

Resilience in Adolescents: Protective Role of Social Support, Coping Strategies, Self-Esteem, and Social Activities on Experience of Stress and Depression

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In this study, 297 adolescents (141 eighth graders and 156 eleventh graders) were classified into 3 groups created from crossing scores of depressive symptoms and frequency of daily hassles: well adjusted, resilient, and vulnerable. A discriminant function analysis was performed to investigate group differences on self-esteem, social support, different strategies of coping, and different aspects of social life. The analysis revealed that self-esteem, problem-solving coping strategies, and antisocial and illegal activities with peers helped to discriminate groups: Well-adjusted adolescents had higher self-esteem than adolescents in the 2 other groups; in addition, resilient adolescents had higher self-esteem than vulnerable adolescents. For the second significant discriminating variables, antisocial and illegal activities with peers, both resilient and vulnerable adolescents had higher scores than well-adjusted adolescents. Finally, resilient adolescents had higher scores on problem-solving coping strategies than adolescents in the 2 other groups.

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INTRODUCTION

Adolescence is best described as a transitional period in which individuals experience major physical, cognitive, and socioaffective changes. Other life events (e.g., family structure changes, school changes, and accidents) also can affect adolescents' well-being. Some children adapt successfully and in some ways are stimulated by these life events whereas others experience adjustment problems. The study of these individual differences may provide information on potential protective factors that may help adolescents even in at-risk contexts. Central to this approach is the concept of resilience, which stems from observations that some high-risk individuals unexpectedly show no clear signs of psychological distress (Garmezy, 1983; Rutter, 1979). Although there is a reasonable amount of research on resilience in childhood, few have studied the individual differences in the stress–distress relation during the transition from childhood to adulthood. Herman-Stahl and Petersen (1996) have proposed the creation of 4 distinct groups of adolescents by crossing indices of depressive symptoms and frequency of negative life events: (1) well adjusted (low on both indices), (2) resilient (high on level of stress and low on depression), (3) vulnerable (high on both indices), and (4) nonadjusted (low on level of stress and high on depression). Herman-Stahl and Petersen (1996) found that adolescents from the well-adjusted group had higher optimism, more active coping, and more positive relations with parents and peers than adolescents in the 3 other groups. They also found that resilient adolescents scored higher than vulnerable adolescents on the preceding variables. This result is important in that it suggests that resilient adolescents may develop normally even if they have experienced difficult family environments. The goal of the present study is to examine the beneficial role of certain internal factors (self-esteem, coping) and external factors (social support and social activities) in protecting youth from a normative sample, who are experiencing depression and repetitive stress known as daily hassles.

Stress–Distress Relation

The literature suggests that life events are a major source of positive and negative stress for adolescents, especially those who are depressive or anxious (L. H. Cohen *et al.*, 1987; Goodyer, 1994; Plancherel *et al.*, 1992; Swearingen and Cohen, 1985), who experience problems in social or academic spheres (Compas, 1987; Compas *et al.*, 1989; Dubois *et al.*, 1992; Rowlison and Felner, 1988; Wagner and Compas, 1990), and who have poor self-esteem (Hoffman *et al.*, 1988). However, correlations reported between life events and mental health problems are consistent but generally modest (from .20 to .30; see Thoits, 1983). In the past 20 years, research has looked for other factors, such as the negative impact of small daily hassles on mental health. Kanner *et al.* (1981) have defined daily hassles as frustrations and irritants stemming from transactions with the environment (homework,

quarrels with friends, etc.). As with life events, the negative effects of these repeated microevents on health are well documented in preadolescents and adolescents, especially in adaptation competence (Rowlison and Felner, 1988) and anxiety or depressive problems (Compas *et al.*, 1989; Kanner *et al.*, 1987).

The interest for daily hassles is growing rapidly for 3 main reasons. First, questionnaires that assess daily hassles make a marked distinction between the objective experience (i.e., the frequency of each hassle) and the subjective experience (i.e., the perceived intensity of each hassle), whereas questionnaires on life events, especially those in line with the seminal work of Holmes and Rahe (1967), focus mostly on the objective experience. Second, life events are relatively rare, whereas daily hassles are common and show a greater interindividual variance (Aldwin, 1994). Finally, the literature also suggests that daily hassles account for a greater percentage of the variance attributed to mental health problems, even when they are entered in the same regression equations as life events. This implies that daily hassles might be better predictors of the psychological health of young adolescents than are life events (Gersten *et al.*, 1977; Plancherel *et al.*, 1997).

