direct measure of resilience should measure essential protective factors and be negatively associated with measures of psychiatric symptoms. In this initial and preliminary step to examine the predictive value of the READ, the relation between resilience and depressive symptoms will be explored.

Depression is a substantial psychiatric disorder with a population prevalence up to 8.3% in adolescents (Anderson & McGee, 1994; Fleming, Boyle, & Offord, 1993; Lewinsohn, Clarke, Seeley, & Rohde, 1994; Lewinsohn, Duncan, Stanton, & Hautziner, 1986; Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993) and a lifetime prevalence estimated to range from 15 to 20% among adolescents (Kessler et al., 1994; Lewinsohn et al., 1986; Lewinsohn, Hops, Roberts, Seeley, & Andrews, 1993; Lewinsohn, Rohde, Seeley, & Fischer, 1993). Studies have identified several important risk factors that influence levels of depressive symptoms. Adverse life events in adolescents have been shown to be an important risk factor that increases risk for major depression in adulthood (Compas et al., 1987; Goodyer, 1996; Pine et al., 2002), and to play a vital role in later episodes of depression independent of previous symptoms (e.g., Fergusson & Woodward, 2002; Patton, Coffey, Posterino, Carlin, & Bowes, 2003). Bullying is one of the adversities that is particularly associated with higher levels of depressive symptoms (Craig, 1998; Denny et al., 2004; Seals & Young, 2003). There is also a relatively high correlation between depressive and anxiety symptoms. Studies of social anxiety in childhood show that anxiety symptoms predict later depression (Bellodi, Battaglia, Diaferia, & Draisci, 1993; Lecrubier, 1998; Stein et al., 2001). When exploring the

READ's ability to predict depressive symptoms, it is thus important to control for known risk factors such as adverse life events and social anxiety.

Despite a longstanding and strong consensus that the assessment of psychiatric symptoms among children and adolescents should include several sources of information (Achenbach, McConaughy, & Howel, 1987; Barkley, 1990; Brandenburg, Friedman, & Silver, 1990; Castello, 1989; Rutter, 1989), the parent–adolescent agreement has been shown to vary as a function of disorder type (Achenbach et al., 1987). For depressive symptoms the reported agreement between adolescents and their parents is low, with kappa of 0.31 for major depression and kappa of 0.23 for dysthymia. The agreement between a parent and an expert has been shown to be somewhat better with kappa of 0.47 for major depression, and kappa of 0.30 for dysthymia. However, the best agreements were between the adolescent and the expert with kappa of 0.80 for major depression, and 0.85 for dysthymia (Cantwell, Lewinsohn, Rohde, & Seeley, 1997). These results indicate that the subjective report from the adolescent herself or himself is the most reliable source of information for depressive symptoms. To the best of our knowledge no studies have so far been published which compare adolescents' and parents' reports of direct measures of resilience and their predictive value for depressive symptoms.

The READ as a direct measure of resilience factors may facilitate exploration of resilience factors as either compensatory or protective. A compensatory model argues that the protective resources operate irrespective of stress levels, while a protective model claims that the protective resources are activated in the face of adversity (Luthar & Zelazo, 2003). Previous studies have supported a protective model (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006; Masten, Morison, Pellegrini, & Tellegen, 1990; Rutter, 1987).

The purpose of this study is thus to explore whether or not the READ and READ-P can predict depressive symptoms, when controlling for known risk factors such as adverse stressful life events (SLE) and social anxiety. It is expected that the young adolescents' own reports will possess higher predictive value than their parents' reports. Two different models for understanding resilience will be explored. Main effects for READ or READ-P would be indications of a compensatory effect, while an interaction effect between READ × SLE or READ-P × SLE would indicate a protective effect.

Method

Young adolescents

Six junior high schools – four from urban and two from rural areas – were invited to participate. One urban area school declined. Three of the participating schools were localized in Trondheim, and two in surrounding villages in Norway. A total of 440 questionnaires were distributed and 425 were returned, which gives a response rate of 96.59%. Thirty-eight young adolescents were removed from the data set due to more than 20% missing values, which resulted in 387 participating young adolescents (165 boys and 217 girls, 5 did not report gender). In junior high schools in Norway young adolescents are between 13 to 15 years of age and are included in three different grades. The participants were distributed as follows for 8th, 9th and 10th grade: 32.9%, 33.4%, and 33.7%, respectively. In all 62 participating young adolescents (10.4%) scored above cut-off level on SMFQ for clinical depression suggested by Angold, Erkanli, Silber, Eaves, and Costello (2002). In all 240 parents, one for each young adolescent completed the parental version of resilience (READ-P).

