Short communication

Chronic fatigue syndrome in adolescents: Do parental expectations of their child’s intellectual ability match the child’s ability?

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Abstract

Objective: This cross-sectional study aimed to measure the discrepancy between actual and perceived IQ in a sample of adolescents with CFS compared to healthy controls. We hypothesized that adolescents with CFS and their parent would have higher expectations of the adolescent’s intellectual ability than healthy adolescents and their parent.

Methods: The sample was 28 CFS patients and 29 healthy controls aged 11–19 years and the parent of each participant. IQ was assessed using the AH4 group test of general intelligence and a self-rating scale which measured perceived IQ.

Results: Parents’ perceptions of their children’s IQ were significantly higher for individuals with CFS than healthy controls.

Conclusions: High expectations may need to be addressed within the context of treatment.

Keywords: Chronic fatigue syndrome; Expectations; IQ

Introduction

Chronic fatigue syndrome (CFS) is characterized by prolonged physical and mental fatigue of at least 6 months’ duration that severely affects functioning [1]. Prevalence has been estimated at between 2% in community studies [2,3] and 0.2% in a large epidemiological study [4], with an observed association between CFS and psychiatric disorders [5–7].

CFS patients frequently report concentration and memory problems [8] associated with a decline in intellectual abilities. Studies that have measured global intellectual functioning in adult patients with CFS have found no evidence of intellectual deterioration or a primary deficit in intellectual functioning [9,10]. Indeed, CFS patients’ IQ scores fall within the normal range on both the Full Scale Verbal and Performance IQ tests compared with normative data on the Weschler Adult Intelligence Scale–Revised [11]. In adolescents with chronic fatigue, a prospective study found an association between high IQ and persistence of fatigue [7]. Two cross-sectional studies have been conducted, one of which assessed a subsample of children with CFS between 7 and 17 years old. Seventeen percent of the total sample (\(n=17\)) had IQs above 120; 47% had an IQ between 100 and 120, and 35% had an IQ between 80 and 100 [12]. In the other study, chronic fatigued adolescents had an average range of intellectual functioning and did not differ from healthy controls [13].

From clinical observations of children with CFS, we observe that they have high expectations of themselves. In keeping with this observation, Fry and Martin [14] found that both adolescents with CFS and their parents underestimated their current activity levels and had higher expectations of their post-CFS activity levels than was realistic for children of that age. It is possible therefore that this high expectation may extend to academic endeavors. The aim of this study was to investigate actual IQ and perception of IQ in CFS adolescents and compare them to healthy controls. We hypothesized that adolescents with CFS and their parents would have higher expectations of the adolescent’s intellectual ability than healthy adolescents and their parents.

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Methods

Design

This study was a cross-sectional design.

Participants

The participants were 28 CFS adolescents and their parents (aged 11–19 years), who met the operationally defined CDC criteria for CFS [1]. Controls consisted of 29 healthy adolescents and their parent.

Procedure

CFS participants were recruited when attending their initial assessment at King’s College Hospital. Controls were recruited from a comprehensive school in Rotherhithe, South East London, UK. Participants and their main carer (usually mother) completed all measures in the CFS unit. The response rate for the patient sample was 93%. Healthy children completed the measures and IQ test in the classroom as requested by their teacher and took the parental questionnaires home for their parent (main carer) to complete and return by post. The response rate for the healthy controls was 42%. Both adolescents and their parents gave informed consent. The participants were blind to the hypotheses. The study was approved by the South London and Maudsley Ethics Committee.

Questionnaires were completed by the CFS patients and controls. A parental questionnaire enquired about the adolescent’s general medical history.

Measures

The Chalder Fatigue Questionnaire [15] consists of an 11-item measure of physical and mental fatigue. It is widely used as a measure of fatigue both in general practice and in hospital trials and has been recommended for use with CFS [1]. The questionnaire was scored in a bimodal fashion (0,0,1,1) giving a maximum score of 11 (range 0–11).

Participants completed the Spence Children’s Anxiety Scale [16]. This consists of 45 items scored from 0, indicating no worry, to 3, indicating the highest level of worry. A total score is then calculated, excluding six positively worded filler items.

In addition, the Birleson Depression Scale [17] was used to assess levels of depression. This scale has 18 items scored from 0 to 2, with 2 reflecting higher distress. A total score is calculated from the sum of individual item scores.

Participants completed the Work and Social Adjustment Scale [18] which was used to measure how fatigue impacts on everyday life. Scores for four items were summed with high scores indicating worse functioning. The mean of four impairment ratings gave the final social adjustment score (range 0 to 8).

The aforementioned scales have all been shown to be reliable and valid, and were used to assess whether the healthy controls clearly differed from the CFS sample.

