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A Qualitative Analysis of Female Collegiate Athletes' Eating Disorder Recovery Experiences

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The purpose of this study was to characterize recovery experiences of female collegiate athletes who have suffered from eating disorders. Participants were 16 collegiate female athletes who experienced recovery from an eating disorder. Participants told their recovery stories in semistructured interviews regarding factors that initiated, assisted, and hindered recovery. The most common turning point to initiate recovery was experiencing negative consequences from the eating disorder. Factors that most frequently assisted recovery included making cognitive and behavioral changes, supportive relationships, and seeking professional care. Hindering factors most commonly included lack of support from others, professional care complaints, and spending time with others with eating disorders. Results suggested that unique features of the sport environment, including coaches' behavior and team norms, introduce either positive or negative influences on athletes as they work to recover from an eating disorder. Based on these findings, specific treatment and prevention recommendations for athletes are discussed.

Keywords: anorexia, bulimia, binge eating disorder, sport

The topic of eating disorders in athlete populations has received increased attention in sport psychology literature of the past two decades. At present, the literature regarding whether athletes are at higher risk than nonathletes for eating disorder development remains somewhat equivocal. Some studies show increased risk among athletes (Holm-Denoma, Scaringi, Gordon, Van Orden, & Joiner, 2009). For example, Martinsen and Sundgot-Borgen (2013) found that 14% of elite female athletes in Norway had eating disorders compared with 5% of nonathlete controls. However, others document a lower overall incidence of clinical eating pathology in athletes (Hausenblas & McNally, 2004; Sanford-Martens et al., 2005) and lower risk for the female-athlete triad (Torstveit & Sundgot-Borgen, 2005) compared with nonathletes. Most recently, DiPasquale and Petrie (2013) found no cases of eating disorders in a sample of 156 female college athletes compared with a 5.9% prevalence of eating disorders in nonathlete controls. Despite these discrepancies, there are consistently high percentages of athletes with subclinical eating disorder symptoms. Studies by Greenleaf, Petrie, Carter, and Reel (2009) as well as Beals and Hill (2006) documented that 25% of female college athletes were symptomatic for eating disorders. In addition, there is now a consensus that those specifically in "thin-build" sports like gymnastics or "lean body" endurance sports like distance running are at elevated risk (Smolak, Murnen & Ruble, 2000; Torstveit, Rosenvinge, & Sundgot–Borgen, 2008). Moreover, athletes use their bodies for physically demanding tasks, arguably more than most nonathletes, and face unique sociocultural pressure related to their performance and expected body shape (Anderson, Petrie, & Neumann, 2012; Thompson & Sherman, 1999). Finally, there are sport-specific traumatic events that create additional risks, such as injury and transitions in coaching relationships (Sundgot-Borgen, 1994).

Given these unique experiences and risk factors, athletes are a population that warrants close study. However, much of the body of research on athlete populations has remained focused on prevalence rates and discussions of symptoms (Papathomas & Lavallee, 2012). It remains largely unknown what factors first initiate eating disorder recovery or help and hinder maintenance of recovery among athletes.

As summarized in Table 1, over the past 15 years, numerous qualitative studies have used interviews with

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Table 1 Factors Related to Recovery as Indicated in Previous Research Studies on Non-Athlete Females

Authors	Sample Size	Age Information	Diagnoses	Recovery Factors
Pettersen & Rosenvinge (2002)	*n* = 48	Mean 27.6 yrs	AN, *n* = 10 BN, *n* = 10 BED, *n* = 8 AN & BN, *n* = 20	*Initiated*: wish to change, fed up, negative consequences. *Helpful*: professional treatment, medication, support from others with EDs, self-help books, important relationships. *Hurtful:* not described.
Cockell et al. (2004)	*n = 32*	Mean 27.9 yrs	AN, *n* = 21 EDNOS, *n* = 11	*Initiated:* not described. *Helpful:* social support, applying skills learned in professional treatment, focusing beyond the ED, making external changes. *Hurtful:* lack of structure, isolation, self-defeating beliefs, media pressures, stressful life events/hassles, moving home.
Lamoureux & Bottorff (2005)	*n* = 9	Range 19–48 yrs	AN, *n* = 9	*Initiated:* seeing the dangers. *Helpful:* developing identity outside of AN, showing true feelings, setting boundaries, addressing fears, changing AN mindset and distorted thoughts, reclaiming self-worth. *Hurtful*: sense of control from AN, identity linked to AN, low self-esteem.
Nilsson & Hägglöf (2006)	*n* = 68	Median 30 yrs	AN, *n* = 68	*Initiated*: negative physical consequences, illness/death of friend, move/leaving home, changing schools. *Helpful*: activities, close relationships, mindset change, treatment. *Hurtful:* not described.
Tozzi et al. (2003)	*n* = 69	Mean 32.3 yrs	AN, *n* = 69	*Initiated*: not described. *Helpful*: maturation, supportive relationships, therapy, medications, leaving home, religion, children/pregnancy, waking up, increased self-esteem, willpower, good loss, jobs. *Hurtful*: not described.
D'Abundo, & Chally (2004)	*n* = 17	Range 17–46 yrs	Some with AN, some with BN. Frequencies not provided.	*Initiated:* acceptance of disorder, negative consequences of the disorder, negative life events. *Helpful:* spirituality, hope for future, supportive relationships, building self-worth, reducing irrational thinking, gaining control, being involved in treatment decisions. *Hurtful*: not described.
Federici & Kaplan (2008)	*n = 15*	Mean 26 yrs	AN, *n* = 15	*Initiated*: not described. *Helpful*: self-motivation, viewing recovery as a "work in progress," validating professional care, supportive relationships, identifying/tolerating emotions, improved self-worth. *Hurtful:* lack of motivation, using ED as coping mechanism, avoiding core issues in treatment, feeling misunderstood or isolated, inability to tolerate emotions, low self-esteem.