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Procedure

Local junior high schools were contacted and teachers distributed written consent forms that the young adolescents presented to their parents. Approvals signed by the parents and returned to the teacher, confirmed that the young adolescent had permission to participate. Young adolescents completed the questionnaires during school hours. The questionnaires were administered by 12 university students at the elementary level of psychology. Each participating adolescent brought home a questionnaire to be filled out by one of the parents. The principals and teachers were offered an oral presentation of the outcome of the study based on the results from their particular school.

Measurements

The young adolescents reported gender and age in addition to completing the following scales.

Resilience Scale for Adolescents (READ) The scale is a 28-item self-report scale using a 5-point Likert scale, with all items positively phrased. Higher scores reflect higher degree of resilience. This scale was developed using confirmatory factor analysis and has shown adequate psychometric properties (total Chronbach alpha = 0.94) and initial promising validity (Hjemdal, Friborg, Stiles, Martinussen, & Rosenvinge, 2006). It consists of five factors; (1) Personal Competence; (2) Social Competence; (3) Structured Style; (4) Family Cohesion; and (5) Social Resources, with Chronbach's alphas of 0.85, 0.83, 0.69, 0.85, and 0.78, respectively. The READ has essentially the same factor structure as the RSA (Friborg et al., 2003; Friborg, Martinussen, & Rosenvinge, 2006; Hjemdal et al., 2001), which may facilitate longitudinal studies of resilience with the possibility of following samples from adolescence into adulthood. The READ is based on the RSA, which also has been shown to possess adequate psychometric qualities (Friborg & Hjemdal, 2004) and has established construct validity (Friborg et al., 2005), incremental validity in experimental studies (Friborg et al., 2006) and predictive validity in pro-spective studies (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006).

Resilience Scale for Parents (READ-P) To get a parent's perception of their young adolescent's resilience, the items in the READ were adopted. If the original item was 'I easily find new friends', the item for the READ-P was changed to 'My child easily finds new friends'. The scale is a 28-item self-report scale using a 5-point Likert scale. The factor structure was kept identical to the young adolescent version to facilitate comparison of the responses of young adolescents and parents.

Stressful Life Events (SLE) Young adolescents were asked for the lifetime occurrence of the following stressful life events: Death in family, illness in family or self, divorce in family, open category of negative life event and bullying. Prior to the item tapping the occurrence of bullying, there was a short ingress that defined and differentiated bullying from teasing in accordance with the definition given by Solberg and Olweus (2003). All items had a dichotomous response format. The SLE score is simply the sum of the total number of stressful life events reported for each young adolescent. The selected life events are all in the Life Event Scale of Holmes and Rahe (1967) and in the Life Events Checklist (Brand & Johnson, 1982; Coddington, 1972a, 1972b; Johnson & McCutcheon, 1980), and they are frequently selected as severe adverse life events reported by adolescents (e.g. Kraaij et al., 2003; Quyen et al., 2001).

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Social Phobia Anxiety Index for Children (SPAI-C) The SPAI-C is a 26-item self-report instrument designed to assess social anxiety in children (Beidel, Turner, & Morris, 1995, 1998–2000). High scores reflect higher severity of social anxiety. Items assess a range of potentially anxiety-producing situations (i.e. reading aloud, performing in a play, eating in the school cafeteria) including physical and cognitive symptoms as well as avoidance behaviours. Each item is rated on a 3-point Likert scale ('Never or hardly ever', 'Sometimes', 'Most of the time or always'). The SPAI-C has been found to possess adequate psychometric properties and acceptable convergent and discriminant validity (Beidel et al., 1998–2000). A Cronbach's alpha of 0.91 was obtained for the Norwegian translation of the SPAI-C, which indicates good internal consistency (Aune & Stiles, 2006).

