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Forfatter: Irina Diaz de Leon	
Veileder: Førsteamanuensis Sebastian S. Sandgren	
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The pursuit of knowledge is not just about reaching a destination, but about the journey along the way. Writing this bachelor paper has been a journey full of ups and downs, but I am grateful how the process provided me with a valuable opportunity to expand my knowledge on this important topic and enhance my understanding. As I reflect on this journey, I am filled with gratitude for the support and patience of my family. Big thank you to my life partner Jose Diaz de Leon and our children who have been very patient and my biggest cheerleaders. I would also like to express my gratitude and appreciation to my supervisor Dr Sebastian S. Sandgren. A sincere thanks for patiently answering numerous questions during the planning and writing process, for his encouragement, guidance, support and for his tireless dedication to his students.

Sammendrag

Bakgrunn: Spiseforstyrrelser kan ha alvorlige konsekvenser og påvirke helse og prestasjon. Forekomsten av spiseforstyrrelser øker (Taquet et al., 2021). Idrettsutøvere er mer utsatt for spiseforstyrrelser enn ikke-utøvere. Trenere spiller en viktig rolle i utøveres liv og er sammen med andre støttepersoner ansvarlige for utøveres fysiske og psykiske trivsel og velvære. Likevel rapporterer trenere om manglende kunnskap til å identifisere symptomer på spiseforstyrrelser, eller de gir ikke tilstrekkelig betydning og oppmerksomhet til det økende problemet. **Formål**: Studien hadde flere formål: Det første formålet var å oversette Athlete Eating Psychopathology Observation Questionaire (AEPOQ) til norsk og teste det for å utforske hvilke symptomer på spiseforstyrrelser og forstyrret spiseadferd trenere i Norge observerer blant sine utøvere, og i hvilken grad disse blir observert. Et annet mål med studien var å undersøke om det er en sammenheng mellom observerte symptomer og trenererfaring og til slutt om det er en forskjell i symptomobservasjon hos trenere innen lean og non-lean idretter. **Metode**: Totalt ble 311 trenere fra Norge inkludert i studien, hvorav 163 var menn og 148 var kvinner. En kvantitativ metode med et tverrsnittsdesign ble brukt, ved hjelp av Athlete Eating Psychopathology Observation Questionnaire (AEPOQ). **Resultater**: Exploratory factor analysis avdekket en fire faktorløsning (Spisefrykt, Negativ påvirkning, Kostholdsregime, Tvangsmessig trening) med 16 elementer. Trenere observerer symptomer på spiseforstyrrelser i varierende grad. I gjennomsnitt observerte 39% av trenerne symptomer knyttet til negativ påvirkning som er relatert til tretthet, dårlig konsentrasjon, mangel på velvære og motivasjon. Det er påvist signifikant forskjell i observerte symptomer på spiseforstyrrelser og forstyrret spiseadferd hos trenere med mer erfaring. Trenere innen lean idretter observerte flere symptomer på spiseforstyrrelser enn trenere innen non-lean idretter. **Konklusjon**: Trenere spiller en viktig rolle til å oppdage symptomer på spiseforstyrrelser og forstyrret spiseadferd hos idrettsutøvere. Denne forskningen viser at noen trenere oppdager symptomer på spiseforstyrrelser i varierende grad. Flere trenere har ikke observert symptomer på spiseforstyrrelser enn de som har gjort det. Mer målrettet forskning er nødvendig for å finne ut årsaken til den lave observasjonsraten.

Emneord

spiseforstyrrelser, forstyrret spiseadferd, idrett, trenere, utøvere

Abstract

Background: Eating disorders (ED) can have serious consequences and affect health and performance. The prevalence of ED is rising (Taquet et al., 2021). Athletes are more likely to suffer from ED than non-athletes. Coaches play an important role in an athlete's life and are, together with other support people, responsible for athletes' physical and psychological safety and well-being. Nevertheless, coaches report lacking knowledge in identifying symptoms of ED or do not give significant importance and attention to this rising problem.
Purpose: The study had several purposes: The first purpose was to translate the Athlete Eating Psychopathology Observation Questionnaire (AEPOQ) to Norwegian and to test it in a Norwegian setting, in order to explore which symptoms of ED and disordered eating (DE) coaches in Norway observe among their athletes and to what extent these observations occur. Secondly, whether there is a correlation between observed symptoms and coaching experience. Finally, if there is a difference in symptom observation among coaches of lean sports and non-lean sports. **Method**: A total of 311 coaches from Norway were included in the study, of which 163 were male and 148 were female. A quantitative method with a cross-sectional design was employed by using the Norwegian- translated AEPOQ. **Results**: Exploratory factor analysis revealed a 16- item, four factor solution (Fear of Eating, Negative Affect, Dieting Practices and Compulsive Exercise). Coaches observed symptoms of ED to varying degrees. On average 39% of coaches observed symptoms, referring to Negative Affect and relating to fatigue, poor concentration, lack of well-being and motivation. A greater number of coaches did not observe symptoms of DE and ED than those who did. A significant difference has been detected in coaches with more coaching experience in observation of symptoms of ED and DE. Coaches of lean sports observed more symptoms of ED than coaches of non-lean sports.
Conclusion: Coaches are important in detecting symptoms of ED and DE in athletes. The performed research shows that coaches detect symptoms of ED to varying degrees. Fewer coaches have observed symptoms of ED than those who have not. More targeted research is needed to determine the reason for lower rate of observation.

Keywords:
eating disorders, disordered eating, sports, coaches, athletes

List of abbreviations

AEPOQ	Athlete Eating Psychopathology Observation Questionnaire
AN	Anorexia Nervosa
BED	Binge-Eating-Disorder
BN	Bulimia Nervosa
DE	Disordered Eating
ED	Eating Disorders
EDNOS	Eating Disorder Not Otherwise Specified
EFA	Exploratory Factor Analysis
OSFED	Other Specified Feeding and Eating Disorders
RED-S	Relative Energy Deficiency in Sports

1 Introduction

An eating disorder is a mental health condition that is characterized by persistent and abnormal eating behavior and attitudes towards food, which can lead to significant distress and impairment in a person's daily life (American Psychiatric Association, 2013). The physical and mental health consequences of this disturbed behavior towards food can be very serious for health, and pose an increased risk of death (Keski-Rahkonen & Mustelin, 2016; van Eeden et al., 2021). ED are a public health concern as they impact physical and mental health, affecting millions of children, adults, and adolescents, worldwide (World Health Organization, 2022). Statistics show that the numbers of those affected by ED are rising, for instance one study found that during the COVID-19 pandemic, the diagnostic incidence in the USA rose by 15.3% in 2020, compared with previous years (Taquet et al., 2021). Since early detection of ED is critical for prognosis, mobility, and mortality, it is important to detect symptoms as early as possible (Ambwani et al., 2020; Fichter et al., 2006).

Athletes have been identified as a vulnerable group for developing ED. One study found that nearly 20% of elite female athletes and 8% of male athletes meet the diagnostic criteria for ED and that elite athletes have double the risk of developing ED compared to non-athletes (Sundgot-Borgen & Torstveit, 2004). A different study found that prevalence of DE behavior was higher among athletes than non-athletes, affecting as many as 19% of male and 45% of female athletes (Bratland-Sanda & Sundgot-Borgen, 2013).

Coaches play a multifaceted role in the lives of athletes, with diverse responsibilities ranging from training and guiding, to observing their performance and ensuring their well-being (Bergeron et al., 2015). Due to the close relationship between coaches and athletes, the former are well-positioned to detect changes in an athlete's well-being and symptoms of ED (Nattiv et al., 2007). In fact, research has shown that a good relationship and strong bond between coaches and athletes can have a range of positive outcomes, including increased motivation, satisfaction, and performance, as well as improved mental health and well-being (Jowett, 2017). However, despite the heightened prevalence for athletes to develop ED, the understanding of ED-related issues for athletes and coaches remains limited (Biggin et al., 2017). Studies have reported that

some coaches have poor knowledge in regards to ED and that there is a need for improved knowledge to be able to identify the risk, triggers, and symptoms of ED (Bratland-Sanda & Sundgot-Borgen, 2013; Turk et al., 1999) . Sandgren et al. (2022) developed and tested a self-report questionnaire for sports practitioners, the Athlete Eating Psychopathology Observation Questionnaire (AEPOQ). This questionnaire aims to explore the features of eating psychopathology (a term encompassing both DE and ED symptoms) in athletes that are detected by sport professionals, such as coaches (Sandgren et al., 2022). However, research has yet to explore this in a Norwegian context, which warrants further investigation.

With the presented evidence in mind, the purpose of this study is to translate the AEPOQ into Norwegian in order to use it in a Norwegian setting to explore which symptoms of ED and DE coaches in Norway observe among their athletes, and to what extent these observations occur. The following research questions will be examined:

RQ1: Does the Norwegian-translated AEPOQ reveal similar psychometric properties as the original AEPOQ?

RQ2: Which ED symptoms are most frequently observed by coaches in Norway?

RQ3: Is there a correlation between the coaches' experience and ED symptom observation?

RQ4: Is there a difference in ED symptom observation between coaches coaching lean versus non-lean sports?

2 Theory

This chapter covers the relevant theory related to both ED and DE in sports and the role of a coach.

2.1 Eating Disorders and Disordered Eating

Eating disorders (ED) is a collective term that refers to several different conditions that meet specific diagnostic criteria outlined in the Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Some examples of ED include Anorexia Nervosa (AN), Bulimia Nervosa (BN), Binge-eating disorder (BED), and Other Specified Feeding and Eating disorders (OSFED), (American Psychiatric Association, 2013).

Disordered Eating (DE) refers to a broader range of problematic eating behaviors and attitudes that do not necessarily meet the specific diagnostic criteria for an eating disorder. Examples of DE may include restrictive dieting, compulsive exercise, or occasional binge-eating (Wells et al., 2020). The DE range can be described as continuum that on the one side starts with appropriate eating and exercise behaviors which can also include healthy dieting and the occasional use of more extreme weight loss methods and on the other side the continuum ends with clinical ED, abnormal eating behaviors, distorted body image, weight fluctuations, medical complications and variable athletic performance (Mountjoy et al., 2014).

Some studies suggest that athletes are more likely to display DE symptoms than outright clinical ED (Bonci et al., 2008; Sundgot-Borgen & Torstveit, 2004) . It is crucial for coaches working with athletes to understand the unique symptoms of ED and DE to ensure early recognition, intervention, and appropriate referral for specialized treatment (Bonci et al., 2008).

2.1.1 Anorexia Nervosa (AN)

Anorexia Nervosa (AN) is characterized by a persistent restriction of food intake, leading to significant weight loss, an intense fear of gaining weight and a distorted body image (American Psychiatric Association, 2013). See diagnostic criteria in Table 1. Those suffering from AN have a disordered body image and see themselves as overweight even if they are dangerously underweight (Williamson et al., 1993). There are 2 subtypes of AN: first, the restrictive type, where people limit their food intake, and second, the binge purge subtype, where the affected people restrict the amount and type of food and additionally having binge-purge episodes. During those episodes, they eat a large amount of food in a short time followed by either vomiting or using laxatives to get rid of the consumed food (NIMH, 2023). AN has the highest mortality rate of any mental illness (Arcelus et al., 2011). It's associated with severe weight loss, malnutrition, and a range of physical and psychological complications that can significantly impact a person's health and well-being (American Psychiatric Association, 2013, pp. 338-339).

