5. Prevention of Eating Disorders

Key Questions:

5.1. What is the efficacy of primary prevention interventions in avoiding eating disorders? Are there any negative effects?

Primary prevention aims to limit the incidence of disease, in this case of eating disorders, by managing causes and exposure to risk factors or the patient’s increased resistance to these. Clearly, the first step to establish primary prevention measures is to identify relevant exposures and assess their impact on the patient’s and the population’s risk of developing the disease.

Specific primary prevention interventions for the most frequent eating disorders can be classified in the following 5 types: psychoeducational, media literacy, dissonance-induction techniques, and interventions focused on eliminating eating disorder risk factors and strengthening the host.

In order to implement primary prevention measures there are two strategies, which often complement each other: the population strategy and the high-risk strategy. The population strategy is general and is aimed at the entire population with the objective of reducing its average risk. The high-risk strategy is individual and is aimed at those people who most need it, meaning the most vulnerable individuals or those presenting additional risk as a consequence of being exposed to certain risk factors. In the case of eating disorders, groups are considered of risk due to their age (adolescence), sex (female) or engagement in risk activities, be it as a hobby or at a professional level (gymnasts, athletes, models, ballerinas, skaters, elite athletes, etc.)

5.1. What is the efficacy of primary prevention interventions in avoiding eating disorders? Are there any negative effects?

In order to respond to these questions, 4 high quality (1++) quantitative SRSE or metaanalysis (MA) on eating disorder prevention programmes have been identified.

Of the four MAs, one focuses the review on children and adolescents and only includes RCT; another one focuses on reviewing RCT and quasi-experimental studies (Q-RCT) on Internet-based prevention programmes; the others perform a general review of the topic, including RCT and quasi-experimental studies. The potential iatrogenic effect (negative impact) of primary prevention programmes was another objective of two of these 4 MAs.

The MA conducted by Stice E, et al. (2007) includes all studies considered in the MA carried out by Newton MS and Ciliska D published in 2006; 24/46 studies included in the MA conducted by Cororve FM, et al. (2006); 10/12 studies included in the fourth MA conducted...
by Pratt BM and Woolfenden SR (Cochrane Review), which was published earlier (2002) 134.

The search for RCTs has identified eight studies that were either published after or not included in previous MAs 138-145. The eight RCTs assess high-risk strategies given that primary prevention programmes are aimed at adolescents (men and women) 138; at adolescent women with body dissatisfaction 141, 143, 145, at female university students with subclinical levels of eating pathology or who wish to improve their body image 139, 140, 144; and female athletes 142. The most administered intervention type was psychoeducational 138-140, 145 (in three of the studies the Internet was used), followed by dissonance-induction techniques 143, 144, critical assessment of media content (media literacy) 141 and a specific programme called ATHENA (The Athletes Targeting Healthy Exercise and Nutrition Alternatives) 142.

The NICE CPG (2004) 30 did not address this aspect and only some protocols, recommendations and other documents on eating disorders elaborated by other organizations in our setting (See Annex 6.1.) tackled this aspect 10, 11, 13, 19, 146-151, even though only the PAPPS 12 group of experts formulates general recommendations.

In the following section, the scientific evidence on primary prevention programmes for eating disorders is described.

Scientific Evidence

In a RCT (Stice, 2008; United States) conducted on a sample of 481 adolescent women (mean age: 17 years) with body dissatisfaction, the following interventions were compared: dissonance-based thin-ideal internalisation reduction programme (group 1) vs. the healthy weight control programme (group 2) vs. expressive writing control condition (group 3) vs. assessment-only control condition (group 4). Group 1 showed significant reduction of thin-ideal internalisation, body dissatisfaction, negative affects and psychosocial impairment and lower risk for eating pathology onset at 2- and 3-year follow-up vs. control subjects. In group 1 there was a greater decrease in thin-ideal internalisation, body dissatisfaction and psychosocial incapacity when compared to group 3. Group 2 showed greater reduction in all results, less increases in weight and lower risk of eating pathology onset at 2- or 3-year follow-up vs. control subjects. Group 2 showed greater decrease in weight and in thin-ideal internalisation than group 3.