Short Mood and Feeling Questionnaire (SMFQ) The brief 13-item screening version of the Mood and Feeling Questionnaire was used. All items are negatively phrased on a 3-point Likert scale. High scores reflect higher severity of depressive symptoms (Angold et al., 1995; Costello & Angold, 1988; Messer et al., 1995). The SMFQ is an unifactorial scale with adequate reliability (Cronbach's $\alpha = 0.90$) (Costello, Benjamin, Angold, & Silver, 1991). It correlates highly with more extensive evaluations like the Children's Depression Inventory (CDI; Kovacs, 1983) with a correlation of $r = 0.67$, and the Diagnostic Interview Schedule of Children (DISC; Shaffer, Fischer, Piacentini, Schwab-Stone, & Wicks, 1989) with a correlation of $r = 0.51$ (Angold et al., 1995; Costello & Angold, 1988). The SMFQ differentiates between referred child psychiatric participants and unselected pediatric controls, and between depressed adolescents and nondepressed adolescents in a general population sample (Angold et al., 1995).

Results

Table 1 shows means, standard deviations, and correlations between READ, READ-P, SMFQ, SPAI-C and SLE. The correlations between self-reported scores on READ, SMFQ, SPAI-C and SLE for the young adolescents were weak to moderate. The correlations between the parents' READ-P and the young adolescents' reported scores on READ, SMFQ, SPAI-C and SLE were nonsignificant to weak. In order to reduce the risk of making Type I errors due to 12 separate hierarchical multiple regression analyses a Bonferroni corrected alpha level of 0.004 was chosen.

READ from young adolescents

The left column of Table 2 displays the results of the separate hierarchical multiple linear regression analyses examining the relationship between resilience and depressive symptoms as measured with the SMFQ when the potential effects of gender, age, SLE and SPAI-C were statistically controlled for. Gender was entered in the first step, age in the second step, SLE-scores in the third step, and SPAI-C-scores in the fourth step. The total READ scores or specific READ-factor scores was entered in the fifth step in six separate analyses. The interaction between the SLE and the total READ scores and the specific READ-factor scores were entered in the sixth step in each analysis.

The results indicated that age was not significantly associated with level of depressive symptoms. Gender, SLE and SPAI-C were found to significantly predict levels of depressive symptoms. The READ-total score and all of the READ-factors were also significantly associated with depressive symptoms when entered in separate analyses in step five. The interactions between the SLE and the total READ scores and the specific READ-factor scores were not significant.

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Table 1. The means, standard deviations, and the correlation between all instruments (N = 387)

Measurements	1	2	3	4	5
1. READ total	–				
2. READ-P total	.28**	–			
3. SMFQ total	–.64**	–.19**	–		
4. SPAI-C total	–.51**	–.24**	.55**	–	
5. SLE	–.20**	.09	.26**	.21**	–
No. of items	28	28	13	26	5
N	387	240	387	387	387
M	3.90	4.05	4.94	7.64	.95
SD	.66	.49	5.00	6.52	.85

Note. Two-tailed, $^*p$ < .05; $^{**}p$ < .01.
Abbreviations: READ = Resilience Scale for Adolescents, READ-P = Resilience Scale for Adolescents – Parental version, SMFQ = Short Mood and Feeling Questionnaire, SPAI-C = Social Phobia Anxiety Index – Children, SLE = Stressful Life Events.

Table 2. Summary of the separate hierarchical multiple regression analyses using depressive symptoms as measured by the SMFQ as the dependent variable, and resilience scores as predictor variables

Step		SMFQ total Adolescent (N = 387)			SMFQ total Parent (N = 240)		
		F cha	R² cha	β	F cha	R² cha	β
1	Gender	6.73*	0.02	0.13	1.44	0.01	0.08
2	Age	0.43	0.00	0.03	0.05	0.00	0.02
3	Stressful life events (SLE)	23.34*	0.06	0.24	10.37*	0.05	0.22
4	SPAI-C	148.07*	0.26	0.53	98.76*	0.31	0.57
5	Resilience total score	110.34*	0.15	–0.46	1.21	0.00	–0.06
5	Personal competence	129.06*	0.17	–0.46	4.78	0.01	–0.12
5	Social competence	8.46*	0.01	–0.15	1.64	0.01	0.07
5	Structured style	47.11*	0.07	–0.29	0.13	0.00	–0.02
5	Family cohesion	111.40*	0.15	–0.42	3.86	0.01	–0.11
5	Social resources	70.90*	0.10	–0.37	4.25	0.01	–0.11
6	Resilience total score* SLE	7.07	0.01	–0.10	1.23	0.00	–0.06
6	Personal competence* SLE	5.37	0.01	–0.09	0.92	0.00	–0.05
6	Social competence* SLE	5.88	0.01	–0.10	0.91	0.00	–0.05
6	Structured style* SLE	4.30	0.01	–0.08	3.19	0.01	–0.10
6	Family cohesion* SLE	6.08	0.01	–0.09	0.80	0.00	–0.05
6	Social resources* SLE	2.45	0.00	–0.06	1.73	0.01	–0.07

