



ORIGINAL RESEARCH PAPER

EATING DISORDERS AND DISORDERED EATING BEHAVIORS IN FEMALE TRACK AND FIELD ATHLETES

Linda Gabarajeva, Žermena Vazne

Latvian Academy of Sport Education,

Address: Brivibas 333, Riga, LV 1006

E-mail: linda.gabarajeva@gmail.com, zermena.vazne@lspa.lv

Abstract

Eating disorders (ED) and disordered eating behaviors (DEB) are more prevalent among athletes than in the general population. Female elite athletes participating in sports in which leanness is important are at yet higher risk for developing DEB and ED. The aim of this study is to determine the prevalence and the reasons of ED and DEB in female track and field athletes in Latvia. The participants are 18 – 41 year old female track and field athletes in Latvia having been the candidates of the Latvian National team in track and field at least for one season during the years 2015 – 2017. The methods used in this study are the scientific literature analysis, a survey: the EDE-Q 6.0, a case study: semi-structured interview and mathematical statistics. It has been found that some of the participants of this study do present possible DEB. The development of DEB in female track and field athletes in Latvia has been aided by coach related pressure and critical comments regarding athlete's weight, a strict reduction of food intake and athlete's personality traits – perfectionism, overcoming oneself and striving towards an ideal. The results of this study suggest that it is necessary for track and field coaches and athletes to be educated about ED and DEB.

Key words: *eating disorders disordered eating behaviors, track and field, and female athlete triad.*

Introduction

Eating disorders (ED) and disordered eating behaviors (DEB) in athletes is a widely researched topic in the field of sports science, and it has been found that ED and DEB have a greater prevalence among athletes than in the general population: in Norway the prevalence of ED and DEB among the elite athletes is 13.5% while in the general population it is 4.6%

(Sundgot-Borgen & Torstveit, 2004). Especially prone to the risk of developing ED and DEB are female elite athletes doing sports that put an emphasis on having a lean body (Currie, 2010; Smolak, Muren & Ruble, 2000; Sundgot-Borgen & Torstveit, 2004; Arthur-Cameselle & Quatromoni, 2011).

Female track and field athletes, particularly middle and long distance runners, sprinters and jumpers, are in risk of developing ED and DEB because they are required to have little amount of body fat (Hirsch et al., 2016), and athletes often experience pressure to lose weight (Coker-Cranney & Reel, 2015).

The data concerning the prevalence of ED and DEB in female track and field athletes varies. It has been found that the prevalence of DEB among the USA college level female track and field athletes is 25% (Black et al., 2004). Another research suggests that more than a half of college level female track and field athletes have DEB (Robbeson, Havemann-Nel & Wright, 2013).

ED and DEB can halt the female athlete's sports career due to the psychological and physical consequences of either of the conditions and cause health problems (Currie, 2010). One such condition affecting female athletes is the female athlete triad caused by insufficient energy intake, leading to irregular menstruation or amenorrhea and decrease of bone density or osteoporosis. Although it is possible the insufficient energy intake is not due to athlete's decision to restrict the food intake, for example, when the athlete is tired after practice and does not feel hungry, however, the most common cause of the female athlete triad is DEB (The Female Athlete Triad Coalition, 2010). Female athlete triad's possible effects on health are stress fractures, decreased ability to produce bone tissue, to maintain muscle mass, replace damaged tissue and recover from injury (Nazem & Ackerman, 2012). In track and field, 75% of female endurance runners are in risk of developing female athlete triad (Torstveit & Sundgot-Borgen, 2005).

It is important for coaches and athletes to be informed about ED and DEB symptoms and effects on health, because the development of ED is best arrested during the early stages (Currie, 2010) and the coach is in a position where she or he can both help to eliminate and to aid the development of ED (Coker-Cranney & Reel, 2015).

Across the globe, the problem of the high prevalence of ED and DEB among female athletes has attracted the attention of sports scientists, however, in Latvia the problem is not widely discussed nor in the academic research, neither in the track and field community. This study is a beginning of a conversation among the athletes, researchers and track and field coaches. The goal of this study is to determine the prevalence and the reasons of ED and DEB in female track and field athletes in Latvia.

Material and Methods

The subject of the study is 18 – 41 year old female track and field athletes in Latvia having been the candidates of the Latvian National team in track and field at least for one season during the years 2015 - 2017. There were 23 participants, constituting 30.6% of the athletes that met the criteria for this study. Their average age was 25.3 years.