(continued)

Table 1 ***(continued)***

Authors	Sample Size	Age Information	Diagnoses	Recovery Factors
Matusek & Knudson (2009)	*n* = 8; Only 3 participants' quotes provided.	Full sample not provided; 3 examples ranged from 24–57 yrs	Full sample not provided; 3 examples: AN, *n* = 2 BED, *n* = 1	*Initiated*: starting treatment, acknowledging the disorder, focusing on balance not weight. *Helpful*: social activism, spirituality, identity outside of ED, feminism, criticism of norms, group treatment, meditation. *Hurtful:* not described.
Linville et al. (2012)	*n* = 22	Range 23–55 yrs	AN, *n* = 12 BN, *n* = 5 EDNOS or more than 1 ED, *n* = 5	*Initiated*: relationships were suffering. *Helped:* supportive relationships, understanding treatment providers, healthy eating habits, education about the disorder. *Hindered*: others' hyperfocus on eating, trivializing the disorder or negative comments from others, isolation, patronizing providers, weight as focus of recovery.
Pettersen et al. (2013)	*n* = 13	Mean 27.6 yrs Range 18–54 yrs	Some with AN, some with BN. Frequencies not provided.	*Initiated*: not described *Helpful*: alternative coping skills, developing new identity, accepting losses. *Hurtful*: feeling stigmatized, grief about negative consequences experienced.

nonathletes in recovery to describe factors that motivate women to initiate recovery from eating disorders and factors that exert helpful and hurtful influences on the process (Pettersen & Rosenvinge, 2002; Cockell, Zaitsoff & Geller, 2004; Lamoureux & Bottorff, 2005; Nilson & Hägglöf, 2006; Tozzi, Sullivan, Fear, McKenzie & Bulik, 2003; D'Abundo, & Chally, 2004; Matusek & Knudson, 2009; Linville, Brown, Sturm, & McDougal, 2012; Pettersen, Thune-Larsen, Wynn, & Rosenvinge, 2013). Across these studies, recovery was frequently initiated due to awareness of negative consequences of the disorder or feeling "fed up" with the lifestyle. Recovery was most commonly facilitated by supportive relationships, professional treatment, changing distorted thinking about body shape, education, and developing an identity separate from the disorder. Recovery efforts were most typically hindered by lack of support from others, isolation, low self-esteem, and media pressures. Although these findings offer some insight, they are limited in explaining how athletes, with aforementioned unique risk profiles, might experience recovery.

To date, only one case study and two survey studies are available in the literature to describe athletes' recovery experiences from eating disorders. Using a life history method through nine semistructured interviews, Papathomas & Lavallee (2006) described the experiences of an elite male soccer player whose onset of bulimia was influenced by performance pressure, achievement related perfectionism, and rigid dieting. His narrative revealed that attending professional treatment was highly influential to his recovery as he learned alternative coping mechanisms, challenged maladaptive thoughts, and planned for possible relapse. In addition, leaving his sport due to injury allowed him to focus on recovery, develop an identity outside of sport, and distance himself from an unhelpful and demanding coach, which were noted as the other factors that helped recovery.

In a sample of 18 former high school athletes who responded to an online survey, Woods (2004) found that sport performance pressure or reinforcement for weight loss by coaches worsened eating disorder symptoms, whereas parents and coaches who provided unconditional support enhanced recovery. These findings suggest that athletes may experience unique factors that influence the recovery process. It is of note that the relatively small sample contained both male (*n* = 2) and female athletes (*n* = 16), yet the results were not delineated by gender. In addition, these athletes stopped competing after high school, thus their experiences may differ from those who compete at collegiate and elite levels. In effort to address the aforementioned limitations, we used an anonymous online survey to ask collegiate female athletes what factors most assisted their recovery (Arthur-Cameselle & Quatromoni, 2014). The responses of 47 participants revealed that a desire to regain strength and energy to compete in sport was the most frequently reported factor that assisted recovery from an eating disorder, another indicator that athletes have different recovery experiences than their nonathlete peers.

These three studies provide a foundation for understanding recovery in athlete populations. The results collectively suggest that the sport environment and the role of "athlete" exert unique influences on recovering from an eating disorder. Of particular interest is the influence of relationships with sport-specific others (e.g., coaches and teammates). However, these prior studies were limited in either generalizability given the case study nature (Papathomas & Lavallee, 2006) or by the use of structured questionnaires, precluding in-depth information

or targeted follow up questions to fully characterize the athletes' experiences (Woods, 2004; Arthur-Cameselle & Quatromoni, 2014). Therefore, as has been recently argued, interview research with larger samples is needed to better understand recovery in athlete populations (Papathomas & Lavallee, 2012).

The objective of the current study was to acquire comprehensive information about initiation and achievement of recovery by interviewing female collegiate athletes in recovery from eating disorders. This sample represents a subset of those from our anonymous online survey research (Arthur-Cameselle & Quatromoni, 2014) described above. We specifically wanted to characterize factors that initiated, assisted, and hindered recovery. We hypothesized that athletes' reports would be largely similar to nonathletes', with the added expectation of identifying specific factors related to the sport environment and important persons within sport, including coaches and teammates (Woods, 2004; Papathomas & Lavallee, 2006).

Method

Participants

Participants were 16 females with an average age of 20.7 years old (*SD* = 2.4). There were 14 Caucasians, one Asian American, and one African American. All participants were current or former National Collegiate Athletic Association (NCAA) athletes in the United States. They competed in: track/cross country (*n* = 8), swimming (*n* = 2), tennis (*n* = 2), crew (*n* = 2), golf (*n* = 1), and diving (*n* = 1). Each athlete, for a period of at least 6 months, met criteria for an eating disorder, as defined in the Diagnostic and Statistical Manual-IV-TR (American Psychiatric Association, 2000), including anorexia nervosa (AN), bulimia nervosa (BN), or eating disorder not otherwise specified (EDNOS), specifically binge eating disorder (BED). Participants experienced the following diagnoses: AN (*n* = 8), BN (*n* = 2), BED (*n* = 2), AN followed by BN (*n* = 3), and AN followed by BED (*n* = 1). For 10 participants (62.5%), eating disorder onset reportedly occurred before college, during either middle school (*n* = 4) or high school (*n* = 6). For the other six (37.5%), symptoms reportedly began during their freshman (*n* = 4) or sophomore years (*n* = 2) of college. On average, their eating disorders lasted for 32.4 months.