Note. $^*p$ < 0.004.
Abbreviation: SLE = Number of stressful life events.

READ-P from parents

To examine the predictive value of young adolescent resilience reported by a parent a new set of multiple hierarchical linear regression analyses were performed. The dependent variable was still depressive symptoms as reported by the young adolescents. Gender was entered in the first, age in the second, SLE-scores in the third, and SPAI-C-scores in the fourth step. The total READ-P scores or specific READ-P factor scores

were entered in the fifth step in six separate analyses. The interaction terms between the SLE and the total READ-P scores and the specific READ-P-factor scores were entered in the sixth step in each analysis. The results are summarized in the right column of Table 2, which indicates that neither gender nor age were significantly associated with depressive symptoms, while the number of stressful life events and levels of social anxiety were. Neither the READ-P total score nor any of the READ-P factors predicted levels of depressive symptoms. The interactions between the SLE and the total READ-P scores and the specific READ-P-factor scores were not significant.

Discussion

The primary purpose of the present preliminary study was to explore the predictive value of READ and READ-P for depressive symptoms in a young adolescent sample. The identification of specific protective factors associated with lower reports of depressive symptoms can provide knowledge that may assist in the development of prevention and treatment interventions for depression. Overall, the study yielded several significant findings. Initially, it was found that adolescents who reported higher levels of resilience exhibited significantly lower levels of depressive symptoms. These results apply to both the total resilience score and all of the five resilience factors, even when controlling for gender, age, the number of stressful life events including bullying, and levels of social anxiety. The results support the predictive validity of the READ. The fact that both Family Cohesion and Social Resources predicted depressive symptoms stresses the protective element in the adolescents' social environment generally reported in the resilience literature (Cheney & Osher, 1997; Werner, 1993; Werner & Smith, 2001), and further emphasizes the importance of including social aspects in scales designed to tap resilience.

The READ-Social Competence was found to be the weakest predictor among the READ factors. This finding is in contrast with previously reported results for adults using the RSA where Social Competence was found to be one of the most important predictors (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006). One possible explanation is that READ-Social Competence can be closely linked to the measure of social anxiety disorder symptoms. An additional analysis was thus undertaken omitting SPAI-C as a covariate in the regression analysis. The predictive value of READ-Social Competence went from explaining 1 to 15% ($t = –8.65$, $p < 0.001$) of the variance of depressive symptoms, making it among the most important predictors. This implies that Social competence is an important protective factor in relation to depressive symptoms.

The findings in the present study draw attention to an important theoretical issue, which deserves further attention. First, contrary to previous studies (Masten et al., 1990; Rutter, 1987), the present results favoured a compensatory model of resilience rather than a protective one by supporting statistical main effects and no interaction effects. In contrast to the protective effects observed with the resilience scale for adults (Hjemdal, Friborg, Stiles, Rosenvinge, & Martinussen, 2006), the READ fitted a compensatory model better despite containing virtually similar items and factor structure. The divergence in results might be attributed to differences in design. For the sake of comparison, the RSA data from Hjemdal, Friborg, Stiles, Rosenvinge, and Martinussen (2006) were reanalysed in a correlational design, and the total RSA scores explained 24% of the variance in the depressive symptoms. For the RSA factors the explained variance varied between 46 and 5%. The reanalysis of the RSA data in a correlational design gave equally and even larger explained variance than the results

for the present study with READ, implying that the divergence in the results between READ and RSA most likely can be attributed to design differences in these two studies. Further prospective studies with the READ are needed to elucidate this issue.