Using a path analytic model, Plancherel *et al.* (1997) have shown that daily hassles may be considered as a mediator of the effect of life events on mental health. This finding suggests that daily hassles may not only trigger stress, but they also may be influenced by internal individual factors (i.e., low self-esteem might induce one to see only negative aspects of situations or to have a poor perception of one's abilities to cope with stressing environments).

Protective Factors

Recent research has emphasised certain personal and environmental resources that buffer the effects of normative and nonnormative stress on health (F. Cohen, 1987; S. Cohen and Wills, 1985; Dohrenwend and Dohrenwend, 1981; Garmezzy, 1983; Plancherel *et al.*, 1994; Wheaton, 1985). These resources, whether internal like self-esteem or external like social support, and coping strategies (actions used to deal with problems or resources available within the individual; Plancherel *et al.*, 1994), are considered to be protective factors. Research has shown that the deleterious effects of stress on mental health are less important for individuals who possess such resources compared to those who do not (Plancherel *et al.*, 1994). In this study, we examine variables that have been considered as protective factors in the stress–distress relation.

Social Support

Social support is a multidimensional concept that includes the support actually received (informative, emotional, and instrumental) and the sources of the support (friends, family, strangers, and animals). It can be considered as structural

(quantitative) or functional (qualitative) (Heitzmann and Kaplan, 1988; Provost, 1995). Cohen and Wills (1985) and Plancherel *et al.* (1994) have identified 2 major models to explain the protective roles of social support on stress. The first, known as the principal effect model, posits that social support gives an individual a general positive context without regard for the actual experiences of stressful events (Bettschart *et al.*, 1992). The second model is known as the stress-buffering effect and has been studied largely with social support and, more recently, with coping strategies (Aro *et al.*, 1989; Nuñez *et al.*, 1992; Plancherel *et al.*, 1994; Roos and Cohen, 1987; Smith *et al.*, 1990; Wertlieb *et al.*, 1987; Wheaton, 1985). This model supposes that adequate social support will offset or moderate the impact of stress on health. For example, Barrera (1986) suggests that, in adults, the relation between stress and distress is higher within a context of low social support. Beneficial effects of social support also have been observed in youth (F. Cohen, 1987; S. Cohen and Wills, 1985; Daniels and Moos, 1990; Dubow and Tisak, 1989; Johnson, 1986). When preadolescents reported low satisfaction with their social support, the probability of having problems of anxiety, depression, or sleep disturbances is high (Bolognini *et al.*, 1992). In adolescents and young adults, low satisfaction with social support is associated with depressive or psychosomatic symptoms, anxiety, and interpersonal sensitivity (Burke and Weir, 1978; Compas *et al.*, 1986).

Coping Strategies

Coping strategies are discussed by Lazarus and Folkman (Lazarus, 1966; Lazarus and Folkman, 1984) who refer to coping as the cognitive and behavioral efforts that allow an individual to tolerate, escape, or minimize the effects of stress. Strategies of coping have been studied mostly in adults. However, in the past decade, interest for children and adolescents has grown rapidly (Altschuler and Ruble, 1989; Blanchard-Fields and Coleman-Irion, 1988; Copeland and Hess, 1995; Compas *et al.*, 1991; Ebata and Moos, 1995; Fanshawe and Burnett, 1991; Kurdek, 1987; Patterson *et al.*, 1983; Plancherel *et al.*, 1993; Seiffge-Krenke, 1994a,b, 1995; Smith *et al.*, 1990; Spirito *et al.*, 1991; Tyszkowa, 1990).

Coping strategies often are discussed within an approach-withdrawal model or within a problem-emotion focused model (Lazarus and Folkman, 1984). Coping strategies centered on problem solving are aimed at doing something to change the stressful situation. Coping strategies centered on emotion refer to strategies aimed at reducing psychological discomfort by simply avoiding the noxious stimulus without trying to modify the situation. According to Seiffge-Krenke (1995), in adolescents, the problem-solving coping mode is functional (seeking information or advice, accepting social support, making efforts to solve the problem), whereas the avoiding coping mode is dysfunctional (withdrawal, fatalistic attitudes, avoidance). This latter mode has been observed mainly in children and

adolescents with psychiatric problems (Reinhard and Ott, 1994), and in adolescents with depressive symptoms, low self-esteem, low social-support satisfaction (Chan, 1995), and poor social adjustment (Tolor and Fehon, 1987).