At 3-year follow-up, participants in the dissonance programme showed a 60% reduction in risk for eating pathology onset; healthy weight participants showed a 61% reduction; assessment-only controls showed a 55% reduction in risk of obesity onset. Therefore, the effect of such programmes is considered clinically important and enduring in time.

In a RCT (Jones M, 2008) 138 a population of adolescents (73 females and 22 males) from public schools in the US at risk for overweight was studied, and a specific 16-week Internet-facilitated intervention (StudentBodies2-BED)(N=52, 38m; 14v) was compared to a wait list (N=53, 35m; 18v) with 9-month follow-up. The specific programme’s content combines psychoeducational and behavioural interventions.
(causal factors). Participants in the experimental group presented significant changes at baseline BMI ($p<0.01$) and at follow-up ($p<0.05$) and significant subjective and objective reduction of binge-eating both after the intervention ($p<0.01$) and during follow-up ($p<0.05$) vs. the control group. Results suggest that an Internet-based intervention programme is moderately effective at the short-term reduction and maintenance of body weight and in reducing binge-eating. This study also demonstrates that weight maintenance and reduction of psychological disturbances caused by eating disorders can be easily achieved when using easily disseminated, Internet-based programmes.

In a RCT (Becker, 2008) a population comprised of 188 female university students (age range: 18-21 years) who had participated in a specific programme on body image but who did not have an eating disorder was studied. Cognitive dissonance moderated by trained peer leaders (N=88) was compared to mobilisation and social and political activism (media advocacy) (N=85) with 8-month follow-up. Results indicated that both interventions reduce thin-ideal internalisation, body dissatisfaction, dietary restraint and bulimic pathology at 8 months, although higher and lower risk groups responded differently. Both interventions were effective in the high-risk group. However, only the dissonance-based technique was effective in lower risk participants.

Overall, both interventions yielded better results in the high-risk group, whereas cognitive dissonance only seems to benefit the lower risk group. Further studies are needed to corroborate the viability of using trained peer leaders in dissonance-based prevention programmes.

In an RCT (Heinicke, 2007) a population of 83 female adolescents (mean age: 14.4 years) from schools in Australia who self-identified as having eating and body image problems was studied. The programme (My Body, My Life: Body Image Program for Adolescent Girls) (N=40) was compared to the control group (N=43) at 2- and 6-months follow-up. This programme consists of 6 weekly group sessions delivered via the Internet during 6 weeks and a SH manual (psychoeducational content), coordinated by a trained therapist. Out of those who completed the programme (28 and 26 of the experimental and control groups, respectively), clinically significant improvements were reported in the experimental group in terms of body dissatisfaction, disordered eating and depression at the end of the intervention ($p\leq0.002$). At two months follow-up, clinically significant improvements were obtained in the scores of different specific eating disorder outcome measures and other related measures (also at 6 months follow-up).

This Internet-delivered programme was well-accepted and obtained good results in improving body dissatisfaction and eating problems.

In an RCT (Jacobi, 2007) performed on a population comprised of 100 female university students in Germany (age range: 18-29 years) who wished to improve their body image, an 8-week Internet-based psychoeducational prevention programme (German adapted version of Stanford’s original programme) (N=50) and a wait-list (N=50) were compared, with follow-up at 3 months. The experimental group obtained better results than the control group in all measures. Participants in the
The experimental group presented sustained effects in terms of their knowledge regarding a healthy diet and exercise, a reduction in their wish to be thin and decreased disordered eating at 3 months follow-up. The experimental programme was also effective in the group of women who were at risk, resulting in favourable changes in the majority of variables. This study demonstrates the benefits of using an Internet-based prevention programme and proves that transcultural adaptation can be successful.