The methods used in this study are the scientific literature analysis, a survey: the EDE-Q 6.0 (Fairburn & Beglin, 2008), a case study: semi-structured interview and mathematical statistics. The EDE-Q 6.0 yields 2 types of data: the level of the four psychological aspects of ED: *restraint of eating, eating concern, shape concern and weight concern* and the frequency of ED related behaviors.

Results

The results of this study imply that some of the psychological aspects of ED among the female track and field athletes in Latvia are common, however, the overall score is low – 1.13 points in a scale from 0 to 6.0 representing no psychological symptoms of ED and 6 representing severe symptoms of ED. The highest score among the subscales has been reported in *Shape concern* – 1.38 points, with the SD 1.58. The lowest score is in the subscale *Eating concern* – 0.65.

10 participants have a higher score than the average 1.13, one participant, a sprinter, has a higher score than the average for the clinical population – 4.45 points (Aardoom, 2012), this points to a high ED risk and it is recommended to seek help of a medical professional. The second highest score is 2.41 points to a long distance runner. The other participants' scores do not reach 2 points.

The behavior associated with ED is binge eating, self-induced vomiting, laxative misuse, excessive exercise (with the intent to reduce body weight) and dietary restraint (going 8 or more hours without eating in order to lose weight). The EDE-Q provides data of the frequency of each of the behaviors by assessing the number of episodes during the last 28 days. The behavior is estimated as „regular occurrence” if the participant has had 4 or more episodes during the last 28 days and as „any occurrence” if the participant has had at least one episode during the last 28 days (Darcy et al., 2013).

The reported frequency of ED behaviors is considerably high: 43.5% of the participants have had at least one binge eating episode and 34.8% have exercised excessively in order to lose weight during the last 4 weeks (see Fig. 1).

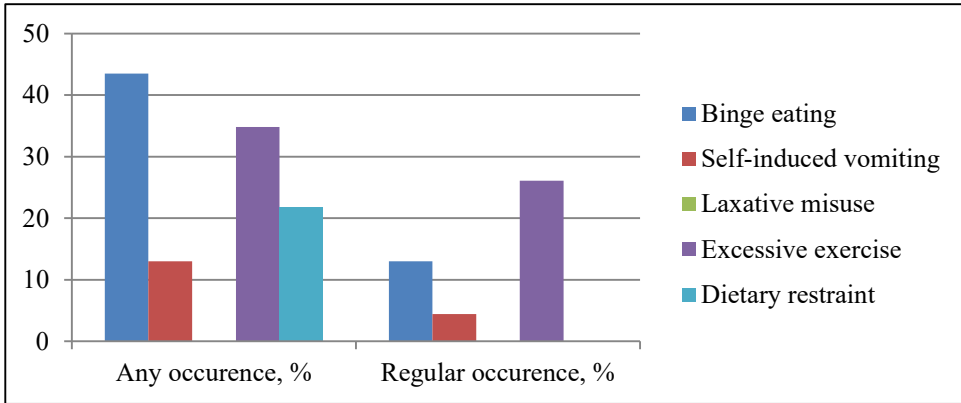


Figure 1. EDE-Q results of the frequency of the behavior associated with ED

13% of the participants show behavior associated with bulimia – self-induced vomiting and one participant has regular vomiting episodes. Laxative misuse is absent. Dietary restraint is absent as a regular occurrence, but 21.7% have experienced 1 to 4 episodes during the last 4 weeks.

The highest frequency of ED behavior is reported by a long distance runner who has reported 5 episodes of binge eating and 15 episodes of self-induced vomiting during the past 28 days. The data suggests a high probability of developing bulimia.

The findings suggest that the participants in this study have reported a low level of psychological aspects of ED; however, the reported frequency of ED related behavior suggests the track and field population is in risk of developing ED and steps towards education and screening should be taken.

