**Scientific background**

Eating disorders (EDs) and disordered eating pathology (DEP) consist of thoughts and behaviors that represent a variety of symptoms and exist on a spectrum ranging from body image disorders to the development of full-blown EDs (Hoek, 2016; Smink, Van Hoeken & Hoek, 2012). Disordered eating includes behaviors such as preoccupation with weight, body and food, and it manifests primarily in the form of calorie restriction, constant dieting, excessive exercise routines, binge-purge behavior, and the use of laxatives and diuretics to control one’s weight (Latzer, Katz, & Spivak-Lavi, 2015). These behaviors constitute a significant risk factor for the development of clinical EDs (Zipfel, Giel, Bulik, Hay, & Schmidt, 2015).

In the last decades, there has been a consistent rise in the prevalence of EDs and DEPs (O’dea, 2007; Smink et al., 2012). A similar trend has been apparent in Israeli society (Latzer, Witzum, & Stein, 2008). The most common age period for the onset of DEP is adolescence; hence, adolescent girls are considered to be an at-risk group and a prime target population for research and prevention efforts (Stice, Marti, Shaw, & Rohde, 2019; Micali et al., 2017). Studies have shown that 50% of adolescent girls have DEPs, and that the prevalence is increasing (Sanlier, Varli, Macit, Mortas, & Tatar, 2017). Approximately 20% of Israeli adolescents displayed symptoms of DEP, with the highest rate found among girls aged 16–18 (Greenberg, Cwikel, & Mirsky, 2007; Latzer et al., 2015). These alarming rates highlight the need to identify risk and protective factors among this highest risk group.

Both EDs and DEPs represent a complex interplay of genetic, biological, psychological, familial and socio-cultural factors (Hilbert et al., 2014; Levine & Smolak, 2009; Stice, Marti, & Durant, 2011). Early adolescence has been identified as a risk period, during which girls are particularly vulnerable to developing DEPs or EDs because of the normative challenges associated with this developmental stage, such as physical changes, an increased desire for peer acceptance, social comparison and low self-esteem (Steinberg, 2005). Psychological risk factors include low self-esteem and negative body image (Levine & Smolak, 2018). Self-esteem is defined as a person’s attitude toward him or herself (Musaiger, Al-Mannai, & Al-Lalla, 2014), and it has been shown to affect one’s quality of life and health (Wu, Kirk, Ohinmaa, & Veugelers, 2016). Low self-esteem is associated with eating disorders, whereas high self-esteem plays an important role in the prevention of eating disorders and body dissatisfaction (Sanlier et al., 2017). Body image is a multidimensional construct encompassing how one perceive, think, feel, and act toward his body and it is part of one’s global self-esteem[.](https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4554432/#b2-ahmt-6-149) It lies on a continuum from healthy body perceptions (accurate and mostly positive) to unhealthy body perceptions (inaccurate and mostly negative) (Grogan, 2010). Evidence consistently indicates that unhealthy body image plays a pivotal role in the development of eating disorders during adolescence (Rohde, Stice, & Marti, 2015).  Low self-esteem and body dissatisfaction promotes unhealthy dieting behaviors (Stice et al., 2011). Dieting, defined as the intentional and consistent restriction of caloric intake for weight management purposes, promotes eating disturbance (Schaumberg, & Anderson, 2016).

Familial risk factors include, among others, maternal modeling about weight, body shape and eating behaviors. Mothers are important role models for their children’s eating behaviors (Palfreyman, Haycraft, & Meyer, 2015). During adolescence, the parent-child relationship is the primary source of influence in development, and it plays an important role in shaping children’s attitudes and values about body image (Jones, 2011). By establishing lifestyle patterns of diet, exercise, and evaluation of others, parents express their expectations and beliefs about physical appearance and eating behavior to their children from a young age (Salvy, Elmo, Nitecki, Kluczynski, & Roemmich, 2011). Mothers are often regarded as the most obvious role models of eating and weight issues for their developing daughters (Cooper & Stein, 2013). High levels of dietary restraint, dietary disinhibition and increased dieting behaviors displayed by mothers, have been related to increased risks of their children developing poor body image and maladaptive eating patterns such as dieting and bulimic type behavior (Fisher & Birch, 1995; Hart, Cornell, Damiano, & Paxton, 2015).

