Psychological Adjustment of Adolescent Girls With Chronic Fatigue Syndrome

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ABSTRACT. Objective. To examine psychosocial problems and adaptation of adolescent girls with chronic fatigue syndrome (CFS).

Methodology. Thirty-six adolescent girls with CFS (mean age: 15.2 years; mean syndrome duration: 19.7 months) who fulfilled the criteria of the Centers for Disease Control and Prevention were examined by interviews regarding premorbid problems and by questionnaires regarding psychosocial functioning and distress, psychological attitudes, and coping resources. Data were compared with normative data.

Results. Of the adolescents, 86.1% reported 1 or more premorbid problems (58.3% physical, 38.9% psychological, and 52.8% familial). Normal adjustment was reported for psychosocial self-esteem, social abilities, and attentional abilities. High adjustment to adult social standards of behavior was found, but low perceived competence in specific adolescent domains, such as athletic ability, romance, and participation in recreational activities. The girls reported predominantly internalizing problems. Normal achievement motivation, no debilitating fear of failure, and high internal locus of control were observed. Palliative reaction patterns and optimism were predominantly used as coping strategies.

Conclusions. The large number of premorbid problems suggests a possible contributing factor to the onset of the syndrome, although there were no reference data of healthy adolescents. In distinct domains of psychosocial adjustment, the adolescent girls with CFS showed strengths such as adequate self-esteem and scholastic and social abilities, and weaknesses such as low competence in adolescent-specific tasks and internalizing distress, which may partly be explained by syndrome-specific somatic complaints. The use of optimistic and palliative reaction patterns as coping strategies in this patient group indicates that the patients with CFS seem to retain an active and positive outlook on life, which may result in a rather adequate psychological adaptation to the syndrome, but also in maintenance of the syndrome by exceeding the physical limits brought about by the CFS. Our results on adjustment and coping strategies may be helpful to implement (individual) rehabilitation programs. Pediatrics 2001;107(3). URL: http://www.pediatrics.org/cgi/content/full/107/3/e35; chronic fatigue syndrome, adolescents, female, psychological adjustment, coping behavior.

ABBREVIATIONS. CFS, chronic fatigue syndrome; CDC, Centers for Disease Control and Prevention; SPPA, Self-Perception Profile for Adolescents; YSR, Youth Self-Report; STAI-C, State-Trait Anxiety Inventory for Children; SDS, Self-Rating Depression Scale; UCL-A, Utrecht Coping List for Adolescents.

Chronic fatigue syndrome (CFS) is a complex symptom pattern, characterized by functional limitations and dominated by debilitating fatigue.1 As a result of a lack of explicit laboratory markers to diagnose CFS, the diagnosis is strictly clinical.1,2 For research purposes, descriptive criteria have been defined by the Centers for Disease Control and Prevention (CDC).3,4 The major criteria consist of fatigue persisting for at least 6 months, seriously interfering with the patient’s daily activities, and without evidence of organic or psychiatric illnesses that can produce chronic fatigue. Minor symptom criteria include impaired memory or concentration, sore throat, tender cervical or axillary lymph nodes, muscle pain, multijoint pain, new headaches, unrefreshing sleep, and postexertion malaise.4

A great deal of research has sought to find the causal and maintaining factors in CFS, but as yet no single marker has been found.1,5–9 It is likely that the syndrome is a result of a combination of psychological (affective, cognitive, and behavioral) factors in association with physiologic (immunologic and endocrinologic) factors.