Self-Esteem

In the stress literature, self-esteem has not been considered as often as coping or social support as a protective factor. However, research has shown that individuals with high self-esteem or a high feeling of control will adopt active coping strategies focused on problems, whereas individuals with a low self-esteem will adopt passive-avoidant coping styles focused on emotions (Thoits, 1995). In a preadolescent sample, high self-esteem was correlated with active-positive coping styles (Mantzicopoulos, 1990) and high social support (Hoffman *et al.*, 1988). Others have shown that low self-esteem is related to depression (Bettschart *et al.*, 1994; Rosenbaum-Asarnow *et al.*, 1987), anxiety, and unsuccessful coping strategies (Houston, 1977, in Seiffge-Krenke, 1995).

Participation in Social Activities

Involvement in social activities seems to be as important as academic programs for youth development. According to Holland and Andre (1987), social activities help to foster personality development and socialization. They argue that involvement in such activities offers young adolescents a channel to express their energy in socially acceptable ways. Their results show clearly that social participation is highly correlated with self-esteem and control of perception. More recently, Rae-Grant *et al.* (1989) have shown in a sample of 3294 children 4 to 16 years old that participation in different social activities is related to a low incidence of behavioral problems.

The goal of the present study is to examine the relative protective roles of specific adolescent internal (self-esteem, coping) and some external (social support and social activities) resources on their experience of stress and depression. Four groups were created by crossing indices of depressive symptoms and levels of daily hassles: (1) well adjusted (low on both indices); (2) resilient (high on level of daily hassles and low on depression); and (3) vulnerable (high on both indices); (4) nonadjusted (low on level of daily hassles and high on depression). As such, this study lies within the domain of developmental psychopathology that is interested in buffering effects of different factors in the presence of different at-risk environments. It has been reported repeatedly that individuals with the same levels of environmental risk may have different developmental outcomes (good or bad adjustment) and that individuals with different levels of risk may have the same outcome (Cowan *et al.*, 1996).

METHOD

Participants

Participants were 141 eight graders ($M = 14$ years; $SD = 7$ months) and 156 eleventh graders ($M = 16$ years and 8 months; $SD = 8$ months) from the same school. The sample was recruited in 6 different classes for each level and was equally divided between girls ($n = 153$) and boys ($n = 144$). The participants came mostly from middle-class intact Caucasian French-speaking families (73%), but some lived in divorced (23%) or other types of families (death of a parent, foster family; 4%). Participation was voluntary and a consent form signed by the adolescent and one parent was obtained. Most of the families contacted agreed to participate (81% for 8th grade; 86% for 11th grade). Questionnaires were administered collectively in classrooms under the supervision of a research assistant.

Measures

Daily Hassles

Daily hassles were assessed using a French and modified version of the Adolescent Hassles Inventory (Bobo *et al.*, 1986; translation, adaptation, and validation by the Service universitaire de psychologie de l'enfant et de l'adolescent, Lausanne, Switzerland, or SUPEA). This questionnaire assesses the frequency of daily hassles and makes a cognitive appraisal of the severity of the annoyance caused by the situation described in each item (severity of daily hassles). The original version has 68 items chosen from the 117-item version for adults (Kanner *et al.*, 1981). The version used in our study was adapted for Swiss preadolescents and contains 59 items organized around different areas of development (self, family, peers, school, future). Participants must first answer whether a given problem has occurred for him/her in the preceding 6 months and whether this had some effect (4-point Likert scale from 1 (not annoyed at all) to 4 (very annoyed)). Frequency of daily hassles was defined as the number of items described as an annoyance, whether small (1) or big (3). The severity of daily hassles was defined, in concordance with Plancherel *et al.* (1997), as the mean score of all of the 59 items. Alpha reliability of the severity scale for our sample was .92.

Depression

Depression was assessed using a validated French translation (Bourque and Beaudette, 1982) of the Beck Depression Inventory (Beck, 1978). This 21-item questionnaire measures the severity of depression. Adolescents were asked to

evaluate each item on a 4-point Likert scale (from 0 to 3) indicating the level that best described their feelings within the past 7 days.

Barrera and Garrison-Jones (1988) showed that, in a sample of adolescents (12 to 18 years old) in school, scores of 16 and more can be associated with a depressive state, whereas, in a clinical sample, a score of 11 or more is associated with depression. The French version (mean age = 20 years) yielded a test-retest correlation of .62 ($p < .001$) and an alpha reliability of .92 (Stanley and Hopkins, 1972). In our study, cutoff points from Barrera *et al.* (1988) were used to form 3 groups: under 9 points (nondepressive); 10 to 15 points (mildly depressive); 16 points and more (depressive).