It may be argued that the relatively strong association between READ and depressive symptoms might be an indication of a tautology. The READ may be assumed to be solely a positively phrased depression measure. If this was the case, the READ should not be able to predict other psychiatric symptoms when controlling for depression. Additional multiple hierarchical regressional analyses were undertaken substituting SPAI-C with SMFQ as dependent variable to explore the READ's capacity to predict symptoms of social anxiety when controlling for depressive symptoms. The results indicated that with the exception of two resilience factors, READ-Family Cohesion ($t = -1.56$, p = n.s.) and READ-Structured Style ($t = -2.44$, p = n.s.), the rest of the READ factors were significant predictors of social anxiety even when controlling for depressive symptoms (Total READ, $t = -5.59$, $p < .004$; READ-Personal Competence, $t = -3.31$, $p < .004$; READ-Social Competence, $t = -10.15$, $p < .004$; READ-Social Resources, $t = -5.30$, $p < .004$). These results indicate that the READ is not merely a tautology of traditional depressive measures, but has value as a predictor of both depressive and social anxiety symptoms.

In a clinical setting one would generally be interested in increasing adolescents' strengths and resources. Scores on each READ factor may thus be highly informative. Clinical interventions tailored for treating depressed adolescents with lower scores on READ-Social Competence might differ somewhat from interventions for depressed adolescents with lower scores on READ-Family Cohesion. Individual differences in READ factor scores and profiles may also have consequences for tailoring prevention interventions for psychiatric disorders. Further research is needed to explore to what extent the READ factors have predictive value for prevention and/or clinical interventions. Such studies are underway.

The READ-P did not show any predictive value for depressive symptoms exhibited by the adolescents, despite significant correlations with READ, SMFQ and SPAI-C. Although somewhat unexpected, there are many studies that have reported low to moderate agreement between adolescents and their parents for psychiatric symptoms such as depression (Achenbach et al., 1987; Angold et al., 1987; Edelbrock, Castello, Dulcan, Connover, & Kalas, 1986; Varni et al., 1996). Consistent with research on depressive symptoms, the young adolescents themselves seem to be a better source of information regarding resilience factors and their ability to predict depressive symptoms.

Earlier studies have found a significant increase in depressive symptoms between the ages of 14 to 15 (e.g. Lewinsohn et al., 1986; Wittchen, Knauper, & Kessler, 1994). The present study found no such increase with age. There may be several possible explanations. The sample may not be representative, but this seems unlikely as the participating schools were from both city and rural areas and the response rate was 96.6%. Furthermore, response rates were evenly distributed among 13-, 14- and 15-year-olds. The lack of significant age effects may be due to the limited age range, and further studies including a broader age range are needed. The above-mentioned studies pinpoint the increase in depressive symptoms to occur between the ages 14 and 15. Interestingly, Wichstrøm (1999) found an increase in depressive symptoms between 13 and 14 years of age in a nationwide sample of 12000 Norwegian adolescents. The increase was gender specific for girls. Boys showed no such increase between the ages of 13 and 15. The increase of depressive symptoms was partly explained by the fact that girls were more developmentally challenged with the onset of pubertal development. Viewed together, the results regarding onset of depressive symptoms indicate a trend of decreasing age

onset of depressive symptoms for girls. This explanation is further strengthened by the fact that the gender differences found in Wichstrøm's study appeared at 14 years of age, while such differences were already present at 13 years of age in the present study.

There are some limitations in the present study that must be acknowledged. First, although satisfactory psychometric properties and moderate to high correlations with a diagnostic interview have been reported for the depressive measure used in this study (Angold et al., 1995; Costello & Angold, 1988; Costello et al., 1991), it is not based on DSM-IV or ICD-10 diagnostic criteria for depressive disorder. Use of diagnostic interviews based on such diagnostic criteria is recommended. Second, due to limited administration time set by the participating schools, only a selection of acknowledged stressful life events (Coddington, 1972a, 1972b; Kraaij et al., 2003) were included. The inclusion of full scales assessing stressful and negative life events is recommended. Finally, the correlational design cannot determine causal relations, and prospective or experimental studies are needed. The READ as a direct measure may, however, facilitate prospective longitudinal studies which may contribute to elucidate protective processes. A longitudinal prospective study would be required to determine the antecedent role of resilience factors in the development of depression. Also, clinical studies are needed to clarify to what extent resilience changes during therapy. Such studies are underway.

Note

1. Requests for copies of the Resilience Scale for Adolescents may be addressed to the first author.

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