One of the main recommendations made by experts in the field of eating disorder prevention is to involve girls’ environments in prevention programs (Hart et al., 2015). The environment includes their families, especially mothers, and their involvement supports the goal of achieving long-term behavioral changes (Stice & Shaw, 2007). However, to the best of our knowledge, few prevention programs exist that have involved mothers in the design and implementation of prevention programs.

The aim of this study was to evaluate a parallel face-to-face intervention program including girls and their mothers for the prevention of eating disorders among the daughters. It compared outcomes across 12-year-old girls who participated in an eating disorders prevention program in parallel to their mothers, girls who participated in the same program without their mothers, and girls who did not participate in the program at all. The program that the girls took part in was an eating disorder prevention program called “Full of ourselves,” and it was based on promoting girl power and self-esteem (Sjostrom & Steiner-Adair, 2005). Eating disorder prevention programs based on strengthening self-esteem have been found to be effective at reducing disordered eating among adolescent girls (Levine & Smolak, 2018). In one of the intervention groups, the girls’ mothers also participated in the program, but separately from their daughters. The mothers’ part of the program consisted of group meetings, which dealt with maternal modeling on topics related to weight, body shape and eating patterns, as well as its impact on their daughters.

The overall research hypothesis was that there would be significantly fewer dieting behaviors among girls who participated in parallel interventions with their mothers as compared to girls who participated in the program without their mothers, and girls who were not exposed to the intervention program. Figure 1 presents the research model.

[Insert figure 1 around here]

The specific research hypotheses were:

**H1:** Maternal modeling of thinness would be linked with lower self-esteem and more dieting behaviors.

**H2:** Higher self-esteem would be associated with fewer dieting behaviors.

**H3:** Theintervention program that included the mothers would promote a greater increase in self-esteem over time (baseline, 6 months, 18 months) and a greater decrease in the number of dieting behaviors as compared with the intervention program without the mothers component and the control group.

**H4:** Self-esteem would mediate the link between maternal modeling of thinness and dieting behaviors, such that lower maternal modeling of thinness would be linked with higher self-esteem, and thus fewer dieting behaviors. Intervention with mothers would moderate this mediation path by increasing self-esteem and its effect on dietary behavior.

All hypotheses will be tested controlling for participant body mass index (BMI).

**Method**

**Sample**

We recruited 140 adolescent girls. Of the 140 girls, 22 girls (15.7%) refused to participate (because either they or their parents objected, or because they did not completed the questionnaires for various reasons). The final sample consisted of years old (*M* = 11.5; Participants were divided into three groups -- two intervention groups and one control group. Seventy girls were in the intervention groups; 35 who participated with their mothers and 35 who participated without their mothers. The remaining 48 girls were in the control group. All girls participated in the intervention program but only the mothers of the 35 research subjects participated in a parallel intervention program.

Two rounds were held during the two years of study. The intervention program lasted for four months and data collection was conducted with self-report questionnaires at three timepoints: before the start of the intervention (timepoint 1), at the end of the intervention (timepoint 2), and six months after the end of the intervention (timepoint 3). The control group was tested only once. Completing the questionnaires took approximately 45 minutes.

Participants were recruited from elementary schools in northern Israel and were based on a convenience sample. All participants were native Hebrew speakers. The study was approved by the Ministry of Education’s Chief Scientist and was conducted in school during the school year. Questionnaires were completed during school hours.

Table 1 shows the frequencies and percentages of demographic variables among the participants.

