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Weight on the bar vs. weight on the scale: A qualitative exploration of disordered eating in competitive female powerlifters

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## Abstract

Disordered eating enquiry in sport psychology has arisen due to the need to investigate sub-clinical populations. Weight-class athletes have been found to be ‘at-risk’ of disordered eating, therefore interpretations of experiences can shed light on female weight-class athletes disordered eating accounts. In line with previous interpretive studies, athlete accounts can highlight unique social and cultural insights regarding disordered eating. The aim of the study was to explore disordered eating experiences of female powerlifters. One semi-structured interview was conducted with 17 participants. A thematic analysis resulted in four themes: fear of disclosing weight-cutting concerns; eating like a powerlifter; culture of regulation; and the female body vs. the powerlifter body. Findings highlight a complex interaction between weight-cutting and the construction of disordered eating, and a female-athlete paradox within powerlifting. We anticipate findings will extend to other weight-class sports, and we discuss applied implications for powerlifters’ mental health and recommendations for future research.

*Keywords:* weight-class sport, weight-cutting, disordered eating practices, female muscularity

**Weight on the bar vs. weight on the scale: A qualitative exploration of disordered eating in competitive female powerlifters**

Disordered eating research within sport and exercise psychology has provided a perspective to account for non-clinical populations (Papathomas & Lavalley, 2010). Enquiry of non-clinical populations are important, as the manifestation of sub-clinical symptoms present risk of full eating disorder diagnosis (Beals & Manore, 1994). The term disordered eating includes a spectrum of maladaptive thoughts, emotions, attitudes, and behaviors related to eating and the body (Bonci et al., 2008). Through the use of a social constructionist perspective, researchers have explored how athletes construct meaning focusing on social, cultural, and historical factors surrounding their disordered eating (Busanich et al., 2014; McGannon & McMahon, 2019; Papathomas & Lavalley, 2014). In such articles, disordered eating ranges from major disturbances surrounding eating and the body (e.g., starvation, purging, bingeing) which could meet clinical diagnosis of bulimia nervosa, anorexia nervosa, or binge eating disorder (American Psychiatric Association, 2013). Whereas, less severe symptoms are associated with mild patterns of atypical eating and body disturbances exhibited (e.g., skipping meals, calorie restriction, excessive exercise, body checking).

Aesthetic, lean, and weight-sensitive sports, whereby requirements to maintain a small physique and/or particular weight for success have been identified as ‘at-risk’ for disordered eating (Smolak et al. 2000). In order to understand the meaning which athletes give to these experiences, researchers have moved beyond the examination of disordered eating using psychometric measures to the use of interpretive accounts. By providing athletes with a voice, the complexities surrounding disordered eating within sport have been made apparent. For example, contextual and sociocultural influences such as retirement (Cooper & Winter, 2017); trauma (Papathomas & Lavalley, 2012); weight-focused sporting cultures (McMahon & Dinan-Thompson, 2008); coach-athlete relationships (Jones et al., 2005);

gender (Busanich et al., 2014); and family impact (Papathomas & Smith, 2015) have influenced athlete constructions of disordered eating.

These accounts have also provided further insight into the role of body image on disordered eating in weight-focused sports. For the purpose of this study, body image is defined as a social construct which assumes differences in body perceptions in relation to the social context in which an individual operates (Tiggermann, 2001). This includes two components (Cash & Deagle, 1997): a perceptual component (i.e., estimation of body size) and an evaluative component (i.e., cognitions and behaviors such as body dissatisfaction or disordered eating). Athletes have been found to possess multiple body images, namely an athletic and social body image (Russell, 2004). An athletic body ideal consists of an evaluation an individual has of their body within a sporting context, while a social body ideal refers to an evaluation within daily life (Greenleaf, 2002). Indeed, Krane et al. (2004) identified a sport and body paradox whereby in order to meet both social and athletic ideals, athletes desired some muscle tone and minimal fat, leading to disordered behaviors. Furthermore, different sporting demands have been found to conflict with desired physical self-presentation (de Bruin & Oudejans, 2018). For example, the gain of muscle mass which is a by-product of the specific training demands for powerlifting may clash with the female athletes' desired body ideal.

Sports in which a lean physique is needed for performance success (e.g., gymnastics) is arguably more in line with the socially constructed definitions of a feminine body shape in Western culture which emphasize thinness (Choi, 2003). This is in contrast to sports where increased levels of body mass and muscularity are needed (e.g., shot putt). Despite the pursuit of muscle mass and strength creating feelings of empowerment for female athletes, the gain of muscle mass and strength through competing in sport and resistance training in gyms has traditionally been perceived as masculinized (Bordo, 1990). This has meant muscularity for

female athletes is continuously negotiated as these athletes attempt to conform to both social and athletic ideals (Krane et al., 2004). For the female powerlifter, participation in a sport which emphasizes traditionally deemed masculine characteristics (e.g., aggression, muscle gain, physical strength), may raise interesting insights in relation to disordered eating (Hardin & Greer, 2009). Female powerlifters' perceptions of their participation and the social and cultural context within their sport, may provide an understanding into how they negotiate their athletic and social body ideals, and if they engage in disordered eating practices.