Based on the results of this MA, 51% of eating disorder prevention programmes reduce eating disorder risk and 29% reduce current or future eating pathology. These overall percentages are favourable when compared to results obtained in other public health programmes (21% obesity prevention and 22% HIV prevention).

The effect of prevention programmes was greater if the following characteristics were satisfied: selected strategies aimed at high-risk populations (versus universal), aimed exclusively at women (versus both sexes), offered to participants over 15 years of age (versus younger people), interactive formats (versus didactic programmes), delivered by trained professionals (versus endogenous providers, such as teachers or educators), with multiple sessions (versus single session), including contents on body acceptance or the use of induction-dissonance techniques (versus psychoeducational or sociocultural interventions), assessed in trials using validated measures and, hence, more sensitive in determining the effect of interventions (only this type of measures should be used) and with shorter follow-up periods.

In an RCT (Brien, 2006) a population of 24 university females from Canada of several different origins (58% Caucasian, 19% Hispanic and the rest of other origins), presenting subclinical levels of eating pathology, was studied. An 8-week psychoeducational intervention (N=13) was compared to self-monitoring control (N=11). Participants in the experimental group showed improvement in the scores of different specific questionnaires on eating disorders and other outcome measures that were significantly different from those observed in the control group.

A psychoeducational intervention can alter the subclinical levels of eating pathology in female university students from different cultures.

In an RCT (Wilkisch, 2006) a population of young adolescent (mean age: 13.8 years) students in Australia (N=100 women and 137 males) was studied to compare one media literacy lesson vs. 6 lessons in the control group. Following the intervention, males had significantly lower values in 4/5 subscales of the questionnaire used to measure media internalisation, whereas females had significantly lower values in one subscale. Higher baseline levels of dietary restraint, reading/buying magazines and a perception of sociocultural pressure predict lesser reductions in males’ scores, whereas depression predicts lesser reductions in females. Males must be included in eating disorder prevention programmes and media literacy is a promising approach to primary prevention of eating disorders.

In the only RCT (Elliot, 2006) identified in a population of 1,179 female athletes studying in schools in the US (mean age: 14.6 years), the ATHENA programme (N=457) was compared to a control group (standard treatments) (N=471). ATHENA
is a programme that promotes a healthy diet and physical exercise as alternatives to eliminate harmful practices. It consists of group sessions with educational material. Significant reductions were observed in the experimental group versus the control group in terms of behaviours related with eating disorders and in the use of weight reduction drugs (p<0.05). Athletes obtained positive changes in strength-training self-efficacy (p<0.005) and in healthy dieting practices (p<0.001). The components of the ATHENA programme were significantly modified in the right direction: mood (p<0.005), refusal skills (p<0.05), belief in the media (p<0.005), perception of close friends’ body shaping drug use (p<0.001).

The ATHENA programme significantly modified risk factors by reducing consumption and delaying the use of pills to lose weight, amphetamines and other body-shaping substances, such as anabolic steroids and other sports supplements.

The second meta-analytical review conducted by Newton MS and Ciliska (2006) included 5 studies, 4 of which were RCTs and one quasi-experimental. All were carried out in California on a sample of women and using the same Internet-based programme vs. control group (wait-list). The prevention programme used (Student Bodies) includes lectures and reflexions, a magazine on body image via the Internet and an Internet-based asynchronous discussion group. Conceptually, this programme is comprehensive given that it addresses many of the factors that are involved in eating pathology (cognitive/affective factors, psychological factors, peer/sociocultural rules and behavioural factors). While carrying out the MA, none of the results studied evidenced statistically significant differences and, thus, conclusions could not be issued on the effectiveness of this programme. The authors mention the small sample size as a possible reason for this.