[Insert Table 1 about here]

Table 1: Averages, standard deviations and percentages of demographic variables in the study groups and between (*N*=118)

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| ***F*(2, 115)** | **Control group**  **(n=48)** | **Without mothers**  **(n=35)** | **With mothers**  **(n=35)** | **Total population**  **(N=118)** | **Category** | **Variables** |
| 2.3 | 11.4 | 11.4 | 11.6 | 11.5 | Average | **Age** |
|  | .45 | .34 | .51 | 45. | SD |  |
| .02 | 39.4  10.6 | 39.3  8.3 | 39.7  8.6 | 39.5  9.3 | Average | **Weight (kg)** |
| SD |
| .50 | 147.8  8.6 | 149.1  6.8 | 149.3  7.9 | 146.9  15.9 | Average  SD | **Height (cm)** |
| .22 | 18.5  3.4 | 19.3  4.6 | 17.8  7.8 | 18.5  3.4 | Average  SD | **BMI** |
| **χ2** |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
| 11.2 | 35.4  37.5  22.9  4.2 | 65.7  14.3  17.1  0  .29 | 54.3  28.6  11.4  5.7 | 50.4  28.2  17.9  3.4 | Very good  Good  Average  Not good  No answer | **Economic status (%)** |
|  |  |  |  |  |  |  |
| 3.9 | 68.8  22.9  4.2 | 60  37.1  2.9 | 62.9  28.6  5.7 |  | Academic  Not academic  Do not know | **Father education (%)** |
|  |  |  |  |  |  |  |
| 4.3 | 77.1  20.8  2.1 | 62.9  37.1  0 | 77.1  20  2.9 |  | AcademicNot-academic  Do not know | **Mother education (%)** |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |

No significant differences were found in the background variables among the girls participating in the study: economic status ((3) = 3.5, p > 0.5), maternal education ( (3) = 5.6, *p* > 0.5) and paternal education ((3)=2.2, *p*>0.5). Additionally, no significant differences were found in the girls’ personal variables (age, weight and height). The participants’ mean BMI was 18.5 (*SD* ± 3.4). BMI is one of the most commonly-used measures for defining obesity, normal weight, and extreme thinness. It is calculated as weight (kg) / height squared (m2) (Ogden, Carroll, Curtin, Lamb, & Flegal, 2010).

In the present study, weight and height data were entered into calculators designed for measuring children’s BMI. The calculations showed that, on average, the girls in the study had an age-appropriate weight range and did not suffer from eating disorders; that is, they were considered a healthy population.

**Measurements**

**Questionnaires**

The study was comprised of an intervention program and data was collected through four self-report questionnaires. Additionally, a demographic questionnaire included questions regarding background variables and clinical information.

**Dieting behavior**

Participants’ dieting behaviors were assessed using a composite of the Dutch

Restrained Eating Scale (DRES; van Strien, Frijters, van Staveren, Defares &

Deurenberg, 1986) and Dietary Intent Scale (DIS; Stice, 1998a). A sample question from this 10-item composite is: “Did you take into account your weight when deciding what to eat?” to which participants respond on a 5-point scale (1 = never – 5 = always), with a possible composite score ranging from 10-50. The reliability of the DIS is .94 (internally) and .92 (temporally) and validity of the DIS has been documented by its strong correlation (.92) with the DRES. Reliability in the present study was found 3 times as follows: At first, α=. 90; during the second, α =.84; While third, α=.90

**Self-esteem**

Self-esteem was measured with the Rosenberg Self-Esteem Scale (Rosenberg, 1965), which includes 10 items. Each item was rated on a 4-point scale, with total scores ranging from 10 (highest self-esteem) to 40 (lowest self-esteem). Five items are phrased negatively (e.g., “At times I think I am no good at all”) and were reverse-scored. Internal reliability has been shown to range from .80 and .85 (Rosenberg, 1965). Cronbach’s alpha in the present study was .88, .90, and .93 for each timepoint, respectively.

