Eating Attitudes among Adolescents

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Abstract

Background: Israeli youth lead 27 western countries in dieting. The prevalence of eating disorders has been rising in the last 30 years, causing social problems and medical complications.

Objectives: To examine the prevalence of eating disorders among high school students in a region in northern Israel (Misgav) and to examine the relationship between the parents’ employment status and the subject’s eating disorder.

Methods: A structured questionnaire was administered to collect demographic data. The short version of the Eating Attitudes Test (EAT-26) was used to evaluate the subject’s attitudes toward and preoccupation with food, dieting, eating, physical appearance, and personal control over eating.

Results: Of 360 students approached, 283 (78%) completed the self-report EAT-26. One of every 5 females and one in every 20 males had an abnormal eating attitude. The rate of pathologic EAT-26 results, 20.8%, falls within the range of similar community-based samples of female adolescents. There were no differences in EAT-26 score between students with an employed or unemployed mother; however, there was a trend for higher EAT-26 scores among those whose father was unemployed (21.4% vs. 12.7%, \( \chi^2 = 0.14 \)).

Conclusions: The findings support our hypothesis of a relatively high rate of abnormal eating attitudes (as reflected by high EAT-26 score) in this population. Another possible risk factor is having an unemployed father, which warrants further research and attention. Our next step is to introduce an intervention program in the school and to study its effect.

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Richard Morton, a specialist in wasting disease, was the first to report, in 1689, the phenomenon of anorexia. He described an 18 year old anorexic girl who refused to eat and exposed herself to cold weather; she had no apparent physical disease and died 3 months after her first visit to Dr. Morton [1]. In the past three decades, the frequency at which eating disorders are encountered has risen dramatically, mainly in the adolescent population. The prevalence of anorexia nervosa among female adolescents is currently estimated at 0.2–1% and of bulimia nervosa 1.9–5.1% [2,3]. One-fourth of the patients develop a chronic form of the illness. The mortality rate is 5–20% [4], and patients with anorexia nervosa commit suicide more often than their counterparts in the general population [5]. Far less is known about males developing eating disorders. It has been suggested that the incidence of eating disorders that do not meet strict criteria of anorexia nervosa or bulimia may be even double [6]. Currently an aggressive treatment regimen is recommended for those patients with traits of eating disorder that do not meet the full criteria of the DSM-4 [7].

In the Youth Risk Behavior Survey [8], 58% of students in the United States had exercised to lose weight and 40% had restricted their caloric intake in an attempt to lose weight. In one study 80% of 18 year old girls with normal height and weight stated that they would like to weigh less [9]. Although most of these behaviors are benign they could be associated with increased medical and psychological risks, the development of anorexia and bulimia, risky behaviors (smoking, alcohol and drug use), depression and suicide [10-12]. Clearly, therefore, a careful and alert approach to these eating disorders is important to prevent the developmental of full-blown anorexia or bulimia symptoms as well as the risky accompanying behaviors.

It is important that the general practitioner evaluate disordered eating attitudes in the community. This task involves monitoring, tracking trends and changes, and planning preventive and treatment programs [13]. The present study prospectively assessed the prevalence of disordered eating attitudes in a large school-based population. This study is the first step in a school-based educational intervention program. This program is based on a recent educational approach for primary prevention of eating disorders, by improving self-esteem, body image, empowerment and eating attitudes [14,15].

Patients and Methods

The study was conducted between September 2001 and May 2002 in 238 high school students, in 7th to 12th grade, living in the Misgav region in northern Israel. This region, with an area of 35 km², comprises 30 middle and upper middle-class Jewish communities. The total population in the area is estimated at 10,000 Jews. Most of the young population study in the regional high school.

The students were asked to report their age, grade, gender and employment of their parents. The students’ height and weight were measured by one of the authors and their body mass index was calculated. The short version of the Eating Attitudes Test [16,17] was used to evaluate the subjects’ attitudes toward and their preoccupation with food, dieting, eating, physical appearance, and personal control over eating. The EAT is commonly used to measure pathologic attitudes towards weight and eating behaviors. The short version (26 items) is highly correlated with...
the original 40 item version [16]. EAT-26 index has two categories: 0–19 is low risk and 20 or more indicates high risk. A score of 20 or more is considered pathologic. We used the Hebrew translation of the EAT-26 [18].

The questionnaires were approved by the Israel Ministry of Education and the school principal. The questionnaires, which were voluntary and anonymous, were distributed by one of the authors in the classroom. An informed consent was filled by the parents.