Powerlifting is classified as a weight-class sport, whereby individuals compete within weight defined classes (Moore et al., 2019). Given the class demands, many athletes weigh-in at competitions following a period of losing weight in order to attain a desired weight-class. These athletes aim to gain a competitive edge by attempting to achieve the highest possible power-to-weight ratio than other competitors (i.e., obtaining a lower body whilst maximizing strength; in powerlifting this is measured using Wilks coefficient). Therefore, competing in a lower weight-class gives athletes relatively better results than if they were to have competed at a heavier body weight (Garcia-Manson et al., 2008). In other weight-class sports, researchers have determined that due to attempts to 'make weight', involving the manipulation of calorie intake and energy expenditure, it may cause disordered eating to be heightened (Artioli et al., 2010). Using a diary-interview approach, Sitch and Day (2015) explored six international judo athletes' psychological experiences of making weight. Participants used several practices to make weight in the lead up to competition including dehydration techniques, starvation, and vomiting. Authors highlighted the importance of understanding an individual's psychological experiences during the weight making process, particularly as participants often concealed difficulties, experienced periods of low mood and heightened anxiety, and the process of making weight was normalized. Experiences of making weight revealed a complex interaction between weight-cutting behaviors and

associated psychological and emotional responses. The normalization of these weight-cutting practices within weight-class sports can perpetuate a cycle of disordered eating, given the regulatory practices used to ‘make weight’ such as manipulation of calorie intake and constant monitoring of weight (Knox, 2017).

Even though weight-class athletes have been found to be ‘at risk’ of disordered eating, female weight-class athletes are yet to be explored. This lack of investigation is surprising given the high number of females that compete in such sports. In powerlifting alone, female participation at a national level in the UK has grown 196% in the last 5 years (British Powerlifting, 2020). By giving a voice to these athletes, the social and cultural nuances which may be impacting disordered eating will cultivate an awareness and increase the literacy of the issue for those operating in the sport. Therefore, the aim of the present study was to understand disordered eating experiences of female powerlifting athletes and build upon work detailing weight-focused sporting cultures (e.g., McMahon & Dinan-Thompson, 2008; 2011). More specifically, we sought to answer the following research question: How do female powerlifters’ perceptions and experiences of training and competing in a weight-class sport impact eating practices and body perceptions?

## **Method**

### **Philosophical Underpinning**

An interpretive paradigm is drawn upon to study the domain, with the researchers coming from an ontological position of relativism (Guba & Lincoln, 1994). The researchers view that reality is subjective and differs between individuals. Knowledge is co-constructed between researcher and participant which both bring their experiences and understanding to influence a topic (Poutcher et al., 2019). Our aim to explore meaning surrounding disordered eating and the impact of weight-classes, is in line with our interpretive paradigm which seeks to understand meanings individuals create for their experiences (Poutcher et al., 2019).

Distinct social and cultural narratives (e.g., sporting cultures, gendered discourses) have been shown to influence constructions of disordered eating (e.g., Busanich et al., 2014; McMahon & Dinan-Thompson, 2008). Therefore, a qualitative methodology and interpretive paradigm was deemed appropriate to explore potentially similar insightful accounts of disordered eating in a weight-focused sport. The lead author's immersion within a powerlifting culture led to an awareness of disordered eating and poor body image perceptions within the sport. Both personal experiences of making weight as well as conversations with fellow female competitors prior to the commencement of the study influenced the purpose of the project and methodological decisions such as recruitment, the interview guide, and analysis.

### **Recruitment**

Following approval from an institutional ethical board, recruitment for participants was carried out through a social media post inviting female powerlifters with experience of disordered eating. Disordered eating experiences were defined as any experience of disordered thoughts, emotions, attitudes, and behaviors related to eating and the body during their participation in powerlifting. The following definition was provided to the participants to give more clarity on what disordered eating may consist of in powerlifting: "a weight-cutting practice i.e., food restriction to make weight". It was also specified that disordered eating could either be clinically diagnosed or undiagnosed.

### **Participants**

Participants were 17 British female powerlifters ( $M = 22.8$  years,  $SD = 1.3$ ). At the time of the interview, athletes were competing at either national or international level in the 47 to 72-kilogram weight-classes. Araújo and Scharhag's (2017) define higher level athletes as actively training to improve performance. Higher level athletes also should be competing nationally, registered in a national sporting federation, and devoting several hours most days to training and competing in their sport. Therefore, powerlifting-specific characteristics were



taken to ensure sampling from a competitive athlete population. For example, Wilks score was recorded, which was defined as a measure of competitiveness used to determine strength relative to the performer's body mass (Coker et al. 2018) ( $M = 365.15$  Wilks,  $SD = 45.5$ ). In addition, competition total, defined as the total weight lifted across the squat, bench press and deadlift, was also recorded ( $M = 311.5$  kilograms,  $SD = 49.3$ ), as well as training hours per week ( $M = 10.5$  hours,  $SD = 2.6$ ).