**Maternal Modeling of eating disturbances**

A subscale of the Bulimic Modeling Scale (Stice, 1998b) was used to assess family modeling of eating disturbances (e.g., binge eating, compensatory behaviors, preoccupation with weight). A sample item from this scale was: “One or more of my family members has dieted to lose weight” to which participants responded using a 5-point scale (1= never; 5 = often). Total scores ranged from 4-20. In the present study, the wording was changed to reflect maternal modeling. For example, instead of a general question about the family, the phrasing was edited so that it explicitly mentioned mothers (e.g., “My mother makes a diet to lose weight”). In addition, one question from the original scale was omitted (“One of my family members vomiting to lose weight”) because it was not approved by the Chief Scientist of the Ministry of Education, which is the entity that approved the research questionnaires. Previously reported reliability was .88 (Stice, 1998). Cronbach’s alpha in the present study was .77, .72, and .77 for each timepoint, respectively.

Description of prevention program to the girls: The program “Full of ourselves” (Sjostrom & Steiner-Adair, 2005) , that was used in this research, aimed to advance girl power, health and leadership, It was designed to reduce risk for disordered eating by increasing self-esteem, promoting body acceptance, providing leadership opportunities, and teaching a range of coping strategies to resist the cultural emphasis on maladaptive body preoccupation and unhealthy eating and dieting behaviors.

There were a number of goals in the intervention group that included the mothers. Mothers were provided with guidance, knowledge, and support on the following topics: how to distinguish between the ideal of thinness and health; how to handle the communication and discourse with their daughters about the unrealistic ideal of thinness; alternatives to the existing dialogue so that they could help their daughters form a more positive body image; how to recognize the offending media messages and ways to reduce the impact on their daughters; how to recognize eating disorders and warning signs. The mothers participated in four sessions, three group meetings and one individual meeting. The individual meetings focused on the specific content raised by each mother on these subjects. The mothers’ sessions were held separately and in parallel to their daughters’ meetings.

**Results**

**Descriptive statistics**

To examine the pattern of associations between main study measures (BMI, maternal modeling of thinness, self-esteem and dieting behavior), we conducted a series of Pearson correlations. Coefficients are reported in Table 1 followed by means and standard deviations. The analyses indicated that BMI at T1 was linked with more dieting behaviors at all time points; higher maternal modeling of thinness was linked with lower self-esteem (T2, T3) and more dieting behavior at T3. Finally, higher self-esteem was linked with fewer dieting behaviors.

**Differences in main study measures**

To examine differences between study groups (intervention with mothers, intervention without mother, control) in the baseline levels of BMI and maternal modeling of thinness, we conducted two one-way analyses of variance (ANOVA). The analyses revealed no significant differences between groups in the baseline levels of BMI, *F*(2, 114) = 0.22, *p* = .80, and maternal modeling of thinness, *F*(2, 114) = 1.13, *p* = .33.

Next, to examine differences between study groups in the trajectory of change in self-esteem and dietary behavior over time (baseline [T1], 6 months [T2], 18 months [T3]), we estimated two latent trajectory models using MPlus 8.3 Structural Equation Modeling (SEM) package ([Muthén & Muthén, 1998-2017](#_ENREF_2)). Specifically, we estimated the intercept and slope of change over time (using the time matrix of 0, 6, 18) for 6 and dietary behavior (separately) and predicted these slopes by study group and BMI to examine whether they affect these slopes of change (i.e., whether there are different slopes of change over time among different study groups and/or for different BMI). To do so, we first recoded the study group measure into two dummy variables comparing the intervention with mothers to the other two groups. Model fit was estimated using Comparative Fit Index (CFI), Tucker Lewis Index (TLI), and Root Mean Square Error of Approximation (RMSEA).