In yet another identified MA, in this case conducted by Cororve FM, et al. (2006) 46 studies (32 published and 14 unpublished) were finally included. The interventions assessed in the different studies were classified as purely psychoeducational, CBT-based psychoeducational, or purely interactive/non psychoeducational. There were no differences between the types of interventions. There were no significant different between purely psychoeducational and CBT-based psychoeducational interventions regarding dieting practices, internalisation and body dissatisfaction. Prevention programmes had the greatest beneficial effect on the acquisition of knowledge. The effect was also positive in other outcome variables, indicating an improvement in the symptoms of general eating pathology, dieting behaviour and internalisation of the thin-ideal. Body dissatisfaction also improved, but the effect was not sustained at follow-up.

No harmful effects related to including eating disorder information in the content of the interventions were observed.

In the MA (Cochrane Review) published in 2002 by Pratt BM and Woolfenden SR, 12 RCTs were included. Based on the programme’s content there were 4 types of intervention: a) knowledge on eating disorders; b) eating attitudes and behaviours and adolescent issues; c) media literacy and mobilisation and social and political activism
(advocacy); and d) interventions related with self-esteem. 2 of the programmes based on media literacy and mobilisation and social and political activism (advocacy) indicate a reduction in the internalisation or acceptance of societal ideals relating to appearance at 3- to 6-month follow-up (SMD:-0.28; 95% CI: -0.51 to -0.05). There is sufficient evidence to support the effect of the 5 programmes that include interventions on eating attitudes and behaviours and other adolescent issues. There is also sufficient evidence to support the effect of two of the programmes designed to improve self-esteem.

There is not enough evidence to indicate that harm resulted from any of the programmes included in this SRSE.

Evidence Summary

<table>
<thead>
<tr>
<th>MA</th>
<th>137</th>
<th>1++</th>
<th>This MA identifies the characteristics of eating disorder prevention programmes that produce the greatest effects. Programmes that are selected, interactive, multisession, offered solely to women, offered to people over 15 years of age, delivered by trained professionals, that incorporate contents related with body acceptance and induction-dissonance techniques, that assess effects using validated measures, that do no include psychoeducational contents and have shorter follow-up periods produce greater effects.</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>137</td>
<td>1++</td>
<td>There are several eating disorder prevention programmes that have also been proven to be effective when delivered by teachers under valid ecological conditions.</td>
</tr>
<tr>
<td>MA</td>
<td>137</td>
<td>1++</td>
<td>Some of the eating disorder prevention programs have had an effect on both these disorders and obesity, which is promising from the point of view of public health.</td>
</tr>
<tr>
<td>MA</td>
<td>136</td>
<td>1++</td>
<td>There is no consistent evidence regarding the impact of Internet-based prevention strategies on eating disorder symptomatology and on the factors that contribute to the development of these disorders.</td>
</tr>
<tr>
<td>MA</td>
<td>136</td>
<td>1++</td>
<td>Prevention programmes had a greater effect on improving knowledge and a lesser effect on reducing incorrect behaviours and beliefs regarding eating.</td>
</tr>
<tr>
<td>MA</td>
<td>136</td>
<td>1++</td>
<td>Studies aimed at high-risk populations produced greater benefits than those performed on the general population (universal strategies).</td>
</tr>
<tr>
<td>MA</td>
<td>136</td>
<td>1++</td>
<td>The results did not confirm the iatrogenic effects of including psychoeducational content on eating disorders in prevention programmes.</td>
</tr>
</tbody>
</table>
There is not sufficient evidence to suggest that any of the interventions included in the MAs have a short-term negative impact (harmful effects).

Recommendations

- **5.1.** Sample, format and design characteristics of eating disorder programmes that have demonstrated the highest efficacy should be considered the model for future programmes.

- **5.2.** In the design of universal eating disorder prevention strategies it must be taken into account that expected behaviour and attitude changes in children and adolescents without these types of problems may differ from those of higher risk populations.

- **5.3.** Messages on measures that indirectly protect individuals from eating disorders should be passed on to the family and adolescent: following a healthy diet and eating at least one meal at home with the family, facilitating communication and improving self-esteem, avoiding family conversations from compulsively turning to eating and image and avoiding jokes and disapproval regarding the body, weight or eating manner of children and adolescents.