Eating attitudes in a diverse sample of Israeli adolescent females: a comparison study

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Abstract

\textbf{Objectives}: To estimate the eating attitudes in Israeli Jewish female adolescents.

\textbf{Methods}: A representative sample of 1270 females in grades 7–12 from five different Israeli schools from five different residential areas were assessed by EAT-26.

\textbf{Results}: Of the total sample, 19.5\% were identified as having abnormal eating attitudes. In terms of age, the 16 year olds were found to have the significantly highest rate of total and positive EAT-26 scores. As for school subgroups, the secular boarding schools had the significantly highest rate and the kibbutz had the lowest rate of positive EAT-26 scores for the total and for all subscales.

\textbf{Discussion}: EAT-26 was found to be a useful tool for screening and identifying at-risk groups in a large adolescent Israeli population.

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1Research interests: Epidemiology and prevention of eating disorders among Israeli youth; biology of behaviour among adolescent girls suffering from eating disorders; innovative treatment methods in treating eating disorder patients and their families; patterns of behaviour and communication in families of eating disorder patients.

2Research interests: Biological rhythms (sleep, mood, melatonin, etc.); sleep-wake cycles; shift work; sleep habits; sleep disorders; eating disorders (epidemiological, sleep habits, nocturnal eating, etc.).
Introduction

An increasing body of research in the last three decades indicates a consistent rise in the prevalence of Eating Disorders (ED) (Deter, Herzog, & Manz, 1994; Eckert, Halmi, Marchi, Grove, & Crosby, 1995; Neumarker, 1997; Herzog et al., 2000). A similar trend is also apparent in Israeli society (Kaffman & Sadeh, 1989; Scheinberg, Bleich, & Kolovsky, 1992; Mitran, Lubin, Chetrit, & Modan, 1995; Latzer & Shatz, 1999, 2001). The onset of ED usually appears in adolescence or in early adulthood (Cooper, 1995), making adolescent girls the target population for research and prevention.

In Western countries, thinness symbolizes a feminine ideal, combining qualities of self-discipline, control, and sexual liberation with attractiveness and fashionableness (Nasser, 1988a, b). A preoccupation with dieting, a drive for thinness, and body dissatisfaction have been identified as diagnostic indicators of the early development of eating disorders. Eating attitudes among adolescent females have been examined in Western as well as non-Western countries, using different methods (Button, Loan, Davies, & Sonuga-Barke, 1997; Steinhausen, Winkler, & Meier, 1997; Devaud, Jeannin, Narring, Ferron, & Michaud, 1998; Gotestam, Eriksen, Heggestad, & Nielsen, 1998; Mckay & Fanning, 2000). Most of them used only the Eating Attitude Test (EAT-26; Garner, Olmsted, Bohr, & Garfinkel, 1982) as the diagnostic criterion (Mann et al., 1983; Patton, 1988; Toro, Castro, Garcet, Perez, & Cuesta, 1989; Patton, Johnson-Sabine, Wood, & Mann, 1990; Neumarker, Dudeck, Vollrath, Neumarker, & Steinhausen, 1992; Fisher, Pastore, Schneider, Pegler, & Napolitano, 1994; Dancyger & Garfinkel, 1995; Al-Subaie et al., 1996; Lee & Lee, 1996; Nakamura et al., 1999).

Israel is a Western multicultural country made up of different types of residential areas and educational systems. Only a few communal studies have been conducted in Israel to examine eating attitudes among certain sub-populations. Stein et al. (1997) used the EAT-26 questionnaire in an urban sample of three high schools among 17-year-old female students. Apter et al. (1994) assessed eating attitudes, using EAT-26, among healthy Jewish and Arab girls in 10 sub-populations. Latzer and Shatz (1999, 2001) examined unhealthy attitudes regarding weight regulation and physical build among adolescent girls living on a kibbutz. Sasson, Lewin, and Roth (1995) used CHEAT to examine eating attitudes among urban students in grades 3–11.

The purpose of this study was to estimate the eating attitudes among Israeli junior and senior high school girls and to identify possible risk groups and risk factors for developing an eating disorder.

Method

Subjects

The sample consisted of 1270 adolescent schoolgirls, ranging in age from 12 to 18 and drawn from five different middle and high schools in five different residential areas in Israel. The different locations were as follows: (1) The city of Haifa, which is a large urban area \( n = 549 \). (2) A kibbutz, which is a communal settlement based originally on socialist principles with no private ownership of property \( n = 121 \). (3) A Kfar Kehilati, a new communal-rural settlement with
private ownership of property, which has come to represent a new type of middle-class group characterized by high levels of education and achievement and a high standard of living ($n = 168$). (4) A secular boarding school from a low-class group, mostly from broken homes, with the majority of the students sent to the boarding school on the recommendation of the social welfare system ($n = 183$). (5) A religious boarding school, which also represents a low-class group but whose students were sent to the boarding school as part of their higher education ($n = 249$). Residential schools in Israel include secular boarding schools, religious boarding schools, and ultra-orthodox boarding schools, with 35% of residential school students attending secular boarding schools and 65% attending religious ones (Central Bureau of Statistics, 1992).