## **Procedure**

Following an introduction to the investigation, participants were asked to read the study information and give written consent to participate. To ensure the population interviewed met the inclusion criteria, participants were asked to record their age, experience, training hours, weight-class, lifting total, and Wilks. The division which athletes competed in was also recorded to ensure the population were representative of regions across the UK, with at least one participant representing a region. Given the differences which may exist in organizational and socio-cultural factors in regions across the UK (e.g., differences in coaches, training environments, competition calendars), it was important to have a range of powerlifters from different regions as contextual factors could influence meanings around weight-cutting, food, and the body. Four interviews were conducted via Skype with the subsequent 13 being conducted face-to-face in convenient locations for participants. Despite the widely reported benefits of Skype, including cost and time efficiency (e.g., Janghorban et al., 2014), Fontana and Frey (2008) advise interviews conducted in this way may not allow the same rapport to be built compared with face-to-face. For this study, Skype interviews were deemed appropriate as it allowed geographical boundaries to be transcended and a wider sample to be targeted (Lo Iacono et al., 2016). All interviews were audio recorded, lasted between 43 and 110 minutes ( $M = 64$  min,  $SD = 15.9$ ), and transcribed verbatim.

## **Interview Guide**

Semi-structured interviews were used to elicit a multitude of experiences, as the participant-led approach has been deemed appropriate for discussing sensitive issues (Fylan, 2005). The interview was designed around a set of open-ended questions, whereby further questions organically emerged through answers provided by participants (DiCicco-Bloom & Crabtree, 2006). The first author conducted a pilot interview with a participant who did not meet the inclusion criteria; an ex-competitive weightlifter who had previous experience of disordered eating. Feedback was attained from the interviewee regarding the questions asked, and an audio recording of the interview was used to determine if the interview guide questions provided enough opportunities for exploration of the topic (Smith & Sparkes, 2016). Consequently, minor amendments were made to the phrasing of questions for clarity. Interview questions were based off our research aims and relevant disordered eating and weight-class literature (e.g., Papathomas & Lavalley, 2010; Sitch & Day, 2015) which were reflected in the interview guide (Smith & Sparkes, 2016).

The final interview guide (available on request from the first author) was separated into five main areas each with different aims. The five areas of the interview guide consisted of: an introduction with the intention of building rapport (How did you begin in powerlifting?); weight-classes and weight-cutting (What weight-class do you compete in and why?; What methods of weight-cutting have you used?); eating and the body (Drawing on your experiences, can you talk me through what your on-season is like compared to your off season? e.g., differences in body weight and food behaviors); participation in powerlifting (Tell me about some of the similar or dissimilar eating patterns you had before powerlifting?); and recommendations (What advice would you give to a girl on weight-classes who is just starting out in the sport?). Participants were encouraged to elaborate on both positive and negative aspects of their experiences, and opportunities were given at the end of the interviews to add any further information which was not addressed.

**Data Analysis**

Thematic analysis was used following Braun and Clarke's (2006; 2019) six-step protocol to guide data analysis. In line with our ontological positioning of relativism and research question, our aim in the use of reflexive thematic analysis was to identify and organize patterns of meaning across a data set in order to make sense of participant experiences. Following the transcription of interviews, in order to gain familiarity with the data set the lead author began by reading and re-reading transcriptions. The process of coding began by hand whereby the lead author highlighted relevant data which captured interesting ideas relevant to our research question. Codes were further collated into themes. For example, the code "weight-cutting practices from peers displayed on social media" was refined to eventually develop the theme "Fear of disclosing weight-cutting concerns". The aid of a thematic map was used to make sense of interconnections between codes to form themes. Themes were constructed in accordance to our research question which allowed us to make decisions on the most relevant data segments to theme. We adopted an inductive approach whereby constructed themes were linked to the data itself, however we acknowledge a solely inductive approach is not entirely possible as researchers bring their own experiences, analytic skill, and epistemological positioning to the analysis process (Terry et al., 2017). Following a review, by acknowledging coherence and distinctiveness from one another, themes were then defined. Analysis continued as the selection of the most relevant data extracts to represent each theme were selected. The flexible and organic approach taken during data analysis was imperative to allow us to continuously reflect on which data would best capture disordered eating experiences in female powerlifters.

**Methodological Rigor**

To ensure rigor in the research process, several methods were employed in line with their appropriateness to our ontological position and relevance to research aims. We believe

knowledge is co-constructed between researcher and participant, as our research question and theoretical positioning will influence data analysis and subsequent findings (Poutcher et al., 2019). Therefore, it is important to note our role in the study. The lead author at the time of the study was an active powerlifter familiar with the sport sub-cultures which was a strength to the research process as this personal insight allowed for deeper exploration during the interview and understanding made to sport-specific references (e.g., Wilks). The co-author, an experienced qualitative researcher and sport psychology practitioner, took the role of advisor and critical friend throughout the research process. As a critical friend, the co-author offered constructive feedback and provided different plausible interpretations to findings and reworked themes which aided in the construction of coherent discussion points in relation to the data (Smith & McGannon, 2018). Member reflections were also employed as they assist in developing rigor, by generating further insight into the research topic (Smith & McGannon, 2018). Participants were asked to reflect on their interview and in collaboration with the researcher, identify further opinions to generate additional data (Schinke et al., 2013). For example, some participants generated discussion on male powerlifters, pondering that perhaps the impact of weight-cutting was not as emotional for males, which demonstrates the taken-for-granted gendered narrative of disordered eating in sport.