Social Support

Social support was assessed by the Social Support Questionnaire (SSQ; Sarason *et al.*, 1987; translation and validation by DeMan *et al.*, 1986). This shortened version (SSQ-6) consists of 6 items from the original 27-item version and was developed by Sarason *et al.* (1987). Adolescents were asked to identify persons in their environment that can help in the situation described by the item. They also were asked to evaluate on a 6-point scale their level of satisfaction with the support they perceived, from 1 (very unsatisfied) to 6 (very satisfied). This yielded 2 scores: the number of persons in their social network and the degree of satisfaction with the support they perceived. This 6-item version has equivalent alpha reliability to the original version (more than .90) for both scales.

Coping Strategies

Coping was assessed using the Ways of Coping Questionnaire (Folkman and Lazarus, 1988; translation and validation by Mishara, 1987) containing 66 items designed to tap subjects' strategies used in coping with stressful situations. The version used in this study is a 21-item shortened French version (Bouchard *et al.*, 1995). Each item was ranked on a 4-point Likert scale from 0 (not used) to 4 (very used). This version, tested with 1012 French Canadian adults, yielded a 3-factor structure (social-support seeking, positive appraisal/problem solving, and avoidance). Alpha reliabilities were .85, .80, and .76, respectively. In the present study, alpha reliabilities were .81, .81, and .67, respectively.

Self-Esteem

Self-esteem was assessed using a shortened 6-item version of the 36-item original version of the Self-Perception Profile for Children (Harter, 1985). Participants were asked (1) to choose from 2 descriptions of an adolescent and (2) to rank

from 1 (a bit like me) to 4 (exactly like me). In 4 samples of 3rd to 8th graders, Harter reported alpha reliabilities from .78 to .84. In this study, the alpha was .84.

Social Activities

Social involvement was assessed using the Involvement Microsystem Scale (Seidman *et al.*, 1995). This 41-item questionnaire measures the degree of involvement of the adolescent in the past 12 months on 5 different microsystems designed to tap involvement with friends (9 items), family (6 items), school (9 items), neighborhood (9 items), and church (8 items). Participants were asked to rate their degree of involvement ranging from 1 (never or approximately never) to 6 (nearly every day). Seidman *et al.* (1995) reported a factorial structure with varimax rotation of 6 factors: (1) neighborhood-action involvement, (2) school involvement, (3) family involvement, (4) sport/athletic involvement, (5) peer involvement, and (6) neighborhood-social involvement. Ten-month test-retest correlations ranged from .32 to .53. Alpha reliability scores ranged from .62 to .84. In our study, a factorial analysis with varimax rotation yielded a 4-factor solution: F_1 , communal and religious activities; F_2 , family activities and socialization with neighbors; F_3 , academic and social activities; F_4 , antisocial and illegal activities with peers. Alpha scores were .80, .75, .60, and .62, respectively.

Formation of the Adjustment Groups

Herman-Stahl and Petersen (1996) have proposed 4 distinct groups of adolescents, created by crossing indices of depressive symptoms and levels of stress: (1) well adjusted (low on both indices), (2) resilient (high on level of stress and low on depression), (3) vulnerable (high on both indices), and (4) nonadjusted. On the basis of this procedure, adolescents in this study were classified into 4 groups based on indices of both depressive symptoms and frequency of daily hassles. Frequency of daily hassles was chosen because (1) Herman-Stahl and Petersen used frequency of negative life events and (2) the correlation with degree of severity of daily hassles was very high ($r = .89$), indicating that both variables were overlapping. However, whereas Herman-Stahl and Petersen (1996) divided their groups according to a top one-third versus the remaining two-third cutoff point, we elected to divide our groups on the basis of a somewhat more severe criterion. Two levels of depression were created: The first level consisted of the top third of the depression distribution and the second level was formed by the bottom third of the depression distribution. With respect to the frequency of daily hassles, 2 levels again were considered: the top third of the frequency distribution was considered as high level of daily hassles whereas the bottom third of the frequency distribution formed the low level of daily hassles. Because of this severity, only 3 groups were

kept on the basis of number of participants in each cell: (1) The well-adjusted group consisted of adolescents scoring low on both indices ($n = 84$, 28% of the sample); (2) the resilient group contained participants high on level of daily hassles and low on depression ($n = 48$, 16% of the sample); (3) the vulnerable group included adolescents scoring high on both indices ($n = 34$, 11% of the sample). Chi-square analyses revealed that age was randomly distributed across groups: ($\chi^2[2, N = 166] = .68, p = .71$).