All participants experienced a period of "recovery," defined as a minimum of 3 months without meeting the DSM-IV-TR criteria. Though many studies simply use an absence of DSM diagnosis as criterion for "recovery," other literature has described more than 3 months as "full remission," while less than three months is considered "partial remission" (Kordy et al., 2002). It was the consensus of our research colleagues (two practicing sport psychologists and one qualitative research expert) that participants should experience a recovery period of minimum 3 months duration to be able to reflect on factors related to recovery. At the time of the interviews, all participants were in a period of recovery, which was on average 13.3 months long.

Procedure

Initially, 47 participants were recruited at 8 colleges on the east coast of the United States via flyers and emails sent to athletic departments. Participants were asked to complete an anonymous online survey as part of a separate study (Arthur-Cameselle & Quatromoni, 2014). At the end of the survey, participants provided their name if they met inclusion criteria for our follow-up study and were interested in being interviewed.

The interview sample appeared representative of the larger sample given their similarity on important variables including age (survey mean = 19.97 years; interview mean = 20.7 years) and period of recovery (survey mean 12.95 months; interview mean = 13.3 months). Though the interview sample had a slightly higher frequency of Caucasian participants (survey ethnic background: Caucasian = 77%, African American = 4%, Asian = 4%, Hispanic = 2%, unidentified = 13%; interview ethnic background: Caucasian = 88%, African American = 6%, Asian = 6%), it is likely that some of the 13% of the survey sample who did not provide ethnicity were also Caucasian. The interview samples' diagnoses were largely reflective of the survey samples', though there were more sole diagnoses of Anorexia (survey diagnoses*:* AN = 34%, BN = 15%, BED = 8.5%, two or more = 42.5%; interview diagnoses*:* AN = 50%, BN = 12.5%, BED = 12.5%, two or more = 25%).

The study design was approved by the institutional review board and all participants read and signed an informed consent form before the interview. They were assured that interview responses would be kept confidential; coaches at the colleges were not informed about their athletes' participation in the study. No compensation was provided for participation.

Participants were interviewed by the primary author (JAC), a female, former collegiate and professional tennis player with no eating disorder history, who is a clinical psychologist qualified to apply diagnostic criteria to confirm eating disorder diagnoses. Participants were first interviewed regarding factors that influenced the onset of their eating disorder (Arthur-Cameselle & Quatromoni, 2011). A second interview segment addressed the research topic for the current study via a semistructured interview guide that focused on the following aspects of participants' experience: 1) Factors that initiated a desire to change disordered eating behavior (i.e., "turning point"); 2) factors that assisted recovery efforts; and 3) factors that hindered recovery efforts. Once the interviewer asked participants to reflect on the area of interest, follow up probes were used to gather more detail, such as, "Tell me more about that" and "Can you identify any other factors that seemed to help your recovery?" The interviewer regularly used reflective statements to verify participants' meaning.

Though 17 participants completed the second segment of interviews, one participant's data (a runner with AN) were lost due to unnoticed failure of the recording device. She was contacted about being interviewed again, but she did not respond; therefore, 16 participants' responses are included in this study. The athletes were interviewed in person ($n = 6$) or by telephone ($n = 10$) and the interviews lasted between 30–45 min. No substantial differences in length of interview time emerged from participants interviewed by phone compared with those interviewed in person. Interviews were audiotaped and transcribed verbatim, omitting only words unrelated to meaning such as "um." Each participant received a copy of her transcript and was invited to contact the researchers with concerns about accuracy; no concerns were reported.

Data Analysis

Participant responses were thematically examined in accordance with content analysis procedures, a method for condensing large amounts of qualitative material into thematic clusters by identifying common meanings represented in multiple narratives (Patton, 2002). For our analyses, responses were initially grouped into the three primary areas of inquiry (initiate, assist, and hinder). Responses were then analyzed inductively using open coding (Strauss & Corbin, 1998); no a priori coding structure was used. Participants' responses to each of the three areas typically received multiple codes. Moreover, on several occasions, two or more factors were described within the same sentence. During a second and third review, using a realist approach (Patton, 2002), themes were condensed to eliminate redundancy and overlap. Responses that were similar in meaning were grouped together into "codes." To enhance the validity of the analysis, two colleagues reviewed the coding structure of all interviews to ensure accuracy, clarity, and conciseness. Disagreements regarding coding, though rare, were resolved by reaching agreement between the authors and three colleagues regarding the intended meaning in the narrative, with emphasis on staying close to the participant's words to reduce subjectivity.

Results

Factors that Initiated Recovery

Six themes emerged to explain participants' motivation to first change eating behaviors and attempt recovery (see Table 2). Experiencing *Negative Consequences of the Eating Disorder* initiated recovery for 69% of participants ($n = 11$). Many realized that they were not willing to suffer the physical consequences any longer. For example:

> When [my physician] told me that my hair was falling out, I freaked out and that actually, sadly, that kind of triggered that I kind of need to start eating a little more food…That was the only reason. Otherwise, I really didn't care. (p#15)

Others were no longer able to compete in sport as a result of their eating disorder. For example, "I couldn't run anymore. I physically couldn't…. that was my turn around factor because I couldn't physically run anymore and that was such a big, big part of my life... running really turned it around "(p#12). For some, the consequences were far-reaching, affecting areas of their lives outside of sports:

> I couldn't go to school. I couldn't be free. I felt like the stupidest person in the world. It put things in perspective. I'm not really being responsible, and because of that I can't do the things I want to do. (p #13)

Of the sample, 63% ($n = 10$) stated that a *Confrontation or Intervention* motivated recovery. Often the intervention was accompanied by an ultimatum, such as being removed from sport or school, as experienced by Participant #5, "My doctor…told me that I had to stop running." For some, the intervention was initially met with resistance or denial and participants reported difficulty coping with the feelings of shame about the eating disorder.