## Results

The participants' training and competition experiences in powerlifting impacted their disordered eating practices and body perceptions which resulted in four themes. The athletes' shared that the fear of disclosing weight-cutting concerns; eating like a powerlifter; culture of regulation, and the negotiation of the female body vs. the powerlifter body contributed to disordered eating practices and their body perceptions (e.g., body comparisons, body dissatisfaction, positive body image). The themes are presented with quotations elicited from participants, with their identities protected through pseudonyms.

**275 Fear of disclosing weight-cutting concerns**

276 Participants noted a prevailing weight-cutting culture within the sport, leading to the  
277 adoption of disordered eating practices. Weight-cutting practices included calorie restriction;  
278 laxative use; dehydration/water manipulation (e.g., sauna use, hot baths, water cutting,  
279 sodium manipulation); food manipulation (e.g., cutting carbohydrates); vomiting and  
280 excessive exercise. For example, Charlotte used many of these methods to ‘make weight’:  
281 “cutting carbs . . . making myself sick . . . I was doing cardio everyday”. Participants  
282 constructed different meanings as to why they engaged in weight cuts and how this impacted  
283 their powerlifting performance, disordered eating, and body perceptions. Athletes described  
284 weight cuts as a normal part of powerlifting, and necessary in order to ‘make weight’ for a  
285 desired weight-class: “It seems very normalized for people to be around the weigh-in room  
286 dehydrated and miserable complaining ‘oh my god I can’t wait to eat’” (Mary). Sophie noted  
287 how the weight-cutting culture was legitimized through social media: “On Instagram, most of  
288 the people I follow are powerlifters and I’m very familiar with what people go through to get  
289 to competition, so it just seems very normal”.

290 Unique to powerlifting, athletes perceived their weight-cutting efforts would also lead  
291 to an increase in their ‘Wilks’ score. Wilks refers to a formula used in powerlifting to  
292 measure the strength of competitors against each other, relative to their body weight: “You  
293 need to optimize your Wilks . . . the best way to get a good Wilks is to be a lower weight”  
294 (Amy). In order to gain a competitive edge over other athletes, Charlotte determined a higher  
295 Wilks would be best achieved through putting her body through strict dieting practices:

296 That's how the eating disorder has developed because I've had to cut when maybe I  
297 should have gone up a weight-category. I'd be eating normal and enjoying life and  
298 then I'd go from that to . . . putting my body through those harsh conditions.

299 Charlotte attributes the development of her eating disorder to her decisions to cut  
300 weight for a higher Wilks, which demonstrates the strength of a performance narrative for  
301 this athlete. Charlotte's life is interrupted each time she engages in a weight cut, as she has to  
302 put her body through strict eating practices in order to achieve the best Wilks possible.

303 The psychological impact of weight-cutting was masked through the athletes  
304 continued dedication to the sport. Participants reported a fear of disclosure about the  
305 psychological impact of weight-cutting, due to feelings of embarrassment and associated  
306 stigma. Isabelle exemplified this by discussing judgements made by those around her  
307 regarding her weight-cutting experiences:

308 You think you're gonna be judged so it stops so many girls coming out about issues  
309 with food. From my experience [male athlete's] like: it's just weight, why can't you just  
310 cut weight? Why are you finding it so hard? [Coach] still jokes about it and I know he  
311 doesn't see it as an issue at all and talks about my experience almost like it's a joke.

312 Isabelle's lack of disclosure stems from a fear of judgement and ridicule from those  
313 who, unlike herself, are able to disassociate mentally from weight-cutting practices. For  
314 females competing in a sport characterised by displays of strength, disclosure of mental  
315 weakness threatens their identity as strong powerlifters:

316 Because you're in a power sport, you can't be weak and bitching and crying about  
317 cutting because you're in a sport where everyone is strong . . . males see it as 'I lost 10  
318 kilos in 10 days' like it's almost an achievement thing, which I think comes from a sort  
319 of lad culture like who's got the biggest bollocks to do this? (Daniela)

320 Daniela evidenced the conflict between disclosing struggles surrounding weight-cutting  
321 and powerlifting characteristics. The male dominated culture of the sport dictates that athletes  
322 perceive mental strength to equate to physical strength. Therefore, the disclosure of the  
323 negative impact of weight-cutting and disordered eating becomes "a taboo topic" (Hayley).

Overall, weight-cutting and consequent disordered eating practices were accepted as the norm within a powerlifting culture in order to achieve the highest Wilks possible. Athletes feared disclosing any associated concerns due to fears of judgement from others, particularly male competitors and coaches.