**Measures**

The EAT-26 (Garner et al., 1982) Demographic self-report questionnaire, including items on age, sex, grade, type of school, residential area, weight, and height.

**Procedure**

The questionnaires were approved prior to the trial by the Israel Ministry of Education of Haifa and the northern district, as well as by school principals. Research assistants, school counselors, and social workers distributed forms in the classroom. Students were told that they were taking part in a survey of typical issues that concern adolescents’ eating attitudes. Participation was voluntary and anonymous.

**Results**

The results showed that 80.5% of the students had a negative EAT-26 score ($<20$), and 19.5% students had a positive EAT-26 score ($>20$). A significantly higher percentage (32.4%) of positive scores (score $>20$) on the EAT-26 was found in the group of 16 year olds as compared to the other age groups ($\chi^2 = 27.2$, $df = 4$, $p < 0.0001$). ANOVA results showed that the total EAT-26 scores significantly differentiated between the age groups ($F = 4.3$, $df = 4$, $p < 0.001$). The 16 year olds had significantly higher total EAT-26 scores than the other age groups (with a mean total EAT-26 score of $16.8 \pm 11.6$), according to Duncan’s Multiple Range test (see Table 1).

<table>
<thead>
<tr>
<th>Age groups</th>
<th>$N = 1270$</th>
<th>EAT-26 positive score</th>
<th>EAT-26 total score</th>
<th>Dieting</th>
<th>Bulimia and food</th>
<th>Oral control</th>
</tr>
</thead>
<tbody>
<tr>
<td>12–13</td>
<td>216</td>
<td>14.9%</td>
<td>11.0 $\pm$ 9.9</td>
<td>6.7 $\pm$ 7.5</td>
<td>0.9 $\pm$ 2.0</td>
<td>3.5 $\pm$ 3.2</td>
</tr>
<tr>
<td>14</td>
<td>260</td>
<td>16.7%</td>
<td>12.0 $\pm$ 9.1</td>
<td>7.4 $\pm$ 7.6</td>
<td>1.1 $\pm$ 2.1</td>
<td>3.6 $\pm$ 2.8</td>
</tr>
<tr>
<td>15</td>
<td>265</td>
<td>15.8%</td>
<td>12.7 $\pm$ 9.2</td>
<td>7.8 $\pm$ 7.3</td>
<td>1.4 $\pm$ 2.4</td>
<td>3.6 $\pm$ 3.1</td>
</tr>
<tr>
<td>16</td>
<td>230</td>
<td>32.4%</td>
<td>16.8 $\pm$ 11.6</td>
<td>9.9 $\pm$ 7.9</td>
<td>2.4 $\pm$ 3.1</td>
<td>4.4 $\pm$ 3.8</td>
</tr>
<tr>
<td>17–18</td>
<td>299</td>
<td>16.9%</td>
<td>12.1 $\pm$ 9.5</td>
<td>6.7 $\pm$ 6.6</td>
<td>1.9 $\pm$ 2.6</td>
<td>3.5 $\pm$ 3.1</td>
</tr>
</tbody>
</table>
Table 1 contains the distributions of EAT-26 factor scores (oral control, bulimia and food preoccupation, and dieting factor scores) among Israeli girls according to five age groups. ANOVA results showed that the oral control factor scores did not differentiate among the age groups. Bulimia and food preoccupation factor scores, on the other hand, did differentiate among the age groups ($F = 3.3$, df = 4, $p < 0.01$). Duncan’s Multiple Range Test showed that ages 16 and 17 were significantly differentiated from all other age groups and from each other. Dieting factor scores also differentiated between age groups ($F = 3.7$, df = 4, $p < 0.005$), with Duncan’s Multiple Range Test showing that age 16 was significantly differentiated from all other age groups (see Table 1).

Statistical differences were found in Body Mass Index (BMI) [weight (kg)/height (m$^2$)] between the school subgroups ($F = 3.2$, df = 4, $p < 0.01$). According to Duncan’s Multiple Range test, the kibbutz and urban subgroups had the significantly lowest BMI, and the secular and religious boarding schools had the significantly highest BMI. The secular boarding school subgroup had the highest percentage (25.7%) of positive scores (score > 20) and the kibbutz subgroup had the lowest percentage (9.9%) of positive scores on the EAT-26 in comparison to the other school subgroups, according to the chi-square test ($\chi^2 = 13.3$, df = 4, $p < 0.01$) (see Table 2). ANOVA results showed significant differences between the school subgroups in the total EAT-26 scores ($F = 5.14$, df = 4, $p < 0.0001$).