Table 1

Diagnostic criteria for Anorexia Nervosa directly cited from DSM-5 (American Psychiatric Association, 2013)

Diagnostic criteria:	
A.	Restriction of energy intake relative to requirements, leading to a significantly low body weight in the context of age, sex, developmental trajectory, and physical health. Significantly low weight is defined as weight that is less that minimally normal or, for children and adolescents, less than that minimally expected.
B.	Intense fear of gaining weight or becoming fat, or persistent behavior that interferes with weight gain, even though at a significantly low weight.
C.	Disturbance in the way in which one's body weight or shape is experienced, undue influence of bodyweight or shape on self-evaluation, or persistent lack of recognition of the seriousness of the current low body weight

Note: «Diagnostic and Statistical Manual of Mental Disorders, Fifth edition. Arlington, V.A, American Psychiatric Association. 2013 Reprinted with the permission from the Diagnostic and Statistical Manual of Mental Disorders, Fifth Edition (copyright 2013)

2.1.2 Bulimia Nervosa (BN)

Bulimia Nervosa (BN) is characterized by recurrent episodes of binge eating, followed by compensatory behaviors to prevent weight gain. The diagnostic criteria are presented in Table 2. The compensatory behaviors can be for example self-induced vomiting, misuse of laxatives, diuretics, or other medications, fasting, or excessive exercise to prevent weight gain. Just like with AN, people with BN often have a distorted body image and an intense fear of gaining weight (Layam et al., 2019; Williamson et al., 1993). Binge episodes in BN typically involve consuming a large amount of food in a short period, accompanied by a sense of loss of control over eating. Individuals with BN may feel embarrassed or guilty about their binge eating and attempt to conceal it from others (American Psychiatric Association, 2013, pp. 351-352).

Table 2

Diagnostic criteria for Bulimia Nervosa directly cited from DSM-5 (American Psychiatric Association, 2013)

A.	Recurrent episodes of binge eating. An episode of binge eating is characterized by both the following:
1	Eating, in a discrete period of time (e.g.; within any 2-hour period), an amount of food that is definitely larger than what most individuals would eat in a similar period of time under similar circumstances.
2.	A sense of lack of control over eating during the episodes (e.g.; a feeling that one cannot stop eating or control what or how much one is eating).
B.	Recurrent inappropriate compensatory behaviors in order to prevent weight gain, such as self-induces vomiting; misuse of laxatives, diuretics, or other medications; fasting; or excessive exercise.
C.	The binge eating and inappropriate compensatory behaviors both occur, on average, at least once a week for 3 months.
D.	Self- evaluation is unduly influenced by body shape and weight
E.	The disturbance does not occur exclusively during episodes of anorexia nervosa.

Note: «Diagnostic and Statistical Manual of Mental Disorders, Fifth edition. Arlington, V.A, American Psychiatric Association.

2.1.3 Binge Eating Disorder (BED)

Binge Eating Disorder (BED) is a condition in which individuals consume excessive amounts of food but do not engage in compensatory behaviors such as vomiting or excessive exercise. See Table 3 for diagnostic criteria. BED can lead to significant physical and emotional distress, accompanied by feelings of guilt, shame, and embarrassment. Hudson et al., conducted a large-scale epidemiological study of eating disorders in the United States in 2007 and found that BED is the most common eating disorder, estimating its occurrence in 1,6 % of the general population. BED is more common among women than men, and tended to develop in early adulthood (late teens to early 20s). Individuals with BED are more likely to have a history of depression, anxiety, and substance abuse compared to those without the disorder (Hudson et al., 2007) . A more recent study from 2018 used data from a nationally representative sample of adults in the United States to examine changes in the prevalence of eating disorders between 2001-2002 and 2012-2013. They found that the prevalence of BN had decreased over that time period, while the prevalence of BED had increased significantly by 150% (Udo & Grilo, 2018).

Table 3

Diagnostic criteria for Binge Eating Disorder directly cited from DSM-5 (American Psychiatric Association, 2013).

A.	Recurrent episodes of binge eating. An episode of binge eating is characterized by both the following:
1.	Eating, in a discrete period of time (e.g., within any 2-hour period) an amount of food that is definitely larger than what most people would eat in a similar period of time under similar circumstances.
2.	A sense of lack of control over eating during the episodes (e.g., a feeling that one cannot stop eating or control what or how much one is eating).
B.	The binge-eating episodes are associated with three (or more) of the following:
1.	Eating much more rapidly than normal.
2.	Eating until feeling uncomfortably full.
3.	Eating large amounts of food when not feeling physically hungry.
4.	Eating alone because of feeling embarrassed by how much one is eating.
5.	Feeling disgusted with oneself, depressed or very guilty afterward.
C.	Marked distress regarding binge eating is present.
D.	The binge eating occurs, on average, at least once a week for 3 months.
E.	The binge eating is not associated with the recurrent use of inappropriate compensatory behavior as in bulimia nervosa and does not occur exclusively during the course of bulimia nervosa and anorexia nervosa.

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2.1.4 Other Specified Feeding or Eating Disorder (OSFED)

Other Specified Feeding or Eating Disorder (OSFED) includes ED symptoms that do not meet the diagnostic criteria for AN, BN, or BED, but still cause significant distress or impairment for the individuals with OSFED (American Psychiatric Association, 2013, p. 353). The diagnostic criteria are presented in table 4. OSFED is sometimes also referred to "Eating Disorder Not Otherwise Specified" (EDNOS).

Table 4

Diagnostic criteria for Other specified feeding or eating disorder directly cited from DSM-5 (American Psychiatric Association, 2013)

1. Atypical anorexia nervosa:
   All of the criteria for anorexia nervosa are met, except that despite significant weight loss, the individual's weight is within or above the normal range.
2. Bulimia nervosa (of low frequency and/or limited duration):
   All of the criteria for bulimia nervosa are met, except that the binge eating and inappropriate compensatory behaviors occur, on average, less than once a week and/or for less than 3 months.
3. Binge-eating disorder (of low frequency and/or limited duration):
   All of the criteria for binge-eating disorder are met, except that the binge eating occurs, on average, less than once a week and/or for less than 3 months.
4. Purging disorder:
   Recurrent purging behavior to influence weight or shape (e.g., self-induced vomiting: misuse of laxatives, diuretics, or other medications) in the absence of binge eating.
5. Night eating syndrome:
   Recurrent episodes of night eating, as manifested by eating after awakening from sleep or by excessive food consumption after the evening meal. There is awareness and recall of the eating. The night eating is not better explained by external influences such as changes in the individual's sleep-wake cycle or by local social norms. The night eating causes significant distress and/or impairment in functioning. The disordered pattern of eating is not better explained by binge-eating disorder or another mental disorder, including substance use, and is not attributable to another medical disorder or to an effect of medication.

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2.2 Prevalence of ED and DE in sports

The prevalence of ED and DE among athletes varies depending on a range of factors, including the type of sport, age of the athlete, level of competition, and gender. When discussing the prevalence of ED in studies, it is important to emphasize the methodological aspects, as the instruments and definitions in different studies vary greatly (Bratland-Sanda & Sundgot-Borgen, 2013).

In general, ED have been shown to be more prevalent among both male and female adult elite athletes compared to non-athlete controls (Sundgot-Borgen & Torstveit, 2004). The prevalence is lower among male athletes compared to the female athletes (Martinsen et al., 2010), however one often-cited study found that male elite athletes and female controls had a comparable incidence of meeting the ED criteria (Sundgot-Borgen & Torstveit, 2004). One study from 2013 found that prevalence of DE and ED vary from 0-19% in male athletes and 6- 45% in female athletes and that athletes, particularly those in sports that emphasize appearance or weight categories are at increased risk of developing ED. The prevalence of ED among athletes was found to be higher than in the general population (Bratland-Sanda & Sundgot-Borgen, 2013). The authors also identified several risk factors that contribute to the development of ED in athletes including pressures to maintain a certain body weight or body composition, performance demands, and psychological stressors (Bratland-Sanda & Sundgot-Borgen, 2013; Mancine et al., 2020).

Mancine et al., 2020 performed a systematic review study and confirmed the findings stated above. Athletes involved in sports that emphasize leanness, such as aesthetic and weight-class sports, have a higher prevalence of DE compared to athletes in non-weight-focused sports. In addition, it was found that female athletes have a higher prevalence of DE compared to male athletes across all sports types. The authors categorized sports types as either "lean" or "non-lean" based on whether the sport emphasizes leanness or weight categories. Lean sports were defined as those that require athletes to maintain a low body weight or body fat percentage, such as gymnastics, diving, and figure skating. Non-lean sports were defined as those that do not emphasize weight categories or leanness, such as basketball, volleyball, and soccer. The authors

used this categorization to compare the prevalence of DE among athletes in lean versus non-lean sports (Mancine et al., 2020) .

2.3 Consequences of ED

ED can lead to serious physiological and psychological health consequences and naturally will affect sports performance (Mountjoy et al., 2014). ED can cause electrolyte disturbance, dehydration, low energy availably, increased risk of illness and injury, reduced training capacity as well as reduced endurance and strength. A commonly recognized consequence in female athletes is the Female Athlete Triad. This triad refers to a complex interplay of three conditions: lack of energy, amenorrhea, and low bone mineral density. On the one hand maintaining energy balance can help prevent disruptions to the menstrual cycle and ensure good bone density. On the other hand, insufficient energy intake can negatively impact both bone health and the menstrual cycle and potentially lead to osteoporosis and increased risk of broken bones. Recognizing and addressing these conditions is crucial for reducing the risk of long-term health consequences. (Nattiv et al., 2007; Torsveit & Sungot-Borgen, 2011).

Another term that is used in the literature when discussing health consequences of ED in sports is The Relative Energy Deficiency in Sport or (RED-S). RED-S is a syndrome that builds the physiological and psychological long and short-term impacts on health and well-being in both males and female athletes (Mountjoy et al., 2014). A research study by Vardardottir et al. in 2020 found that RED-S is a more comprehensive and up-to-date term that includes the components of the Female Athlete Triad and expands on them. In addition the study suggests that RED-S is also a more inclusive and accurate term than the Female Athlete Triad for describing the range of health consequences that can occur when athletes do not consume enough energy to meet their physical demands (Vardardottir et al., 2020).