### **Eating like a powerlifter**

Given the high energy demands of powerlifting and the long training hours, the participants' noted the importance of eating a sufficient amount of food to sustain training sessions and competitions: "Whenever I eat something that's not traditionally healthy, I don't feel bad about it. It's another source of energy which can really fuel my sessions" (Rebecca). However, athletes had to balance the weight-making component of competitions which led to disordered practices and some body dissatisfaction when a desired weight-class goal was not met. Often these periods were followed by a cycle of binge eating as a reward, which was justified by the athletes and coaches in line with the demands of the sport.

Athletes recognized the importance of food to aid performance: "I think food intake for a powerlifter is important, especially for a peak as you need carbs and all of the energy" (Eva). A peak is a period of training leading to competition where high levels of fatigue have been accumulated and training intensity is at its highest, which means sufficient food intake is important to sustain training. Paradoxically, many athletes will be nearing the end of a weight cut and for those engaged in food restriction, the body will be depleted of carbohydrates and athletes unable to eat optimally. After weigh-in at competition following a period of food restriction, athletes described how the emphasis on eating a sufficient amount validated binge-eating, i.e., food as a reward following a period of self-starvation:

I wasn't thinking about my performance; all I was thinking about was being able to eat again. I wouldn't have felt able to eat those foods if I hadn't had restricted as hard. It

348           wasn't to fuel my lifting . . . I wasn't thinking about my lifting at all, just about food...

349           And you know that's ok because we're in a sport where you're meant to eat a lot.

350           For Amber her motivation for competing was outweighed by a preoccupation with food

351   which demonstrates the impact of self-starvation on athletes' thoughts and behaviors. Her

352   ability to self-starve was seen as an achievement and her reward was being able to overeat

353   following weigh-in. These eating behaviors were justified by the demands of the sport which

354   encouraged athletes to eat in abundance to fuel performance.

355           For Amber, the urgency of making weight reignited problematic thoughts, as she

356   recalled disordered behaviors which she previously engaged in to negate weight gain:

357           You need to make weight so if you ever need to you can [throw up] . . . that was

358           always in the back of my mind after a binge or if I need to cut weight . . . you can get

359           rid of the food in your stomach if you really need to because I had done that before.

360           Similarly, for Isabelle weight-cutting triggered old thoughts regarding her body

361   leading to severe compensatory behaviors: "Constantly telling myself I was too big started

362   bringing back those habits I had of not eating at all, skipping meals, throwing up, doing

363   cardio all the time". A negative inner monologue from Isabelle emerged regarding her body

364   following a period of self-starvation. Isabelle perceives such thought patterns and behaviors

365   occurred due to her history with an eating disorder: "If I didn't have that I would be stronger

366   right now, maybe I'd be able to deal with it better". However, as additional interviews

367   demonstrate, regardless of prior relationship with food, experiences within the sport were still

368   perceived to impact a disordered relationship with food and the body in other athletes: "I

369   never had a bad relationship with food before [powerlifting]" (Charlotte).

370           Participants experienced a fluctuation in extreme eating behaviors and body perceptions

371   throughout the competition year. For some, balancing their desired eating patterns to produce

372   optimal performance, while simultaneously attempting to cut weight during the competition



season, resulted in a cycle of restriction and bingeing. The urgency of making weight also led to self-depreciating thoughts about the body and the re-emergence of previous eating practices when striving to meet a desired weight-class.

### **Culture of regulation**

A culture of regulation was present as regulatory practices were imposed on athletes either through self-monitoring or disciplinary practices imposed by coaches. The control which athletes previously perceived they had over their bodies was in contrast to the present theme, whereby control was relinquished to coaches and calories. Some coaches influenced motivations to engage in weight-cutting, as from a position of power, they had control over athletes' bodies and what they were eating. The strict regulations imposed by coaches and the calorie limits enforced by athletes' themselves, led to extreme eating practices such as self-starvation and purging, as well as body consciousness.

The monitoring of calories and macronutrient intake was present in all athlete narratives. This method of weight management involved inputting calories consumed into MyFitnessPal, an app which allows users to monitor calories consumed (and specifically macronutrient intake) and calories expended, otherwise known as energy-balance. Athlete narratives described a compulsion to monitor calories in their daily life: "Even when I wasn't eating, I was thinking about it. I was thinking about what I can have for my next meal that's going to fit into my calories" (Amy). This method of self-monitoring led to difficulties while eating at social occasions: "Tracking [food] can get quite obsessive . . . it can get very addicting if you go out for a meal and you can't track, you feel paranoid that you've gone over your calories" (Olivia). Feelings of worry emerged if athletes felt they had no control over the calories they were consuming (i.e., if they could not track it accurately in MyFitnessPal). In order to regain control and alleviate feelings of guilt for "bad days" (Charlotte), behaviors such as undereating and expending calories through additional exercise were used. Eating

398 fewer calories would counteract “bad days” (e.g., binges) where control was impossible: “I  
399 would try to be as under [on calories] as possible. In my mind I was almost like taking  
400 advantage of days where I was over [on calories]” (Rebecca). Interestingly, athletes noted  
401 feelings of control were gained through being able to monitor their food intake through  
402 MyFitnessPal and yet others described regaining control after deleting the app. For example,  
403 Alice constructs her experiences through the move to a higher weight-class in order to get  
404 away from calorie monitoring: “I don’t want to have to spend my life worrying about calories  
405 and saying the reason I can’t eat this is because I need to stay at [weight-class]”.