Statistical analysis
The sample was described using distributions in frequencies and percents, means and standard deviations. Differences between study groups were tested using two-way analysis of variance (ANOVA) by gender and grade. The correlation between gender and grade and each category of EAT-26 was examined by likelihood ratio chi-square test. The correlation between BMI and EAT-26 was tested with Spearman’s correlation coefficient.

Results
There are close to 1800 students in Misgav high school, from which two classes from every grade were elected randomly to participate in the study, totaling 12 classes. Of the 360 students who were originally approached, 283 (78%) gave their informed consent and answered the questionnaire. Table 1 presents their gender and grade. Thirty-eight students did not mention their gender. For data analysis the students were grouped into three grades: 7th and 8th, 9th and 10th, 11th and 12th.

The differences in EAT-26 by grouped grade and gender are presented in Table 2. The distribution of EAT-26 in all students by gender revealed that 5% of the boys and 20.8% of girls had a high risk EAT-26 ($\chi^2=14.43, P<0.001$) [Figure 1]. The distribution of high EAT-26 by grouped grade and gender revealed no statistical significance (total $\chi^2=0.67, P=NS$; boys $\chi^2=3.83, P=NS$; girls $\chi^2=0.40, P=NS$). No correlation was found between EAT-26 and BMI among boys or girls. With regard to parents’ occupation, of the 14 students whose father was unemployed 21.4% had a high EAT-26 score compared with 12.7% among students whose father did work at the time of the research ($\chi^2=0.14, P=NS$); there was no difference among students whose mother was unemployed ($\chi^2=0.78, P=NS$) [Figure 2].

Discussion
In our study of Jewish high school students in a region in northern Israel we found that 1 of every 5 girls and 1 of every 20 boys had abnormal eating attitudes. No correlation was found between BMI and the eating attitude questionnaire score.

The rate of pathologic EAT-26 results (20.8%) falls within the high range of similar community-based samples of female adolescents. These results change according to the population selection. In their study in the United States Fisher et al. [19] found that 17.5% of suburban females and 15% of urban females achieved pathologic EAT-26. In Israel, Stein and colleagues [20] found pathologic EAT-26 scores in 18% of female high school girls in their 11th and 12th grade. Another Israeli study [21] conducted in five distinct Jewish female groups and five Arab female groups (although the groups comprised between 26 and 107 students) showed high EAT-26 scores in 27.3% of kibbutz girls compared to 19.4% of city students and 16.8% of immigrant females. In

Table 1. Distribution of sample by grade and gender (n=245)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Boys</th>
<th>Girls</th>
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</thead>
<tbody>
<tr>
<td>7th</td>
<td>43.8%</td>
<td>56.2%</td>
</tr>
<tr>
<td>8th</td>
<td>60.0%</td>
<td>40.0%</td>
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<tr>
<td>9th</td>
<td>38.8%</td>
<td>61.2%</td>
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<tr>
<td>10th</td>
<td>52.6%</td>
<td>47.4%</td>
</tr>
<tr>
<td>11th</td>
<td>53.3%</td>
<td>46.7%</td>
</tr>
<tr>
<td>12th</td>
<td>47.8%</td>
<td>52.2%</td>
</tr>
<tr>
<td>Total</td>
<td>49.0%</td>
<td>51.0%</td>
</tr>
</tbody>
</table>

Table 2. Differences in EAT-26 by grouped grade and gender (number of students, means and standard deviations)

<table>
<thead>
<tr>
<th>Grade</th>
<th>Total</th>
<th>Boys</th>
<th>Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n M SD</td>
<td>n M SD</td>
<td>n M SD</td>
</tr>
<tr>
<td>7th + 8th</td>
<td>67 10.18 9.92</td>
<td>35 8.23 9.04</td>
<td>32 12.31 10.52</td>
</tr>
<tr>
<td>9th + 10th</td>
<td>87 9.80 8.61</td>
<td>39 6.59 4.25</td>
<td>48 12.42 10.27</td>
</tr>
<tr>
<td>11th + 12th</td>
<td>91 9.49 9.93</td>
<td>46 6.57 7.89</td>
<td>45 12.49 10.96</td>
</tr>
</tbody>
</table>

Figure 1. Distribution of EAT-26 in low and high risk groups by gender. $\chi^2=14.43, P<0.001$

Figure 2. Distribution of EAT-26 in high risk groups by parents’ occupation. $\chi^2=0.78, P=not significant$ $\chi^2=0.14, P=not significant$
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References


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