Some studies found that ED are associated with an increased risk of mortality, particularly from medical complications like electrolyte imbalances, cardiac abnormalities, gastrointestinal

problems, and other physical health problems. In addition to medical complications, individuals with ED also have a higher risk of suicide (Arcelus et al., 2011; Smink et al., 2012).
Arcelus et al. (2011) conducted a meta-analysis of 36 studies to examine mortality rates and causes of death in individuals with ED, including AN, BN, and EDNOS and found that the weighted mortality rate for AN was 5.1 deaths per 1000 person per year, while the standardized mortality ratio for AN was 5.86. In comparison, the weighted mortality rate for BN and EDNOS were 1.7 and 3.3, respectively. The standardized mortality ratios for BN and EDNOS were 1.93 and 1.92, respectively. This study also revealed that one in five individuals with AN who died had committed suicide. Mountjoy et al. (2014) emphasizes the importance of early identification and treatment of ED to prevent long-term health consequences.

2.4 Role of coaches

To effectively prevent DE behavior among athletes, everyone involved in their sports should work together: athletes, coaches, athletic administrators, and parents (Joy et al., 2016; Sundgot-Borgen & Torstveit, 2004) . Coaches are especially important as they can often be the first point of contact for athletes who may be experiencing DE behaviors (Ljungqvist et al., 2009). They are able to identify ED symptoms in their athletes more accurately than other support staff (Sundgot-Borgen & Torstveit, 2004). Coaches, while only one part of the puzzle, have a unique opportunity to influence the lives of their athletes and play an important role in developing and promoting positive psychological well-being, which goes beyond physical training (Lara-Bercial & McKenna, 2018).

One effective approach for coaches is to cultivate strong relationships with their athletes, which poses a core basis for success in sports (Jowett, 2017). Research indicates that establishing a positive coach-athlete relationship can lead to a variety of benefits for athletes, such as increased motivation and higher levels of perceived support and satisfaction. Moreover, such a relationship can have a positive impact on an athlete's mental well-being. (Davis & Jowett, 2014; Simons & Bird, 2022).

Coaches can have significant influence on athletes' values, attitudes, behavior, and serving them as a moral exemplar (Hamilton & LaVoi, 2020). By creating an open and supportive environment, by modeling healthy behaviors and attitudes, for example towards emphasis on the importance of proper nutrition and balanced diet, as well as demonstrating a commitment to personal and professional growth, coaches can inspire their athletes to strive for excellence in sport and beyond. A coach's role should also include fostering team cultures that support athlete mental health which can also help to reduce the stigma associated with mental health (Bissett et al., 2020).

Besides fostering healthy relationships, being a good example and creating a safe environment, coaches have also an important role as educators and facilitators of life skills. They can educate their athletes about the risks associated with ED and DE and other unhealthy behaviors and provide resources and support for athletes who may be struggling with these issues (Martin et al., 2022). To be able to educate and effectively identify the symptoms of ED, coaches should be knowledgeable about associated symptoms. One example can be that coaches should be aware of changes in an athlete's eating habits, as well as any changes in weight or body composition. They should also be familiar with not only the physical changes but also any emotional symptoms that can accompany ED, such as fatigue, lack of concentration, mood changes, and social withdrawal (Bratland-Sanda & Sundgot-Borgen, 2013).

Research shows that despite the importance of coaches' ability to observe symptoms of ED and DE, coaches encounter difficulties in observing those signs. Some coaches report to lacking in knowledge on how to identify and support athletes with eating issues and are uncertain as to when and where the appropriate time would be to address the issues (Biggin et al., 2017; Plateau et al., 2015; Plateau et al., 2014). One study performed with coaches and athletes found that addressing symptoms of ED in athletes is challenging due to tensions around communication, responsibility, and obtaining timely support. This study concluded that both athletes and sport professionals would benefit from education and training on ED, that there is a need for accessible, confidential, and tailored early intervention resources that athletes can access independently in the early stages of an eating problem (Sandgren et al., 2023).

Another difficulty that coaches may encounter is recognizing signs of ED among their athletes, as the latter may be hesitant to seek assistance or could experience a sense of shame or disgrace associated with mental health concerns (Hilliard et al., 2022). Athletes may also fear the possible consequences of sharing mental health issues with coaches in regards of harming the relationship or due to the risk of being dropped from the program or team. Some athletes are not willing to share concerns of a potential problem unless it becomes impossible to hide due to severity (Weinberg & Gould, 2019, p. 488).

While some coaches acknowledge the presence of ED among their athletes, others believe that ED are not a significant issue or common occurrence in their sport and therefore not problematic (Nowicka et al., 2013). One qualitative study looked into coaches' knowledge of the Female Athlete Triad and RED-S and found among other results that nearly all participants 98,61% (n=281) knew about the female triad but only 32.98% (n=94) had heard of RED-S, implying that there is potential requirement for continued education among athletic trainers (Kroshus et al., 2018).

The research data on symptom observation by coaches is limited. Sandgren et al. (2022) identified that one potential issue with limited evidence on sport professionals' observation of and concern for athlete eating psychopathology symptoms, is a lack of an effective measuring tool. This led to the development and initial testing of the AEPOQ for sports professionals. The study found that the most frequently observed symptoms by sports professionals is connected to athletes' dieting practices, while symptoms connected to fear of eating in social contexts were observed least frequently.

Overall, coaches have an important role in identifying DE behaviors and attitudes among their athletes (Selby & Reel, 2011). However, coaches face challenges in identifying symptoms of ED for various reasons.

3 Method

The method section serves the purpose of describing the methodology used in a study, including the collection and analysis of data. In this particular study, a quantitative method with a cross-sectional design was employed. The methodology will be presented in a specific order, beginning with the methodical approach and ethical considerations, followed by information regarding the participants, procedure, data collection method, and analysis.

3.1 Methodical approach

The study employed a quantitative approach, utilizing a cross-sectional design, and involved the use of the Athlete Eating Pathology Observation Questionnaire (AEPOQ) translated into Norwegian.

3.2 Inclusion and exclusion criteria

For this study, coaches, both head coaches and assistant coaches from all sports were invited to participate. The study required participants to be at least 18 years old and either be employed or volunteering as a coach in Norway. No further inclusion or exclusion criteria were applied.

3.3 Participants

The participants were recruited via social media and via direct recruiting through the administrative leaders of different sports clubs. A Facebook post including the link to the survey was created and shared on private Facebook pages and various groups for coaches (see Appendix 6). Additionally, 1200 administrative club leaders from all major cities in Norway received an email with the invitation for coaches to participate in the project and the link to the survey (see Appendix 7). A total of 67 administrative leaders confirmed passing on the link to the coaches in their clubs.

Out of the 375 participants who gave consent to be included in the study, 58 were excluded due to insufficient responses to a certain number of questions. In addition, six more individuals were excluded for the reason that they were younger than 18 years. In total, 311 participants were included in the study and their data was analyzed.

The distribution of gender among the participants was as follows: out of 311 participants, (52,4%; n=163) were male and (47,6%; n=148) were female. The coaches were between 18 and 67 years old. The mean age of the participants was 36,85 years (SD ±12,2). Furthermore, (83%; n=258) of participants were main coaches and (17%; n=53) were assistant coaches. The participants worked with athletes across a wide range of sports. Majority of participants coached athletes in gymnastics (15,8%; n=49), football (17%; n= 53) and handball (18%; n=56). The participants had varied work experience, which ranged between less than a year to 40 years with the average work experience of 9,75 years (SD± 7,9). The survey results showed that coaches worked with both male and female athletes (50.5%; n =157), primarily male athletes (15.4%; n=48), or primarily female athletes (34.1%; n=106).

Of all participants, (84,2%; n= 262) reported that their athletes compete on a regular basis of which (67,2 %; n=209) compete at a club level, (43%; n=134) at a national level and (10%; n=31) competed at an international level. The coaches reported to work with athletes of different age groups, most commonly 13 to 19-year-old (52,1%; n=162) and 6–12-year-old (35%; n=109). Of all participants, 87,1% worked with athletes who were between 6 years and 19 years of age. Coaches spent varying amounts of time with their athletes. The majority (38.3%, n=119) spent 4-10 hours per week, while (29.3%; n=91) spent 2-4 hours per week. A smaller percentage (18.6%, n=58) reported spending 10 or more hours per week with their athletes.

3.4 Instrument

The instrument used for data collection consisted of a Survey based on part A of a translated version of Athlete Eating Psychopathology Observation Questionnaire (AEPOQ). The translation process is described below. The AEPOQ was developed and tested as a tool to explore which

features of eating psychopathology are detected by Sports Professionals and how observation of these symptoms may vary (Sandgren et al., 2022). The AEPOQ contains 31 questions exploring a wide range of possible symptoms of eating psychopathology, which is a combined term for symptoms of ED and DE. Section A consists of 31 questions and explores symptom observation and section B explores concern over symptoms, from both the health and the performance perspective. The participants in the original study were 232 Sports Professionals. Through statistical analysis, using the Exploratory Factor Analysis (EFA), the study found a 5-factor solution which included 20 items. The factors were labeled Negative Affect, Dieting Practices, Fear of Eating in Social Contexts, Bingeing and Purging, and Compulsive Exercise. In this project only Section A was used.

The answer options for all questions were set to three possible categories including Yes (1 point), No (0 points) and Not Sure (0 points). An example from the AEPOQ: “Have you observed any of the athletes that you've worked with to do the following... Cuts out treat foods? Skips meals? Is as active as possible? (e.g., stands, walks or runs about whenever possible)”. In addition to the 31 questions from the AEPOQ, 12 demographic characteristics questions to obtain background information of the participants were designed. Questions included were for example gender, age, work experience, sports type, the age of athletes the coaches are working with, and other (see Appendix 2).

3.4.1 Translation process

Before the AEPOQ could be used in a Norwegian context and setting, it needed to be translated to Norwegian. Prior to the beginning of translation process, it was necessary to assess whether the AEPOQ was suitable for translation to a different language. The lead developer of AEPOQ, Associate Professor Sebastian S. Sandgren decided that the original AEPOQ was suitable for translation and the translation process began. The process conducted to translate the AEPOQ from English to Norwegian was performed using a forward-backward translation technique. First, the English version of AEPOQ was separately translated into Norwegian by a bachelor student (the author of this thesis) and the supervisor of the project in a process called forward translation. The two translated versions were then examined, compared, and compiled into one

translation. There were no major differences between the two versions in the forward translation by the people involved.

Next, the Norwegian translated version of AEPOQ was sent to an external expert in English and Norwegian language for a backward translation to English. This person was blinded to the original English version, meaning that the language expert did not have access to the original AEPOQ. Thereafter, Associate Professor Sandgren (supervisor of the project) assessed and compared the original English version and the backward English translation and found that there were no major differences in the meaning and structure of the two translations, although there were some differences in the words used. Associate Professor Sandgren and the external language expert discussed the differences in words used and agreed on wording (see Appendix 1).

Finally, the external language expert was given the Norwegian translation and was invited to suggest any changes to the wording. Only one change to one item was suggested, and the change was made. The AEPOQ Norwegian translated version was then finalized and was ready for testing in a Norwegian context. The forward backward translation process ensured that the AEPOQ was accurately translated and appropriate for use in a Norwegian setting.