Parental and adolescent estimate of the adolescent’s intelligence

This measure was constructed specifically for this research. Parents’ expectations of their child’s intelligence were assessed as a percentage using a visual analogue scale. Parents were told that 50% represented a child of average intelligence and that most children fell somewhere in the range of 25% to 75%. Thus parents placed an X at a point they felt was most appropriate on a 10-cm line which was marked with 0%, 50%, and 100% (at 0-, 5-, and 10-cm intervals). This was then scored by measuring in millimeters from 0 to the location of the X giving a score out of 100 equal to the number of millimeters. Adolescents then assessed their own intelligence using the same method as described above.

Test of general intelligence

This study used the AH4 Group Test of General Intelligence [19] on all child participants. This is a valid...
and reliable test that has shown very high test–retest consistency of 0.9 and has been extensively validated on children of school age [20]. The test is in two parts consisting of verbal and nonverbal reasoning of 10 min each. The total score is corrected for age and given a grade where A represents the top 10%; B, the next 20%; C, the middle 40%; D, the next 20%; and E, the bottom 10%.

Statistical analysis

Results were analyzed using SPSS and all variables were tested for fulfillment of parametric assumptions, and then the appropriate significance tests were employed to compare the two groups.

Results

Demographic characteristics

Participants consisted of 28 adolescents with CFS and 29 adolescent controls. Table 1 shows the demographic and clinical characteristics of the sample.

Table 1 shows that age was significantly different between the two groups, with the CFS group approximately 2 years older ($t=3.9$, $df=54.2$, $P<.001$). There were also significantly more females in the CFS group ($\chi^2=8.19$, $df=1$, $P=.004$). However, there were no significant differences between the two groups in terms of ethnic origin, family history of fatigue, or whether the family was intact or not. There were considerable differences between the two groups on clinical measures. All the patients fulfilled the CDC diagnostic criteria [1] for CFS, while none of the controls did. Depression and social adjustment scores differed significantly between the two groups, with the control group having lower mean scores. The CFS patients were markedly more impaired in terms of social adjustment.

Intelligence and activity levels

The actual and perceived intelligence level of each group is displayed in Table 2.

#### Table 2
IQ and Expectations

<table>
<thead>
<tr>
<th>Variable</th>
<th>CFS group ($n=28$)</th>
<th>Control group ($n=29$)</th>
<th>Test statistic $\chi^2/P$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age adjusted IQ grade</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A 6 (21%)</td>
<td>15 (52%)</td>
<td>.19</td>
<td></td>
</tr>
<tr>
<td>B 7 (25%)</td>
<td>5 (17%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C 8 (29%)</td>
<td>5 (17%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D 2 (7%)</td>
<td>2 (7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E 5 (18%)</td>
<td>2 (7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Parental expectations of IQ, mean (S.D.)</td>
<td>76.9 (11.1)</td>
<td>68.8 (14.9)</td>
<td>.03</td>
</tr>
<tr>
<td>Children’s expectations of IQ, mean (S.D.)</td>
<td>67.5 (14.1)</td>
<td>64.9 (15.8)</td>
<td>.57</td>
</tr>
</tbody>
</table>

* All by $t$ test except IQ grade by $\chi^2$.

Table 2 shows that, overall, there was no significant difference in age-adjusted IQ grades between the two groups. Parental expectations of IQ were significantly higher for patients with CFS than for healthy controls. However, the discrepancy between expectation and actual IQ did not differ significantly between groups ($r=-1.7$, $P=.09$). Regarding adolescent’s expectations there was no significant difference between the two groups and less of a divergence between perceived and actual IQ. Post hoc analyses revealed that parental perception of IQ was not affected by the child’s age or gender.

Discussion

This study aimed to investigate perception of IQ in adolescents with CFS. We found that parental expectations of IQ were significantly higher for the children with CFS than for healthy controls. This is noteworthy when observed alongside the views of the parents in the control group who had lower expectations of their child’s IQ despite some of the children scoring at the top end of the spectrum. The CFS patients’ own self-estimates of IQ were not so high. These findings concur with another study which reported that parents had higher expectations of their child’s post-CFS activity levels than was reasonable for children of that age. These factors, together with the elevated levels of conscientiousness, might contribute to the development and maintenance of the disorder.

The findings in this study have to be viewed with caution. The current study is limited by the small number of participants, the fact that only one type of IQ test was used, and the fact that only one parents’ view was sought. Furthermore, although the study aimed to match controls to patients in terms of age and gender, this was not feasible due to difficulties in recruiting controls. Ideally, CFS adolescents should be reassessed on recovery as it is possible that their IQ was affected by the illness and that parents’ expectations are accurate. These findings, together with our previous research [7], demonstrate that the relationship between IQ and fatigue is a complex one and needs further investigation. High expectations may need to be addressed within the context of treatment such as cognitive behavior therapy [21].
References