406 Athlete narratives reveal regulations were additionally imposed by coaches which  
407 influenced disordered eating. Athletes deemed the role of the coach vital due to their status:  
408 “They’re literally God to their athlete, like they listen to every word they say” (Isabelle).  
409 Isabelle exemplifies the position of power and control which coaches had upon athletes.  
410 Coaches enforced disciplinary practices (e.g., weighing, dieting, weight-cutting) were  
411 adhered to by athletes. Consequently, Charlotte experienced disordered eating after following  
412 strict rules from her coach surrounding dietary intake:

413 [Coach] was always like you will never make weight eating that stuff, make sure you  
414 don’t eat carbs . . . I was restricting myself so much that I would go and binge on the  
415 foods I couldn’t have and then just go and make myself sick because I felt so bad.

416 Food restriction was deemed necessary for Charlotte to make weight and following  
417 binge-eating and a period of guilt, relief was found in purging. Given the position of power  
418 which coaches had, athletes noted the role of the coach was vital in preventing disordered  
419 eating. Sophie suggested that problems with food arose when athletes relinquished control of  
420 their food intake to their coach: “If they [coaches] have more control over what you’re putting  
421 into your body than you do, then that’s problematic” (Sophie). Ultimately these extreme self-  
422 regulatory practices as well as those imposed by some coaches led to body consciousness,

guilt, and daily thoughts to be dominated by food and calories. The implementation of strict disciplinary practices by coaches were therefore advised against. Instead, athletes advocated for further education and awareness surrounding nutrition and disordered eating, in order to prevent the occurrence of misinformed weight-cutting in powerlifting.

### **The female body vs. the powerlifter body**

Athlete accounts revolved around the role of their bodies as required for the sport, contrasted to what is idealized in society. Disordered eating was linked to striving to attain a body weight for a smaller weight-class, which athletes associated as more in line with a socially desired female body. However, striving for a lower weight-class was continuously negotiated as athletes welcomed the gain of muscle to aid performance and recognized the empowering effect which having a powerlifter body had on attaining a positive body image.

Some participant accounts reveal an idealization with the attainment of body which was able to meet social body norms while still being able to produce a successful powerlifting performance. This led to associations made between being in a smaller weight-class and the possession of a socially accepted aesthetic body: “Girls seem to not want to move up [a weight-class] but that's just a kind of society thing that we have in our heads, that girls should be smaller” (Mary). Heavier weight-categories were associated with a body which did not conform to the aesthetically-pleasing social ideal, which led participants to eat disorderedly in order to compete in a lower weight-class. Some girls rebelled against this ideal by discussing being part of a sport that defies these rules: “It’s much cooler to lift heavy stuff and go against the stereotype that females have to look a certain way or that females who lift look a certain way” (Rebecca). Rebecca exemplifies the enjoyment had from challenging perceptions that female bodies need to conform to traditional social norms. Similarly, Georgia enjoyed how powerlifting has changed the perception of her body:

447        My body has a purpose now, it's not just something to look at. It can do stuff like I don't  
448        give a fuck if I've got thick legs like these thick legs squat more than your boyfriend.

449        It's nice knowing that you're stronger than the boys.

450        Athletes embraced their muscular bodies and challenged societal ideals of beauty by  
451        occupying space through their muscular physiques. These body perceptions allowed athletes  
452        to view their bodies as having a purpose, which for some, led to decisions to move up a  
453        weight-class, stop disordered eating practices, and allow their bodies to grow in order to  
454        increase performance. Regardless, a paradoxical relationship existed for many between social  
455        and sporting body norms. Some athletes described wanting to be both strong for the sport,  
456        alongside meeting social ideals regarding femininity: "I care the most about getting a higher  
457        deadlift, bench, and squat, but I also care about how I look in the mirror and being lean"  
458        (Hayley). Athletes which strived to attain both ideals, continued in their pursuit of strength  
459        and a better performance, but within the confines of their weight-class, which led to  
460        continued disordered eating behaviors in order to attain this ideal. Participants additionally  
461        made comparisons due to thoughts competitors' bodies were leaner, and therefore more in  
462        line with society's idealized feminine body: "At competition they look real lean with their abs  
463        popping . . . automatically it makes me ponder being in a lower class cos they're in my  
464        category and I'm not as lean" (Sophie). Sophie made body comparisons to peers who she  
465        perceived had muscular bodies, but also socially desirable lean bodies. These comparisons  
466        led to feelings of body dissatisfaction, which caused Sophie to ponder cutting weight and  
467        disordered eating in an attempt to meet both ideals.

468        Despite the move to a higher weight-class to stop weight-cutting and alleviate  
469        disordered eating, weight gain was linked to negative connotations for most. However,  
470        participants admitted weight gain was a normal part of the sport as increased muscle mass  
471        was a by-product of training. Athletes welcomed weight gain, as long as it aided strength and

muscle mass gain, but not fat gain: “The thing that would be hard is I wouldn't like to put on two kilos and it be fat” (Emily). The gain of fat was associated with body dissatisfaction for the athletes who desired possession of both a strong yet lean muscular body for powerlifting.