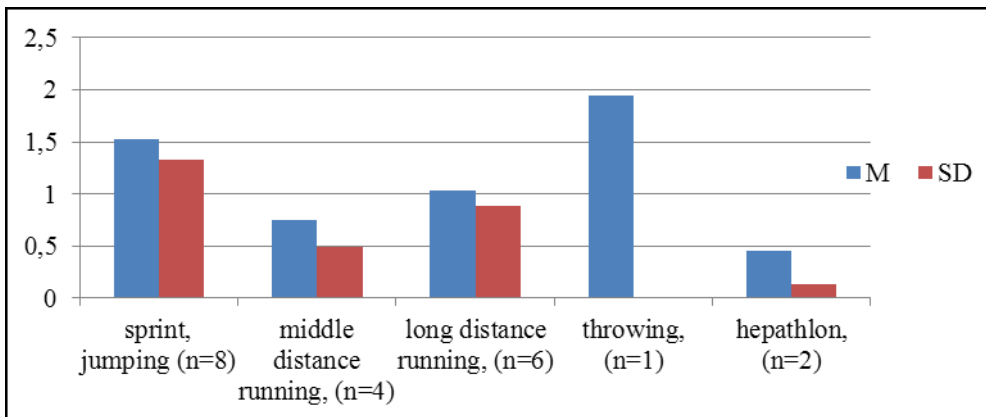


Figure 2. EDE-Q results of the psychological aspects of ED among the participants competing in different events

The results imply that the highest level of ED psychological aspects is among the athletes participating in throwing disciplines (see Fig. 2). However, there was an only one participant representing throwing, therefore this data cannot be applied to the event as a whole. Athletes participating in sprinting and jumping events reported a higher level of ED psychological aspects than the rest (1.52), however, the SD is also the highest – 1.33 indicating the vast differences among the athletes participating in these events.

The highest frequency of ED related behaviors have been reported by long distance runners and sprinters and jumpers (Fig. 3 and 4).

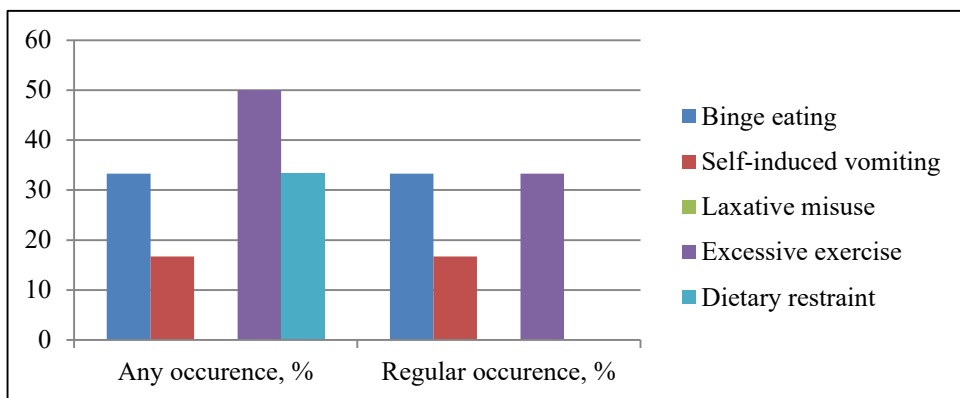


Figure 3. EDE-Q results of the behavior associated with ED among long distance runners

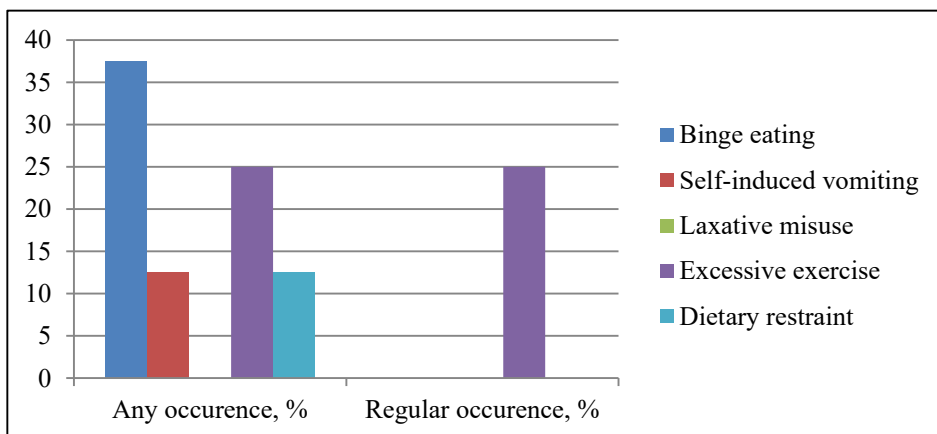


Figure 4. EDE-Q results of the behavior associated with ED sprinters and jumpers

While both groups have reported occurrence of all but one of the ED behaviors, the main difference is in the frequency of the behaviors. Long distance runners have reported regular occurrence of binge eating, self-

induced vomiting and excessive exercise (see Fig. 3) while sprinters and jumpers have only reported frequent excessive exercising (see Fig. 4).