> [My sister] came up to me one night and she was like, "You need to stop." And I was like, "Stop what? What are you talking about?". . . I had to tell my coach. . . I felt like I was disappointing my teammates and the young girls that looked up to me. . . I was disappointing my parents. I was disappointing my boyfriend. (p#13)

However, in reflecting on the experience, the athletes consistently expressed how important the confrontation was since many had been in denial and reported that they likely would not have initiated treatment or made changes on their own. For example,

> I didn't think I was fat, but I didn't see myself as super skinny…my mom took me into the bathroom and she said… "Look at your bones." And I saw them, and I just started crying. . . I cried because I just had no idea what to do. (p#11)

> The fact that [my teammates] would go and help me like that was really an eye opener and it was a really good thing… I think that really helped a lot… they are showing concern for me and it's unhealthy and it's time to make a change. (p#1)

The *Desire for a Better Life* was a turning point for 50% of participants ($n = 8$), who reported reaching a point where they felt fed up with the eating disorder lifestyle and realized that their quality of life would improve without it. Participant #3 noted, "I think senior year I finally was like, 'this has got to go.' I just did not want to be a 40-year-old mom who was bulimic." One runner gave up her sport to recover from anorexia:

> I received a third place medal…I thought I would feel like I was on top of the world, right? Because that was the whole goal, the whole reason I was doing all this [anorexic behavior]…I just went, 'This is not making me feel any better.'.... That's when I believe I started true recovery…. I was like, 'OK, I've ruined my whole life for this [medal], and it's not worth it…you know what? I'm choosing my life over this stupid running thing.' (p#4)

When there was *Improvement in Self-Esteem or Mood*, 38% of participants (n = 6) were motivated to recover. For example, one participant noted that by making important life changes she found self-acceptance, which made it easier to resume normal eating patterns. She stated, "I really gained self-respect back and everything just fell into place" (p#14).

Opening Up to Others sparked recovery for 38% of participants (n = 6). Specifically, those who had struggled to overcome the disorder without professional help reported that it was imperative to confide in others:

> This was absolutely the turning point…I went in there and I was like "[head coach], I have an eating disorder. I can't handle it… I'm just stressed out….I don't know what to do.". . . And she completely understood. . . that day, I really made the commitment to myself to keep getting better. (p#14)

For 25% (n = 4), a *Change in Environment* was an important initiator of recovery because certain environments were "toxic" or "negative." For example, "I think my biggest turning point was…when I transferred to [a new university]. And, I think it was just a new beginning for me" (p#14).

Factors that Assisted Recovery

Participants' narratives revealed eight common themes with regard to factors that facilitated recovery (see Table 2). Every participant made *Cognitive Changes* (n = 16) to recover. They changed attitudes about the possibility of recovery, thoughts about their bodies, or reactions to negative influences in their lives. For example, the helpful impact of "reprioritizing the important things in my life" (p#16) was often reported. In addition, they used empowering self-talk, such as, "I would just try to tell myself, 'You can make this decision. It's your decision'" (p#4). Others achieved a level of acceptance of things outside of their control, which proved helpful. For example:

> I have realized…that my mom is never going to change… For me, one of the big issues that I brought up is that she never says she loves me…So I just realized, 'Look, it's her. Forget it. She probably does love me. She does, she just can't express it for whatever reason.' (p#6)

In addition, several participants discussed their ability to shift their previously maladaptive perfectionism and obsessiveness over food and body toward working on regaining health, like Participant #2 who said, "My outlook changed a lot. I mean, I'm a determined person when it comes down to it and I think that when I made up my mind to get better, I really did want to get better." This sentiment was echoed by Participant #16, "I guess I am kind of a person who doesn't like to quit things so I was just trying to get through it. And just like trying to finish, I guess, was my motivation."

Each participant (n = 16) noted the supportive influence of *important relationships.* They overwhelmingly reported that unconditional support was the most helpful aspect, as reflected by, "[My dad] just, was always, always there to listen… I knew he was going to love me no matter what" (p#10) and, "My coach was really motivated in getting me better. He didn't even care if I raced that year; he just wanted to see that I got better" (p #12).

Professional care was an important assisting factor for 94% of participants (n = 15). Most often, the athletes described the helpful influence of therapists on their recovery, such as Participant # 5 who said, "The most helpful thing, I think, was seeing the social worker because she was really good at listening." Participants

Table 2 Reported Factors that Influenced Athletes' Recovery from Eating Disorders

Factors That Initiated Recovery	Factors That Assisted Recovery	Factors That Hindered Recovery
Negative consequences of the disorder (69%)	Cognitive changes (100%)	Lack of support (81%)
Confrontation/ intervention (63%)	Important relationships (100%)	Professional care complaints (63%)
Desire for better life (50%)	Professional care (94%)	Others with eating disorders (56%)
Improvement in mood/ self-esteem (38%)	Behavioral changes (94%)	Negative cognitions (50%)
Opening up to others (38%)	Sport environment (81%)	Relationship conflict (50%)
Change in environment (25%)	Others with eating disorders (56%)	Negative emotions/ low self-esteem (38%)
	Medication (38%)	Sport environment (25%)
	Spirituality (25%)	Societal pressure (25%)
		Body checking (13%)

also reported that counseling helped them to identify root causes of their eating disorders:

> [My therapist] really challenged me to talk, when I didn't want to talk about this stuff…And she didn't make me talk just about food, she let me talk about whatever I wanted to talk about that day, and when I started swaying away from the topic, she'd bring me back and make me talk about it…we really started talking kind of about the meat and bones behind why I was having all these issues and stuff, and just dealing with the past. (p#7)