Amber described how weight gain and the move to a weight-class were a sacrifice, explaining feelings of frustration when immediate performance benefits were not reaped:

If my sessions go badly or I go to hit a weight and it doesn't move as well as I think it should, the pros don't outweigh the cons . . . I'm sacrificing looking leaner to get stronger and it's not even working. I get frustrated when my sessions don't go well because I think that I've made this sacrifice of having to gain weight and not look the way I want any more. I'm not even strong enough to be that big.

Amber recognized that in order to be as strong as possible, her previous lean body would have to be sacrificed. This meant beginning to develop healthier eating patterns now that she did not have to focus on restricting food in order to lose weight for a weight-class. However, when weight gain was not rewarded by increased levels of strength, her new heavier body was resented. For Amber, it seems the cons of weight-cutting (i.e., disordered eating) once yielded a body which was in line with a social body ideal. Ultimately, the ideal smaller leaner body which Amber desired did not fit with how she perceived her current body after a period of gaining weight for the purpose of powerlifting performance.

Athletes attempted to negotiate both female and powerlifter body ideals which impacted the perceptions of their body and disordered eating. Athletes which weight cut to attain lower weight-classes possessed a more socially accepted body, however, were engaging in extreme weight-cutting practices and disordered eating. In contrast, although those which made the move to higher weight-classes did not engage in disordered eating, their previous leaner body was sacrificed leading to an overall poor body image.

## Discussion

The aim of the study was to explore disordered eating experiences in competitive female powerlifters, and specifically understand the impact of weight-classes on disordered eating and body perceptions. The results provide unique insights to powerlifting athletes' thoughts, feelings, attitudes, and behaviors surrounding eating and the body. Themes highlighted the conflict between the aim of powerlifting in terms of adding 'weight on the bar', and the weight-class aspect of the sport requiring athletes to monitor 'weight on the scale'. Findings provide further support to existing risk and prevalence studies within weight-class sports, confirming the sport to be 'at-risk' of disordered eating development (Smolak et al., 2000; Sundgot-Borgen & Torstveit, 2004). Our findings also advance previous work within weight-class sports and go beyond the identification of causal relationships, as themes demonstrate how the sociocultural context of powerlifting can influence the construction of disordered eating and body perceptions. We will now discuss our themes in relation to relevant literature.

Firstly, weight-classes and the normalization of weight-cutting practices imbedded within the sporting culture led athletes to excessively monitor their weight and impacted perceptions of the body and disordered eating. This was highlighted by Galli et al. (2017), who found voluntary self-weighing of up to seven times per week lead to internalization of societal body ideals and disordered eating, including calorie restriction and bulimia symptoms. The imposed regulations in the form of self-monitoring which participants within our study engaged in was described by McMahon and Dinan-Thompson (2011) as the engagement in regulatory normalized practices over the body in order to gain perceived performance success. Within our study, regulatory practices used to cut weight (e.g., food restriction and water manipulation) were learned behaviors from coaches, peers, and/or social media. The internalization of such behaviors combined with weight-cutting being the norm within the sport, led to disordered eating and poor body perceptions. These findings support

previous athlete accounts within swimming (Jones et al., 2005; McMahon & Thompson, 2008) which highlight how compliance to a sporting culture and the regulatory practices imposed by coaches led athletes to engage in self-monitoring and surveillance of the body.

Many participants engaged in disordered eating behaviors, which they witnessed male athletes engage in, without any overt pathological effect. Views were that males were able to detach themselves from the emotions many females experienced with food. This observation highlights the existence of hegemonic masculinity values within powerlifting, which expect males to project confidence and never vulnerability through admitting mental or physical illness (Räsänen & Hunt, 2014). For the female powerlifter, attitudes and norms aligned with those imbedded within the culture of the sport, leading to a lack of disclosure of psychological struggle with weight cuts. Ironically, participants recommended an increased awareness in the sport to tackle disordered eating, contradicting accounts of disordered eating being hidden from peers and coaches, as well as a hesitation in discussing the role which weight-classes had on disordered eating, due to fears of judgement (Sitch & Day, 2015). The gendered constructions of disordered eating additionally provided an interesting dimension to the understanding of help-seeking and disclosure of mental illness in weight-class sports.

Similar to sports whereby an aesthetic component was not a marker for performance success, body image concerns continued to be apparent for athletes (Russell, 2004). Our findings highlight a female-athlete paradox within powerlifting, which conceptualizes how female athletes confront pressures to meet cultural dualism: both the ideals of Western culture emphasizing a feminine body, and sporting culture which demands an athletic body (Choi, 2003; Krane et al., 2004). Echoing comments by Rosdahl (2014), the muscular woman allows herself, both literally and figuratively, to occupy space outside of accepted gender norms. Equally, participants idealized a smaller leaner physique which led to motivations to weight-cut. Through investigating eating practices in combination with body perceptions, an

interaction beyond a simple causal relationship between weight-cutting and disordered eating was identified (e.g., Sundgot-Borgen & Torstveit, 2004). The added dimension of body image perceptions demonstrated how this construct operates within a female weight-class sport and contributes to the growing body of work on the female-athlete paradox.