3.5 Procedure

Once the translation procedure of the AEPOQ was completed and the background questions were determined, a survey was developed using the Survey Xact program by Ramboll. The survey underwent pilot testing by seven individuals, four of whom were coaches and three were sports science students. The pilot testing showed that minor modifications were needed in the demographic question section of the survey to enhance clarity. These modifications included rephrasing certain questions, ensuring consistent descriptions of how to answer each question, correcting some minor spelling and grammar errors, and refining the survey's formatting. To allow for greater flexibility in the AEPOQ part of the questionnaire, the answer setting in Survey Xact was set such so that participants were not required to answer every question but had the

choice of leaving blank answers if desired. After the final modifications, the survey was posted on Facebook with the request of sharing by friends and acquaintances. The link to the survey was also posted in several groups for coaches of different sports. Additionally, several hundred emails with the link to the survey were sent to the administrators of sports clubs around Norway with the request of sharing the link with their coaches. The data collection lasted 3 weeks and was completed by 17 Feb. 2023.

3.6 Ethical considerations

This research project was conducted with participants over 18 years old. Due to the sensitive nature of the questionnaire, a risk assessment was conducted to ensure participant protection prior to data collection (see Appendix 3). In addition, references to low-threshold support resources for ED were included at the end of the survey, in case participants experienced the need for support or more information (see Appendix 2).
Since participation in the research project was completely anonymous an no personal data was collected, the Norwegian Center for Data Research (NSD) judged that the project did not need to be reported (see Appendix 4).

3.7 Validity and reliability

To measure the reliability of the questions in each subscale, a Cronbach's α reliability analysis was conducted on the five factors in the original study. The result for AEPOQ revealed a Cronbach's α for subscale 1(α = 0.73), subscale 2 (α =0.70), subscale 3 reveled (α = 0.69), subscale 4 (α = 0.65) and subscale 5 (α = 0 .52). The Cronbach's α for global score was very good for the AEPOQ overall (α = .86). This study will assess the factor structure and internal reliability of AEPOQ used in the Norwegian setting.

3.8 Data analysis

All statistical analyses were performed using the IBM SPSS statistics program version 26.0. The collected data was downloaded from Survey Exact and saved in SPSS where it was cleaned and organized. Respondents with 50% or more missing answers were removed from the data set. Some entry mistakes were corrected. One example, the coaches were asked to enter their age in years, but some participants wrote the birth year in the answer, which needed to be manually changed. The dataset was tested for missing data. Missing data was minimal (< 2,3%). A Little's Missing Completely at Random (MCAR) test was performed for the missing data and the result revealed that data was missing completely at random ($p > 0,5$). Missing values were therefore replaced using the Expectation Maximization Algorithm. This approach estimates the maximal likelihood estimation for the missing value (Schafer & Olsen, 1998). The missing data was entered in the dataset and the missing values have been rounded up or down to an even number. This was done to allow the possibility of finding frequencies and perform other planned testing. Afterwards, the data was tested for normality using the Shapiro Wilk and Kolmogorov-Smirnov test. The test resulted in $p = 0,001$ which indicates that the data was not normally distributed ($p < 0,05$).

To explore the pattern of eating psychopathology observed by the Norwegian coaches in order to answer RQ1, an Exploratory Factor Analysis (EFA) was performed using the 20 identified items in AEPOQ (Sandgren et al., 2022). The EFA procedure used the same steps as described and suggested in Sandgren et al. (2022). First, the Kaiser-Mayer-Olkin and Bartlett's test of sphericity was performed to see if the available data was suitable for data reduction. As the data did was not normally distributed, Principal Axis Factoring extraction was used in the EFA analysis, with a Pearson correlation matrix (Costello & Osborne, 2005). The method of determining the number of factors to extract involved analyzing eigenvalues greater than one using the eigenvalue method and examining the scree plot (Yong & Pearce, 2013). Assuming that the factors would be correlated, the Oblique Promax rotation was utilized (Floyd & Widaman, 1995). The minimum item loading was set to 0.32 (Tabachnick & Fidell, 2001) as under 0.32 the factor loading is considered to be too weak. The items that loaded at ≥ 0.32 were therefore removed. Factors with just one or two item were removed, as they were considered

unstable (Yong & Pearce, 2013). The EFA was re-run until appropriate factor solution was achieved.

To examine RQ2, which symptoms of ED are most frequently observed by coaches, descriptive statistical analyses were performed. To investigate RQ3, if there a correlation between coaches' experience and symptom observation, two-tailed Spearman's rho (r_s) correlation test was performed. To investigate RQ4, if there a difference in symptom observation of coaches coaching lean versus non-lean sports, first the different sports types were grouped in 2 groups belonging to either lean sport or non-lean sport (see Appendix 5). This was done using the grouping method suggested in a study that looked into prevalence of ED in different sports (Mancine et al., 2020). Then, given that the data was distributed non-normal, the Mann- Whitney U analysis was performed and the effect size was computed. The significance level for statistical analysis was set to $p < 0,05$ which means that there is a 5% chance that the observed effect is due to chance, and a 95% chance that the observed effect is real.

4 Results

To present the test results in a clear and organized manner, they will be reported in accordance with the four research questions, starting with RQ1 and followed by RQ2, RQ3, and RQ4, respectively. First, the psychometric properties of AEPOQ will be outlined, as well as the frequency of the observed symptoms. Next, the correlation between coaches' experience and symptom observation will be presented; and finally, the test results on the difference in symptom observation between coaches coaching lean and non-lean sports will be provided.

4.1 Psychometric properties of the Norwegian translated AEPOQ

The Kaiser-Mayer-Olkin and Bartlett's test of sphericity reveled 0.86 which is considered very good. The test was significant ($p < 0.001$) and therefore suitable for data reduction. The EFA was performed with the 20 identified items (Sandgren et al., 2022). From the 20 items, items 11, 23 and 29 were removed due to low factor loading (< 0.32) and item number 27 was removed due to forming an unstable factor. A stable factor is required to have a minimum of three items (Yong & Pearce, 2013). The EFA revealed a four-factor solution with 16 items. Factor 1 included 6 items (items 1, 3, 6, 7, 9, 26), Factor 2 included four items (16, 17, 18, 19), Factor 3 included three items (item 2, 5, 15) and Factor 4 included three items (item 20, 30, 31). All four factors had eigenvalues above 1, accounting for 56,5 % of the total variance (see Table 5).
Factor 1 was labeled Fear of Eating, as items relate to tension around mealtime and avoiding or skipping meals. Factor 2 was labeled Negative Affect, as items relate to fatigue, poor concentration, lack of well-being and motivation. Factor 3 was labeled Dieting Practices as it refers to food choices. Factor 4 was labeled Compulsive Exercise, as items refer to rigid and excessive exercise practices and avoidance of medical care. Cronbach's α measured the internal consistency and revealed an $\alpha = 0.56 - 0.79$ for all factors (see Table 5). This result is considered acceptable. The result for AEPOQ overall is $\alpha = 0\ .84$, which indicates a high internal consistency (Hinton et al., 2014).

Table 5

Pattern Matrix with Factor Loadings, Eigenvalues, Variance and Internal Consistency of the Norwegian translated AEPOQ.

	Factors			
AEPOQ items	**1**	**2**	**3**	**4**
1. Avoids eating with others	0.75	-	-	-
3. Cuts out major food groups	0.55	-	-	-
6. Skips meals	0.61	-	-	-
7. Shows obvious signs of tension at mealtimes	0.81	-	-	-
9. Seldom mentions being hungry	0.49	-	-	-
26. Noticeable weight loss	0.39	-	-	-
16. Clear lack of motivation or interest in activities	-	0.75	-	-
17. Persistent low mood and sadness	-	0.70	-	-
18. Persistent complaints of fatigue and tiredness	-	0.60	-	-
19. Poor concentration	-	0.59	-	-
2. Cuts out treat foods	-	-	0.55	-
5. Prefers diet products (with low calorie content)	-	-	0.74	-
15. Takes supplements to promote muscle gain	-	-	0.54	-
20. Adopts rigid exercise practices	-	-	-	0.74
30. Is as active as possible	-	-	-	0.48
31. Is reluctant to see a doctor or refuses medical Examination	-	-	-	0.32
Eigenvalues	4.99	1.65	1.24	1.15
Variance	31.22	10.33	7.80	7.21
Cronbach's α	0.79	0.76	0.65	0.56
Range	0-1	0-1	0-1	0-1
Mean	0.18	0.38	0.24	0.12
Standard Deviation	0.27	0.36	0.32	0.24

Note: Factor loading under 0.32 are not presented

4.2 Frequency of symptom observation

For each of the four factors, mean scores were computed based on scores that range from 0 to 1. Higher scores indicate a greater frequency of observed symptoms (see Table 5). In Table 6, the percentage of the observed items are listed. Out of the four Factors, the items in Factor 2, referring to Negative Affect were observed most frequent, on average by 39% of coaches, followed by items in Factor 3, 1 and 4 in that order. Item 19, referring to poor concentration has been observed by 55 % of coaches. Item 2 (Skips meals), item 16 (Clear lack of motivation or interest in activities), item 17 (Persistent low mood and sadness) and item 18 (Persistent complaints of fatigue and tiredness) has been observed by over 30% of all coaches. The least observed items (< 12%) are item 3 (Cuts out major food groups), item 7 (Shows obvious signs of tension at mealtimes), item 20 (Adopts rigid exercise practices e.g., always running the same route; exercising for exact amount of time) and item 31 (Is reluctant to see a doctor or refuses medical examination).

Table 6

Frequency of Coaches' Observation of Eating Psychopathology Symptoms (n=311).

	Observation frequency		
	Yes (%)	No (%)	Not sure (%)
Factor 1: Fear of Eating			
1. Avoids eating with others	18	67	15
3. Cuts out major food groups	11	71	18
6. Skips meals	27	53	20
7. Shows obvious signs of tension at mealtimes	12	74	14
9. Seldom mentions being hungry	26	52	22
26. Noticeable weight loss	19	74	7
Factor 1 mean %	19	65	16
Factor 2: Negative Affect			
16. Clear lack of motivation or interest in activities	37	54	9
17. Persistent low mood and sadness	30	59	11
18. Persistent complaints of fatigue and tiredness	32	57	11
19. Poor concentration	55	34	11
Factor 2 mean in %	39	51	10
Factor 3: Dieting Practices			
2. Cuts out treat foods	34	50	16
5. Prefers diet products (with low calorie content)	22	63	15
15. Takes supplements to promote muscle gain	17	72	11
Factor 3 mean in %	24	62	14
Factor 4: Compulsive Exercise			
20. Adopts rigid exercise practices (e.g., always running the same route; exercising for exact amount of time	12	73	15
30. Is as active as possible (e.g., stands, walks or runs about whenever possible	18	68	14
31. Is reluctant to see a doctor or refuses medical examination	8	69	23
Factor 4 mean in %	13	70	17
AEPOQ global mean in % (n= 311)	24	62	14

4.3 Correlation between coaches' experience and symptom observation

A Spearman's Rho correlation matrix was conducted to examine the relationship between coaches' coaching experience and symptom observation (AEPOQ factors and Global Score). This analysis shows if there is a relationship with coaching experience and symptom observation, and the direction of this relationship. The results are presented in Table 7. The data reveals a statistically significant positive correlation ($p < 0.01$) between several factors. Factor 1, 2, 3, and the global score exhibit a high positive correlation ($r_s > 0.60$), while factor 4 and the global score exhibit a moderate correlation ($r_s > .40$). Coaching experience exhibits a weak positive correlation with factor 3 and the global score, and a very weak correlation with factor 1 ($r_s = 0.17$). However, there was no correlation observed between coaching experience and factors 2 and 4.