CFS in adolescence mostly has an acute onset, presenting as a flu- or mononucleosis-like image, eg, Epstein-Barr virus infection.1,2,5,10 In ~25% of cases, the onset is insidious. Depending on the diagnostic criteria and age ranges used, prevalence estimates for adolescents vary from 23/100 000 to 116.4/100 000 in children from 6 to 19 years old.6 In the literature a predominance is reported of CFS in adult women (ratio 4:1 for women vs men) and this also seems to be the case in pediatric CFS.1,5,11 Although in young children the distribution seems to be more equal, after puberty adolescent girls seem to outnumber adolescent boys. The middle and upper socioeconomic classes are slightly overrepresented in research on chronically fatigued patients.5,10,11

A recent study from our group (Knook LME, et al) has shown that in addition to the CDC criteria, adolescents with CFS suffer from pallor, cold extremi-
ties, excessive sweating, insomnia, light sleep, and increased somatic perception. Apart from these additional symptoms possibly related to an increased sensitivity for bodily signals, CFS in adolescents differs from CFS in adults because of developmental characteristics, such as identity formation, a growing independence, and the important influence of the parents in dealing with and presentation of the symptoms.1,5,7,10,12,13

Previous research with respect to the psychological variables in adult and adolescent patients with CFS suffers from minor or major methodological restrictions. Most studies on adolescents have not made use of the strict diagnostic criteria described by Fukuda et al4 including, for example, adolescents with a symptom duration of <6 months.7,10,13 Many reports describe small patient samples leading to problems of overgeneralization.2,14 Several studies have relied on qualitative data based on case studies or clinical impressions.7 Most research has focused on a small part of psychological adjustment instead of offering an encompassing representation of the overall psychological adjustment of this specific patient group.2 Finally, a great deal of research attention has been focused on psychopathology in this patient group instead of on global (not necessarily deviant) psychological functioning.13,14

The occasional studies examining psychosocial variables in adolescent CFS patients have revealed results that are similar to those found in research on adult patients. Reported results include considerable restrictions to physical activities, social activities, and school attendance.1,15,16 Besides, high achievement motivation and perfectionism (adolescents,1,5,13,14 adults8,17) are described. High internalizing symptoms (eg, anxiety, withdrawn, and overcontrolled behavior) are found, as well as difficulties with regard to social relationships, but no consistent differences regarding family functioning.2,10,18,19 Furthermore, sleeping problems, depression, somatization, and attention and concentration problems but average intelligence are reported.2,10,18,19 In the reports on adolescents with CFS, we did not find data regarding locus of control and coping strategies. Literature on adults revealed that patients with CFS attribute illness-related features to physical causes, and predominantly use a coping strategy based on escape and avoidance.9,20–23 As noted, a large amount of research in both adults and adolescents with CFS has been directed at psychiatric diagnostics or comorbidity.5,14,21,22,24–26 Patients generally obtain higher scores with regard to all measures of psychosocial morbidity including depression, anxiety, and psychopathology (eg, somatization disorder).

To provide insight into the mechanisms that may contribute to the perseverance of and the adjustment to CFS and to allow for an appropriate implementation of psychological education and intervention, it is important to find out which specific problems adolescent girls with CFS encounter and how they adapt to the syndrome and its accompanying physical and psychological problems. To that aim, 2 descriptive research questions were studied. First, the frequency of premorbid physical, psychological, and familial problems was examined by semi-structured interviews. Second, the psychological adjustment of adolescent girls with CFS was studied by comparing questionnaire scores of psychosocial functioning and distress, as well as psychological attitudes and coping resources with scores of norm groups.