Nutritionists were identified as helpful when they provided individualized support and gradually increased their interventions. "[The nutritionist] got me on this sort of nutrition schedule…we worked on it in really, really small steps. Increase something small, one at a time per day" (p#1). For those with binge eating disorder and bulimia, identifying triggers for binges and developing strategies to avoid them were crucial:

> [The nutritionist] was so good about being so practical and being like, "OK. This is stuff that you can easily keep in your car when you get hungry" and that kind of thing. . . Like, you need to set yourself up for this to work. (p#3)

Behavioral changes, such as avoiding triggers and utilizing new coping mechanisms, assisted recovery for 94% of participants ($n = 15$). For example, Participant #7 explained, "I try really hard not to weigh myself …and trying not to go naked in front of a mirror." Participants also used new strategies to deal with triggers, "I read a lot, I rest, I take naps, I go for runs, I sit in the sun….I do a lot of things that are good for me" (p#14). A powerful change, reported consistently by participants, was learning to express feelings to others instead of using food or exercise to manage emotions. For example, "Once I began to voice my opinions, I would feel better, see other perspectives, get a new idea on how to handle a trying situation…my worry and anxiety would lessen" (p#9).

Factors unique to the *sport environment* assisted recovery for 81% of participants ($n = 13$). Recovery efforts were strengthened when athletes experienced that they actually performed better when they ate better, assuaging the fear associated with refeeding that was otherwise a barrier to recovery. The following was a typical comment, "If I wanted to do well at anything, you have to have energy or you can't do it" (p#13). As participants became healthier, sport provided a source of confidence: "Actually, [tennis] helped… I was making the right decisions in my personal life or with my food….the more clear that I was off the court, the more clear I am on the court." (p#14) The *Sport Environment* was also deemed helpful because it provided a sense of purpose. Participant #10 explained, "Going back to training with the team has been really helpful… having that structure."

Interactions with *others with eating disorders,* were helpful for 56% of participants ($n = 9$), as they provided a sense of universality. For example, "Just to sort of realize that…I wasn't the only one…There are other people out there and…people with very different problems feel the same things" (p#10). *Others with eating disorders* also provided vicarious learning, highlighting negative consequences of the disorders. Participant #12 noted, "[My friend] took me to her Mormon church one day so we could see this woman who is 28 years old and still lives with her mother because she has an eating disorder."

Psychotropic medications assisted recovery for 38% of participants ($n = 6$), across diagnoses, though some athletes resisted taking medications initially:

> I did notice a change when I took the medication, but I was really opposed to taking medication. Once I started to feel better, I said, "I don't want to take it anymore." I stopped taking it and then I just went back the way I was. . . I just was really depressed and I had really bad thoughts.. . . Even though [my eating disorder] was such a long time ago, I'm still on medication now. (p#11)

Finally, *spirituality* was mentioned by 25% ($n = 4$) who noted that faith, prayer, or meditation helped them to surrender the need for control and connect to others:

> I just became a lot more spiritual, that's one thing I did do. I started going to church a lot and praying and…. just brought God back in to my life and started to just not be so selfish and just open myself up. (p#14)

Factors that Hindered Recovery

Nine thematic codes emerged to describe participants' accounts of what hindered their recovery (see Table 2). *Lack of support from important others*, reported by 81% of participants ($n = 13$), was the most frequently noted obstacle and included direct negative comments, lack of concern, and pressure from family members, friends, teammates, and coaches. Participant #1 explained how negative comments intensified her restriction, "My mom would say things like, 'Oh, what? You're not going to eat now?' when she'd get mad at me. And when [she and my sister] both did that, I didn't want to eat at all, and I wouldn't." Another participant's teammate triggered negative body image, "I remember when school started, [my teammate] would come up to me and the other girls on the team and she would pinch our sides and be like, 'Ha Ha! [she] has a little jiggle' " (p#13).

Lack of acknowledgment of the eating disorder by family or coaches was also interpreted as disregard for the participants' well-being. For example, a rower reflected:

> The coach that I had at [boarding school] never said anything and I distinctly remember once…I was stroking this boat and I started upchucking a lot of stuff and it ended up on me and she didn't even say anything and it happened all the time, but that time she was even looking at me and talking to me. (p#3)

Finally, judgments about food intake reportedly made participants' eating disorder symptoms worse. Participant #10 stated, "You feel like they're going to be watching you…Is she eating? Is she not eating? Is she eating too much? … you don't want them to be constantly judging you."

Professional care complaints impeded recovery for 63% of participants ($n = 10$). Some, like Participant #12, had difficulty finding a therapist with the right expertise, "I got placed with this random guy that had no idea…about eating disorders… I would just go in there and cry and there was no response out of him and it was awful, so I quit going." Others believed that providers did not use techniques that were individually tailored to their needs. Participant #11 stated, "It seemed like [therapists] always had their own agenda, their set of, this is what we need to go through and I just was like, 'today, I just want to talk about this.'" Participant #15 also noted, "I went [to a nutritionist] twice, which, personally I thought it did more harm than good because I had to write down everything I ate...anorexics love… measuring, knowing every little piece of food you're putting in your mouth." For others, the use of weigh-ins impeded recovery because they felt punished and devalued:

> I got really upset and I still do kind of get upset at my primary care physician when he makes me come in to check my weight every two weeks…it just feels like I am being judged by the scale again….In anorexia, I was judging myself if I had gained too much, and now he gives me a thumbs up if I gained another pound and a thumbs down if I lost any weight…. That was just very unhelpful. (p#5)

Interactions with *others with eating disorders* impeded recovery for 56% of participants ($n = 9$). Participant #4 stated that her progress was hindered by, "meeting all those people in the hospital…just seeing what they were doing and then you have a real mixed perception of what you're supposed to be doing." Others reported a harmful competitiveness with others with eating disorders, particularly teammates:

> I had this thought, "[My teammate] thinks I'm thin, but now I have to stay thin'….we got really competitive…. she had lost like 20 pounds. I mean, she was really thin, disgustingly thin…when she wouldn't eat, it would just drive me crazy 'cause I was like, 'well I can't eat.' (p#13)