Table 2 contains the distributions of EAT-26 factor scores among Israeli girls according to school subgroups. ANOVA results showed that oral control factor scores differentiated among the subgroups ($F = 3.3$, df = 4, $p < 0.01$). Duncan’s Multiple Range Test showed that the secular boarding school and urban subgroups were similar and were differentiated from the Kfar Kehilati and the kibbutz subgroups. It also showed that the religious boarding schools were similar to all other subgroups. Bulimia and food preoccupation factor scores also differentiated among the subgroups ($F = 21.7$, df = 4, $p < 0.0001$). Duncan’s Multiple Range Test showed that the secular boarding school subgroup had significantly higher scores than all other school subgroups. The dieting factor did not differentiate among the subgroups (see Table 2).

**Discussion**

The results of the present study demonstrated that the prevalence of abnormal eating attitudes among Israeli female adolescents, based on EAT-26 scores, is 19.5% and falls within the range of
similar community-based samples of female adolescents in Israel (18%) (Apter et al., 1994; Stein et al., 1997). Similar figures have been found in other Western countries (Lichener, Arnett, Rallo, Srikameswaran, & Vulcano, 1986; Patton, 1988; Toro et al., 1989; Whitaker, Davies, Shaffer, & Johnson, 1989; Patton et al., 1990; Scheinberg et al., 1992; Dancyger & Garfinkel, 1995; Wichstrom, 1995). In non-Western societies, cultural change consistently correlates with an increased risk of developing eating disorders (Nasser, 1986, 1988b; Al-Subaie et al., 1996; Kiriike & Nagata, 1997). In a study using EAT-26 in different ethnic groups, the rate of abnormal eating behaviour was found to be 8.5%, 7.0%, 16%, 18.6%, and 29% in Caucasian, Afro-Caribbean, Asian, Nigerian, and Indian females, respectively (Dolan, Lacey, & Evans, 1990).

The main findings of this research indicated that 16 year olds had the significantly highest total scores on the EAT-26 and the significantly highest percentage of positive scores (score > 20) in comparison to the other age groups. Moreover, the dieting, bulimia, and food preoccupation factors were found to be significant factors associated with age 16. The clinical implications of these results point to the importance of establishing prevention intervention models for this age group in particular.

Other recent studies conducted in Israel using EAT-26 recruited only 16–17 year olds (Apter et al., 1994; Stein et al., 1997), whereas the current study sample included adolescent females in the age range of 12–18 years. Thus, age 16 can be differentiated as an age group with high risk for maladaptive attitudes and behaviours regarding food, weight, dieting, physical appearance, and eating disorders.

Regarding adolescents from different residential areas, those attending secular boarding schools had the significantly highest percentage of positive scores (score > 20), and the kibbutz group had the lowest percentage of positive scores on the EAT-26 for the total and for all subscales. The other subgroups fell mid-way between the two extreme groups.

The lowest rate found in the kibbutz subgroup was in contrast to the results of Apter et al. (1994), showing that kibbutz adolescent females have the highest positive scores on the EAT-26 for the total and for most subscales. The discrepancy in prevalence between the two studies can be explained by the fact that, in the last decade, the kibbutz has undergone major socioeconomic changes as they have moved from a communal living style to privatization. Thus, it may be that the role stress conflict characterizing kibbutz women over the years (Apter et al., 1994) is now in the process of being resolved, as manifested by the reduction of maladaptive eating patterns and disordered eating.

The finding that the secular boarding school group had the highest positive EAT-26 scores may be explained by the fact that students in secular boarding schools in Israel typically come from a low socioeconomic status, from broken families, and from new immigrant families. Residential schools in Israel are characterized by great diversity in socioeconomic levels, values, and attitudes of their students (Romi, 1997). The students in secular boarding schools tend to be distant from their families, and the peer group’s increasing importance presents conflicts and difficulties, such as problems with social adjustment, identity, and self-image (Guttman, 1993). These findings are supported by a pilot study conducted in Israel by Knishkowy, Schein, Velber, and Naveh (1995), which found that the major concerns reported by this population of residential school students were related to nutrition, weight, and body image. Depression, suicidal intent, and dieting were the most common behavioural issues identified.

The discrepancies found between secular and religious residential schools may relate to the psychological standpoint of female students, who may be positively influenced by their religious
values and beliefs on issues of self-esteem, identity, and body image. Similar to the findings on age group, these results highlight the need to relate to the secular boarding school student population as a high-risk group and to develop intervention programs oriented to their particular needs. By identifying the subgroups that require special clinical attention, we may be better able to target our prevention and intervention efforts on those sectors of the population that are most vulnerable to the development of eating disorders.

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