METHODS

Study Population and Procedures

The study population consisted of adolescent girls between the ages of 13 and 18 years, who were referred to the Department of Pediatric Psychology of the University Medical Center Utrecht, Wilhelmina Children’s Hospital, with complaints of chronic fatigue, between September 1996 and February 1999. All patients were subjected to a thorough clinical evaluation as advocated by Fukuda et al4 to exclude underlying or contributing conditions. Excluded from the study were adolescents with primary physical conditions, such as juvenile rheumatoid arthritis, asthma, or cancer, or psychological morbidity, such as depression, somatization disorder, or school phobia. Only 3 boys fulfilled the revised CDC criteria of CFS. Because the generalizability of gender-related results based on such a small group would be insufficient, the boys were excluded from the study. Eventually the study included 36 adolescent girls who fulfilled the revised CDC criteria for CFS. In mainly meetings of approximately 1/2 to 2 hours, each patient was given a semistructured interview by a psychologist regarding demographic data (age and education), possible precursor(s) of CFS, symptoms, symptom duration, restrictions, and premorbid problems. To assess psychosocial distress and functioning as well as psychological attitudes and coping resources, a protocol of questionnaires was presented to the patients. During the filling out of the questionnaires, a psychologist was present to answer any questions. Because of the different age ranges specified in the questionnaires, not all datasets were complete. The adolescents and their parents gave permission to use data for scientific research when entering the hospital. The research and ethics committee of the Wilhelmina Children’s Hospital approved the protocol of the study.

The mean age was 15.2 years (standard deviation: 1.4). The adolescents were highly educated: 72% attended upper general secondary education or preuniversity education, 19% attended lower general secondary education, and 9% attended lower secondary vocational education or received special education. According to data from the Central Bureau of Statistics in The Netherlands in 1997, 39% of the general adolescent population attended upper general secondary education or preuniversity education, 32% attended lower general secondary education, and 29% attended lower secondary vocational education. All patients suffered from persisting chronic fatigue with a duration range of 6 to 46 months (mean duration: 19.7 months; standard deviation: 10.5). Nine of 36 patients (25%) reported no specific precursor of CFS. Twenty-seven patients (75%) reported 1 or more precursor(s) before the onset of CFS symptoms. The reported precursors for these patients were: influenza-like infection (29.6%), inflammations (eg, sinusitis, throat, paranasal sinus, bladder, bronchitis; 22.2%), Epstein-Barr virus infection (11.1%), and surgical procedures (nasal polyps, tonsillectomy, stomach operation; 3.7%); the remaining 33.4% was made up of 14.8% who reported both influenza-like infection and Epstein-Barr virus infection, and 18.6% who reported 2 or more other precursors.

All patients mentioned several additional complaints besides fatigue (Fig 1), in particular headache, concentration problems, myalgia, and stomachache or nausea.

Psychological Measures: Psychosocial Functioning and Distress

(Perceived) Competence

The Dutch version and norms of the Self-Perception Profile for Adolescents (SPPA)27,28 were used, measuring in which way adolescents perceive their own functioning compared with that of their peers on 8 relevant areas: scholastic ability, social acceptance, athletic ability, physical appearance, romance, behavior and conscience, friendships, and global self-worth. A higher score on a subscale means a higher perceived competence in that area. The
Both scales have a high internal consistency (Cronbach norms. A higher score on each scale reflects a higher anxiety level. Cause that study made use of data from adolescent populations. Competency part examines the type, degree, and specific area. The Cronbach a analysis problems. Over all scales, a total problem score is calculated. On each scale, a higher score means more problems in that area. The Cronbach a values of .80–.89 for ECA-R subscales are moderate to high for the syndrome scales: internalizing and externalizing problems. Two broadband scales, derived from factor-analytic studies, summarize the syndrome scales: internalizing and externalizing problems. Over all scales, a total problem score is calculated. On each scale, a higher score means more problems in that specific area. The Cronbach a are moderate to high for the syndrome scales (.45 to .83) and high for the internalizing, externalizing, and total problem scales (.82 to .92).

**Psychological Attitudes and Coping Resources**

**Achievement Motivation**

The Dutch questionnaire “Achievement Motivation Test for Children” was used, applicable to children between 10 and 16 years old. The Achievement Motivation Test for Children consists of 89 items divided into 4 subscales: achievement motivation, positive fear of failure, negative fear of failure, and social desirability. Achievement motivation is the inclination to achieve. Positive fear of failure brings the person into a state of optimal tension, prompting him or her to achieve better in unstructured and stressful situations than under normal circumstances. Negative fear of failure prompts the person to dysfunction in task situations that are relatively unstructured and stressful. Social desirability is a general tendency to behave socially acceptable toward others. A high score on a subscale means a higher level with regard to that tendency. The internal consistency of the scales is high (Kuder-Richardson–20 varies from .75 to .82).