Table 7

Correlation between coaches' work experience and symptom observation (AEPOQ factors and AEPOQ total score).

	Work experience	**Factor 1**	**Factor 2**	**Factor 3**	**Factor 4**	**Global score**
Work experience (in years)	-					
Factor 1 Fear of Eating	0.17**	-				
Factor 2 Negative Affect	0.05	0.43**	-			
Factor 3 Dieting Practices	0.30**	0.46**	0.28**	-		
Factor 4 Compulsive Exercise	0.07	0.31**	0.29**	0.27**	-	
Global Score	0.20**	0.77**	0.79**	0.66**	0.49**	-

Note: Correlation coefficients are 2-tailed Spearman's rho.

*** p < 0.01*

4.4 Difference in symptom observation in lean versus non-lean sports

To explore the difference in symptom observation of coaches in lean versus non-lean sports, a Mann-Whitney U analyses was conducted. The analysis reveals that coaches representing lean sports (n=134) and non-lean sports (n=177) differ significantly in their observations of items in Factor 1, Factor 2, and the Global Score ($p < 0.001$). However, the effect size is small ($r < 0.29$), indicating that the differences between the two groups are relatively small. There is no significant difference detected between the two groups (lean and non-lean) on factor 3 and 4.

Table 8

Mean Scores, SDs, and Differences in coaches of lean and non-lean sports on AEPOQ factor scores and AEPOQ total score (n=311)

Factor	**Groups**		**Differences**	
	Lean M (SD)	**Non-lean M(SD)**	**Z[a]**	**r**
1. Fear of Eating	0.24 (0.29)	0.14 (0.25)	3.45***	0.19
2. Negative Affect	0.46 (0.37)	0.32 (0.34)	3.29***	0.18
3. Dieting Practices	0.27 (0.32)	0.22 (0.32)	1.87	0.10
4. Compulsive Exercise	0.14 (0.25)	0.10 (0.22)	1.53	0.08
Global score	1.14 (0.88)	0.79 (0.87)	4.17***	0.23

*Note: Z = Mann Whitney U; r = effect size; *** p <0.001*

5 Discussion

The first aim of this study was to see if the psychometric properties of the Norwegian- translated AEPOQ were similar to the original AEPOQ, along with the frequency of observed symptoms. Secondly, if there is a correlation between coaches' experience and symptom observation and lastly, this study aimed to compare the results of symptom observation between coaches coaching lean and non-lean sports. The discussion of the results will follow the order of the four research questions and will conclude with an exploration of practical implications and recommendations for future research. The strengths and limitations of the study will also be discussed in the final section.

5.1 RQ1

The results from AEPOQ in the Norwegian sample reveled similar, but not identical psychometric properties compared to the original study. Using the EFA, Sandgren et al. (2022) found a five-factor solution with 20 items. Those factors were labeled as follows: 1. Negative Affect, 2. Dieting Practices, 3. Fear of Eating in Social Context, 4. Bingeing and Purging and 5. Compulsive Exercise. The study demonstrated an acceptable level of internal consistency for all factors compatible with the study's exploratory nature (i.e., Cronbach's $\alpha \geq .5$; Hinton et al., 2004). Sandgren et al. (2022) recommended further research to determine whether the item loadings from AEPOQ can be replicated and/or if any items should be omitted. This study implemented those recommendations. This study performed on coaches in Norway found a different factor solution, which included four factors and 16 items. The four factors were labeled as follows: Factor 1 as Fear of Eating, Factor 2 as Negative Affect, Factor 3 as Dieting Practices, and Factor 4 as Compulsive Exercise. The labels were chosen based on the example of the AEPOQ factors (Sandgren et al., 2022). The Cronbach's alpha ranges from 0.59- 0.79 which indicates an acceptable to moderate internal consistency.

The different factors found could be explained by the different participants of the two studies. This study included exclusively coaches (n=311), both head and assistant coaches. The original

AEPOQ study included a much more diverse selection of participants in a different geographical and population context. The participants included 232 sports professionals like sport coaches, sport practitioners, sport psychologists, physical therapists, sport nutritionists, sports scientist, sports managers, performance lifestyle employees and a sports performance leads.
Given the variations, it is sensible to assume that the different factor loadings are based on the difference in participant selection criteria. For example, a sports psychologist or sport nutritionist, would observe different symptoms than coaches and to a different extent (Sandgren et al., 2022).

One interesting observation is that item 15 "takes supplements to promote muscle gain" was detected by 67% of sports professionals in the original study, but only 17% of exclusively coaches observed item 15 in the Norwegian sample. Dieting behaviors are common among athletes (Martinsen et al., 2010). There is overwhelming evidence that consuming protein pre- and/or post-workout induces a significant rise in muscle protein synthesis (Cintineo et al., 2018). However, it is the total daily caloric and protein intake over the long-term that plays the most crucial dietary role in facilitating bodily adaptations to exercise. Varying responses in the two studies could be attributed once more to difference in participant selection and/or the specific sports they belong to. It is reasonable to speculate that the use of supplements for muscle gain may be more prevalent in certain sports, such as bodybuilding. There may also be differences in the education and cultural attitudes towards supplement use in promoting muscle gain across different countries.

Items 18 and 19 which in both studies belong to the factor labeled Negative Affect and is referring to fatigue and poor concentration is observed by most participants, by sports professionals (58%-59%), and by exclusively coaches (30% - 55%). While this certainly can be a symptom of DE, it can be difficult to recognize it as such, since it can also be attributed to other causes. For example, fatigue, which is a common symptom of ED, can be caused by a variety of factors, such as sleep deprivation, physical exertion, overtraining, poor nutrition, or medical conditions. Similarly, lack of concentration, which is another common symptom of ED, can be caused by many factors, such as stress, lack of sleep, or medical conditions.

Both studies indicate that participants observe symptoms of ED to varying degrees. While there are similarities in the observations between the two studies, the factor loadings of the AEPOQ questionnaire differ. Despite having a larger sample size, the study conducted on coaches in Norway revealed a lower incidence of symptom observation compared to the original study, which included a wide range of sports professionals.

5.2 RQ2

The most observed symptoms of ED in this study are items 19 (poor concentration), 16 (clear lack of motivation or interest in activities), 2 (cuts out treats foods), 18 (persistent complains about fatigue and tiredness) and 17 (persistent low mood and sadness) in that order. Four items belong to the factor labeled Negative Affect and item 2 belonging to factor Dieting Practices. These findings demonstrate that symptoms of ED related to Negative Affect are observed most by coaches in Norway. Overall, the AEPOQ global mean score provides a comprehensive view of the level of symptom observation among coaches, revealing that coaches tend to have a higher score (62%) for not observing symptoms compared to genuine observations of symptoms (24%) on average. There are multiple potential explanations for this result. For example, some symptoms of ED may be more difficult for coaches to observe, particularly when they involve internal processes including distorted thoughts and feelings rather than external signs or behavior and are therefore not easily recognizable. Another potential reason for the result could be the coaches' lack of knowledge and awareness regarding the signs and symptoms of ED. The literature suggests that coaches commonly report feeling ill-equipped to recognize these symptoms (Biggin et al., 2017; Plateau et al., 2015). Another factor that may contribute to the result is the possibility that some symptoms listed in the AEPOQ questionnaire are simply less common among athletes.

5.3 RQ3

When exploring the correlation between coaches’ work experience and symptom observation, it was found that there is a significant positive correlation between some of the symptom

observation (factor 1, factor 3 and global score) and work experience. The more experienced coaches observed more symptoms concerning Fear of Eating and Dieting Practices, but no correlation was detected in between coaches' experience and Negative Affect and Compulsive Exercise. Perhaps Fear of Eating and Dieting Practices may be more obvious and easier to identify than Negative Affect and Compulsive Exercise. Coaches with more experience may have a better understanding or developed a greater awareness of the various symptoms associated with ED, and may be more attuned to signs in factor 1 (Fear of Eating) and (Dieting Practices) in their athletes.

One key observation is that the factors themselves had a moderate to strong positive correlation amongst themselves ($r_s > .79$). This means that the coaches' responses within a subscale correlate with each other. In other words, if one item or symptom was observed by the coaches within the subscale, other items were likely observed too. This could be due to the fact that one symptom is rarely presented alone when it comes to ED.

Coaches experience was measured in years. Coaches with more years of coaching may have worked with a greater number of athletes and therefore may have developed a greater ability to recognize symptoms of ED. Additionally, the ability to recognize symptoms of ED will depend greatly on education the coaches received, which was not taken into account in this study. It is evident that multiple factors are interrelated regarding a coach's experience and symptom observation.

5.4 RQ4

By exploring the difference of the symptom observation by coaches of lean versus non-lean sports, this study found a significant difference in coaches of lean sports observing factor 1, referring to Fear of Eating and factor 2 referring to Negative Affect, furthermore the Global score. There is no significant difference in the two factors referring to Dieting Practices and Compulsive Exercise. Previous research has shown that athletes participating in lean sports, with emphasis on body weight and body composition are more susceptible to ED than athletes participating in non-lean sports (Bratland-Sanda & Sundgot-Borgen, 2013; Mancine et al., 2020).

Based on this study's findings, it is reasonable to conclude that coaches working in lean sports are more likely to observe some symptoms of ED among their athletes compared to coaches in non-lean sport. The higher prevalence of ED in lean sports, as evidenced by previous studies, may account for this finding. Alternatively, it could be attributed to a greater awareness among coaches of the potential issues in lean sports.

5.5 Practical implications and recommendations for future research

The AEPOQ used in Norwegian setting showed a similar, but not identical, factor structure than the original AEPOQ. While the result could be explained by different selection of participants, AEPOQ should be further used and validated as a measuring tool in order to further confirm the facture structure. This research found that a greater number of coaches did not observe symptoms of ED and DE than those who did. It is important to investigate the reason for the low observation rate. Future research is necessary, particularly with a more adequately representative sample to determine whether the symptoms listed in AEPOQ do not appear frequently in athletes, or if symptoms are not observed due to an absence of symptoms in athletes, or whether the failure to observe symptoms is due to lack of education and awareness, like previous research suggests (Biggin et al., 2017; Plateau et al., 2015).

It is important for coaching programs and continuing education to prioritize education on ED and their signs and symptoms. By doing so, coaches can improve their knowledge and ability to recognize and address symptoms of ED in athletes, which enables the promotion for a healthier sports environment. This also contributes to athletes' well-being and healthier sport culture.