The findings in comparing different track and field events in terms of the psychological and behavioral aspects of ED suggest that long distance runners and sprinters and jumpers are most at risk for developing ED. Also, more data is needed to evaluate female throwers.

In order to gain information about the sports related causes of ED and DEB among the study participants, two participants were interviewed. Participant A1 is a long distance runner who has binge eating episodes. A1 has been practicing for 7 years, she trains 6 days a week, 1 – 2 times a day. Her current weight is 54kg and height – 165cm. Her body mass index (BMI) is 19.8. Participant A2 is a sprinter, she has participated in track and field for 5 years and currently trains occasionally, her personal records were set in years 2013 – 2015. While still in competitive track and field, her body weight was 64kg and her height – 172cm. A2 has had DEB she described as severe.

Asked to describe the problematic eating behaviors, A1 tells of DEB: *„My biggest problem is overeating when I am tired or stressed, when I feel bad. I know I should not eat that much, but it is hard to stop. I don't think about the overeating episodes during my everyday life, because I don't have them often, but when I do, I feel horrible afterwards.”* A2 tells about her binge eating experience: *„Currently for more than 2 years I don't have any problems with eating, but I had binge eating disorder, although not medically diagnosed, for about four years from the age of 16 until I was 20.”* A1 tells the overeating episodes started when she was in her last year in University: *„I experienced a great amount of stress due to the decisions I had to make about where I am going to study next, what kind of profession am I going to choose. Also, I was scared to not graduate as I had spent a month in a training camp. Overeating soothed me in a way. Now, however, I don't need that kind of consolation anymore, but the behavior is still present.”* A2 tells how she has always enjoyed eating and since she was a teenager, she has always eaten a bit too much. However, the beginning of binge eating was after a period of strict control over the amount of food she ate: *„I did not have anorexia, but I only ate when I was very hungry. I lost a lot of weight and it was the only time in my track and field career when I felt physically fit as an athlete. During that period I thought I have found a new way to eat, I was very proud of myself. However, in few months I began having unmanageable overeating episodes. I couldn't stop eating until I was completely full.”*

Asked about her body image, A1 tells: *„Some days I like my body but most of the time I am not satisfied because I have the image of the ideal runner's body in my mind. I want to be thinner.”* A2 responds: *„Now when I*

am not competing anymore, I don't concentrate on my body that much. I am more or less satisfied with how I look."

When asked if they had ever skipped menstruation, both athletes said they have. For A1 the longest period had been 5 months before and during the summer season. She had not taken any medication or seen a doctor, A1 claims menstruation „simply returned in October". She denies eating less than appropriate. A2 has had several periods of amenorrhea during adolescence, the longest period being a year. Her coach suggested she sees a doctor, who gave her iron supplements, but A2 doesn't remember when menstruation returned. A2 has had amenorrhea because of a low energy intake.

Both athletes have followed a dietary plan or guidelines in order to lose weight during their sports career. A1 has not had a strict dietary plan and she does not report behavior typical to DEB. A2 tells: *„I have tried using L-carnitine, stopped eating sweets and unhealthy food. However, I experienced the biggest impact during the period of 4 months when I ate very little amount of food. I had tried fasting for 2.5 days and that experience somehow convinced me I could live without food. It sounds illogical, but at that time I almost believed it was true. I started experiencing anxiety, I couldn't sleep, I woke up at 5 in the morning and couldn't go back to sleep."*

Asked if her coach has ever suggested restricting her food intake in order to lose weight, A1 tells her coach has told her and her team mate they should lose weight and eat less sweets. A2 denies her coach has given her instructions about food intake, however, she is convinced her coach had an opinion that she should lose weight and that it would have a positive effect on her results.

When asked if her coach has ever commented her body or weight, A1 responds: *„I don't remember how exactly he said it, but I know he thought it would be good if I lost 3-4 kg. I myself think so too."* A2 tells: *„I remember my coach saying that I should lose weight if I want to have better results. I have experienced being criticized about my weight by another coach. It was very painful, because I respected him."* Both athletes agree that their training partners, especially boys, have often made comments about girl athletes' bodies, commenting different body parts, calling girls fat. A1 has only heard comments about other female athletes while A2 has experienced negative comments about her body from her teammates and a sports medicine doctor.