**Locus of Control**

The Dutch version of the Children’s Nowicki-Strickland Internal-External Control Scale was used. Dutch norm scores were obtained from the dissertation of Braet. A high score on this scale means a higher extent of internal locus of control, whereas a low score represents a higher extent of external locus of control. Internal locus of control is defined as the extent to which persons perceive that life events are a consequence of their own actions, thus controllable. External locus of control is defined as the extent to which persons perceive life events as unrelated to their own behavior, beyond their personal control. Internal consistency, derived from American data, is moderate to high (Cronbach a varies from .63 to .81).

**Coping**

The Dutch questionnaire Utrecht Coping List for Adolescents (UCL-A) was used, applicable to children between 13 and 16 years old. The Utrecht Coping List for Adolescents consists of 47 items divided into 7 subscales: confrontation (disentangling the situation and purposefully working to solve the problem); paliative reaction pattern (seeking of distraction to not have to think about the problem); avoidance (leaving the problem to what it is or running away from it); seeking of social support (seeking comfort and understanding from others); depressive reaction pattern (being totally overwhelmed by the problem); expression of emotions (showing irritation and anger about the problem); and optimism (using comforting thoughts). A high score on a subscale means that the individual uses that coping style often. The scales have a moderate to high reliability (Cronbach a vary from .61 to .85).

**Data Analyses**

The qualitative data from the semi-structured interview were categorized. To present the results, descriptive statistics were used (frequency measures, means, and standard deviations). With regard to the quantitative questionnaire data, the 1-sample t test was used examining the significance of differences in mean raw values between the study group and mean raw norm scores (taking into account age and sex whenever applicable). On the questionnaires measuring anxiety and depression, additional item analyses were conducted. All computations were conducted using the SPSS for Windows, Version 9.0 statistical package (SPSS, Chicago, IL).

**RESULTS**

**Premorbid Problems**

No evident premorbid problems were indicated by 13.9% of the adolescent girls with CFS. Of the 86.1% who did report premorbid problems, 58.3% indicated physical problems in the past such as heart surgery and chronic cold; 38.9% indicated psychological problems, such as being teased at school, anxiety and panic attacks, and fear of failure; and 52.8% indicated familial problems such as divorce of parents and psychological and/or physical problems of the parent(s) or sibling(s). Fifty percent of the study population reported problems in more than one area. The severity of the problems reported differed from moderate to substantial.

**Psychosocial Functioning and Distress (Perceived) Competence**

The adolescent girls with CFS deviated from the norm group on 4 of the 10 (perceived) competence...
scales (Table 1). The adolescents with CFS did not deviate from their peers as to participation in social activities and as to perceived competence related to self-esteem, namely scholastic ability, social acceptance and friendships, physical appearance, and global self-worth. The study group showed lower perceived competence than the norm in the areas that are especially important in adolescence, namely athletic ability and romance, and lower participation in daily and recreational activities. In addition, the adolescents with CFS seemed to be rather conscientious, trying to behave as would be appreciated by others.

Psychological Distress

The girls with CFS were significantly more anxious and depressed compared with the normative data (Table 1).

Item analyses (Hickie et al25 with adults) were performed to examine on which complaints the adolescents obtained high and low scores (Table 2). Items on which the adolescents attained high scores represented physical or mental fatigue, whereas relatively low scores were attained on items regarding actual anxiety (feeling frightened, scared, or terrified) and depression (weight loss and suicidality).