RESULTS

Results are presented in 2 sections. In the 1st section, analyses of correlations are presented to check for possible overlapping variables. The 2nd section presents a discriminant analysis designed to assess potential factors differentiating the 3 groups.

Intercorrelations Between Variables

Organized according to classes of variables, Table I presents Pearson correlations between all variables. A scanning of this table allows a first general conclusion that most of these correlations are modest; therefore, variables in this study can be, for the most part, considered independent enough to be used in later analyses.

Some exceptions to this general statement should be noted. First, the correlation between number of daily hassles and their degree of severity is very high ($r = .89, p < .0001$).

Intercorrelations between dimensions of coping are significant and positive. However, only the correlation between social-support seeking and problem solving is relatively high ($r = .57, p < .0001$). This suggests that ways of coping are different parts of an organization of strategies that can be used in different contexts.

Correlations between buffering variables (coping, social support, and different social activities) range from significant but modest to nonsignificant, indicating that different ways of coping with stress can be used individually in later analyses. Correlations between classes of variables are generally small. Two exceptions can be pointed out. First, degree of daily hassles and depression ($r = .56, p < .0001$) and frequency of daily hassles and depression ($r = .47, p < .0001$) are highly correlated. This is consistent with research findings consistently showing a positive relation between stress and depression. Also note that high, negative correlations were found between self-esteem and depression ($r = -.66, p < .0001$) and self-esteem and daily hassles ($r = -.51$ and $-.45, p < .0001$), suggesting that self-esteem may be a protective factor against depression and stress.

Finally, Table I shows that satisfaction with social support is negatively related to frequency of daily hassles ($r = -.11, p < .05$) and to depressive symptoms

Table 1. Intercorrelations Between All Variables

Variables (<i>N</i> = 297)	Variable											
	1	2	3	4	5	6	7	8	9	10	11	12
1. Severity of daily hassles	—	.89 ^a	.56 ^a	-.51 ^a	.16 ^c	.11	.46 ^a	-.11	-.10	-.23 ^a	.03	.17 ^c
2. Frequency of daily hassles		—	.47 ^a	-.45 ^a	.12 ^d	.11	.41 ^a	-.11 ^d	-.08	-.20 ^a	-.04	.21 ^a
3. Depressive symptoms			—	-.66 ^a	.16 ^c	.03	.48 ^a	-.13 ^d	-.04	-.22 ^a	.02	.20 ^a
4. Self-esteem				—	-.00	.19 ^b	-.40 ^a	.23 ^a	.11 ^d	.32 ^a	.05	-.12 ^d
5. Social-support seeking (coping)					—	.57 ^a	.25 ^a	.14 ^c	.12 ^d	.17 ^c	.18 ^b	.10
6. Problem solving (coping)						—	.23 ^a	.14 ^d	.13 ^d	.22 ^a	.11 ^d	.06
7. Avoidance (coping)							—	-.03	-.00	-.14 ^d	-.00	.10
8. Social-support satisfaction								—	.03	.00	-.03	.01
9. Communal and religious activities									—	.30 ^a	.24 ^a	-.06
10. Family activities and socialization with neighbors										—	.23 ^a	-.00
11. Academic and para academic activities											—	.03
12. Antisocial and illegal activities with peers												—

^a*p* = .000.^b*p* < .001.^c*p* < .01.^d*p* < .05.

($r = -.13$, $p < .05$); satisfaction with social support also is positively correlated with self-esteem ($r = .23$, $p < .0001$). These correlations, although significant, are modest, suggesting that adolescents' satisfaction with social support may not be as important a factor as often has been considered in the literature.

Discriminant Function Analysis

A hierarchical discriminant function analysis was performed to assess prediction of membership in the 3 groups from the 9 variables (self-esteem, 3 coping strategies, social support, and 4 areas of social activities). There was significant separation among the 3 groups from self-esteem, problem-solving coping strategies, and antisocial and illegal activities with peers ($F[3, 6] = 30.18$; $p < .001$). Wilk's lambdas (Λ) for univariate analyses were .49 ($p < .001$), .41 ($p < .001$) and .44 ($p < .001$), respectively.

The matrix of correlations between the 9 predictor variables and the 2 discriminant functions shows that self-esteem is the primary predictor for the 1st discriminant function, which accounts for 95% of the variance. The primary predictors of the 2nd discriminant function (5% of the variance) are antisocial and illegal activities with peers and problem-solving coping strategies. On the basis of all 9 variables, 70% of adolescents were correctly classified into the 3 original groups (Table II). More specifically, both the well-adjusted group (72.4%) and the vulnerable group (82.4%) were correctly classified; the resilient group showed a somewhat lower percentage of correct classification (58.3%).