5.6 Strengths and limitations

This study has adequately translated and tested the AEPOQ in a Norwegian setting and employed numerous coaches to participate in it, thereby testing it. The results contribute to a better understanding of the observed symptoms of ED by coaches in Norway. Beyond the strength of this research, there are the following limitations to the study.

Firstly, coaches of athletes across all age ranges were included in the sample. It is possible that coaches working with very young children or older, more experienced athletes, who may be less susceptible to eating disorders, may not have been as relevant to this study's findings. Therefore, the findings of the study may not be pertinent to all coaches working with athletes of different age groups or in different sports settings.

A second weakness is the limited size of the sample. Ideally, at least ten percent of all coaches in Norway should have participated in the study. This would give a more accurate statistical sample and would have allowed for better representation of the population. Another weakness is that the AEPOQ relied on self-reported answers by the participants in the sample. A problem in the statistical analysis of self-reported answers is the presence of bias. For example, in case of personal biases, some coaches have their own personal beliefs about weight, nutrition, and exercise. If coaches believe in a “no pain no gain” mentality, they may have a much higher tolerance for ED and DE behaviors and be less likely to recognize symptoms as such. Previous experiences and education may also play a role of how sensitive a coach is to observing symptoms of ED. Someone who has had previous experience will most certainly be more sensitive to unhealthy behaviors or attitudes.

6 Conclusion

Coaches are an essential part of the support team for an athlete. They are well positioned and play an important role in detecting symptoms of ED and DE in athletes. It is especially important to detect possible symptoms as early as possible, as this can significantly improve the prognosis. The research in this paper successfully translated and tested the AEPOQ in a Norwegian setting and found a similar, but not identical factor structure as in the original AEPOQ. Coaches from different sports in Norway observed symptoms of ED and DE to varying degrees. The most observed symptoms referred to Negative Affect. A greater number of coaches have not observed symptoms of ED than those who did. Coaches with more coaching experience were more likely to observe symptoms of ED and DE in their athletes. Furthermore, coaches of lean sports were more likely to observe symptoms of ED than coaches of non-lean sports. Additional research is necessary, particularly with a more targeted sample to determine whether the failure to observe symptoms of ED and DE is due to lack of education and awareness or simply due to an absence of symptoms. Such research might corroborate or complement this study, in addition to further exploring potential explanations for the aforementioned lack of symptom observations.

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Appendices

Appendix 1

Athlete Eating Psychopathology Observation Questionnaire (AEPOQ)

Developed by Dr. Sebastian S. Sandgren, Prof. Emma Haycraft and Dr. Carolyn R. Plateau

Reference: Sandgren, S. S., Haycraft, E., & Plateau, C. R. (2022). Development and Initial Evaluation of the Athlete Eating Psychopathology Observation Questionnaire for Sport Professionals. *Journal of Clinical Sport Psychology*. https://doi.org/10.1123/jcsp.2021-0108.

****NORSK OVERSETTELSE** (uthevet i gult)**

Instructions:

Please read through the following items and decide whether you have observed any of these behaviours or attitudes among any athletes that you've worked with.
Rate an item ***'Yes'*** or ***'No'*** only if you are sure about it (for instance, if you yourself saw it happening). Rate ***'Not sure'*** if you did not have the opportunity to observe the behaviour or attitude for yourself, if you only heard about it, or if you can only suppose that it happened.

Have you observed any of the athletes that you've worked with to do the following...?

Instruksjoner:

Instructions:

Vennligst les igjennom alle uttalelsene nedenfor og bestem deg for hvilke av disse atferdene/holdningene du noen gang har observert blant idrettsutøvere som du jobber/har jobbet med. Svar **«Ja»** eller **«Nei»** bare hvis du er sikker på at du har observert den atferden/holdningen. Svar **«Usikker»** hvis du ikke hadde mulighet til å observere atferden eller holdningen selv, hvis du bare hørte om det, eller hvis du bare kan anta at det skjedde.

Vennligst les gjennom de følgende uttalelsene, og angi hvilke av disse atferdene/holdningene du har observert blant idrettsutøvere som du jobber/har jobbet med. Svar **Ja** eller **Nei**, kun hvis du er sikker på at du selv har observert den gitte atferden/holdningen hos en idrettsutøver. Svar **Usikker**, hvis du ikke har hatt mulighet til å observere den gitte atferden/holdningen selv, men bare har hørt om det, eller bare kan anta at det har skjedd.

Please read through all the statements below, and decide which of these behaviors/attitudes you have ever observed among athletes who you work/have worked with. Answer **«Yes»** or **«No»**, only if you are certain that you have observed this behavior/attitude. Answer **«Not sure»** if you have not had the opportunity to observe the behavior or attitude yourself, if you've only heard of it, or if you can only assume that it has occurred.

Har du observert noen av idrettsutøverne du har jobbet med noen gang gjøre følgende …?

Have you observed any of the athletes you work with ever doing the following:

1. Avoids eating with others [Unngår å spise sammen med andre] Avoids eating with others	☐ Yes Ja	☐ No Nei	☐ Not sure Usikker
2. Cuts out treat foods [Kutter ut søtsaker fra kostholdet sitt] Kutter ut godteri/snacks fra kostholdet sitt Eliminating sweets from their diet	☐ Yes	☐ No	☐ Not sure
3. Cuts out major food groups (e.g., carbohydrates, fat) [Kutter ut viktige næringsstoffer fra kostholdet sitt (eks, karbohydrater og fett] Eliminating important nutrients from their diet (e.g. carbohydrates and fat)	☐ Yes	☐ No	☐ Not sure
4. Complains that there is too much food, or that it's too rich (fattening) [Klager over at det er for mye mat, eller at den er for mektig (fetende)] Complaining that there is too much food, or that it is too rich (fattening)	☐ Yes	☐ No	☐ Not sure
5. Prefers diet products (with low calorie content) [Foretrekker diettprodukter (med lavt kaloriinnhold)] Prefers diet products (with low calorie content)	☐ Yes	☐ No	☐ Not sure
6. Skips meals [Hopper over måltider] Skipping meals	☐ Yes	☐ No	☐ Not sure
7. Shows obvious signs of tension at mealtimes [Viser tydelige tegn på anspenthet ved måltider] Showing obvious signs of being tense around meal times	☐ Yes	☐ No	☐ Not sure
8. Reports a loss of appetite [Rapporterer tap av matlyst]	☐ Yes	☐ No	☐ Not sure

Reporting a loss of appetite			
9. Seldom mentions being hungry [Nevner sjelden å være sulten] Rarely mentions being hungry	☐ Yes	☐ No	☐ Not sure
10. Eats fast food frequently [Spiser ofte hurtigmat/take away] Often eats fast food/take away	☐ Yes	☐ No	☐ Not sure
11. Has difficulties in stopping eating or eats unusually large amounts of food or sweets [Har utfordringer med å slutte å spise eller spiser uvanlig store mengder mat eller søtsaker] Finds it challenging to stop eating, or eats unusually large amounts of food or sweets	☐ Yes	☐ No	☐ Not sure
12. Takes diuretics / water pills or laxatives [Bruker vanndrivende tabletter eller avføringsmidler] Uses diuretic pills or laxatives	☐ Yes	☐ No	☐ Not sure
13. Complains a lot about constipation [Klager mye på forstoppelse] Complains a lot about constipation	☐ Yes	☐ No	☐ Not sure
14. Takes herbal supplements to promote fat or weight loss [Bruker urtetilskudd for å fremme fett- eller vekttap] Uses herbal supplements to promote fat- or weight loss	☐ Yes	☐ No	☐ Not sure
15. Takes supplements to promote muscle gain [Bruker kostholdstilskudd for å fremme muskelvekst] Uses supplements to promote muscle growth	☐ Yes	☐ No	☐ Not sure
16. Clear lack of motivation or interest in activities [Klar mangel på motivasjon eller interesse for aktiviteter] Clear lack of motivation or interest in activities	☐ Yes	☐ No	☐ Not sure
17. Persistent low mood and sadness [Vedvarende lavt humør og tristhet] Persistent low mood and sadness	☐ Yes	☐ No	☐ Not sure
18. Persistent complaints of fatigue and tiredness [Vedvarende klager på utmattelse og tretthet]	☐ Yes	☐ No	☐ Not sure

Persistent complaints about exhaustion and fatigue			
19. Poor concentration [Lav konsentrasjon] Dårlig konsentrasjonsevne // Dårlig evne til konsentrasjon // Lav konsentrasjonsevne Low concentration	☐ Yes	☐ No	☐ Not sure
20. Adopts rigid exercise practices (e.g., always running the same route; exercising for exact amounts of time) [Har en rigid treningspraksis (for eksempel, løper alltid den same ruten eller trener alltid like lenge)] Has a rigid exercise regimen (e.g. always running the same route or always exercising for the same amount of time)	☐ Yes	☐ No	☐ Not sure
21. Continues to exercise when ill/injured [Fortsetter å trene når en er syk/skadet] Keeps exercising even when ill/injured	☐ Yes	☐ No	☐ Not sure
22. Engages in additional training beyond what has been set by the coach [Trener utover det som er bestemt av trener] Exercises beyond what has been determined by the coach	☐ Yes	☐ No	☐ Not sure
23. Avoids social activities with team members [Unngår sosiale aktiviteter med lagkamerater] Avoids social activities with team mates	☐ Yes	☐ No	☐ Not sure
24. Makes negative comments about weight and/or shape [Kommer med negative kommentarer om sin vekt og/eller kroppsfasong] Expresses negative comments about their weight and/or body shape	☐ Yes	☐ No	☐ Not sure
25. Is very anxious before training and/or competition [Er veldig engstelig før trening og/eller konkurranse] Is very anxious before practice and/or competitions	☐ Yes	☐ No	☐ Not sure
26. Noticeable weight loss [Merkbart vekttap] Noticeable weight loss	☐ Yes	☐ No	☐ Not sure
27. Noticeable weight gain	☐ Yes	☐ No	☐ Not sure

[Merkbar vektøkning] Noticeable weight gain			
28. Absence of the menstrual cycle (female athletes) [Fravær av menstruasjonssyklusen (kvinnelige utøvere)] Absence of menstrual cycle (female athletes)	☐ Yes	☐ No	☐ Not sure
29. Vomits after meals [Kaster opp etter måltider] Purging after meals	☐ Yes	☐ No	☐ Not sure
30. Is as active as possible (e.g., stands, walks or runs about whenever possible) [Er så fysisk aktiv som mulig (for eksempel, står, går eller løper der det er mulig)] Keeps as physically active as possible (e.g. standing, walking or running wherever possible)	☐ Yes	☐ No	☐ Not sure
31. Is reluctant to see a doctor or refuses medical examination [Kvier seg for å oppsøke lege eller nekter å bli undersøkt av en lege] Is reluctant to see a doctor or refuses to be examined by a doctor	☐ Yes	☐ No	☐ Not sure

Appendix 2

Online survey

Treneres observasjoner av symptomer på spiseforstyrrelser blant utøvere i Norge

Infoskriv og samtykke

Dette er et spørsmål til deg om å delta i et forskningsprosjekt hvor formålet er å undersøke hvilke observasjoner av symptomer på spiseforstyrrelser idrettstrenere gjør blant utøvere. Videre er formålet å undersøke forekomsten av observerte symptomer.
Dette skrivet skal informere deg om formålet med prosjektet og hva din deltakelse vil innebære. Deltakelse er helt **anonymt.**

Formål

Prosjektet er en bacheloroppgave i idrettsvitenskap ved Universitetet i Stavanger. Tidligere studier har vist at idrettsutøvere er mer utsatt for spiseforstyrrelser enn resten av befolkningen. Vi vet fortsatt lite om i hvilken grad trenere observerer symptomer på spiseforstyrrelser blant idrettsutøvere og hvilke symptomer som observeres hyppigst. Trenere er en meget viktig gruppe som del av støtteapparatet for idrettsutøvere og svarene fra denne undersøkelsen kan hjelpe med å belyse problematikken innenfor dette viktige temaet.