Emotional and Behavioral Problems

The adolescent girls with CFS obtained significantly higher scores than the norm group at the composite score reflecting internalizing problems ($T = 4.45; P = .00$). The scales withdrawn behavior and somatic complaints that load on this factor obtained significantly higher scores in the patient group than in the norm group (Table 1). Girls with CFS did not score significantly higher than the norm group on anxious and depressed behavior, social problems, thought problems, and attention problems. The composite score of externalizing behavior did not significantly differ from the norm group ($T = 1.62; P = .12$), although the scale aggressive behavior almost reached significance ($P = .052$), with less aggressive behavior in the patients with CFS.

Psychological Attitudes and Coping Resources

Achievement Motivation

The adolescent patient group did not deviate from the norm group regarding their inclination to achieve (Table 3). They showed significantly higher positive and lower negative fear of failure than the norm. This reflects adequate performance in unstructured and stressful circumstances. With regard to social desirability, the study group scored significantly higher than the norm group.

Locus of Control

The study group scored significantly higher than normal denoting an internal locus of control (Table 3).

Coping Strategies

The girls deviated from the norm on 2 of the 7 coping scales (Table 3). They reported more use of a palliative reaction pattern and of optimism as ways of coping with a problem than did the norm group. The strategies of avoidance and seeking of social support showed a positive trend, almost reaching

<table>
<thead>
<tr>
<th>TABLE 1. Psychosocial Functioning and Distress*</th>
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<tbody>
<tr>
<td>Variable</td>
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</tr>
<tr>
<td>Perceived competence (SPPA)</td>
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<tr>
<td>Scholastic ability</td>
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<tr>
<td>Social acceptance</td>
</tr>
<tr>
<td>Athletic ability</td>
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<tr>
<td>Physical appearance</td>
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<tr>
<td>Romance</td>
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<tr>
<td>Behavior/conscience</td>
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<tr>
<td>Friendships</td>
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<tr>
<td>Global self-worth</td>
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<tr>
<td>Participation in daily and recreational activities (YSR)</td>
</tr>
<tr>
<td>Participation in social activities (YSR)</td>
</tr>
<tr>
<td>Psychological distress</td>
</tr>
<tr>
<td>State anxiety (STAIC)</td>
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<tr>
<td>Trait anxiety (STAIC)</td>
</tr>
<tr>
<td>Depression (SDS)</td>
</tr>
<tr>
<td>Emotional and behavioral problems (YSR)</td>
</tr>
<tr>
<td>Withdrawn behavior</td>
</tr>
<tr>
<td>Somatic complaints</td>
</tr>
<tr>
<td>Anxious/depressed behavior</td>
</tr>
<tr>
<td>Social problems</td>
</tr>
<tr>
<td>Thought problems</td>
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<tr>
<td>Attention problems</td>
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<tr>
<td>Delinquent behavior</td>
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<tr>
<td>Aggressive behavior</td>
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</tbody>
</table>

SD indicates standard deviation.

* Sample sizes (n), means, and SDs of the study group and the norm group, T values and levels of significance.

† P < .05; ‡ P < .01.
significance \((P = .064\) and \(P = .059\), respectively). No significant differences were reported with regard to active or depressive coping strategies.

**DISCUSSION**

Two descriptive research questions were studied in 36 adolescent girls with clinically diagnosed CFS. The frequency of premorbid physical, psychological, and familial problems was examined as well as the psychological adjustment.

**Premorbid Problems**

The majority of adolescent girls with CFS reported moderate to serious premorbid psychological, physical, or familial problems before onset of CFS symptoms, varying from chronic cold to severe depression of one of the parents. Only 14% did not report any premorbid problems. Absolute statements on the prevalence of premorbid problems are not possible, because the data are self-reported and retrospective in nature. Furthermore, prevalence data on premorbid problems in other clinical populations or a healthy control group are lacking. The data, however, strongly indicate that a considerable part of this patient group has experienced problems before onset of CFS symptoms. Research regarding previous life events in adults has resulted in contradictory findings, with some studies indicating no significant dif-