When asked about having an ideal in sports, A1 responds: *„I do. I think it is a kind of a compilation of elite runners, but the ideal includes not only running, this ideal „her" is also a good person, she is intelligent and is not separated from the rest of the world."* A2 describes her past ideal:

„When I was competing I used to see the ideal me that I never was but always wanted to be: I had very good results, and an athletic body: a lot thinner and more muscular than I was in reality, with the „six pack”. I strived towards my ideal, my results were more important to me than school, I was frequently in training camps.” Asked if they have high standards for themselves, A1 tells: *„No, because I really believe one can accomplish anything she wishes and works for.”* A2 tells: *„I used to do have unreachable goals. When I look back now, I see how we all used to look at elite athletes and believe it could be us while in reality only few can reach that level. I don't think I could be among them.”* Both athletes admit they see themselves as perfectionists; A1 applies her perfectionism in running while A2 sees herself as a perfectionist in her everyday life apart from sports. They also admit to having made sacrifices in order to excel in sports, however both athletes see it as a part of the training process and do not regret having missed parties, social gatherings and other activities because what sports has given them is much more rewarding. Asked if she has continued training or competing in spite of physical pain or psychological fatigue, A1 responds: *„Yes, often. Long distance running as such implies dealing with pain, either it is lactate in your muscles or pain in your liver, but at one point during the distance it gets hard. I think a person who cannot run through pain cannot be a runner.”* A2 tells of a different kind of fatigue: *„For me it was difficult to do both sports and school, I didn't get enough sleep for long periods, my body wanted to stay at home and sleep, but I went to the stadium, came back home, studied, didn't get enough sleep and so on. My goals were really important to me and therefore I could overcome myself.”*

The interviews show that both athletes have experienced comments about their or other female athlete's body. Also, both athletes have tried to reduce weight by means of food restriction; however, A2 used more severe methods than A1. When addressing their personality traits, both athletes described themselves as perfectionists being able to overcome pain while reaching towards their goals and ideals.

Discussion

The findings of this study suggest there is a need for education and ED screening among the female track and field athletes in Latvia. The information gathered from the interviews show that there is a culture of criticism towards the female athlete's body and it needs to be addressed.

EDE-Q results of the psychological aspects of ED in this study have been compared to the results of the USA college level female athletes (Darcy et al., 2013) and the results of women with diagnosed eating disorders (Aardoom, 2012). It has been found that female track and field

athletes in Latvia have a lower level of the psychological aspects associated with ED (1.13) than female student athletes in the USA (1.39) and the clinical ED population (4.02). However, SD in this study is the highest – 1.39, among the US athletes it is 1.16 and the clinical population – 1.28. This implies that among the participants in this study, there is a greater variation of the levels of ED severity than in the other two studies.

The participants of this study have reported a considerably higher frequency of the behavior associated with ED than the student athletes from the USA and a lower level of frequency than the clinical population. 17.5% of the US college level female athletes have reported any occurrence of binge eating, 64% of the clinical populations have and 43.5% of the participants of this study have. Regular occurrence of binge eating among the US participants is experienced by 13.5%, in clinical population by 51.7% and in Latvia by 13%. In this study, 13% of the participants have experienced self-induced vomiting (4.4% regularly) while in the US 1.3% have had an episode and 0.9% have had frequent episodes during the last 4 weeks and in the clinical population – 54.6% and 46.6% respectively. Also, the participants of this study have reported a considerably more frequent use of exercise as means to lose weight: 34.8% have had any occurrence while 26.1% have had regular occurrence, in the US – 9.3% and 8.8% and in the clinical population – 44.9% and 42.5% respectively.

The data suggests that the psychological aspects associated with ED are less prevalent in the participants of this study than it is in the US college level female athletes and in female patients diagnosed with ED. However, the behavior associated with ED is of a greater frequency in track and field athletes in Latvia than in the US athletes. Nevertheless, more research is needed to be done in the field of ED and DEB among female track and field athletes in Latvia in order to draw meaningful conclusions about the severity of the problem and the causes of ED and DEB in athletes.

Conclusions

Female track and field athletes in Latvia have reported a low prevalence of psychological aspects of eating disorders, but a high frequency of disordered eating behaviors.

The highest score in psychological aspects of eating disorders among the track and field events is in sprint and jumping events: 1.52 points in EDE-Q. However, the highest score in behavior associated with eating disorders is in long distance runners: 33.3% have regular binge eating episodes, 16.7% regularly induce vomiting and 33.3% regularly exercise excessively in order to lose weight.

The interview analysis suggest that the sports specific causes of eating disorders and disordered eating behaviors among female track and

field athletes in Latvia are coach related pressure and critical comments regarding athlete's weight, a strict reduction of food intake and athlete's personality traits – perfectionism, overcoming oneself and striving towards an ideal.

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