To further test discriminating power of the 3 significant variables, Duncan's post hoc tests were performed. As can be seen in Table III, well-adjusted adolescents have higher self-esteem than adolescents in the 2 other groups; in addition, resilient adolescents have higher self-esteem than vulnerable adolescents. For the 2nd significant discriminating variables, antisocial and illegal activities with peers, both resilient and vulnerable adolescents had higher scores than well-adjusted adolescents. Finally, resilient adolescents had higher scores on problem-solving coping strategies than did well-adjusted adolescents.

Table II. Classification Results from the Discriminant Function Analysis

Actual Group	Number of Cases	Predicted Group Membership		
		Well-Adjusted	Resilient	Vulnerable
Well-adjusted	87	63 (72.4%)	20 (23.0%)	4 (4.6%)
Resilient	48	14 (29.2%)	28 (58.3%)	6 (12.5%)
Vulnerable	34	1 (2.9%)	5 (14.7%)	28 (82.4%)

Table III. A Post Hoc Mean Comparison (Duncan)

Variable	Groups						F(2, 172)
	Well Adjusted (N = 84)		Resilient (N = 48)		Vulnerable (N = 34)		
	Mean ^a	SD	Mean ^a	SD	Mean ^a	SD	
Self-esteem	3.50 _a	0.54	3.18 _b	0.49	2.06 _c	0.65	82.22, <i>p</i> < .001
Social support satisfaction	5.41	0.78	5.26	0.54	4.95	1.00	
<i>Coping strategies</i>							
Social support seeking	1.11	0.74	1.31	0.62	1.34	0.78	8.15, <i>p</i> < .001
Problem solving	1.06 _a	0.65	1.33 _b	0.62	1.14 _a	0.66	
Avoidance	0.83	0.55	1.12	0.55	1.73	0.61	
<i>Social implication in different activities</i>							
Communal and religious activities	1.21	0.48	1.16	0.24	1.22	0.26	2.47, <i>p</i> < .001
Family activities and sociability with neighbors	3.02	0.77	2.82	0.81	2.46	0.64	
Academic and para-academic activities	1.70	0.68	1.70	0.70	1.62	0.72	
Antisocial and illegal activities with peers	2.05 _a	0.68	2.61 _b	1.05	2.62 _b	0.91	

Note. Means with different letters are tested significantly different by Duncan's test (*p* < .05).

Linear and quadratic trend analyses were performed to test possible trends for each variable with respect to the 3 groups. Results showed a linear ($F[1, 168] = 163.36, p < .001$) and a quadratic ($F[1, 168] = 17.78, p < .001$) trend for self-esteem. This suggests a linear curve between the 3 groups with a sharper slope between the vulnerable and the resilient groups. A linear trend for antisocial and illegal activities with peers also was found ($F[1, 168] = 9.62, p < .001$), whereas no trend was detected in problem-solving coping strategies.

DISCUSSION

Stress–Distress Relation

Results of this study show a high correlation between frequency of daily hassles and their perceived level of severity. This is in marked contrast to studies with adults that have shown low correlations between the same 2 variables (DeLongis *et al.*, 1982; Dumont *et al.*, 1998; Reich *et al.*, 1988; Zarski, 1984). Thus, it seems that the frequency and severity of daily small negative events are perceived differently by adolescents and adults. Adolescents seem to be quite annoyed by the frequency of little stresses they meet on an everyday basis, whereas adults seem to be able to differentiate between daily life events that are difficult to avoid completely and severity of these annoyances that depends largely on the appraisal and the personal resources of each individual.

This result has been observed constantly throughout the literature and suggests the deleterious effect of stress on every aspect of psychological and physical health (Burke and Weir, 1978; L. H. Cohen *et al.*, 1987; Compas *et al.*, 1989; Kanner *et al.*, 1987; Rowlison and Felner, 1988). Research on stress thus is still very important and should be encouraged. One promising area of research concerns the analysis of protective factors. This study has examined some of the most prominent ones through a multifactorial approach.