The models had excellent fit to the observed data, *χ*2(6) = 6.85, *p* = .34, *CFI* = 1.00, *TLI* = .99, *RMSEA* = .04 for self-esteem (see Figure 1), and *χ*2(6) = 4.20, *p* = .65, *CFI* = 1.00, *TLI* = 1.00, *RMSEA* = .00 for dietary behavior (see Figure 2). The models indicated that the self-esteem of girls in the intervention with mothers group was marginally higher than that of girls in the intervention without mothers, specifically between T2 and T3, *p* = .06. In addition, significant differences were found in the trajectory of change in dietary behavior such that a greater decrease was observed among the intervention with the mothers group as compared to the other groups (*p* < .05). These effects were significant controlling for BMI (which were not linked with the slope of change in self-esteem and dietary behavior).

**Examining the modeling for thinness 🡪 self-esteem 🡪 dietary behavior hypothesis**

In this section, we examined the hypothesis that self-esteem will mediate the link between maternal modeling for thinness and dietary behavior and that study group would moderate this mediation path. To allow discussion regarding directionality, maternal modeling for thinness was measured at T1, self-esteem at T2, and dietary behavior at T3. To examined these hypotheses (which argue for moderated mediation paths), we conducted a moderated mediation analysis using PROCESS ([Hayes, 2013; model 59](#_ENREF_1)). In this model, maternal modeling for thinness served as the predictor (x), self-esteem as the mediator (m), dietary behavior as the outcome measure (y), study group (as dummy coded) as the moderator (w) and BMI as a covariate. Significance of moderated mediation paths were estimated using bias-corrected bootstrap analysis with 5,000 resampling cycles.

The analysis indicated that as predicted, the higher the maternal modeling for thinness at T1, the lower the self-esteem at T2, *b* = -.22, *β* = -.30, *p* = .03. This link was not moderated by study group (*p*s > .23). Controlling for maternal modeling for thinness, self-esteem at T2 was associated with fewer dietary behaviors at T3, *b* = -4.55, *β* = -.46, *p* < .001. This link, however, was moderated by study group (intervention with mothers vs. intervention without mothers; *b* = 1.89, *β* = .19, *p* = .03). Simple slope tests revealed that the link between self-esteem at T2 and dietary behavior at T3 was significantly stronger for girls in the intervention with mothers group, *b* = -6.43, *β* = -.65, *p* < .001, than for girls in the intervention without mothers group, *b* = -2.68, *β* = -.27, *p* = .04 (see Figure 3). Overall, the analysis indicated that self-esteem significantly mediated the link between maternal modeling for thinness and dietary behavior only for girls in the intervention with mothers group (*indirect* = .12, 95% bias-corrected confidence interval .01, .39).

Table 1

Pattern of associations between main study measures followed by means and standard deviations

|  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| 8 | 7 | 6 | 5 | 4 | 3 | 2 | 1 |  |  |
|  |  |  |  |  |  |  | - | BMI (T1) | 1 |
|  |  |  |  |  |  | - | -.04 | Maternal modeling of thinness (T1) | 2 |
|  |  |  |  |  | - | -.12 | .11 | Self-esteem (T1) | 3 |
|  |  |  |  | - | .73\*\*\* | -.18\* | -.02 | Self-esteem (T2) | 4 |
|  |  |  | - | .75\*\*\* | .69\*\*\* | -.21\* | -.04 | Self-esteem (T3) | 5 |
|  |  | - | -.29\*\* | -.33\*\*\* | -.48\*\*\* | .13 | .24\*\* | Dieting behavior (T1) | 6 |
|  | - | .62\*\*\* | -.41\*\*\* | -.47\*\*\* | -.43\*\*\* | .07 | .35\*\*\* | Dieting behavior (T2) | 7 |
| - | .76\*\*\* | .69\*\*\* | -.52\*\*\* | -.53\*\*\* | -.46\*\*\* | .17\* | .28\*\* | Dieting behavior (T3) | 8 |
| 20.76 | 20.73 | 21.64 | 3.34 | 3.35 | 3.32 | 2.24 | 17.74 | *Mean* |  |
| 9.78 | 9.50 | 9.39 | 0.66 | 0.59 | 0.51 | 0.98 | 3.39 | *Standard deviation* |  |

Note. \* *p* < .05, \*\* *p* < .01, \*\*\* *p* < .001.