A positive body image allowed athletes to appreciate and internalize their bodies for what it could do, as opposed to dwelling on any perceived imperfections. Our findings corroborate discussions by Tylka and Wood-Barcalow (2015) suggesting body image does not operate on a continuum. Experiences of both concurrent positive and negative body images meant powerlifters were still able to appreciate and respect their body, for the feats of strength it was able to produce. Interestingly, accounts from Georgia and Alice, framed around feelings of empowerment from moving up a weight-class, did not internalize the female-athlete paradox. In line with bodybuilding narratives, it may be possible that a means has been found to integrate a female identity within powerlifting to generate a new ideal body norm (Marshall et al., 2019). Such accounts highlight that further research is warranted in the attainment of a middle ground between the two dualist ideals of femininity and athleticism.

Our findings suggest that competing in powerlifting poses a mental health risk, if careful consideration of weight-class is not taken into account. The use of weight-cutting has been normalized through perceptions that a lower weight-class increases competitiveness, which is reinforced by peers and coaches. In line with mental health position statements, the sporting culture must change in order to be a psychologically safe environment for athletes (Slingerland et al., 2019). A culture change could include creating new norms surrounding competitiveness and fostering an environment whereby athletes are encouraged to seek help for mental health concerns (Bauman, 2016). More specifically, a shift in perspective surrounding competitiveness and weight-classes may facilitate an improvement in powerlifters' mental health. Given the relationship between muscle mass and lifting



performance, an energy surplus is most beneficial for increased performance in resistance trained individuals (Slater et al., 2019). This suggests the move to a higher weight-class to be most optimal for powerlifters. In addition, the complex interaction between nutrition, performance, and the risks associated with weight-cutting, warrant workshops with qualified dieticians to increase weight-cutting literacy (UK Sport, n.d). Through such evidence-based strategies, disordered eating may be alleviated through a change in culture and the ceasing of weight-cutting, improving the overall mental and physical health of powerlifters.

Although there is a lack of literature on disordered eating interventions for weight-class female athletes, disordered eating education in other sports has proven to be a successful early intervention strategy (Torres-McGee et al., 2011). Beyond the behavioral practices which athletes engaged in to make weight, our findings demonstrated that weight-cutting went far beyond behaviors and highlighted the emotional and attitudinal relationships toward food and the body. Athlete constructions of their bodies demonstrated the importance of targeting a body image perspective as an early intervention tool. Interventions targeted at improving body image, with the aim of eating disorder prevention, have proved useful in the attainment of reduced body dissatisfaction, drive for thinness, and dietary restraint (Becker et al., 2012). Therefore, our findings support the use of such prevention and early intervention projects to target disordered eating in athletes. Future intervention research, specifically targeting female weight-class athletes may prove insightful in addition to our findings.

Athlete accounts demonstrated how being a female athlete in a male dominated sport influenced the construction of experiences. For example, weight-cutting was legitimized within a cultural context whereby psychological struggle was not disclosed due to an alignment with hegemonic masculinity norms. Although we never intended to ‘verify’ participant accounts, as these were a representation of their socially constructed reality at a particular time, an investigation of male powerlifters experiences to supplement our female

accounts, may have proved insightful. Future researchers may choose to explore gendered constructions within weight-class sports of disordered eating and body perceptions in male athletes, in order to expand upon our findings. Given that our findings highlighted a complex tangled relationship between weight-cutting and disordered eating, we encourage future weight-class sport studies to investigate disordered eating through a subjective lens.

### **Conclusion**

This study was the first to qualitatively explore disordered eating in a weight-class sport. Our findings add to the growing body of literature on disordered eating and body image in sport, through the use of interpretive perspectives to gain an understanding of athletes' experiences. Athlete accounts revealed how the sociocultural contexts of powerlifting contributed to experiences of disordered eating practices and particular body perceptions. The normalization of weight-cutting led many athletes to engage in regulatory practices, however, any associated psychological concerns (e.g., disordered eating) were concealed due to fears of judgement from others within the sport. Motivations to cut weight were not only to gain a competitive edge over fellow athletes, but were also linked to body image concerns, as lower weight-classes were associated with a more aesthetically pleasing body ideal. Therefore, our results highlighted a female-athlete paradox within powerlifting, as athletes desired both a body capable of powerlifting success and a body which met societal ideals. However, this paradox was not internalized by all athletes; some constructed their experiences through the move to a higher weight-class and viewed the sport as empowering, which suggests not all athletes ascribe to specific body ideals. In order to alleviate disordered eating development, an increased literacy of disordered eating, weight-cutting, and nutrition within powerlifting is needed. In addition, interventions targeted at improving body image may prove useful in disordered eating prevention. We anticipate findings will extend to other weight-class sports to further understand individual experiences of disordered eating.

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