**TABLE 2.** Items of the Depression Scale (SDS; Range: 1–4) and the Anxiety Scales (STAIC; Range: 1–3) on Which the Adolescent Girls With CFS Obtained High Versus Low Average Scores

<table>
<thead>
<tr>
<th>Item Mean SD</th>
<th>Item Mean SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>High depression scores</strong></td>
<td><strong>High depression scores</strong></td>
</tr>
<tr>
<td>10. I get tired for no reason 3.57 .63</td>
<td>19. I feel that others would be better off if I were dead 1.25 .59</td>
</tr>
<tr>
<td>12. I find it easy to do the things I used to* 3.57 .74</td>
<td>13. I am restless and can’t keep still 1.21 .50</td>
</tr>
<tr>
<td>2. Morning is when I feel the best* 3.14 1.08</td>
<td></td>
</tr>
</tbody>
</table>

**Low depression scores**

5. I notice that I am losing weight 1.50 .79

**High state-anxiety scores**

6. I do not feel rested 2.81 .40

12. I do not feel happy 2.58 .50

14. I do not feel good 2.50 .51

17. I do not feel nice 2.50 .51

**Low state-anxiety scores**

11. I feel frightened 1.08 .28

7. I feel scared 1.04 .20

18. I feel terrified 1.04 .20

**High trait-anxiety scores**

18. I have a hard time falling asleep in the evening 2.11 .85

5. I do not feel rested 2.81 .40

12. I do not feel happy 2.58 .50

14. I do not feel good 2.50 .51

17. I do not feel nice 2.50 .51

**Low trait-anxiety scores**

11. I feel frightened 1.08 .28

7. I feel scared 1.04 .20

18. I feel terrified 1.04 .20

SD indicates standard deviation.

* These items were recoded \((1 = 4, 2 = 3, 3 = 2, 4 = 1)\) so that a higher score on each item relates to more depression.

**TABLE 3.** Psychological Attitudes and Coping Resources*

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean SD</th>
<th>Mean SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Achievement motivation (PMT-K)</td>
<td>17.5 5.2</td>
<td>17.3 6.1</td>
</tr>
<tr>
<td>Positive fear of failure</td>
<td>9.8 4.5</td>
<td>8.0 4.2</td>
</tr>
<tr>
<td>Negative fear of failure</td>
<td>7.7 4.0</td>
<td>9.4 3.2</td>
</tr>
<tr>
<td>Social desirability</td>
<td>13.8 4.4</td>
<td>10.3 4.3</td>
</tr>
<tr>
<td>Locus of control (NS-LOCUS)</td>
<td>28.7 4.4</td>
<td>24.6 4.3</td>
</tr>
</tbody>
</table>
| Internal locus of control | 227 4.3 | 4.52+)

| Coping strategies (UCI-A) | 15.8 4.1 | 15.2 3.6 |
| Confrontation | 20.4 3.0 | 18.7 4.0 |
| Palliative reaction pattern | 16.1 2.9 | 14.9 3.4 |
| Avoidance | 13.5 3.1 | 12.2 3.6 |
| Seeking of social support | 12.5 3.4 | 11.7 2.9 |
| Depressive reaction pattern | 6.5 1.4 | 6.4 2.0 |
| Expression of emotions | 13.0 2.3 | 11.3 2.8 |

SD indicates standard deviation; NS-LOCUS, Nowicki-Strickland Internal-External Control Scales.

* Sample sizes \((n)\), means and SDs of the study group and the norm group, \(T\) values and levels of significance.

† \(P < .05; \) ‡ \(P < .01.

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fenerences in experienced life events or their seriousness, and others finding more stressful life events or subjectively experienced stress in patients with CFS. Premorbid psychological, physical, and familial problems may possibly be a contributing factor in the onset of the fatigue, perhaps combined with a viral agent.