Figure 1. Changes in self-esteem over time as a function of study group.

Figure 2. Changes in dietary behavior over time as function of study group.

Figure 3. The link between self-esteem (T2) and dietary behavior (T3) as a function of study group (with mothers vs. without mothers).

**Discussion**

The overall aims of the present study were to identify risk factors that contribute to developing an eating disorder and to examine their correlation with prevention of eating disorders. We compared girls who participated in an eating disorders prevention program in parallel to their mothers, girls who participated in the same program without their mothers, and girls who did not participate in the program. The main research hypothesis was that there would be significantly fewer dieting behaviors among girls who participated in parallel interventions with their mothers as compared to girls who participated in the program without their mothers, and to girls who were not exposed to an intervention program. All of the research hypotheses were fully supported.

To the best of our knowledge, this is the first study to examine a face-to-face prevention program for eating disorders, which included an intervention group of girls and mothers who participated simultaneously, yet separately from each other. Findings indicated that among the girls who participated in the intervention group with mothers, as compared to the non-mothers intervention group, higher self-esteem was associated with fewer pathological diet behaviors.

Mother involvement in the prevention of eating disorders

The innovative piece of this study was that it examined an eating disorders face-to-face prevention program that both mothers and daughters participated in simultaneously, yet separately from one another. The general research hypothesis was that among the girls whose mothers also participated in the program, there would be a positive change not only in their **attitudes** toward disordered eating (as has been shown in existing programs), but also in their disordered eating **behaviors**. This hypothesis was confirmed. After the end of the intervention, the self-esteem of the girls who participated in the program with mothers was higher than girls whose mothers did not take part in the program. Additionally, the girls whose mothers participated in the program showed a pattern such that the higher their self-esteem was, the less pathological were their **diet behaviors**. It should be noted that no significant differences were found in the relevant background variables between the two intervention groups, those with and without maternal participation.

The rationale for the parallel program involving daughters and their mothers was that, despite many attempts to develop and implement programs to prevent eating disorders, no long-term behavioral changes have been reached in practice (Hart et al., 2015). Mothers have a great influence on the development of DEP among their daughters (Hillard, Gondoli, Corning, & Morrissey, 2016; Sadeh-Sharvit et al., 2016). Nevertheless, there are few prevention programs that integrate parents in general, and mothers in particular. As far as we know, the few programs that have integrated mothers into prevention programs have intervened only with mothers, without a daughter intervention component (Corning, Gondoli, Bucchianeri, & Salafia, 2010 ; Hart et al., 2015; Trost, 2006). Hence, the current study presents a novel contribution.

As depicted in the proposed model, findings indicated that the relationship between self-esteem and diet behaviors among girls during the third timepoint (six months after the end of the intervention) was dependent on the intervention group in which they participated. In other words, the findings revealed that only in the intervention group with mothers -- but not in the intervention group without mothers -- as self-esteem increased, dieting behaviors were less pathological. This finding is innovative and unique, and significantly contributes to an understanding about the prevention of eating disorders among adolescents, and the prevention of dangerous behaviors more generally. This finding reinforces and demonstrates the great importance that mothers have in the prevention of eating disorders. Maternal involvement in eating disorders prevention can lead to changes not only in their daughters’ pathological **attitudes** but, more importantly, to changes in their daughters’ pathological **behaviors** (such as dieting).