Hvem er ansvarlig for prosjektet?

Universitetet i Stavanger, fakultet for utdanningsvitenskap og humaniora, institutt for grunnskolelærerutdanning, idrett og spesialpedagogikk.

Hvorfor får du spørsmål om å delta og hva innebærer det for deg?

Dersom du er 18 år eller eldre og er **hovedtrener** eller **assistenttrener** innenfor hvilken som helst idrett blir du herved invitert til å delta i prosjektet. Du kan være ansatt **fulltid, deltid** eller jobber som **frivillig.** Deltakelse innebærer å svare på et elektronisk spørreskjema (ca. 10 min). Spørreskjemaet inneholder noen spørsmål om din bakgrunnsinformasjon (f.eks. alder,

kjønn, etc.) og om dine observasjoner av symptomer på spiseforstyrrelser blant idrettsutøvere.

Det er frivillig å delta

Det er frivillig å delta i prosjektet. Hvis du velger å delta, kan du når som helst trekke tilbake ditt samtykke uten å oppgi noen grunn. Hvis du underveis i undersøkelsen ønsker å trekke din deltagelse kan du når som helst avslutte undersøkelsen ved å lukke nettleseren. Det vil ikke ha noen negative konsekvenser for deg hvis du ikke vil delta. Det er ikke mulig å trekke seg etter spørreskjemaet er ferdig utført og sendt inn. Dataene som blir samlet inn kan ikke kobles til deg (se under).

Ditt personvern – hvordan vi oppbevarer og bruker dine opplysninger

Deltakelse i denne studien er helt anonymt, og det samles ikke inn noen personopplysninger. Vi behandler dataen konfidensielt og i samsvar med personregelverket. Det er kun prosjektansvarlig og bachelorstudent som vil ha tilgang til dataen. Dataen som blir samlet inn, vil vi ikke kunne kobles til deg. Du og dine svar vil ikke være gjenkjennbare i datamaterialet eller i bacheloroppgaven.

Hva skjer med opplysningene dine når vi avslutter forskningsprosjektet?

Prosjektet skal etter planen avsluttes 1. Juni 2023.
Dataen som er samlet, kan bli oppbevart på UiS sine passord beskyttede digitale systemer i opptil en periode på 5 år.

Hvor kan du finne ut mer?

Hvis du har spørsmål til studien, eller ønsker å benytte deg av dine rettigheter, ta kontakt med:
Universitetet i Stavanger, bachelorstudent, Irina Diaz de Leon, epost: im.diazdeleon@stud.uis.no
Universitetet i Stavanger, prosjektansvarlig (veileder), førsteamanuensis Sebastian S. Sandgren, epost: sebastian.s.sandgren@uis.no
Personvernombudet ved Universitetet i Stavanger, epost: personvernombud@uis.no

Samtykke

Gir du samtykke til å delta i prosjektet, godkjenner du innhenting, lagring og behandling av din data. Dataen som blir samlet inn er anonym og vil ikke kunne spores til deg. Undersøkelsen er frivillig. Hvis du underveis ønsker å trekke deg fra prosjektet kan du avbryte undersøkelsen ved å lukke din nettleser og din data vil ikke bli lagret.

Jeg samtykker til å delta i projektet

(1) m Ja

Del 1: Trenerens bakgrunn

Denne delen inneholder spørsmål om deg selv. Hvis du er usikker på hva du skal svare på, så velg det som passer best. Vennlings besvar alle spørsmålene.

Hvilket kjønn er du? (Velg ett atlernativ)

(2) m mann
(3) m kvinne

Hvor gammel er du? (Skriv svaret i år)

_____

Hva beskriver rollen din best? (Velg ett alternativ)

(1) m trener
(2) m assistenttrener

Har du noen relevant trener utdanning eller kurs?

(1) m Ja
(2) m Nei

Hvilken utdanning eller kurs har du? (Skriv nedenfor)

_____

Hvor mange timer i uken er du med idrettsutøvere? (Velg ett alternativ)

(1) m 1-2 timer i uka
(2) m 2-4 timer i uka
(3) m 4-10 timer i uka
(4) m mer enn 10 timer i uka

Hvor mange år har du vært trener/ assistenttrener? (Skriv antall år nedenfor)

_____

Hvilket kjønn er utøverne du jobber med primært? (Velg ett alternativ)

(1) m jenter
(2) m gutter
(3) m både jenter og gutter

Hvilken idrett(er) er det du trener i ? (Skriv nedenfor)

_____

Hvor gamle er utøverne du jobber med primært? (Velg ett alternativ)

(1) m 0-6 år
(2) m 6-12 år
(3) m 13-19 år
(4) m 20-35 år
(5) m over 35 år

Deltar utøverne du trener i regelmessige konkurranser? (Velg ett alternativ)

(1) m Ja
(2) m Nei

På hvilket nivå konkurrerer dine utøvere? (Velg ett eller flere alternativ)

(1) q klubb
(2) q nasjonalt
(3) q internasjonalt

Del 2: Observasjoner av symptomer på spiseforstyrrelser

Instruksjoner:

Vennligst les gjennom de følgende uttalelsene, og angi hvilke av disse atferdene/holdningene du har observert blant idrettsutøvere som du jobber/har jobbet med. Svar Ja eller Nei, kun hvis du er sikker på at du selv har observert den gitte atferden/holdningen hos en idrettsutøver. Svar Usikker, hvis du ikke har hatt mulighet til å observere den gitte atferden/holdningen selv, men bare har hørt om det, eller bare kan anta at det har skjedd.

Har du observert noen av idrettsutøverne du har jobbet med noen gang gjøre følgende …?

1. Unngår å spise sammen med andre

(1) m ja (2) m nei (3) m usikker

2. Kutter ut godteri/snacks fra kostholdet sitt

(1) m ja (2) m nei (3) m usikker

3. Kutter ut viktige næringsstoffer fra kostholdet sitt (eks, karbohydrater og fett)

(1) m ja (2) m nei (3) m usikker

4. Klager over at det er for mye mat, eller at den er for mektig (fetende)

(1) m ja (2) m nei (3) m usikker

5. Foretrekker diettprodukter (med lavt kaloriinnhold)

(1) m ja (2) m nei (3) m usikker

6. Hopper over måltider

(1) m ja (2) m nei (3) m usikker

7. Viser tydelige tegn på anspenthet ved måltider

(1) m ja (2) m nei (3) m usikker

8. Rapporterer tap av matlyst

(1) m ja (2) m nei (3) m usikker

9. Nevner sjelden å være sulten

(1) m ja (2) m nei (3) m usikker

10. Spiser ofte hurtigmat/take-away

(1) m ja (2) m nei (3) m usikker

11. Har utfordringer med å slutte å spise eller spiser uvanlig store mengder mat eller søtsaker

(1) m ja (2) m nei (3) m usikker

12. Bruker vanndrivende tabletter eller avføringsmidler

(1) m ja (2) m nei (3) m usikker

Har du observert noen av idrettsutøvere du har jobbet med noen gang gjøre følgende...?

13. Klager mye på forstoppelse

(1) m ja (2) m nei (3) m usikker

14. Bruker urtetilskudd for å fremme fett- eller vekttap

(1) m ja (2) m nei (3) m usikker

15. Bruker kostholdstilskudd for å fremme muskelvekst

(1) m ja (2) m nei (3) m usikker

16. Klar mangel på motivasjon eller interesse for aktiviteter

(1) m ja (2) m nei (3) m usikker

17. Vedvarende lavt humør og tristhet

(1) m ja (2) m nei (3) m usikker

18. Vedvarende klager på utmattelse og tretthet

(1) m ja (2) m nei (3) m usikker

19. Dårlig konsentrasjonsevne

(1) m ja (2) m nei (3) m usikker

20. Har en rigid treningspraksis (for eksempel, løper alltid den same ruten eller trener alltid like lenge)

(1) m ja (2) m nei (3) m usikker

21. Fortsetter å trene når en er syk/skadet

(1) m ja (2) m nei (3) m usikker

22. Trener utover det som er bestemt av trener

(1) m ja (2) m nei (3) m usikker

23. Unngår sosiale aktiviteter med lagkamerater

(1) m ja (2) m nei (3) m usikker

24. Kommer med negative kommentarer om sin vekt og/eller kroppsfasong

(1) m ja (2) m nei (3) m usikker

25. Er veldig engstelig før trening og/eller konkurranse

(1) m ja (2) m nei (3) m usikker

26. Merkbart vekttap

(1) m ja (2) m nei (3) m usikker

27. Merkbar vektøkning

(1) m ja (2) m nei (3) m usikker

28. Fravær av menstruasjonssyklusen (kvinnelige utøvere)

(1) m ja (2) m nei (3) m usikker

29. Kaster opp etter måltider

(1) m ja (2) m nei (3) m usikker

30. Er så fysisk aktiv som mulig (for eksempel, står, går eller løper der det er mulig)

(1) m ja (2) m nei (3) m usikker

31. Kvier seg for å oppsøke lege eller nekter å bli undersøkt av en lege

(1) m ja (2) m nei (3) m usikker

Tusen takk for at du tok deg tid til å svare på denne undersøkelsen!

Har du spørsmål angående prosjektet ta kontakt med:
Bachelorstudent, Irina Diaz de Leon, epost: im.diazdeleon@stud.uis.no
Prosjektansvarlig (veileder), førsteamanuensis Sebastian S. Sandgren, epost: sebastian.s.sandgren@uis.no

Hvis du har noen bekymringer om din egen eller andres spiseatferd eller mental helse tar kontakt med din fastlege eller følgende organisasjoner:

- Spiseforstyrrelsesforeningen
  https://www.spisfo.no/
- Rådgivning om spiseforstyrrelser
  https://nettros.no/

Vennligst nå trykk "AVSLUTT" for å registrere dine svar!