Coping strategies also have been mentioned often in the stress literature. However, as with many other authors, our results suggest that one must be careful in differentiating positive and negative coping strategies. We found relatively strong positive relations between avoidance strategies and stress or distress and a negative correlation with self-esteem. It should be emphasized that this type of coping (hoping for a miracle, accepting one's destiny, acting as if nothing really has happened, simply trying to forget, etc.) is used to lower psychological discomfort but is not instrumental in resolving the problem. It seems quite clear that an adolescent who adopts this kind of strategy will not be efficient in protecting himself or herself against stress and will be at risk for developing depressive symptoms. This is consistent with the observations by Ebata and Moos (1995), Herman-Stahl *et al.* (1995), and Seiffge-Krenke (1994b) who found that adolescents with avoidant coping strategies are more likely than adolescents with problem-solving coping

strategies to develop psychological distress or problems in adaptation. This seems to be true for other cultures because similar results have been reported in Chinese adolescents (Chan, 1995). More recently, Hasting *et al.* (1996) have reported a positive relation between avoidant strategies and externalizing disorders.

Self-esteem has been mentioned many times as one of the major factors that can buffer the noxious effects of stress on psychological health; surprisingly, it rarely has been studied empirically. Our results are consistent with previous studies that reported high negative correlations between self-esteem and daily stress (L. H. Cohen *et al.*, 1987; Hoffman *et al.*, 1988) and depression in youngsters (Chan, 1995; Nuñez *et al.*, 1992; Rosenbaum-Asarnow *et al.*, 1987).

The negative correlation between avoidance and self-esteem may provide an interesting clue to the dynamics of the avoidance–distress relation. It seems that adolescents with high self-esteem seldom use avoidance strategies and prefer problem-solving strategies. Although this conclusion stems from correlations, it is possible to hypothesize that adolescents with good self-esteem perceive themselves with the capacity to react to the environment and therefore are confident in using strategies that challenge the problem and help to modify the situation. These adolescents appear to be less bothered by stress because they perceive that they have control and are able to react positively and actively to their environment. Furthermore, self-esteem is positively correlated with involvement in community, family, neighborhood, but negatively correlated with antisocial activities with peers. In other words, adolescents who do not have a high self-esteem are more likely to choose avoidant coping strategies (e.g., drug consumption) than adolescents who have a high self-esteem and are involved in their community.

This study has introduced the idea that involvement in the community can be a protective factor in the stress–distress relation. The results show negative correlations between activities within the family or the neighborhood and the 2 measures of stress and symptoms of depression. These results suggest that interactions with members of the family and neighbors may be beneficial to youth social adjustment in helping them to avoid stressful experiences or, at least, in making these experiences less stressful. On the other hand, involvement in negative social or even illegal activities (stealing, bullying, illegal use of alcohol or drugs) are positively correlated with depression and stress. This is congruent with findings by Patterson *et al.* (1983), who reported a negative correlation between substance use (cigarette, alcohol, drugs) and problem solving within the family.

Protective Factors Differentiating Groups

The main goal of the present study was to examine the relative protective roles of 4 internal and external resources of young adolescents on their levels of stress and depression.

The results confirm what has been said previously. Self-esteem is the primary predictor for the first discriminant function. This strongly suggests that personal satisfaction and self-confidence in one's capacities are the best predictors of differences between groups. This is specified further by Duncan's contrast analysis followed by a quadratic trend analysis, which clearly indicate that well-adjusted adolescents display a higher self-esteem than resilient adolescents who, in turn, manifest a higher self-esteem than vulnerable adolescents.

It seems that having developed a positive personal perception and a strong perception of control would guard against negative perceptions of daily stressful situations, probably by building in the individual a solid impression that he or she has the capacities to cope with these aspects of daily life. This is concordant with findings by Herman-Stahl and Petersen (1996), who reported that well-adjusted adolescents scored higher on approach-oriented coping, perceived mastery, optimism, levels of intimacy with parents, good family relations, and social competencies than did the resilient vulnerable and negatively adjusted youth. Furthermore, our results showing that the resilient group had a higher self-esteem than the vulnerable group are also consistent with the results from Herman-Stahl and Petersen (1996), who reported that their resilient group was distinguished from the vulnerable group by characteristics such as optimism, positive relationships with parents and peers, and active coping. Indeed, it seems from these results that personal resources have stress-buffering effects to protect youth from the deleterious effects of stress on psychological health.