Negative cognitions were reported as hindering for 50% ($n = 8$) of participants. The following response was typical of the internal struggles experienced, "I had to fight thoughts a lot. When I would eat a healthy meal, I would be like, 'Shit. Now I have to go running'…. to be honest, I think I was my worst enemy." (p#2)

Half of the athletes in this study also reported that *relationship conflict* hindered their recovery ($n = 8$). For example, some women noted that when romantic relationships ended, they had difficulty avoiding eating disordered behaviors: "He and I kind of got in a fight, and he was one of my best friends, but also, kind of like a boyfriend…That definitely was a time when I kind of resorted back to certain things." (p#9)

Negative emotions/low self-esteem hindered recovery for 38% ($n = 6$) of participants ($n = 12$). Athletes frequently cited their own low self-concept as a barrier:

> There were days where I was like, 'Ugh. I know I should eat again but I don't want to, I don't feel good enough about myself to be able to give myself what I want and what I know that I need'…. I guess [not eating] was kind of a punishment. If I had low self-confidence on some day or I didn't feel like I had done something well or that I deserved [food]. (p#5)

Negative mood states also increased the chances of relapse. For example, Participant #2 explained how the act of restricting food actually soothed her in times of distress, "The more emotionally painful things were, the more I wanted to go back to that comfort of being hungry. It sounds weird, but it's just a comfort thing."

For 25% ($n = 4$) of participants the *sport environment* was a detriment to recovery, due to pressures to excel in sport as well as maladaptive norms around exercise, eating, and body shape. Participant #8, a runner, described the difficulty she had maintaining recovery when so many of her teammates had disordered eating. She stated, "… it's very hard to get over something when it is accepted." A golfer similarly talked about negative influence of the sport environment:

> My opinion is that it's because you're hanging around perfection all day… You are talking about elite people… it's like, 'Oh my God, look at the muscles she has! I'm never gonna measure up.' And she's the number one track star in the nation... And yet, that's not the average female, but it's who you're basing your averages on and you're like, 'Oh my God I'm fat. I have no muscle.' (p#6)

Societal pressure at large was mentioned as an indirect factor that impeded recovery for 25% ($n = 4$). These athletes noted that pressure from the media or social norms worsened their symptoms. For example, "I think media plays a lot in it….there's times you glance at magazines and be like, 'why don't I look like that?'" (p#13).

Body checking behaviors, such as weighing oneself or looking in mirrors, were mentioned as hindering by 13% ($n = 2$). Participant #7 shared, "I weighed myself this summer for the first time in months… just the fact that the number went up instead of down was just intolerable to deal with. And the very next day, I started calorie counting [again]."

Discussion

This research is notable for its unique investigation of the eating disorder recovery journey among competitive female athletes using interviews and qualitative analyses to elucidate factors that initiate, assist and hinder

recovery. Our analyses confirmed similarities in recovery factors reported by nonathletes. It also provided new information and characterized factors specific to the sport environment. In addition, this research was one of only a few on the topic that identified factors that interfere with recovery. The findings present a complex array of factors in an athlete's environment that interact with and often trigger internal factors in ways that promote, facilitate, or sabotage recovery efforts.

Factors that stimulated the desire to recover were relatively few in number across athletes in this sample. The fear of ongoing, negative consequences and feeling "fed up" with the lifestyle of the disorder were among the strongest motivators for recovery in our participants, factors that have been reported by nonathletes (D'Abundo & Chally, 2004; Pettersen & Rosenvinge, 2002; Pettersen et al., 2013; Nilson & Hägglöf, 2006). However, it is notable that many of these athletes were specifically motivated by a desire to be healthy enough to compete in their sport. This result is consistent with findings from the larger sample we surveyed using an anonymous questionnaire, which indicated that the desire to be healthy for sport is perhaps the strongest motivator for recovery in female college athletes (Arthur-Cameselle & Quatromoni, 2014). Both of our studies suggest that motivational interviewing techniques (Miller & Rollnick, 1991) would enhance an athlete's commitment to recovery, which might involve exploring ambivalence through a decisional balance exercise in which the athlete articulates the pros and cons of making a change as well as pros and cons associated with continuing disordered eating behaviors. Such interventions are successful in nonathletes with eating disorders (Cockell, Geller, & Linden, 2003; Macdonald, Hibbs, Corfield, & Treasure, 2012) and could be applied to create dissonance in an elite athlete, bringing into awareness that maladaptive eating behaviors (which cause physical impairments) are at odds with athletic performance goals. This suggestion is in line with findings from cognitive dissonance based prevention programs that aim to produce dissonance between one's values (e.g., "I want to be a successful athlete") and behavior (e.g., "I am not giving myself proper fuel"). Such prevention efforts have proven to be successful in reducing eating disorder risk factors in nonathletes (Stice, Shaw, Becker & Rohde, 2008) and in athletes (Becker, McDaniel, Bull, Powell, & McIntyre, 2012).

Consistent with prior research on nonathletes, our athlete participants were motivated to recover when they felt more emotionally stable, when someone important like a coach confronted them, or when they left unhealthy environments (Nilson & Hägglöf, 2006). Their reports demonstrate the important influence of coaches and support findings that coaches are often helpful when involved in eating disorder prevention and treatment (Sherman, Dehass, Thompson, & Wilfert, 2005). Specifically, our findings suggest that coaches should seek assistance or consultation from a mental health provider and then confront an athlete who is exhibiting disordered eating.