As in previously reported studies on both adults and adolescents, 75% of the study group reported 1 or more possible precursor(s), often an infectious disease, of the syndrome. Prospective research may illuminate these possible cause and effect relationships. However, prospective research is difficult, because very large samples are needed to include sufficient adolescents who will develop CFS. Given the high prevalence of preceding infectious diseases, it would be possible, however, to examine whether physical, psychological, or familial problems can predict who will recover and who will develop CFS in a large group of adolescents with infections and inflammations.

Psychosocial Functioning and Distress

Depression and anxiety scores of the adolescents with CFS were significantly elevated, as was previously reported in both adults and adolescents with CFS. The adolescent girls scored high on items in the depression and anxiety questionnaires that were related to physical and mental fatigue, and low on items that were related to actual feelings of depression or anxiety. This corresponds with the findings on adults with CFS. On the YSR self-report measure separating the scales somatic complaints and anxious/depressed behavior, the adolescent girls with CFS had significantly more somatic complaints, but they did not differ significantly from the norm on anxious/depressed behavior. The somatic aspect is important in both the symptomatology of anxiety and depression and of CFS. To be able to elucidate the specific quality of psychological distress in CFS, in future research patients with CFS should be compared with a control group of healthy participants on item scores of anxiety and depression instruments and with a control group of patients with other chronic physical conditions such as juvenile rheumatoid arthritis. Therefore, although our analyses clearly showed that adolescent girls with CFS are distressed, it is unclear whether this is predominantly because of the fatigue and its somatic consequences or whether depressive mood and anxiety are increased as well.

The emotional and behavioral problems reported in the adolescent girls with CFS mainly focus on internalizing symptomatology, including withdrawn behavior and somatic complaints, as well as the previously reported depression and anxiety. Also, the adolescent patients with CFS report socially desirable and conscientious behavior, trying to adjust to adult standards, instead of reporting adolescent conflicts with adults. This was also reflected in the normal, even slightly lower, report of externalizing behaviors. Previous research on adolescents with CFS has also reported high internalizing symptomatology. These findings suggest that adolescents with CFS mostly experience internalizing problems and that they do not show problematic behavior toward the outside world. Instead, they seem to be somewhat overadjusted to the adult standards of behavior. With regard to developmental tasks that are particularly important in adolescence, this patient group experiences significantly lower competence, as in social abilities in romantic relationships, athletic abilities, and participation in activities. Although these findings may be the result of the restrictions placed on the patients by their CFS, they may call for a focus of attention to the development of these patients. The problems reported suggest that psychological education, support, and intervention in this patient group should focus on internalizing symptoms.

Despite the problems reported, however, in many psychosocial areas the adolescent girls did not seem to experience distress. The study group showed average self-esteem with respect to several significant domains: global self-worth, social acceptance, scholastic ability, physical appearance, and self-esteem with respect to social abilities. This is an important element of psychological well being, especially in adolescence, when identity formation is a major developmental task. Besides self-esteem, also distinct competencies were rated normal or even high by the adolescents with CFS. A high level of social activities was found, suggesting that social isolation is not a necessary consequence of the activity restriction resulting from the CFS. In addition, the present study found no specific thought and attention problems, normal achievement motivation, and elevated positive and reduced negative fear of failure, reflecting an adaptive way of coping with stressful circumstances. Several of these findings contradict previous studies that do report social isolation, attention and concentration problems, and high achievement motivation and perfectionism. Although the patients in this study did report concentration problems in the semi-structured interview, when asked about their symptoms, they did not report significantly heightened thought and attention problems on the emotional and behavioral problems scale. Possibly, the patients with CFS are capable of relatively normal thought and attention processes in the short-term, but because of their fatigue, they are not able to retain this attention for a longer period. In this study, the adolescent patients with CFS were not highly achievement motivated. Nevertheless, the adolescent girls seem to set high standards for themselves in social relationships, as previously noted. Normal achievement motivation at the time of the study does not preclude higher levels of motivation before onset of symptoms. During the course of illness, the girls might have adjusted their standards. It is possible that different assessment methods and population characteristics, such as duration of CFS, are responsible for discrepancies between studies as to threats to self-esteem, attention and concentration problems, and achievement motivation. The present study has pointed out that these problems may not be a necessary result of CFS in
adolescence and additional research in these areas is warranted.