The 2nd most prominent predictor for differentiating these 3 groups is involvement in antisocial or illegal activities with peers. A linear trend analysis demonstrated that vulnerable adolescents are higher on this variable than resilient adolescents who, in turn, scored higher than the well-adjusted group. Furthermore, Duncan's contrast analysis revealed a single contrast between the well-adjusted group and the 2 other groups, indicating that vulnerable adolescents are involved in certain activities with peers and can be considered at risk. The same holds true for resilient adolescents, although the linear trend suggests that this group is midway on the continuum from well-adjusted to vulnerable adolescents. This can be discussed in light of the next variable to be entered in the discriminant function analysis.

The 3rd protective factor to discriminate between the 3 groups concerns the positive coping strategy of problem solving. Surprisingly enough, however, Duncan's contrast analysis showed that the resilient group uses this strategy significantly more than the 2 other groups. An examination of the means revealed that the well-adjusted group used this coping style less than the 2 other groups. This is in marked contrast with the literature, which assumes that an active coping style is part of the personal resources that an individual uses to buffer the noxious effect of stress (Chan, 1995; Herman-Stahl *et al.*, 1995; Seiffge-Krenke, 1994b). Note, however, that positive coping strategies should be used as a function of characteristics of specific situations—namely, the fact that they can be controlled, that

they are predictable—as well as personal considerations such as the goal set by the individual, their personal motivation, and so on. This would have to be clarified in further research.

The discriminant analysis approach gives an opportunity to rank factors that discriminate groups. In the present analysis, self-esteem has been shown to be the most valuable variable to differentiate groups. This suggests that adolescents with high self-esteem are likely to be confident of their abilities. On the other hand, resilient adolescents seem to feel some discomfort about their capacity to face difficult situations while appearing to be confident that an active approach to problems may help them in lowering their experience of stress.

Note that social support did not significantly differentiate groups of adolescents. This is clearly a surprising result because the literature has put much emphasis on the buffering effects of social support for mental health. A close examination of the results revealed that the vulnerable group did not use social support as often as the 2 other groups did, although this difference did not reach statistical significance. In our analyses, social support was analyzed together with other variables that proved to be more influential on the differentiation of groups. This is not to say that one should rule out social support from future research designs but, as our results indicate, social support probably should be considered with other factors that may have been neglected in the past.

The discriminant function analysis also reveals that the 3 groups created by crossing depressive symptoms and frequency of daily hassles can be discriminated easily. It should be restated that our method for contrasting groups was stricter than that used by Herman-Stahl and Petersen (1996) because only the first and the last thirds of the distribution were used. This resulted in the formation of only 3 groups, the negatively adjusted group used by Herman-Stahl and Petersen (1996) being too small in our own study. The discriminant function analysis is a powerful tool to verify the validity of group creation. In our study, the analysis suggests that both vulnerable and well-adjusted groups are clearly characterized by the protective factors entered in the function analysis. In contrast, the resilient group seems less specific, with a tendency to have some of its members be better classified in the well-adjusted group. This observation suggests that resiliency may be an intermediate concept between adaptation and maladaptation. This is consistent with a recent discussion by Zimmerman and Arunkumar (1994), who argued that the definition of resiliency should be refined in light of some results suggesting that resilient youth simply may be identified incorrectly because their maladaptive responses are not overt behavioral problems. As discussed before, our resilient group had a tendency to be involved in at-risk peer interactions.

This investigation provides new information about the relative importance of some protective factors against stress and depression in adolescents. Specifically, it has shown that self-esteem is the prominent protective resource that youth can use against daily negative life events. The results also suggest that problem-solving

coping strategies are instrumental in helping adolescents to avoid too much stress and even depression. Moreover, our study has revealed that it is important to differentiate positive and negative activities with peers, especially during adolescence. Finally, our discussion has pointed out that the concept of resilience remains to be clarified.

Two important directions for further research are suggested by the findings. The first is for additional clarification of the importance of each of the protective factors in the study of the relationship between stress and distress. The multivariable approach adopted in this study has proven to be fruitful. Future research should use this approach together with a longitudinal method to determine the implications of protective factors over longer periods of time. The second is for further clarification of the resilience concept. This study is limited to self-reports. It is possible that the unclear classification of the resilient group stems from problems in getting exact information from these adolescents who have problems in assessing their own feelings. Future research should include other sources of reports, such as teachers or observers.

There are 2 main limitations to this study. First, as Herman-Stahl and Petersen (1996) have noted in their study, we only considered the internalizing disorders. Future research should include a broader array of internalizing and externalizing problems to avoid sampling bias. Second, we could not create a 4th group of negatively adjusted adolescents. Our criteria were quite severe and even with 297 participants we could only find 6 negatively adjusted adolescents. Future research may benefit from assessing clinical groups together with normative samples to form this 4th group.

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