Once they entered recovery, athletes in our study reported that a change in attitude was the most common factor that helped to avoid relapse. In fact, a change in attitude appears universally critical to achieve recovery from eating disorders (Björk & Ahlström, 2008; Nilson & Hägglöf, 2006). As such, our findings support previous assertions that the definition of "recovery" from an eating disorder should include cognitive changes to the eating disorder mindset, not simply the absence of behavioral symptoms like purging or low body weight (Noordenbos, 2011; Couturier & Lock, 2006). Based on our athletes' reports, it appears that several factors facilitated shifts in attitude. In particular, they noted the value of reprioritizing what was important to them, which resulted in deemphasizing thinness. Often this shift was possible once they saw a decrease in athletic performance or were removed from school or sport as a consequence of an intervention. These experiences seemed critical to dispel the myth that they needed to be thinner to excel in their sport once they experienced that, in reality, the eating disorder was an obstacle to athletic participation and goals. In addition, the use of professional treatment was essential for reshaping attitudes, accomplished by therapists who challenged maladaptive and distorted thoughts. Several athletes also noted that they were able to shift their perfectionistic tendencies by channeling their obsessiveness onto a pursuit for recovery and health.

The ability to express emotions to others was also perceived as directly related to the reduction of symptoms by our athletes and by women in previous studies (Cockell et al., 2004). This observation supports the assertion that eating disorders are maladaptive coping mechanisms, often used to avoid difficult emotions (Nordbø, Espeset, Gulliksen, Skaþrderud, & Holte, 2006). When athletes expressed their needs, they were less likely to use food to cope with their emotions and instead implemented healthy coping strategies that facilitated recovery, as also reported by nonathletes (Pettersen et al., 2013). Similarly, social connectedness was deemed helpful, consistent with prior research on binge eating disorder in nonathletes (Krentz, Chew, & Arthur, 2005). Finally, as reported by our athletes, spirituality is a factor that assists recovery in nonathletes (D'Abundo & Chally, 2004; Matusek & Knudson, 2009), particularly for those who use the 12-step "Overeaters' Anonymous" recovery program (Wasson & Jackson, 2004).

It is notable that half of the prior interview studies involving nonathletes failed to report on any factors that interfered with ED recovery. Of those that did identify hindering factors (Table 1), only a few factors particularly resonated with the reports of athletes in our study. Lamoureux & Bottorff (2005) noted how a woman's identity was linked to the eating disorder, serving as a barrier to recovery. In our study, the eating disorder was often closely tied to athletic performance and tied to the individual's identity as an athlete. Linville et al. (2012) described the hindering influence of isolation and of others who made negative comments or trivialized the disorder, similar to the descriptions provided by our

athletes as to how coaches and teammates (or isolation from teammates when sport participation was prohibited) negatively influenced their recovery. Uniquely in our sample, it was noted that the pressures to achieve and maintain an athletic body type were intertwined with factors that hindered recovery. Athlete body image issues were reflected in themes of lack of support from others, others with eating disorders, and sport environment factors, largely related to teammate interactions that drove athletes to internalize pressures to be thin.

For half of our participants, a hindering factor was their own negative thinking, including distorted thoughts about food, their bodies and about their sport performance. Negative cognition is an obstacle noted consistently by nonathlete populations (Cockell et al., 2004; Keski-Rahkonen & Tozzi, 2005; Krentz et al., 2005; Lamoureux & Bottorff, 2005). Our findings suggest that interventions specifically designed to change maladaptive thinking patterns, such as Cognitive Therapy (Beck, 1995), and increase emotional expression, such as Emotion Focused Therapy (Greenberg, 2010), should be regularly included in athletes' treatment plans. In particular, it appears that a useful intervention would be to help athletes challenge the common maladaptive thought that lowering body weight will only improve athletic performance. Athletes' attempts to restrict food and lower body weight often hurt performance due to related injuries or lack of proper energy, which in turn became a primary motivator to enter recovery for athlete participants in our study.

Close relationships could both assist or impede recovery. Interactions with family, friends, and coaches were deemed helpful when athletes received concern and unconditional support, but hurtful if they felt pressured, criticized, or ignored. Previous research in general populations also identified support of others as contributors to recovery (Button & Warren, 2001; D'Abundo & Chally, 2004; Nilsson & Hägglöf, 2006; Tozzi et al., 2003; Woods, 2004), by contrast lack of support (Hesse-Biber, Marino, & Watts-Roy, 1999), hurtful comments (Linville et al., 2012), and emphasis on physical appearance (Hesse-Biber et al., 1999) were hurtful.

With regard to sport-specific persons, athletes specifically appreciated coaches who approached them with concern and listened to their needs. Coaches who ignored eating disorder behavior, or who made negative comments about body weight or shape, were deemed hurtful. Former high school athletes similarly had this experience (Woods, 2004). This finding also aligns with reports that athletes who receive critical and negative comments about their body weight or shape are more likely to engage in disordered eating (Kerr, Berman, & De Souza, 2006; Muscat & Long, 2008). As such, education for coaches about risk factors and symptoms of eating disorders, and training on how to communicate and intervene in an appropriate manner is warranted. It seems essential for coaches to acknowledge and confront eating disorders, given that ignoring them apparently fuels maladaptive behaviors by defining them as normative.

Spending time with other individuals with eating disorders had both positive and negative consequences for athletes in recovery. Some positive influences were reported related to a sense of universality and connection, as seen previously (Tozzi et al., 2003; Wasson & Jackson, 2004). Seeing others who had recovered, or conversely, observing those who were "worse off" were forms of vicarious learning (Lamoureux & Bottorff, 2005; Pettersen & Rosenvinge, 2002; Wasson & Jackson, 2004). However, competition with others with eating disorders or maladaptive behaviors learned from others were commonly cited as hurtful to recovery, as has also been noted by nonathletes (Keski-Rahkonen & Tozzi, 2005). One might suspect that this observation is heightened to some unknown extent by the competitive nature of sports. For example, participants noted that unhealthy behavior of teammates and comparisons to their teammates' appearance had a hurtful influence, which has been reported in other athlete samples (Greenleaf, 2002; Mosewich, Vangool, Kowalski, & McHugh, 2009). This hurtful modeling seems particularly relevant to address given that an athlete cannot choose her teammates or control the amount of time she spends with her team. By contrast, a nonathlete may have more control over interactions with peers and therefore might be better able to distance herself from others with eating disorders. These findings suggest that team norms around eating, exercise habits, and communication are all essential targets for preventive interventions.