Appendix 3

Risikoanalyse/vurdering i forskning med mennesker

Referansenummer fra NSD/REK e.l.:

Prosjekt/studie: Bacheloroppgave: Teneres observasjon på spiseforstyrrelser hos utøvere

Dato	Utarbeidet av (navn, tittel og signatur)	Kontrollert av (navn, tittel og signatur)	Sted (universitet, institutt og by)	Versjon #	Endelig dato for ferdigstilt dokument
12.12.22	Irina Diaz de Leon Bachelorstudent	Sebastian S. Sandgren Veileder	Universitet i Stavanger	1	

Aktivitet	Risiko	Hvem kan bli rammet	Tiltak/metode for å kontrollere/minimere risiko	Sann-synlighet*	Alvorlig-hetsgrad**	Risiko vurdering ***	Resultat (A–D) †	Andre kommentarer
Spørreskjema om observasjon av spiseforstyrrelser (AEPOQ)	Emosjonelt ubehag	Deltaker	Hvis deltaker viser tegn på emosjonelt ubehag, kan han/hun trekker seg når som helst, hvis deltaker velger å gjennomføre undersøkelsen blir han /hun henvist til lav lett tilgjengelige støtteressurser som en anbefales å kontakte i tilfelle en opplever emosjonelt stress eller ubehag	2	3	6	B	Risikoen er tilstrekkelig kontrollert
Deltaker svarer ikke på alle spørsmålene	Mangel av data	Forskeren	Forsker informerer om varighet og antall spørsmål i samtykkeskriv. Deltaker må lese og samtykke på forehånd før besvarelsen.	3	1	3	B	Risikoen er tilstrekkelig kontrollert
Oppbevaring av data	Uetisk oppbevaring av data	Universitet i Stavnger Forsker Veileder	Pc med data er passordsikret, kun forsker har tilgang til	1	4	4	B	Risikoen er tilstrekkelig kontrollert
Dataanalyse	Feilanalysering av data	Universitet i Stavanger Forsker Veileder	Veilederen kontrollerer dataanalysen for å minske sjansen til eventuelle feil	1	3	3	B	Risikoen er tilstrekkelig kontrollert

*** Sannsynlighet**

5 Svært sannsynlig - risiko vil oppstå gjentatte ganger. Forventes rutinemessig en gang hver 20-100 operasjoner, muligens ukentlig eller oftere hvis det utføres regelmessig.

4 Sannsynlig - vil forekomme flere ganger i året, så det er ikke overraskende når det skjer.

3 Mulig - kan forekomme noen ganger. Oppstår sannsynligvis en gang i året.

2 Usannsynlig - men kan forekomme en gang hvert 10-100 år.

1 Svært usannsynlig å forekomme. Sannsynligheten nærmer seg null.

**** Alvorlighetsgrad**

5 Dødsfall.

4 Stor/alvorlig skade - varig funksjonshemming, alvorlig amputasjon som f.eks. tap av hånd. Stort tap av tid.

3 Middels skade f.eks. brannskade, brudd, eller bevissthetstap. Antatt utilgjengelig for normalt arbeid i over 3 dager.

2 Mindre skader - Mer alvorlig kutt, forstuing, belastning, brannskader etc. der det ikke er mulig å komme tilbake til arbeid etter behandling. Det kan gå tapt tid - mindre enn 3 dager.

1 Ingen skader eller svært lav skade - f.eks. blåmerker, mindre kutt, nålestikk osv. der skaden tillater retur til arbeid etter førstehjelp - ingen tapt tid.

***** Risikovurdering = Sannsynlighet x Alvorlighetsgrad**

***** Risikovurdering score (range: 1-25)**

Lav risiko = 1-8; Medium risiko = 9-15; Høy risiko = 16-25

Lav risiko – forbedre om mulig/nødvendig.

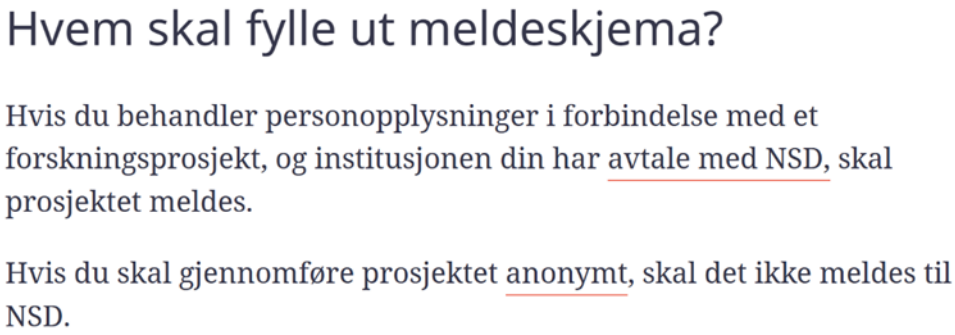
Medium risiko – Innfør ytterligere tiltak for å redusere risikoen.

Høy risiko – Vurder om prosjektet/studien må stanses eller innfør nødvendige tiltak umiddelbart.

† Resultat (nøkkel): A = triviell risiko; B = tilstrekkelig kontrollert, ingen ytterligere handling er nødvendig; C = ikke tilstrekkelig kontrollert, ytterligere handling er nødvendig; D = klarer ikke bestemme, ytterligere informasjon er nødvendig

Appendix 4

NSD meldeskjema informasjon



Directly cited from NSD webpage.
"Hvis du skal gjennomføre prosjektet anonymt, skal det ikke meldes til NSD." (15. Januar 2023). Norsk Senter for Forskningsdata.

Appendix 5

Figure 1. From « Prevalence of disordered eating in athletes categorized by emphasis on leanness and activity type–a systematic review, » by Ryley P. Mancine, Donald W. Gusfa, Ali Moshrefi and Samantha F. Kennedy, 2020, Journal of Eating Disorders, 8, p 3 (https: 10.1186/s40337-020-00323-2). Copyright 2020 by LONDON: Springer Nature.

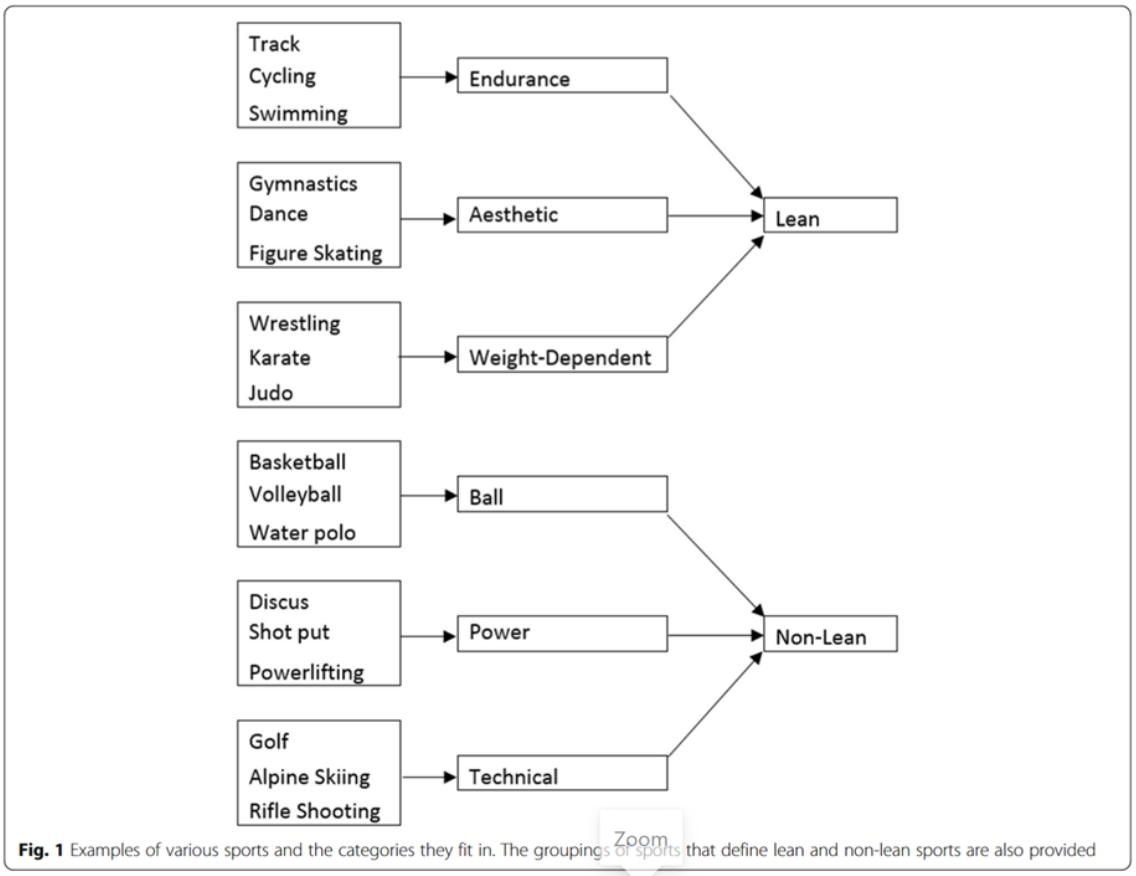


Fig. 1 Examples of various sports and the categories they fit in. The groupings of sports that define lean and non-lean sports are also provided

Appendix 6

FACEBOOK POST

Hei,
Er du 18 eller eldre? Jobber du som trener eller er frivillig trener/hjelpetrener i hvilken som helst idrett?
Da hadde jeg satt stor pris på om du kunne svare på en kort (ca. 10 min) spørreundersøkelse rundt dine observasjoner av symptomer på spiseforstyrrelser blant utøverne du har jobbet med. Studien er en del av en bacheloroppgave, og deltakelse er helt anonymt og inneholder ingen personalopplysninger.
Trykk på lenken for mer info om studien og lenke til spørreskjemaet.
https://svar.uis.no/LinkCollector?key=NKGD1VMTU11N

På forhånd, tusen takk for hjelpen!

Om du kan dele undersøkelsen med andre, settes det stor pris på. Takk.

Med vennlig hilsen,

Irina Diaz de Leon

Appendix 7

E-POST til idrettsklubber

Hei,

mitt navn er Irina Diaz de Leon. Jeg er idrettsstudent ved Universitetet i Stavanger og prøver å rekruttere så mange trenere som mulig til å svare på en kort spørreundersøkelse som er en del av bacheloroppgaven min. Kunne dere hjelpe meg ved å dele lenken med trenere deres? På forhand, tusen takk!

Trenerens observasjon av symptomer på spiseforstyrrelser blant idrettsutøvere i Norge

Er du 18 eller eldre? Jobber du som trener eller er frivillig trener/hjelpetrener i hvilken som helst idrett?

Da hadde jeg satt stor pris på om du kunne svare på en kort (ca. 10 min) spørreundersøkelse rundt dine observasjoner av symptomer på spiseforstyrrelser blant utøverne du har jobbet med. Studien er en del av en bacheloroppgave, og deltakelse er helt anonymt og inneholder ingen personalopplysninger.

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https://svar.uis.no/LinkCollector?key=NKGD1VMTU11N

På forhånd, tusen takk for hjelpen!

Om du kan dele undersøkelsen med andre, settes det stor pris på. Takk.

Med vennlig hilsen,

Irina Diaz de Leon