The findings that adolescent girls with CFS did not report problems in several psychosocial areas, including self-esteem and achievement motivation, are based on self-reports. The validity of this approach follows from the fact that the subjective appraisal of psychosocial well being and functioning is the core construct that matters here. Nevertheless, because of the subjective nature of the method as well as the heightened social desirability and conscientiousness scores in this patient group, some caution on the interpretation of the findings is warranted. It is possible that the results are somewhat affected by a tendency of these patients to tone down their problems, to strive to prove that they are psychologically normal, and to communicate that they have a somatic problem only. The general impression, however, is that the adolescent girls have adjusted themselves rather well, with more internalizing problems and lower perceived competence in specific adolescence-related areas.

**Psychological Attitudes and Coping Resources**

With respect to attributional style, the adolescent girls showed an internal locus of control, contradictory to the reported external locus of control regarding illness representations in adults. A possible explanation of this difference could be that previous studies have made use of specific illness-related locus of control measures, whereas this study has made use of a global measure of locus of control. Furthermore, it is possible that the adolescent girls, in contrast to their adult counterparts, have not accepted the powerlessness or helplessness associated with CFS.

Compared with the norm group, the adolescent girls with CFS used significantly more palliative reaction patterns such as distraction and optimism, which includes comforting thoughts as coping strategies when confronted with problems. Studies on coping styles in adults with CFS have found significantly more use of avoidance as a coping strategy, which in our study only showed to be a trend. It may be that the coping questionnaire used (the UCL-A) has separated the escape and avoidance scales, combined in the adult questionnaires. Thus, a palliative reaction pattern could represent the aspect of escape.

These ways of coping with life stressors could have both positive and negative consequences. On the positive side, an internal locus of control keeps patients active in the control of their disease. Palliative and optimistic reaction patterns are both ways of coping in which problems are more or less neglected or attenuated. In this way, the girls can retain a positive outlook on life. This does not lead to passivity regarding possibilities for recovery. It may suggest that these adolescent patients are able to put the syndrome into perspective, leading to the reported moderate psychological problems. On the negative side, remaining active in trying to return to normal activities when the body does not allow it, by underrating or neglecting significant warning symptoms, may lead to relapse and may play a role in the maintenance of CFS. The effects of the use of certain attitudes and coping resources on psychological and physical adaptation should be examined in prospective longitudinal designs (preferably starting at onset of the syndrome). This would provide valuable information regarding adaptive and nonadaptive ways to manage the syndrome and its accompanying problems.

This study has some restrictions. First, a clinical sample of medically referred adolescents was used. This group might not be representative of the female adolescent population with CFS, implicating restrictions regarding generalization to the population. Second, this study makes use of normative data. Through the use of control groups, more generalizations could have been made with regard to interaction effects and mediating variables.

**CONCLUSION**

The present study has offered an extensive description of a relatively large patient group, which has led to several new findings, suggestions for possible syndrome-maintaining factors, and additional research. The large extent of premorbid problems suggests a possible contributing factor to the onset of the syndrome. The study reported problems in the areas of psychological distress, internalizing problems, and adolescence-related activities, offering substantial indications for psychological guidance of this patient group. It was also demonstrated that in other areas, such as self-esteem and externalizing problems and attitudes, the adolescent girls with CFS did not deviate from the norm, suggesting normal development in these relevant areas. In coping with the syndrome, new findings were reported, directing attention to possibly maintaining factors in CFS in adolescent girls. The adolescent patients with CFS seem to retain an active and positive outlook on life, which may result in a rather adequate psychological adaptation to the syndrome, but also in maintenance of the syndrome by exceeding the physical limits brought about by the CFS.

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