Similar to previous studies, professional caregivers were deemed helpful when they were empathic, allowed the client to have some control over the treatment plan, and when they assisted clients in identifying root causes of their disorder (Cockell et al., 2004; Krentz et al., 2005; Pettersen & Rosenvinge, 2002). Athletes in this study emphasized the importance of treatment providers who were knowledgeable, accessible, and trustworthy. In particular, they noted that therapists' and nutritionists' techniques aimed at building specific coping mechanisms to fight urges to binge or restrict food were particularly helpful.

Therapists, physicians, and nutritionists were identified as obstacles to the recovery process if they lacked specific knowledge of eating disorders or if they used treatment interventions that were too rigid or not individualized to the athlete's unique circumstances. The importance of flexible and individualized treatment plans is also reported in prior research (Button & Warren, 2001). Weigh-ins and height-weight charts were deemed detrimental because they imposed nonindividualized standards. Nonathlete literature revealed similar reactions—particularly that weight monitoring worsens the cognitive symptoms of eating disorders (Button & Warren, 2001; Linville et al., 2012). For physicians and athletic trainers, it is important to realize that meeting a particular weight goal does not define "recovery," because negative cognitions typically persist even after a healthy weight stabilizes them medically (Bachner-Melman, Zohar, & Ebstein; 2006; Couturier & Lock, 2006). In general, our findings confirm suggestions that a team treatment approach that comprehensively addresses both the physical and

psychological manifestations of eating disorders is needed in athletes (Thompson & Sherman, 2010).

It is noteworthy that the sport environment was helpful to recovery for well over three-quarters of participants. Most commonly, participants were motivated to stay in recovery when they experienced performance enhancement resulting from their improved nutritional state. However, as documented by Anderson et al. (2012) and Papathomas and Lavallee (2006), our participants also reported that the pressure to perform or to achieve a particular athletic body type hindered recovery. These findings lend more support for education for coaches, teams, and sports medicine staff on how to facilitate healthy norms and food choices as a means to improve performance, since both appear critical to recovery.

Antidepressant and antianxiety medications also assisted the athletes' recovery; a finding demonstrated in studies among nonathletes (Button & Warren, 2001; Pettersen & Rosenvinge, 2002; Tozzi et al., 2003). However, it is important to note that a meta-analysis of research on eating disorder recovery suggested that medication helps in the reduction of behavioral symptoms, such as binge/purge behaviors, but does not help cognitive symptoms including fear of weight gain (Richards et al., 2000). Nonetheless, our finding supports the inclusion of psychiatrists on treatment teams for athletes.

Limitations

Though this study provides new insights about athletes' experiences with recovery, several limitations deserve mention. First, participants were recruited using convenience sampling and there was no attempt made to randomly select the sample. It is also possible that the inability to see the body language of participants interviewed by phone could have been a detriment to communication or rapport. Next, the lack of a clear or universal definition for "recovery" in eating disorder research makes comparisons with other studies difficult (Couturier & Lock, 2006; Noordenbos, 2011); though our results do help clarify the need for a definition that includes changes to maladaptive thoughts about body and food.

Finally, results were not separated based on the participants' diagnosis, in part due to our relatively small sample size. However, we believe that since that one-quarter of the athletes in our sample met criteria for two or more eating disorders, it is most appropriate to present the overall findings on the total sample. Future studies that are specifically designed to recruit adequate numbers of individuals within the different diagnostic categories will allow stratified analyses where differences within subgroups can be explored.

Conclusions

The experiences shared by the female athletes in this study provide new information about the process of recovery from eating disorders. It is clear from these results that there is a complex network of factors that influence the recovery process for athletes. Our findings mostly align with earlier research involving nonathlete cohorts and suggest that factors that influence the recovery process are somewhat universal. However, the sport environment and persons associated with sport introduce unique factors that contribute both positive and negative influences affecting female athletes who experience eating disorders. Based on the participants' narratives, it appears that sport can be an assisting factor if coaches, teammates, and the sport culture support the individual and facilitate necessary therapeutic interventions. In fact, these sport figures have the potential to provide a larger support network than a nonathlete may have access to (Kirk, Singh, Getz, 2001). In addition, the desire to reduce eating disordered behavior as a way to improve performance and stay connected socially to a team seems to be a strong athlete-specific motivator that should be incorporated into treatment and prevention strategies for athletes. Therefore, a holistic approach to education and nutrition/health promotion involving both coaches and teammates may be particularly relevant to address risk factors in the sport community.

It is interesting to learn that for initiation of recovery, the majority of factors were internal in nature. In contrast, the majority of helping and hindering factors that influenced the recovery journey were external. These insights, and the interplay between internal and external factors described here, are important for intervention planning to develop strategies that capitalize on positive influences and diminish the negative influences of hindering factors in an athlete's environment and social network. Too often, therapeutic interventions focus solely on treating the affected individual. Our findings suggest that without addressing several key external, environmental factors, such as team norms and teammate interactions, individual recovery efforts by athletes may be threatened or sabotaged.

Overall, this research demonstrates a necessity for coaches, parents, and team members to become better educated about eating disorders and more aware of their ability to either help or hinder recovery. Athletes with eating disorders could use our findings by seeking out positive supports, reducing time spent with others with eating disorders (including teammates) who are not focused on recovery, and working to make the cognitive and behavioral changes that knowingly assist recovery. Professional treatment providers, such as clinical sport psychologists and sport nutritionists, would benefit from applying our findings to create individually tailored treatment programs that are flexible, client-centered, account for athletic performance needs, and focused on development of effective coping skills. Our findings will also be of assistance to educational sport psychologists as they work to raise awareness of disordered eating risk and foster affected athletes' motivation for recovery and/or willingness to enter clinical treatment. Finally, replication and extension of this work is needed. Future studies that include larger and more diverse samples of athletes will allow thorough exploration of eating disorder recovery experiences in key subgroups stratified by diagnosis, race/ethnicity, and sport type.

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