Mothers modeling of thinness

The hypothesis regarding the relationship between mothers’ modeling of thinness and self-esteem of their daughters was fully confirmed, such that the higher was maternal modeling of thinness, the lower was the self-esteem of the daughter. In addition, in accordance with expectations, the higher was the maternal modeling of thinness, the greater the occurrence of dieting behaviors. The findings supported and reinforced similar findings reported in the literature about the significant role of mothers in contributing to their daughters’ body image and the influence of mothers on their daughters’ eating behaviors, occurring both through personal example and imitation (Handford, Rapee, & Fardouly, 2018; Hillard et al., 2016). In families in which there are eating disorders present, there are also many family-level characteristics of eating pathology, especially among mothers (Arroyo & Andersen, 2016; Chow & Tan, 2018). Additionally, previous research has shown that mothers’ modeling of thinness was associated with bulimic symptoms in daughters (Hillard et al., 2016).

To the best of our knowledge, the finding regarding the negative association between maternal modeling of thinness and daughter’s self-esteem is innovative since, as far as we know, this relationship has not previously been directly examined. Most studies have examined the relationship between maternal modeling of thinness, negative body image and DEP (Handford et al., 2018; Kluck, 2010; Smith et al., 2016), but they have not specifically tested the relationship with self-esteem. Low self-esteem is important as it is one of the most significant risk factors for the development of eating disorders (Iannaccone, D’Olimpio, Cella, & Cotrufo, 2016). The findings of this study corroborate previous findings described extensively in the literature. In accordance with expectations, an association was found such that the lower the participant’s self-esteem, the more pathological were the dieting behaviors. The association found in this study, between maternal modeling of thinness and low self-esteem of daughters, may contribute to an understanding of the risk factors involved in the development of eating disorders, adding an important layer to the existing research knowledge. Thus, the relationship between maternal modeling of thinness and low self-esteem of daughters is a direct continuation of the relationship between maternal modeling of thinness and DEP. Further, self-esteem can even explain this relationship, since low self-esteem is such a significant risk factor for DEP and eating disorders (Iannaccone et al., 2016). Hence, the present study’s research findings reinforce the need to develop eating disorders prevention programs that are based on strengthening self-esteem.

The main contribution of these findings, both at the theoretical and practical levels, is the importance that parents, especially mothers, have in preventing eating disorders among their daughters. Important implications derived from this study for the prevention of eating disorders include deepening the theoretical basis of the influence of mothers’ attitudes and behaviors regarding eating and weight on their daughters. Hence, it is advisable to continue implementing appropriate prevention programs that take into account the significant impact of mothers on their daughters on these issues.

Limitations

The study has several limitations. First, the sample was small and represents a relatively homogeneous population from the northern part of Israel, as participants were mainly from middle-class backgrounds from both urban and rural areas. Thus, it is difficult to generalize to the rest of Israel, whose population is quite diverse. Second, the mothers who participated in the study were not randomly sampled; as such, they may have chosen to participate in the program because they were more aware of the subject in the first place. Third, the questionnaires were not anonymous and, therefore, there may have been an element of response bias, as the girls may have been motivated to respond in a way that pleased the researcher. Lastly, since the intervention was administered by one supervisor, it is not possible to infer the full reliability of the program; therefore, a protocol should be constructed so that other supervisors could carry out the same intervention and reliability analyses could be performed.  
Clinical Implications and Conclusion

This study presents an innovative and initial effort in developing an eating disorders prevention program, which has an emphasis on mother involvement. Findings provide preliminary support for the implementation of an intervention model that includes both daughters’ and mothers’ face-to-face participation. Maternal involvement in this study’s intervention program was shown to promote positive behavior (i.e., less dieting) among the daughters, which suggests that a similar model can be used to prevent risky behaviors among adolescents in other areas.

Findings from this study represent an important contribution to the existing theory in the field of health promotion in general, and prevention of eating disorders in particular. More specifically, this study emphasizes the importance of incorporating a model that highlights maternal involvement as an inseparable part of preventive interventions, and an integral part of the process for changing the harmful behaviors of children and adolescents.

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